

# BRAVE

BLAIR RESILIENCE: ADDRESSING VULNERABILITY AND EXPOSURE  
BLAIR COUNTY 2018 HAZARD MITIGATION PLAN UPDATE



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**- SECTION 1 -**

**INTRODUCTION**

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## 1.0 INTRODUCTION

### 1.1. BACKGROUND

The Blair County Planning Commission, in response to the Disaster Mitigation Act of 2000, organized a countywide hazard mitigation planning effort to prepare, adopt and implement a multi-jurisdictional hazard mitigation plan for Blair County and all 25 Blair County municipalities. The Blair County Planning Commission then undertook the task prepare the 2018 hazard mitigation plan. The 2013 hazard mitigation plan has been utilized and maintained during the five-year life cycle.

The Blair County Planning Commission was successful in securing hazard mitigation grant funding to update the county hazard mitigation plan. The pre-disaster mitigation grant funding was administered by the Pennsylvania Emergency Management Agency and provided to the Blair County Planning Commission as a sub-grantee. A local hazard mitigation planning team was developed comprised of government leaders and citizens from Blair County. This updated hazard mitigation plan will provide another solid foundation for the Blair County Hazard Mitigation Program.

Hazard mitigation describes sustained actions taken to prevent or minimize long-term risks to life and property from hazards and to create successive benefits over time. Pre-disaster mitigation actions are taken in advance of a hazard event and are essential to breaking the disaster cycle of damage, reconstruction and repeated damage. With careful selection, successful mitigation actions are cost-effective means of reducing risk of loss over the long-term.

Hazard mitigation planning has the potential to produce long-term and recurring benefits. A core assumption of mitigation is that current dollars invested in mitigation practices will significantly reduce the demand for future dollars by lessening the amount needed for recovery, repair and reconstruction. These mitigation practices will also enable local residents, businesses and industries to reestablish themselves in the wake of a disaster, getting the economy back on track sooner and with less interruption.

### 1.2. PURPOSE

The purpose of the Blair County Hazard Mitigation Plan is:

- To protect life, safety and property by reducing the potential for future damages and economic losses that result from natural hazards;
- To qualify for additional grant funding, in both the pre-disaster and the post-disaster environment;
- To speed recovery and redevelopment following future disaster events;
- To demonstrate a firm local commitment to hazard mitigation principles; and
- To comply with both state and federal legislative requirements for local hazard mitigation plans.

### 1.3. SCOPE

This Blair County Hazard Mitigation Plan serves as a framework for saving lives, protecting assets and preserving the economic viability of the 25 municipalities in Blair County. The hazard mitigation plan outlines actions designed to address and reduce the impact of a full range of natural hazards facing Blair County, including drought, earthquakes, flooding, tornados, hurricanes/tropical storms and severe winter weather. Human caused hazards such as transportation accidents, hazardous materials spills and fires are also addressed.

A multi-jurisdictional planning approach was utilized for the Blair County hazard mitigation plan update, thereby eliminating the need for each municipality to develop its own approach to hazard mitigation and its own planning document. Further, this type of planning effort results in a common understanding of the hazard vulnerabilities throughout the county, a comprehensive list of mitigation projects, common mitigation goals and objectives and an evaluation of a broad capabilities assessment examining policies and regulations throughout the county and its municipalities.

### 1.4. AUTHORITY AND REFERENCE

Authority for this plan originates from the following federal sources:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C., Section 322, as amended
- Code of Federal Regulations (CFR), Title 44, Parts 201 and 206
- Disaster Mitigation Act of 2000, Public Law 106-390, as amended
- National Flood Insurance Act of 1968, as amended, 42 U.S.C. 4001 et seq.

Authority for this plan originates from the following Commonwealth of Pennsylvania sources:

- Pennsylvania Emergency Management Services Code. Title 35, Pa C.S. Section 101
- Pennsylvania Municipalities Planning Code of 1968, Act 247 as reenacted and amended by Act 170 of 1988
- Pennsylvania Storm Water Management Act of October 4, 1978. P.L. 864, No. 167

The following Federal Emergency Management Agency guides and reference documents were used to prepare this document:

- FEMA 386-1: *Getting Started*. September 2002
- FEMA 386-2: *Understanding Your Risks: Identifying Hazards and Estimating Losses*. August 2001
- FEMA 386-3: *Developing the Mitigation Plan*. April 2003
- FEMA 386-4: *Bringing the Plan to Life*. August 2003
- FEMA 386-5: *Using Benefit-Cost Review in Mitigation Planning*. May 2007
- FEMA 386-6: *Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning*. May 2005
- FEMA 386-7: *Integrating Manmade Hazards into Mitigation Planning*. September 2003
- FEMA 386-8: *Multijurisdictional Mitigation Planning*. August 2006
- FEMA 386-9: *Using the Hazard Mitigation Plan to Prepare Successful Mitigation Projects*. August 2008
- *FEMA Local Multi-Hazard Mitigation Planning Guidance*. July 1, 2008

- *FEMA National Fire Incident Reporting System 5.0: Complete Reference Guide*. January 2008
- *FEMA Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards*. January 2013

The following Pennsylvania Emergency Management Agency guides and reference documents were used to prepare this document:

- *PEMA: Hazard Mitigation Planning Made Easy!*
- *PEMA Mitigation Ideas: Potential Mitigation Measures by Hazard Type: A Mitigation Planning Tool for Communities*. March 6, 2009
- *PEMA: Standard Operating Guide*. October 18, 2013

The following document produced by the National Fire Protection Association (NFPA) provided additional guidance for updating this plan:

- NFPA 1600: *Standard on Disaster/Emergency Management and Business Continuity Programs*. 2011

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**- SECTION 2 -**

**COMMUNITY PROFILE**

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## 2.0 COMMUNITY PROFILE

### 2.1 GEOGRAPHY AND ENVIRONMENT

Blair County was formed on February 26, 1846 from portions of Bedford and Huntingdon Counties. It covers 526 square miles and is located in the south-central portion of the Commonwealth of Pennsylvania. It is bounded by Centre County to the north, Huntingdon County to the east, Bedford County to the south, Cambria County to the west, and Clearfield County to the northwest. According to the 2010 Census, the population of Blair County was 127,089.

The County is composed of 25 municipalities, including two home rule municipalities, eight boroughs, and fifteen second class townships. One second class township, Blair Township, is eligible to become a first-class township should it so choose.

**Table 2.1-1: Blair County Municipalities**

Municipality	Type	Population	Settled
Allegheny	Township	9738	1793
Altoona	Home Rule	46320	1854
Antis	Township	6499	1787
Bellwood	Borough	1828	1877
Blair	Township	4494	1773
Catharine	Township	724	1846
Duncansville	Borough	1233	1831
Frankstown	Township	7381	1787
Freedom	Township	3458	1787
Greenfield	Township	4173	1846
Hollidaysburg	Borough	5791	1768
Huston	Township	1336	1842
Juniata	Township	1112	1847
Logan	Township	12289	1850
Martinsburg	Borough	1958	1815
Newry	Borough	270	1793
North Woodbury	Township	2644	1771
Roaring Spring	Borough	2585	1865
Snyder	Township	3364	1840
Taylor	Township	2465	1775
Tunnelhill	Borough	118 (Blair)	1876
Tyrone	Home Rule	5477	1851
Tyrone	Township	1885	1775
Williamsburg	Borough	1254	1790
Woodbury	Township	1693	1787

Blair County is situated at the headwaters of all three major branches of the Juniata River: the Little Juniata, the Frankstown Branch, and the Raystown Branch. All water in the county drains into the main stem of the Juniata River, on to the Susquehanna River, and into the Chesapeake Bay. As stewards of the headwaters of one of the major tributaries to the Susquehanna, we take our water quality and stewardship responsibilities seriously.



Geologically, the county is located at the western edge of the ridge and valley section of the Commonwealth, in the Southern Alleghenies region. The Allegheny Front, which forms the eastern continental divide in this area, defines the western boundary of the county. The climate is temperate and influenced by both the Allegheny Front and the ridges and valleys of the province. It generally experiences moderately hot summers, with mid-summer temperatures generally reaching the lower 90s and moderately cold winters, when it is not unusual to see a few days in the teens. The record high for the county is 98 degrees, and the record low is -22. In terms of precipitation, the county sees an average of just over 40 inches of rainfall annually, plus an average of 34 inches of snow.

## **2.2 COMMUNITY FACTS**

The economy in Blair County is diverse. The five largest employers are the UPMC Health System, Commonwealth of Pennsylvania, Sheetz, Inc., Altoona Area School District, and the Federal Government. This list does not reflect the importance of the agriculture industry, which tops the list of major industries in the county, by value. The majority of our agriculture is conducted in smaller family-oriented farms and businesses and is spread across the county. As such it does not generally appear in 'top ten' lists unless considered as an aggregated whole.

Blair County is characterized by several working landscapes. Sinking Valley and Morrison Cove are largely agricultural. The Allegheny Front, Tussey Mountain, and mid-county ridges are largely forested. Dotted in these areas are several quarries, processing plants, and settlements. The large employers are located in the larger communities, however the larger industries work the landscape and are in the more rural areas.

Recreation is quickly becoming a major industry in the county. For instance, the Borough of Williamsburg is redefining itself around the concept of a crossroads for trails of various types: cycling, hiking, and boating. A half dozen trails meander through the borough, which has adopted the slogan 'Take Your Journey' in response. With the number of recreation seekers increasing, we find a number of people unfamiliar with the territory which can pose issues in the event hazards arise.

## **2.3 POPULATION AND DEMOGRAPHICS**

The 2010 Census counted 127,089 people in the county, with a median age of 42 years. The overall population continues to decline and is estimated to be around 125,000 people in 2018. Additionally, the median age is increasing due to people living longer and the out-migration of young people. The county is predominately Caucasian, with only 5.2% reporting a race other than white. The heaviest immigrant population is from south-central Asia, a trend that mirrors the state.

Limited English proficiency is not widespread in the county. The most common non-English languages spoken are Pennsylvania Dutch, Hindi, and Mandarin. Most speakers of these three languages are also proficient in English. The most common non-English language with a large number of non-English speakers is Spanish. Just 2.65% were classified as 'non-English speakers' with less than 5% of these indicating they had limited English proficiency. Live phone translation service is provided to all municipalities in the county through a contract held by Blair Planning.

The median household income in the county is \$45,500, with an annual growth rate around 3.5%. Unfortunately, fifteen percent of the county population – approximately 18,000 people - have an income that is below the poverty line. These are spread throughout the county, but map analysis of the census data shows a trend toward Altoona. This is likely because support services are available more readily in Altoona than in other parts of the county.

## **2.4 LAND USE AND DEVELOPMENT**

The land use is about 65 percent forest/game lands, 20 percent agricultural, and nine percent residential. Over 65 percent of the population is concentrated in less than six percent of the county's land area. The major transportation routes in Blair County include Interstate 99, which runs in a north/south direction and US Route 22 which runs east/west. Secondary major routes include PA 36 through Morrison Cove, PA 453 along the Little Juniata River, and PA 350 through Bald Eagle.

There have been no major subdivisions in Blair County in over a decade. The development applications are primarily to adjust lot lines and build on previously-approved parcels. An occasional plan comes in with a few lots, but this is not common in recent years. More common are commercial land developments requiring site plan review. Even these are modest, tending toward small businesses, start-ups, and family-owned shops.

Major developed areas are centered on the 'Golden Triangle' of Altoona, Duncansville, and Hollidaysburg, with some extension northward along the I-99 corridor toward Tyrone. There has been a rural revitalization in Morrison Cove in the last quarter century as farming ownership has changed hands and prospering under the new management. The hollows along the Allegheny Front tend toward the stereotypical Appalachia, often a dozen homesteads along a stream with one proper means of ingress and egress from the neighborhood.

## **2.5 DATA SOURCES AND LIMITATIONS**

The ultimate source of nearly all data in the section comes from some iteration of the United States Census. This may be through the Decennial Census, the Economic Census, the American Community Survey, or similar product published by the Bureau. Other sources are the *Alleghenies Ahead* comprehensive plan, the prior iteration of the hazard mitigation plan, the long-range transportation plan, and the Blair Planning public participation plan. All these numbers, with the exception of the Decennial Census, are based estimates drawn from the results of surveys. The numbers given have a margin of error that can be quite large. American Community Survey data in Blair County can have a margin of error that can make the number meaningless. This is due to the small population size, and as a result, American Community Survey data are avoided in favor of another source whenever possible.

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**- SECTION 3 -**

**PLANNING PROCESS**

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## 3.0 PLANNING PROCESS

### 3.1 UPDATE PROCESS AND PARTICIPATION SUMMARY

The Hazard Mitigation Plan update began November 29, 2016. The Blair County Planning Commission was able to secure a hazard mitigation grant to start the process. The planning process involved a variety of key decision makers and stakeholders within the county. Taking to heart the concerns expressed that there was too much emphasis on first-responder participation for the 2013 update, the list of participant invitees was expanded. The core hazard mitigation team, which was referred to as the steering committee, included officials from the Blair County Planning Commission, and the Blair County Department of Emergency Services.

The process was developed around the requirements laid out in the Federal Emergency Management Agency plan review tool, referenced throughout this plan, as well as numerous other guidance documents including, but not limited to, Pennsylvania's All-Hazard Mitigation Standard Operating Guide, the Federal Emergency Management Agency's State and Local Mitigation Planning How-to Guide series of documents (FEMA 386-series) and the National Fire Protection Association 1600 Standard on Disaster/Emergency Management and Business Continuity Programs.

The Blair County Planning Commission and the Blair County Department of Emergency Management coordinated and led public involvement meetings, local planning team meetings, analysis and the writing of the plan update. Blair Planning conducted project meetings and local planning team meetings throughout the process. Meeting agendas, meeting minutes and sign in sheets were developed and maintained for each meeting; these documents are detailed in Appendix C of this plan.

Interview meetings with local officials were held, as well as work sessions and in progress review meetings. At each of these meetings, municipal officials were strongly encouraged to submit hazard mitigation project opportunity forms, complete their respective portions of the capabilities assessment and review and eventually adopt the county hazard mitigation plan. Blair Planning will continue to work with all local municipalities to collect local hazard mitigation project opportunities.

The hazard mitigation planning process consisted of:

- Applying for and receiving a hazard mitigation grant to fund the planning project.
- Announcing the initiative via press releases and postings on the county website.
- Involving elected and appointed county and municipal officials in a series of meetings, training sessions and workshops
- Identifying capabilities and reviewed the information with the municipalities.
- Identifying hazards.
- Assessment of risk and analyzing vulnerabilities.
- Identifying mitigation strategies, goals and objectives.
- Developing an implementation plan.
- Announcing completion via press releases and postings on the county website.
- Plan adoption at a public meeting of the Blair County Board of Commissioners.
- Plan submission to the Federal Emergency Management Agency and the Pennsylvania Emergency Management Agency.

This plan update was completed January 23, 2019. The document follows an outline developed by the Pennsylvania Emergency Management Agency which provides a standardized format for all local hazard mitigation plans in the Commonwealth of Pennsylvania. The 2018 Blair County Hazard Mitigation Plan has additional hazard profiles that were added and these additional profiles increased the subsections in section 4.3 of the document.

### 3.2 THE PLANNING TEAM

The Plan update was led by the Blair County Steering Committee. The Steering Committee provided guidance and leadership for the overall project. The steering committee disseminated information and undertook administrative tasks, and is listed in Table 3.2-1.

**Table 3.2-1: Hazard Mitigation Plan Update Steering Committee**

Name	Organization	Position
David McFarland, III	Blair County Planning Commission	Planning Director
Jamie Klink	Blair County Planning Commission	Community Planner
Tina Enderlein	Blair County Planning Commission	Regional Planner
Mark Taylor	Blair County Department of Emergency Services	Director
Cris Fredrickson	Blair County Department of Emergency Services	Operations & Training Officer

In order to represent the county, a diversified list of potential Local Planning Team members was developed. Members that participated in the 2013 hazard mitigation plan were highly encouraged to join the new team. The steering committee then provided invitations to the prospective members and provided a description of duties to serve on the Team. The following agencies, departments and organizations were invited to participate in the Team: Blair County Commissioners, the Altoona Blair County Development Corporation, Blair County Chamber of Commerce, the Department of Conservation and Natural Resources Bureau of Parks, and Bureau of Forestry, the Pennsylvania Department of Transportation, Pennsylvania State Police, Blair County Conservation District, Pennsylvania Department of Agriculture and all twenty-five municipalities. The invitations for membership were disseminated by Blair Planning utilizing emails and telephone calls. The local planning team worked throughout the process to plan and hold meetings, collect information and conduct public outreach.

The stakeholders, which included officials from Blair County and each of the twenty-five participating municipalities, served on the 2018 Blair County Hazard Mitigation Local Planning Team, actively participated in the planning process by attending meetings, completing assessments, surveys and worksheets and/or submitting comments.

### 3.3 MEETINGS AND DOCUMENTATION

Meetings of the local planning team were held approximately every ten weeks. At each of these meetings, municipal officials were strongly encouraged to participate in identifying and prioritizing hazards, review the capability assessment, and provide input on the plan. Three outreach meetings were held at different

location in the county to directly solicit public input into the plan and identify any hazards or capacity concerns that may have been missed. During the municipal interview process, participants were asked to submit hazard mitigation project opportunity forms, complete their respective portions of the capability assessment and review and eventually adopt the plan update. Table 3.3-1: Hazard Mitigation Planning Committee Meetings lists the meetings held during the planning process and the topic that was discussed at each meeting. Meeting-related materials including agendas, advertisements and sign-in sheets, are located in Appendix C.

**Table 3.3-1: Hazard Mitigation Planning Committee Meetings**

<b>Date</b>	<b>Description of Meeting</b>
January 11, 2017	Kickoff meeting and update of status of the 2013 Plan.
January 18, 2017	Community Resilience Workshop meeting.
March 22, 2017	Discussion on the timeline, expectations, content and format for the plan update. Also discussed the possibility of a countywide floodplain administrator.
August 9, 2017	Discussed surveys related to the hazards that will be included in the plan update, along with discussion on potential projects to be included. Also discussed National Flood Insurance Program requirements for municipalities and public outreach assistance.
November 15, 2017	Discussion on committee’s responsibilities and status of the plan update. Also discussed capacity and implementation strategies for the plan. Discussed capability assessment forms and development of action plans to support mitigation strategies.
January 3, 2018	Discussion of interest in a countywide flood buyback program, storm water ideas to be put in the plan, continuity of operations, and hazard rankings for the County.
January 31, 2018	Discussion of Community Rating System and countywide flood buyback program. Also discussed continuity of operations drills and potential hazard mitigation projects to be included in the plan.
April 4, 2018	Discussed the need for a profile from each municipality detailing hazards and potential projects for their municipality.
May 2, 2018	Discussed the projects to be included in the plan update and what was still needed from the municipalities prior to plan submission. Also, discussed submission and adoption timelines for the plan.

### **3.4 PUBLIC AND STAKEHOLDER PARTICIPATION**

Blair Planning engaged numerous stakeholders and encouraged public participation during the plan update process. Advertisements for public meetings were completed utilizing the local newspaper, social media, and the Blair Planning website. Copies of those advertisements are located in Appendix C. Municipalities and other county entities were invited to participate in various meetings and encouraged to review and update various worksheets and surveys. Copies of all meeting agendas, meeting minutes and sign-in sheets are located in Appendix C. Municipalities were also encouraged to review hazard mitigation related items with other constituents located in the municipality like businesses, academia, private and nonprofit interests.

Four approaches were utilized to solicit a broad base of information:

- *Meeting Discussions:* Officials participating in regular meetings during the update process were asked to evaluate the 2013 plan, and provide input on where changes were needed in the document. This included a re-evaluation of the hazards considered for the 2013 update and a new ranking of these hazards based on local knowledge and experience. Since the majority of those at the meeting were first responders, the input provided an excellent base of hazards actually faced in the community.
- *Public Workshops:* Three public workshops were conducted to collect information on local planning, regulatory, administrative, technical, fiscal and political capabilities that can be included in the countywide mitigation strategy. Additionally, participants were asked to identify and rank potential hazards in Blair County.
- *Public Survey:* The survey collected input from the public and indicated where gaps in general knowledge of potential hazards lie as well as the input sought – identification of hazards and related issues that are facing Blair County. The survey indicated some issues identified in Section Three relative to capacity.
- *Municipal Interviews:* Blair Planning staff conducted interview discussions with each of the twenty-five municipalities in the county in April 2018. These interviews ensured participation by all the municipalities in the county, gave assurance that all were aware of the process, needs, and requirements, and also provided staff with the municipal viewpoint on potential hazards and mitigation projects in the county, each planning region, and each municipality. These interviews form the basis of the approaches outlined in Section Six.

A time line that provided appropriate opportunities for public comment was utilized during the review and drafting process. Any public comment that was received during public meetings or during the draft review of the plan were documented and included in the plan. Copies of public meeting notices, workshop invitations, and survey are included in Appendix C of this plan.

Blair Planning invited all contiguous counties to review the draft hazard mitigation plan. A notice was sent to the county planners in Bedford County, Cambria County, Centre County, Clearfield County and Huntingdon County, and is included in Appendix C.

### **3.5 MULTI-JURISDICTIONAL PLANNING**

In order for a multi-jurisdictional hazard mitigation plan to be approved, each municipality that is included in the plan must have its governing body adopt the plan, even though the Blair County Emergency Management Agency has the authority to prepare such a plan on behalf of the respective jurisdictions.

Once adopted, resolutions for the plan are included in Section Eight and are summarized in the table above. Information regarding the adoption of the plan is also included.

Figure 3.5-1: Blair County Municipal Map



Blair County’s 25 municipalities (see Table 3.5-1) were involved throughout both the hazard mitigation planning process. Municipal emergency management coordinators were informed about the project at their quarterly training sessions. Municipal officials provided information related to existing codes and ordinances, known hazard areas, the severity of past hazard events, and the location of critical facilities. Municipalities also identified the mitigation measures they completed under the 2013 plan. Municipal officials also provided input on the hazard identification and risk assessment and hazard mitigation



strategy sections of the plan. Municipal involvement in this hazard mitigation planning program was further emphasized during review of the draft plan and by adopting the final plan.

**Table 3.5-1: MULTI-JURISDICTIONAL PLANNING PARTICIPATION**

<b>Municipality</b>	<b>Planning Process</b>	<b>Committee Meetings</b>	<b>Community Workshop</b>	<b>Public Survey</b>	<b>Municipal Interview</b>	<b>Plan Review</b>
Blair County	Yes	Yes	Yes	Yes	Yes	Yes
Altoona Municipality	Yes	Yes	Yes	Yes	Yes	Yes
Tyrone Municipality	Yes	Yes	No	Yes	Yes	Yes
Bellwood Borough	Yes	Yes	No	No	Yes	Yes
Duncansville Borough	No	Yes	No	No	Yes	Yes
Hollidaysburg Borough	Yes	Yes	No	No	Yes	Yes
Newry Borough	No	Yes	No	No	Yes	Yes
Martinsburg Borough	Yes	Yes	No	Yes	Yes	Yes
Roaring Spring Borough	Yes	Yes	No	No	Yes	Yes
Tunnelhill Borough	No	Yes	No	No	Yes	Yes
Williamsburg Borough	Yes	Yes	No	Yes	Yes	Yes
Allegheny Township	Yes	Yes	No	No	Yes	Yes
Antis Township	Yes	Yes	Yes	No	Yes	Yes
Blair Township	Yes	Yes	No	No	Yes	Yes
Catharine Township	Yes	Yes	No	Yes	Yes	Yes
Frankstown Township	Yes	Yes	Yes	No	Yes	Yes
Freedom Township	Yes	Yes	Yes	No	Yes	Yes
Greenfield Township	Yes	Yes	No	No	Yes	Yes
Huston Township	No	Yes	No	No	Yes	Yes
Juniata Township	No	Yes	No	No	Yes	Yes
Logan Township	Yes	Yes	Yes	No	Yes	Yes
North Woodbury Township	Yes	Yes	No	Yes	Yes	Yes
Snyder Township	No	Yes	No	No	Yes	Yes
Taylor Township	Yes	Yes	No	No	Yes	Yes
Tyrone Township	No	Yes	No	No	Yes	Yes
Woodbury Township	Yes	Yes	No	Yes	Yes	Yes

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**- SECTION 4 -**

**RISK ASSESSMENT**

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## 4.0 RISK ASSESSMENT

### 4.1 UPDATE PROCESS SUMMARY

A key component to reducing future losses is to first have a clear understanding of what the current risks are and what steps may be taken to lessen their threat. The development of the risk assessment is the critical first step in the entire mitigation process, as it is an organized and coordinated way of assessing potential hazards and risks. The risk assessment identifies the effects of both natural and human-caused hazards and describes each hazard in terms of its frequency, severity and county impact. Numerous hazards were identified as part of the process.

A risk assessment evaluates threats associated with a specific hazard and is defined by probability and frequency of occurrence, magnitude, severity, exposure and consequences. The Blair County risk assessment provides in-depth knowledge of the hazards and vulnerabilities that affect Blair County and its municipalities. This document uses an all-hazards approach when evaluating the hazards that affect the county and the associated risks and impacts each hazard presents.

This risk assessment provides the basic information necessary to develop effective hazard mitigation/prevention strategies. Moreover, this document provides the foundation for the Blair County Emergency Operations Plan, local emergency operations plans and other public and private emergency plans.

The Blair County risk assessment is not a static document, but rather, is an annual review requiring periodic updates. Potential future hazards include changing technology, new facilities and infrastructure, dynamic development patterns and demographic and socioeconomic changes into or out of hazard areas. By contrast, old hazards, such as brownfields and landfills, may pose new threats as county conditions evolve.

Using the best information available and geographic information systems technologies, the county can objectively analyze its hazards and vulnerabilities. Assessing past events is limited by the number of occurrences, scope and changing circumstances. For example, ever-changing development patterns in Pennsylvania have a dynamic impact on traffic patterns, population density and distribution, storm water runoff and other related factors. Therefore, limiting the risk assessment to past events is myopic and inadequate.

The Blair County Local Planning Team reviewed and assessed the change in risk for all natural and human-caused hazards identified in the 2013 hazard mitigation plan. The mitigation local planning team then identified hazards that were outlined within the Pennsylvania Hazard Mitigation Plan but not included in the 2013 Blair County Hazard Mitigation Plan that could impact Blair County. The team utilized the hazard identification and risk evaluation worksheet that was provided by the Pennsylvania Emergency Management Agency to complete these tasks.

The Blair County Steering Committee met with municipalities and provided guidance on how to complete the municipal hazard identification and risk evaluation worksheets. All Twenty-five municipalities and the County returned a completed hazard identification worksheet. This information was combined with the county information to develop an overall list of hazards that would need to be profiled.

Once the natural and human-caused hazards were identified and profiled, the local planning team then completed a vulnerability assessment for each hazard. An inventory of vulnerable assets was completed utilizing tabular data, spatial data, and local planning team knowledge. The team used the most recent Blair County assessment data and the HAZUS software to estimate loss to particular hazards. Risk factor was then assessed to each profiled hazard utilizing the hazard prioritization matrix. This assessment allows the county and its municipalities to focus on and prioritize local mitigation efforts on areas that are most likely to be damaged or require early response to a hazard event.

As part of this plan update, each profiled hazard will include an assessment for the planning regions of Blair County. For this update, this will appear at the end of the Risk Assessment subsection included in each hazard profile. In cases where a planning region division is inappropriate, an alternate breakout will be used to provide a more detailed profile at the local level. The Blair County planning regions are shown in Table 4.1-1 below.

**Table 4.1-1 Blair County Planning Regions**

<b>Region</b>	<b>Municipalities Included</b>
Region One	Snyder Township, Tyrone Borough, Tyrone Township
Region Two	Antis Township, Bellwood Borough
Region Three	Altoona City, Logan Township
Region Four	Catharine Township, Williamsburg Borough, Woodbury Township
Region Five	Allegheny Township, Blair Township, Duncansville Borough, Frankstown Township, Hollidaysburg Borough, Newry Borough, Tunnelhill Borough
Region Six	Huston Township, Martinsburg Borough, North Woodbury Township, Roaring Spring Borough, Taylor Township
Region Seven	Freedom Township, Greenfield Township, Juniata Township

## 4.2 HAZARD IDENTIFICATION

Based on historical occurrences specific to Blair County, the Mitigation Steering Committee developed a listing of known natural hazards to be addressed in this plan. These known natural hazards were identified through an extensive process that involved the following:

- input from the individual Steering Committee members, local officials, and the public;
- coordination with various federal, state, and local agencies;
- a review of natural disaster history specific to Blair County (see Table 4.2-1);
- analysis of hazard identification and risk assessment publications at the state and local level;
- limited field reconnaissance;
- Internet research; and
- Review of “NFPA 1600” hazards.

In addition, the Planning Commission’s geographic information system database was used as an important resource in identifying and mapping the County’s infrastructure, critical facilities, and land uses. Data from this source and spatial data made available from other project participants were used to determine those hazards that present the greatest risk to the County. The discussion presented in the following pages summarize these hazards.

**Table 4.2-1 History of Events in Blair County Since 2000**

Hazard	Date	Fatalities	Injuries	Property Damage (2017 \$)
Wind	1/16/2000	0	0	\$ 27,528.11
Severe Storm	6/2/2000	0	0	\$ 13,764.05
Severe Storm	6/21/2000	0	0	\$ 2,752.81
Wind	12/12/2000	0	0	\$ 20,871.32
Wind	2/10/2001	0	0	\$ 8,019.23
Winter Weather	3/4/2001	0	0	\$ 6,691.61
Flooding	5/26/2001	0	0	\$ 13,383.23
Wind	3/9/2002	0	0	\$ 1,996.20
Flooding	8/9/2003	0	0	\$ 322,033.97
Flooding - Ivan	9/17/2004	1	0	\$ 1,901,094.05
Wind - Ivan	9/17/2004	0	0	\$ 6,261.06
Wind	2/17/2006	0	0	\$ 2,137.60
Wind	12/1/2006	0	0	\$ 356.27
Wind - Ike	9/14/2008	0	0.17	\$ 0.00
Winter Weather	1/6/2009	0	0	\$ 169.97
Wind	2/12/2009	0	0	\$ 49,254.94
Flash Flood	6/20/2009	0	0	\$ 27,619.59
Severe Storm	7/21/2009	0	0	\$ 5,523.92
Severe Storm	8/10/2009	0	0	\$ 5,523.92
Wind	10/7/2009	0	0	\$ 7,595.39
Severe Storm	4/16/2010	0	0	\$ 5,434.77
Severe Storm	5/14/2010	0	0	\$ 10,869.55
Severe Storm	5/14/2010	0	0	\$ 10,869.55
Flooding	12/1/2010	0	0	\$ 10,869.55
Severe Storm	6/10/2011	0	0	\$ 5,268.47
Severe Storm	7/29/2011	0	0	\$ 5,268.47
Severe Storm	9/27/2011	0	0	\$ 5,268.47
Severe Storm	5/27/2012	0	0	\$ 5,161.65
Severe Storm	5/27/2012	0	0	\$ 5,161.65
Severe Storm	5/27/2012	0	0	\$ 5,161.65
Severe Storm	6/1/2012	0	0	\$ 5,161.65
Severe Storm	7/7/2012	0	0	\$ 10,323.31
Severe Storm	9/8/2012	0	0	\$ 5,161.65
Severe Storm	1/30/2013	0	0	\$ 5,087.14
Severe Storm	5/10/2013	0	0	\$ 10,174.28
Severe Storm	5/10/2013	0	0	\$ 2,543.57
Severe Storm	6/25/2013	0	0	\$ 5,087.14
Severe Storm	6/25/2013	0	0	\$ 5,087.14
Severe Storm	7/7/2013	0	0	\$ 2,034.86
Severe Storm	5/13/2014	0	0	\$ 1,001.19
Severe Storm	7/3/2014	0	0	\$ 2,002.37
Severe Storm	7/27/2014	0	0	\$ 1,001.19
Severe Storm	7/27/2014	0	0	\$ 1,001.19
Severe Storm	7/27/2014	0	0	\$ 1,001.19
Severe Storm	7/27/2014	0	0	\$ 1,001.19
Severe Storm	7/27/2014	0	0	\$ 1,001.19
Severe Storm	6/8/2015	0	0	\$ 500.00
Severe Storm	6/12/2015	0	0	\$ 1,000.00
Severe Storm	6/12/2015	0	0	\$ 1,000.00
Severe Storm	2/12/2017	0	0	\$ 0.00
Flooding	4/15/2017	0	0	\$ 0.00
Flooding	5/12/2017	0	0	\$ 0.00
Severe Storm	6/19/2017	0	0	\$ 0.00
Flooding	8/1/2017	0	0	\$ 0.00
Flooding	7/2/2018	0	0	\$ 0.00
Flooding	8/3/2018	0	0	\$ 0.00
Flooding	9/10/2018	0	0	\$ 0.00

The cumulative effect of these 57 hazards resulted in one fatality, one injury, and \$2.5 million in known property damages. Note these numbers are conservative as complete data for the events in 2017 and 2018 were not available for this plan.

Additionally, the Blair County agriculture industry has filed \$5.75 million in claims related to natural events during the same period (2000-2018). These claims were due to crop damage from storms, drought, and the adverse effects of very cold weather.

Man-made disasters have also occurred within Blair County. Examples include hazardous material incidents, fires, and explosions. Other incidents include the Logan Valley Mall fire of 1994, the Smith Transport fire of 1994, the Lakemont explosion of 1998, and the New Pig fire of 2002.

Due to the lack of record of occurrence for these events, natural hazards such as avalanches, coastal storms, coastal erosion, tsunamis, glacier, tidal surge, expansive soil, sandstorms, famine, and volcanoes are not addressed in this plan.

#### 4.2.1 PRESIDENTIAL AND GUBERNATORIAL DISASTER DECLARATIONS

Table 4.2.1-1 - Presidential & Gubernatorial Disaster Declarations presents a list of all Presidential and Governor’s Disaster Declarations that have affected Blair County from 1972 through 2017, according to the Pennsylvania Emergency Management Agency.

**Table 4.2.1-1 - Presidential & Gubernatorial Disaster Declarations**

Date	Event	Date	Event
<i>Presidential Declarations</i>		<i>Gubernatorial Declarations</i>	
October 2012	Hurricane Sandy	January 2018	Opioid Crisis
September 2011	Tropical Storm Lee	March 2017	Winter Storm
April 2010	Winter Storm	January 2016	Winter Storm
June 2006	Flooding	August 2015	Severe Storms
September 2005	Hurricane Katrina	January 2015	Winter Storm
September 2004	Hurricane Ivan	February 2014	Winter Storm
September 2004	Tropical Depression Frances	January 2014	Extreme Weather
February 2003	Winter Storm	June 2013	Severe Storms
September 2003	Hurricane Isabel	October 2012	Hurricane Sandy
		April 2012	Winter Storm
		August 2011	Hurricane Irene
		January 2011	Winter Storm
		February 2010	Winter Storm
		April 2007	Severe Storms
		February 2007	Winter Storm
		September 2006	Tropical Depression Ernesto
		September 2005	Hurricane Katrina

## **4.2.2 SUMMARY OF HAZARDS**

The local planning team was provided the Pennsylvania Standard List of Hazards to be considered for evaluation in the 2018 plan update. Following a review of the hazards considered during the planning process as well as the standard list of hazards, the local planning team decided that the 2018 plan should identify, profile and analyze thirteen hazards, including the four in the 2013 Plan Update. The list below contains a description of the hazards that have the potential to impact Blair County as identified through previous risk assessments, the Blair County Hazards Vulnerability Analysis and input from those that participated in the 2018 plan update. Hazard profiles are included in Section 4.3 for each of these hazards.

### **Drought**

Drought is a natural climatic condition which occurs in virtually all climates, the consequence of a natural reduction in the amount of precipitation experienced over a long period of time, usually a season or more in length. High temperatures, prolonged winds and low relative humidity can exacerbate the severity of drought. This hazard is of particular concern in Pennsylvania due to the presence of farms as well as water-dependent industries and recreation areas across the Commonwealth. A prolonged drought could severely impact these sectors of the local economy, as well as residents who depend on wells for drinking water and other personal uses. (National Drought Mitigation Center, 2006).

### **Earthquake**

An earthquake is the motion or trembling of the ground produced by sudden displacement of rock usually within the upper 10-20 miles of the Earth's crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of underground caverns. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of persons and disrupt the social and economic functioning of the affected area. Most property damage and earthquake-related deaths are caused by the failure and collapse of structures due to ground shaking which is dependent upon amplitude and duration of the earthquake. (Federal Emergency Management Agency, 1997).

### **Fire Hazard**

An urban fire involves a structure or property within an urban or developed area. For hazard mitigation purposes, major urban fires involving large buildings and/or multiple properties are of primary concern. The effects of a major urban fire include minor to significant property damage, loss of life, and residential or business displacement. Explosions are extremely rapid releases of energy that usually generate high temperatures and often lead to fires. The risk of severe explosions can be reduced through careful management of flammable and explosive hazardous materials. (Federal Emergency Management Agency, 1997).

### **Floods (Including Flash Floods and Ice Jams)**

Flooding is the temporary condition of partial or complete inundation on normally dry land and it is the most frequent and costly of all hazards in Pennsylvania. Flooding events are generally the result of excessive precipitation. General flooding is typically experienced when precipitation occurs over a given

river basin for an extended period of time. Flash flooding is usually a result of heavy localized precipitation falling in a short time period over a given location, often along mountain streams and in urban areas where much of the ground is covered by impervious surfaces. The severity of a flood event is dependent upon a combination of stream and river basin topography and physiography, hydrology, precipitation and weather patterns, present soil moisture conditions, the degree of vegetative clearing as well as the presence of impervious surfaces in and around flood-prone areas (National Oceanic and Atmospheric Administration, 2009). Winter flooding can include ice jams which occur when warm temperatures and heavy rain cause snow to melt rapidly. Snow melt combined with heavy rains can cause frozen rivers to swell, which breaks the ice layer on top of a river. The ice layer often breaks into large chunks, which float downstream, piling up in narrow passages and near other obstructions such as bridges and dams. All forms of flooding can damage infrastructure (United States Army Corps of Engineers, 2007).

### **Hazardous Materials and Environmental Hazards**

Environmental hazards are hazards that pose threats to the natural environment, the built environment and public safety through the diffusion of harmful substances, materials, or products. Environmental hazards include hazardous material releases at fixed facilities or in transit and including toxic chemicals, infectious substances, biohazardous waste and any materials that are explosive, corrosive, flammable, or radioactive (PL 1990165, § 207(e)); air or water pollution such as the release of harmful chemical and waste materials into water bodies or the atmosphere (National Institute of Environmental Health Sciences, July 2009; Environmental Protection Agency, Natural Disaster PSAs, 2009); Superfund Facilities and hazards originating from abandoned hazardous waste sites whether or not listed on the National Priorities List (Environmental Protection Agency, National Priorities List, 2009); manure spills involving the release of stored or transported agricultural waste (Environmental Protection Agency, Environmental Impacts of..., 1998); product defect or contamination; and highly flammable or otherwise unsafe consumer products and dangerous foods (Consumer Product Safety Commission, 2003).

### **Invasive Species**

An invasive species is a species that is not indigenous to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. These species can be any type of organism: plant, fish, invertebrate, mammal, bird, disease, or pathogen. Infestations may not necessarily impact human health, but can create a nuisance or agricultural hardships by destroying crops, defoliating populations of native plant and tree species, or interfering with ecological systems (Governor's Invasive Species Council of Pennsylvania, 2009).

### **Pandemic (Including Addiction and Preventable Diseases)**

A pandemic occurs when infection from of a new strain of a certain disease, to which most humans have no immunity, substantially exceeds the number of expected cases over a given period of time. Such a disease may or may not be transferable between humans and animals. (Martin & Martin-Granel, 2006).

### **Radon**

Radon is a colorless, odorless, radioactive gas. It forms naturally from the decay (breaking down) of radioactive elements, such as uranium, which are found in different amounts in soil and rock throughout the world. Radon gas in the soil and rock can move into the air and into underground water and surface water. Radon is present outdoors and indoors. It is normally found at very low levels in outdoor air and



in drinking water from rivers and lakes. It can be found at higher levels in the air in houses and other buildings, as well as in water from underground sources, such as well water. Radon breaks down into solid radioactive elements called radon progeny (such as polonium-218, polonium-214, and lead-214). Radon progeny can attach to dust and other particles and can be breathed into the lungs. As radon and radon progeny in the air break down, they give off radiation that can damage the DNA inside the body's cells (American Cancer Society, 2015).

### **Strong Storms (Including Tornadoes, Wind Storms and Hurricanes)**

A wind storm can occur during severe thunderstorms, winter storms, coastal storms, or tornadoes. Straight-line winds such as a downburst have the potential to cause wind gusts that exceed 100 miles per hour. Based on 40 years of tornado history and over 100 years of hurricane history, the Federal Emergency Management Agency identifies western and central Pennsylvania as being more susceptible to higher winds than eastern Pennsylvania. (Federal Emergency Management Agency, 1997).

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud extending to the ground. Tornadoes are most often generated by thunderstorm activity (but sometimes result from hurricanes or tropical storms) when cool, dry air intersects and overrides a layer of warm, moist air forcing the warm air to rise rapidly. The damage caused by a tornado is a result of high wind velocities and wind-blown debris. According to the National Weather Service, tornado wind speeds can range between 30 to more than 300 miles per hour. They are more likely to occur during the spring and early summer months of March through June and are most likely to form in the late afternoon and early evening. Most tornadoes are a few dozen yards wide and touch down briefly, but even small, short-lived tornadoes can inflict tremendous damage. Destruction ranges from minor to catastrophic depending on the intensity, size and duration of the storm. Structures made of light materials such as mobile homes are most susceptible to damage. Waterspouts are weak tornadoes that form over warm water and are relatively uncommon in Pennsylvania. Each year, an average of over 800 tornadoes is reported nationwide, resulting in an average of 80 deaths and 1,500 injuries (Pennsylvania Emergency Management Agency, 2018). Based on Storm Prediction Center Statistics from the National Oceanic and Atmospheric Administration, the number of recorded F3, F4, & F5 tornadoes between 1950-1998 ranges from <1 to 15 per 3,700 square mile area across Pennsylvania (Federal Emergency Management Agency, 2009). A water spout is a tornado over a body of water (American Meteorological Society, 2009).

Hurricanes (along with tropical storms and nor'easters) are classified as cyclones and are any closed circulation developing around a low-pressure center in which the winds rotate counterclockwise (in the Northern Hemisphere) and whose diameter averages 10-30 miles across. While most of Pennsylvania is not directly affected by the devastating impacts cyclonic systems can have on coastal regions, many areas in the state are subject to the primary damaging forces associated with these storms including high-level sustained winds, heavy precipitation and tornadoes. Areas in southeastern Pennsylvania could be susceptible to storm surge and tidal flooding. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea and Gulf of Mexico during the official Atlantic hurricane season (June through November). (Federal Emergency Management Agency, 1997).

### **Subsidence and Landslides**

Subsidence is a natural geologic process that commonly occurs in areas with underlying limestone bedrock and other rock types that are soluble in water. Water passing through naturally occurring

fractures dissolves these materials leaving underground voids. Eventually, overburden on top of the voids causes a collapse which can damage structures with low strain tolerances. This collapse can take place slowly over time or quickly in a single event, but in either case. Karst topography describes a landscape that contains characteristic structures such as sinkholes, linear depressions, and caves. In addition to natural processes, human activity such as water, natural gas, and oil extraction can cause subsidence and sinkhole formations. (Federal Emergency Management Agency, 1997).

A landslide is the downward and outward movement of slope-forming soil, rock and vegetation reacting to the force of gravity. Landslides may be triggered by both natural and human-caused changes in the environment, including heavy rain, rapid snow melt, steepening of slopes due to construction or erosion, earthquakes and changes in groundwater levels. Mudflows, mudslides, rock falls, rockslides and rock topples are all forms of a landslide. Areas that are generally prone to landslide hazards include previous landslide areas, the bases of steep slopes, the bases of drainage channels, developed hillsides and areas recently burned by forest and brush fires. (Delano & Wilshusen, 2001).

### **Terrorism**

Terrorism is use of force or violence against persons or property with the intent to intimidate or coerce. 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. (Federal Emergency Management Agency, 2009).

### **Utility Interruptions**

Utility interruption hazards are hazards that impair the functioning of important utilities in the energy, telecommunications and public works and information network sectors. Utility interruption hazards include geomagnetic storms including temporary disturbances of the Earth's magnetic field resulting in disruptions of communication, navigation and satellite systems (National Research Council et al., 1986); fuel or resource shortage resulting from supply chain breaks or secondary to other hazard events; electromagnetic pulse originating from an explosion or fluctuating magnetic field and causing damaging current surges in electrical and electronic systems (Institute for Telecommunications Sciences, 1996); information technology failure due to software bugs, viruses, or improper use (Rainer Jr., et al, 1991); damage to or failure of highways, flood control systems, public buildings, bridges, and dams (United States Senate Committee on Environment and Public Works, 2009); telecommunications system failure including damage to data transfer, communications and processing equipment (Federal Emergency Management Agency, 1997); transmission facility or linear utility accident including liquefied natural gas leakages, explosions, facility problems; and major energy, power failure such as; interruptions of generation and distribution, power outages (United States Department of Energy, 2000).

### **Winter Storms**

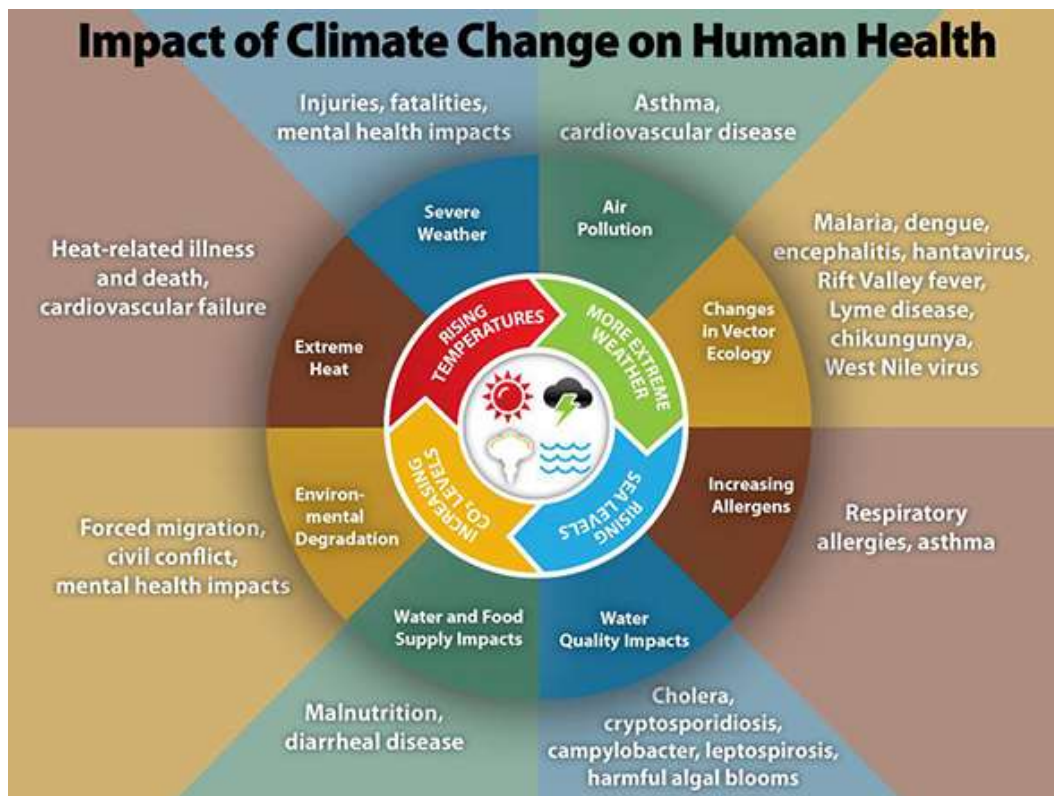
Winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. A winter storm can range from a moderate snowfall or ice event over a period of a few hours to blizzard conditions with wind-driven snow that lasts for several days. Many winter storms are accompanied by low temperatures and heavy and/or blowing snow, which can severely impair visibility and disrupt transportation. The Commonwealth of Pennsylvania has a long history of severe winter weather. (National Oceanic and Atmospheric Administration, 2009).

### 4.2.3 CLIMATE CHANGE

Humans have become the dominant species on Earth and our society and influence is globalized. Human activity such as the large-scale consumption of fossil fuels and deforestation has caused atmospheric carbon dioxide concentrations to significantly increase and a notable diversity of species to go extinct. The result is rapid climate change unparalleled in Earth’s history and an extinction event approaching the level of a mass extinction (Barnosky et al., 2011; Wake & Vredenburg, 2008). The corresponding rise of average atmospheric temperatures is intensifying many natural hazards, and further threatening biodiversity. The effects of climate change on these hazards is expected to intensify over time as temperatures continue to rise, so it is prudent to be aware of how climate change is impacting natural hazards.

The most obvious change is in regard to extreme temperatures. As average atmospheric temperatures rise, extreme high temperatures become more threatening, with record high temperatures outnumbering record low temperatures 2:1 in recent years (Meehl et al., 2009). As climate change intensifies, it is expected that the risk of extreme heat will be amplified whereas the risk of extreme cold will be attenuated. Less immediately apparent, climate change could increase the prevalence of the West Nile Virus (Section 4.3.7). Some studies show increased insect activities during a similar rapid warming event in Earth’s history (Curano et al., 2008). Other studies make projections that with the warming temperatures and lower annual precipitation that are expected with climate change, there will be an expansion of the suitable climate for mosquitos and West Nile Virus, potentially increasing the risk that the disease poses (Harrigan et al., 2014). Myriad other health problems are likely to result from climate change, as this figure from the United States Center for Disease Control shows:

**Figure 4.2.3-1: Impact of Climate Change on Human Health**



Climate change is likely to increase the risk of droughts (Section 4.3.1). Higher average temperatures mean that more precipitation will fall as rain rather than snow, snow will melt earlier in the spring, and evaporation and transpiration will increase. Along with the prospect of decreased annual precipitation, the risk of hydrological and agricultural drought is expected to increase (Sheffield & Wood, 2008). Correspondingly this will impact wildfires (Section 4.3.3). Drought is accompanied by drier soils and forests, resulting in an elongated wildfire season and more intense and long-burning wildfires (Pechony & Shindell, 2010). However, the Southwest United States is at a greater risk of this increased drought and wildfire activity than Pennsylvania in the Eastern United States.

While it may seem counterintuitive considering the increased risk of drought, there is also an increased risk of flooding associated with climate change (Section 4.3.4). As previously mentioned, warmer temperatures mean more precipitation will fall as rain rather than snow. Combined with the fact that warmer air holds more moisture, the result is heavier and more intense rainfalls, increasing the risk of flooding and dam and levee failures. Similarly, winter storms are expected to become more intense, if possibly less frequent (Section 4.3.13). Climate change is also expected to result in more intense hurricanes and tropical storms (Section 4.3.9). With the rise of atmospheric temperatures, ocean surface temperatures are rising, resulting in warmer and moister conditions where tropical storms develop (Stott et al., 2010). A warmer ocean stores more energy, and is capable of fueling stronger storms. It is projected that the Atlantic hurricane season is elongating, and there will be more category 4 and 5 hurricanes than before (Trenberth, 2010).

Climate change is contributing to the introduction of new invasive species (Section 4.3.6). As maximum and minimum seasonal temperatures change, non-native species are able to establish themselves in previously inhospitable climates where they have a competitive advantage. This may shift the dominance of ecosystems in the favor of nonnative species, contributing to species loss and the risk of extinction.

This type of sudden global change is novel to humanity. Despite myriad documents of well thought out research, there is still much uncertainty surrounding the future of the Earth. All signs point to the intensification of the hazards mentioned above, especially if human society and individuals do not make swift and significant changes to reduce emissions and species losses.

## 4.3. HAZARD PROFILES

### 4.3.1. DROUGHT

#### 4.3.1.1 LOCATION AND EXTENT

While Pennsylvania is generally more water-rich than many U.S. states, the Commonwealth may be subject to drought conditions. A drought is broadly defined as a time period of prolonged dryness that contributes to the depletion of ground and surface water. Droughts are regional climatic events, so when such an event occurs in Blair County, impacts are not restricted to the county and are often more widespread. The spatial extent of the impacted area can range from localized areas in Pennsylvania to the entire Mid-Atlantic region. There are three types of drought (National Drought Mitigation Center, 2006):

**Meteorological Drought** – A deficiency of moisture in the atmosphere compared to average conditions. Meteorological drought is defined by the duration of the deficit and degree of dryness, and is often associated with below average rainfall. Depending on the severity of the drought, it may or may not have a significant impact on agriculture and the water supply.

**Agricultural Drought** – A drought inhibiting the growth of crops, due to a moisture deficiency in the soil. Agricultural drought is linked to meteorological and hydrologic drought.

**Hydrologic Drought** – A prolonged period of time without rainfall that has an adverse effect on streams, lakes, and groundwater levels, potentially impacting agriculture.

#### 4.3.1.2 RANGE OF MAGNITUDE

The Commonwealth uses five parameters to assess drought conditions:

- Stream flows (compared to benchmark records).
- Precipitation (measured as the departure from normal, thirty year average precipitation).
- Reservoir storage levels in a variety of locations.
- Groundwater elevations in a number of counties (comparing to past month, past year and historic record).
- Soil moisture via the Palmer Drought Index (See Table 4.3.1-1: Palmer Drought Severity Index) - a soil moisture algorithm calibrated for relatively homogeneous regions which measures dryness based on recent precipitation and temperature.

**Local Water Rationing:** With the approval of the PA Emergency Management Council, local municipalities may implement local water rationing to share a rapidly dwindling or severely depleted water supply in designated water supply service areas. These individual water rationing plans, authorized through provisions of 4 PA Code Chapter 120, will require specific limits on individual water consumption to achieve significant reductions in use. Under both mandatory restrictions imposed by the Commonwealth and local water rationing, procedures are provided for granting of variances to consider individual hardships and economic dislocations.

**Table 4.3.1-1: Palmer Drought Severity Index Table**

Severity Category	PDSI
Extremely wet	4.0 or more
Very wet	3.0 to 3.99
Moderately wet	2.0 to 2.99
Slightly wet	1.0 to 1.99
Incipient wet spell	0.5 to 0.99
Near normal	0.49 to -0.49
Incipient dry spell	-0.5 to -0.99
Mild drought	-1.0 to -1.99
Moderate drought	-2.0 to -2.99
Severe drought	-3.0 to -3.99
Extreme drought	-4.0 or less

**Table 4.3.1-2:**

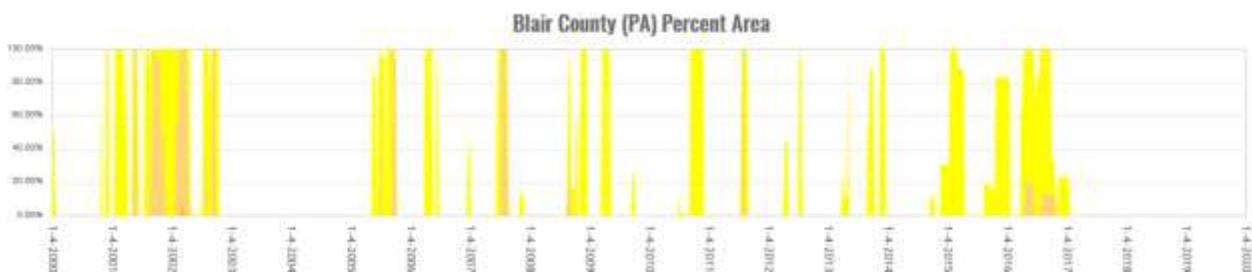
**Pennsylvania Department of Environmental Protection Drought Preparation Phases**

Phase	General Activity	Actions	Request	Goal
Drought Watch	Early stages of planning and alert for drought possibility	Increased water monitoring, awareness and preparation for response among government agencies, public water suppliers, water users and the public	Voluntary water conservation	Reduce water use by 5%
Drought Warning	Coordinate a response to imminent drought conditions and potential water shortages	Reduce shortages - relieve stressed sources, develop new sources if needed	Continue voluntary water conservation, impose mandatory water use restrictions if needed	Reduce water use by 10 to 15%
Drought Emergency	Management of operations to regulate all available resources and respond to emergency	Support essential and high priority water uses and avoid unnecessary uses	Possible restrictions on all nonessential water uses	Reduce water use by 15%

### 4.3.1.3 PAST OCCURRENCE

Figure 4.3.1-1 - Drought Event History for Blair County (Pennsylvania Department of Environmental Protection 2017) shows declared drought status for Blair County from 2000 to the present as reported by the Pennsylvania Department of Environmental Protection. The figure indicates the level of drought declaration (yellow is a watch, and orange is a warning), as well as the percentage of the county affected. Figure 4.3.1-2 - Palmer Drought Severity Index History (National Oceanic and Atmospheric Administration, 2016) shows that Blair County has experienced severe drought (PDSI  $\leq -3$ ) less than five percent of the time from 1895-1995, which gives a good idea of how often Blair County has been affected by drought events.

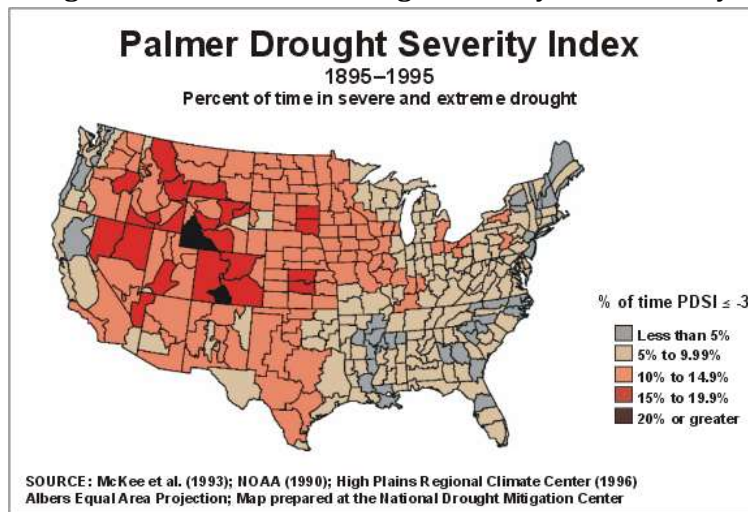
**Figure 4.3.1-1 Drought Event History for Blair County**



### 4.3.1.4 FUTURE OCCURRENCE

It is difficult to forecast the exact severity and frequency of future drought events, and the future of climate change will lead to increased uncertainty and extremity of climate events, suggesting that it is best to be prepared for potentially adverse conditions. Blair County has experienced severe drought between five percent and 9.99 percent of the time between 1895 and 1995 (Figure 4.3.1-2: Palmer Drought Severity Index History), which can be used to make a rough estimate of the future probability of drought in Blair County, although it does not account for uncertainty introduced by climate change

**Figure 4.3.1-2: Palmer Drought Severity Index History**



### 4.3.1.5 VULNERABILITY ASSESSMENT

The most significant losses resulting from drought events are typically found in the agriculture sector. The 1999 Gubernatorial Proclamation was issued in part due to significant crop damage. Preliminary estimates by the Pennsylvania Department of Agriculture indicated possible crop losses across the Commonwealth in excess of \$500 million. This estimate did not include a twenty percent decrease in dairy milk production which also resulted in million-dollar losses (National Climatic Data Center, 2009).

While these were statewide impacts, they illustrate the potential for droughts to severely impair the local economy in more agricultural communities. Blair County ranks twentieth of the sixty-seven counties in the Commonwealth for agricultural production, totaling \$107,108,000 (United States Department of Agriculture, 2017). This production divides between crops, (including nursery and greenhouse crops) totaling \$16,904,000 and livestock (including aquaculture and related products) at \$90,275,000.

Water supplies are also vulnerable to the effects of drought. Public water service areas cover 7.1% of the county, including the two home rule municipalities, the majority of the eight boroughs, and large portions of Allegheny, Logan, and Blair Townships. Additionally, there are smaller systems serving a number of village areas in the townships as well as the areas of townships immediately surrounding the boroughs. These systems serve nearly two-thirds of Blair County households, but private wells cover nearly two-thirds of the land area.

Droughts will quickly affect systems that rely on surface supplies, whereas systems with wells are more capable of handling short-term droughts without issue. Longer-term droughts inhibit the recharging of groundwater aquifers which has an impact on well owners. Depending on the severity of the drought, this could cause the well to dry up, rendering the well owner at a loss for useable water, meaning Blair County residents who use private domestic wells are vulnerable to drought events. Blair County has approximately 4,700 wells and a dozen active springs in service as of the writing of this document. Well and spring data was gathered from the Pennsylvania Groundwater Information System, which relies on voluntary submissions by well drillers. While this is the best dataset of domestic wells available for Blair County, it is not comprehensive due to the voluntary nature of the data submission. Not all wells were reported including a location designation (Pennsylvania Groundwater Information System, 2017).

<b>Local Hazard Vulnerability Assessment</b>	
Planning Region 1	Greater impact on reservoir-based municipal water supplies. Drought more keenly felt on Sinking Valley agricultural interests
Planning Region 2	Impact in line with general assessment
Planning Region 3	Large impact on reservoir-based municipal water supplies. Minimal agricultural impact
Planning Region 4	Moderate impact on agriculture. Municipal supplies minimally impacted.
Planning Region 5	Moderate impact on reservoir-based municipal water supplies. Minimal agricultural impact
Planning Region 6	Large impact on agriculture. Municipal supplies are well-based
Planning Region 7	Greater impact on agriculture. Minimal impact on municipal supplies.

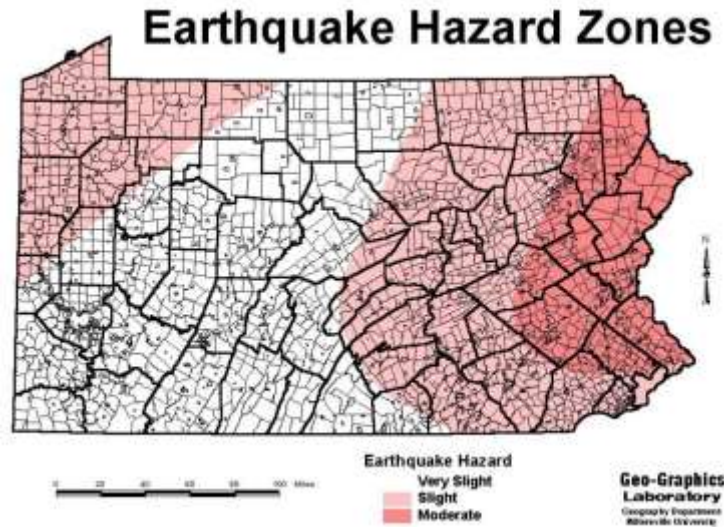


## 4.3.2. EARTHQUAKE

### 4.3.2.1 LOCATION AND EXTENT

An earthquake is sudden movement of the earth's surface caused by the release of stress accumulated within or along the edge of the earth's tectonic plates, a volcanic eruption, or by a human induced explosion (Pennsylvania Department of Conservation and Natural Resources, 2007). Earthquake events in Pennsylvania, including Blair County are usually mild events; impacting areas no greater than 62 miles in diameter from the epicenter. A majority of earthquakes occur along boundaries between tectonic plates, and some earthquakes occur at faults on the interior of plates. Today, Eastern North America, including Blair County, Pennsylvania, is far from the nearest plate boundary. That plate boundary is the Mid-Atlantic Ridge, and is approximately 2,000 miles to the east. When the supercontinent of Pangaea broke up about 200 million years ago, the Atlantic Ocean began to form. Since then, many faults have developed. Locating all of the faults would be an idealistic approach to identifying the region's earthquake hazard; however, many of the fault lines in this region have no seismicity associated with them. The best way to determine earthquake history for Blair County is to conduct a probabilistic earthquake-hazard analysis with the earthquakes that have already happened in and around the county (See Figure 4.3.2-1: Earthquake Hazard Zones).

Figure 4.3.2-1: Earthquake Hazard Zones



### 4.3.2.2 RANGE OF MAGNITUDE

Earthquakes result in the propagation of seismic waves, which are detected using seismographs. These seismograph results are measured using the Richter Scale, an open-ended logarithmic scale that describes the energy release of an earthquake. Table 4.3.2-1: Richter Scale summarizes Richter Scale Magnitudes as they relate to the spatial extent of impacted areas. The Modified Mercalli Intensity Scale (Table 4.3.2-2: Modified Mercalli Intensity Scale) is an alternative measure of earthquake intensity that is broken down by the impacts of the earthquake event. Earthquakes have many secondary impacts, including disrupting critical facilities, transportation routes, public water supplies and other utilities.

**Table 4.3.2-1: Richter Scale**

Richter Magnitude	Earthquake Effects
Less than 3.5	Generally not felt, but recorded.
3.5-5.4	Often felt, but rarely causes damage.
5.5 - 6.0	At most, slight damage to well-designed buildings; can cause major damage to poorly constructed buildings over small regions.
6.1-6.9	Can be destructive in areas where people live up to about 100 kilometers across.
7.0-7.9	Major earthquake; can cause serious damage over large areas.
8.0 or greater	Great earthquake; can cause serious damage in areas several hundred kilometers across

**Table 4.3.2-2: Modified Mercalli Intensity Scale**

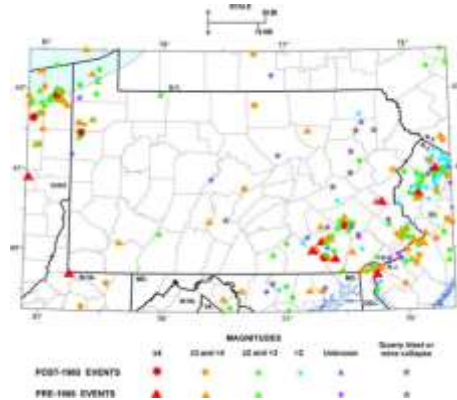
Scale	Intensity	Earthquake Effects	Richter Scale Magnitude
I	Instrumental	Detected only on seismographs	<4.2
II	Feeble	Some people feel it	
III	Slight	Felt by people resting; like a truck rumbling by	
IV	Moderate	Felt by people walking	
V	Slightly Strong	Sleepers awake; church bells ring	<4.8
VI	Strong	Trees sway; suspended objects swing; objects fall off shelves	<5.4
VII	Very Strong	Mild alarm; walls crack; plaster falls	<6.1
VIII	Destructive	Moving cars uncontrollable; masonry fractures; poorly constructed buildings damaged	<6.9
IX	Ruinous	Some houses collapse; ground cracks; pipes break open	
X	Disastrous	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread	<7.3
XI	Very Disastrous	Most buildings and bridges collapse; roads; railways; pipes and cables destroyed; general triggering of other hazards	<8.1
XII	Catastrophic	Total destruction; trees fall; ground rises and falls in waves	>8.1

**4.3.2.3 PAST OCCURRENCE**

The strongest recorded earthquake in Pennsylvania is referred to as the Pymatuning Earthquake, and occurred on September 25th 1998. The Pymatuning Earthquake was a magnitude 5.1 on the Richter Scale and originated near the southern end of the Pymatuning Reservoir, in Crawford County. A total of forty-three earthquake events occurred within 50 miles of Blair County between 1724 and 2015, and were minor quakes with Richter magnitudes less than four. All earthquake events that occurred in the area surrounding Blair County since 1724 can be seen in Figure 4.3.2-2: Earthquake History.

On August 23, 2011 a magnitude 5.8 earthquake struck Virginia, with an epicenter in Louisa County. The location of the earthquake as well as the geology of the region enables the shockwaves to travel great distances, and therefore people who were still at the time were able to notice the disturbance. The effect was minor, and most did not realize that an earthquake was occurring. No damage was reported in Blair County as a result.

**FIGURE 4.3.2-2: EARTHQUAKE HISTORY**



**4.3.2.4 FUTURE OCCURRENCE**

Earthquake activity and intensities are difficult to predict, but a probabilistic analysis of prior earthquakes can assist in gauging the likelihood of future occurrences. Figure 4.3.2-1: Earthquake Hazard Zones shows Blair County in the lowest non-zero hazard zone for earthquake activity according to the United States Geologic Survey (2012), suggesting a low probability of earthquake occurrence. However, according to the United States Geologic Survey, there has been a recent trend increasing the frequency of magnitude 3 and larger earthquakes in the central and eastern United States (Table 4.3.2-3: Recent Earthquake Trends). This uptick in seismicity is considered to be due to fracking activities, and specifically occurs as a result of waste water from the hydraulic fracturing process being injected into the earth (Meyer, 2016). Recent studies have moved towards being able to predict such induced seismicity by looking at uplift after injections, but more work needs to be done to confirm uplift as a reliable indicator of induced seismicity (Shirzaei et al., 2016). As of April 2017, Blair County has three active wells (Pennsylvania Department of Environmental Protection, 2017), and it is important to note that seismicity can occur even after wells become inactive and injections rates decline (Shirzaei et al., 2016).

**Table 4.3.2-3: Recent Earthquake Trends in Central and Eastern United States**

Year	Number of M3+ Earthquakes (average per year)
1973-2008	21
2009-2013	99
2014	659
2015	1000+

**4.3.2.5 VULNERABILITY ASSESSMENT**

According to the U.S. Geological Society Earthquake Hazards Program, an earthquake hazard is anything associated with an earthquake that may affect a resident’s normal activities. For Blair County, this could include: surface faulting, ground shaking, landslides, liquefaction, tectonic deformation, and seiches (sloshing of a closed body of water from earthquake shaking). Earthquakes usually occur without

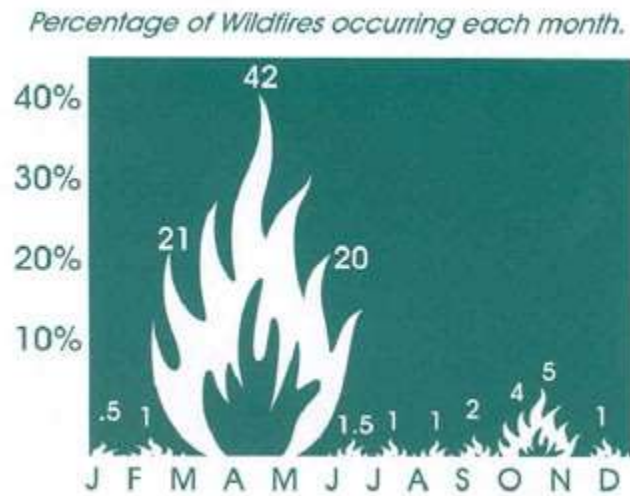
warning, and can impact areas a great distance from their point of origin (epicenter). Ground shaking is the greatest risk to building damage within Blair County. Risk to public safety and loss of life from an earthquake is dependent upon the severity of the event. Injury or death to those inside buildings, or people walking below building ornamentation and chimneys is a higher risk to Blair County’s general public during an earthquake. While historically the risk of earthquakes in north western PA is low to moderately low (See Figure 4.3.2-1: Earthquake Hazard Zones), the uptick in seismicity due to hydraulic fracturing increases the likelihood of Blair County experiencing a damaging earthquake.

<b>Local Hazard Vulnerability Assessment</b>	
Planning Region 1	Consistent with the general profile
Planning Region 2	Consistent with the general profile
Planning Region 3	Consistent with the general profile
Planning Region 4	Consistent with the general profile
Planning Region 5	Consistent with the general profile
Planning Region 6	Consistent with the general profile
Planning Region 7	Consistent with the general profile

### **4.3.3. FIRE HAZARD**

#### **4.3.3.1 LOCATION AND EXTENT**

Most fires in Pennsylvania are caused by anthropogenic fires such as debris burns that get out of control. A fire started in somebody’s backyard could travel through dead grasses and weeds into bordering woodlands. The most prevalent causes of devastating wildfires are droughts, lightning strikes, arson, human carelessness, and in rare circumstances, spontaneous combustion. Major urban fires can cause significant property damage, loss of life, and residential or business displacement. While wildfires are a natural and essential part of many native Pennsylvania ecosystems (e.g. pitch pine – scrub oak woodlands), wildfires can also cause devastating damage if they are undetected and allowed to propagate unfettered. Wildfires most often occur in less developed areas such as open fields, grass, dense brush or forests where they can spread rapidly by feeding off of vegetative fuels. Wildfires are most prevalent under prolonged dry and hot spells, or generally drought conditions. The greatest potential for wildfires (83% of all PA wildfires) occur in the spring months of March, April, and May, and the autumn months of October and November. In the spring, bare trees allow sunlight to reach the forest floor, drying fallen leaves and other ground debris and increasing wildfire vulnerability. In the fall, the surplus of dried leaves are fuel for fires. The Pennsylvania Department of Conservation and Natural Resources has provided Figure 4.3.3-1:- Seasonal Wildfire Percentage (2017), which shows the wildfire percentage occurrence during each month occurring in Pennsylvania.

**Figure 4.3.3-1: Seasonal Wildfire Percentage**

#### 4.3.3.2 RANGE OF MAGNITUDE

Forested areas, croplands and properties that are at the interface between wild lands and human development are most at risk for being impacted by and causing wildfires. If an urban fire or wildfire is not contained, secondary impacts such as power outages may result. Other negative impacts of wildfires include killing people, livestock, fish and wildlife, destroying property, valuable timber, and forage, recreational and scenic values. Wildfires can also cause severe erosion, silting of stream beds and reservoirs, and flooding due to a loss of ground cover.

Wildfire events can range from small fires that can be managed by local firefighters to large fires impacting many acres of land. Large events may require evacuation from one or more communities and necessitate regional or national firefighting support. The impact of a severe wildfire can be devastating. A wildfire has the potential to kill people, livestock, fish and wildlife. They often destroy property, valuable timber, forage and recreational and scenic values.

In addition to the risk wildfires pose to the general public and property owners, the safety of firefighters is also a concern. Although loss of life among firefighters does not occur often in Pennsylvania, it is always a risk. More common firefighting injuries includes falls, sprains, abrasions or heat-related injuries such as dehydration. Response to wildfires also exposes emergency responders to the risk of motor vehicle accidents and can place them in remote areas away from the communities that they are chartered to protect.

#### 4.3.3.3 PAST OCCURRENCES

In recent years, the number of wildfires in Pennsylvania have been variable since 2000, from a low of 202 to a high of 974. This corresponds to an embrace of the need for fire in many natural ecosystems and management strategies for reducing vulnerability to wildfires. Table 4.3.3-1: Pennsylvania Wildfire Statistics (Pennsylvania Department of Conservation and Natural Resources, 2017) shows wildfire data

for Pennsylvania from 2010 to 2018, is the last period for which the Pennsylvania Department of Conservation and Natural Resources has published data.

**Table 4.3.3-1: Pennsylvania Wildfire Statistics**

<b>Year</b>	<b># Fires</b>	<b># Acres</b>	<b>Average Size</b>	<b>Extinction Cost</b>
2010	574	3,414	5.95	\$ 638,248.84
2011	202	582	2.88	\$ 23,654.69
2012	717	3,193	4.45	\$ 677,708.70
2013	632	1,790	2.83	\$ 180,825.65
2014	871	4,514	5.18	\$ 595,389.29
2015	817	4,165	5.10	\$ 756,092.67
2016	853	12,190	14.3	\$ 2,722,738.29
2017	534	1,649	3.09	\$ 244,765.77
2018	690	1,843	2.67	\$ 320,141.08

Between 2011 and 2017, there were 36 wildfires reported to authorities, burning a total of 435 acres. These reported fires are primarily urban fires, and wildfires in natural lands may be reported less frequently and thus could be under-represented here. The list on the following page (Table 4.3.3-2: Blair County Wildfires (2011-2017)) should be treated as a sample of fire history in Blair County and not an all-inclusive database.

**Table 4.3.3-2: Blair County Wildfires (2011-2017)**

YEAR	NAME	CAUSE	ACRES	TOWNSHIP	DATE
2011	Nicewonger Lane	Incendiary	2.8	Juniata	11/09/2011
2011	Beagle Club	Incendiary	4.18	Antis	03/27/2011
2012	Buckhorn	Equipment Use	0.9	Logan	12/14/2012
2012	Hollidaysburg Sportsman Club	Miscellaneous	4.25	Frankstown	11/20/2012
2012	Sandy Run 1	Equipment Use	1.65	Logan	04/18/2012
2012	Smith Farm	Equipment Use	1.34	Snyder	04/09/2012
2012	Tyrone Reservoir	Equipment Use	3.64	Snyder	04/07/2012
2012	Johnstown Road	Incendiary	1.03	Freedom	04/06/2012
2012	Homer Gap	Debris Burning	0.73	Logan	04/03/2012
2012	Horse Shoe 1	Railroad	61.09	Logan	03/11/2012
2013	Sinking Valley	Debris Burning	1	Tyrone	04/05/2013
2014	Puzzletown	Incendiary	10.75	Freedom	11/04/2014
2014	The Jones	Debris Burning	0.4	Snyder	11/04/2014
2014	Decker Hollow	Debris Burning	0.21	Snyder	10/28/2014
2014	Elementary School	Equipment Use	0.18	Tyrone (HRM)	10/28/2014
2014	Wopsy White Rd	Equipment Use	9.62	Logan	05/08/2014
2014	Deer Lane Fire	Debris Burning	2.77	Freedom	05/06/2014
2014	Hite Hollow	Debris Burning	5.62	Antis	04/24/2014
2014	15 <sup>th</sup> St. Hollow	Equipment Use	0.8	Logan	04/16/2014
2014	Bums Woods II	Incendiary	1.22	Logan	04/12/2014
2014	Rossman Road	Debris Burning	4.22	Snyder	04/10/2014
2015	McCaulley Lane	Debris Burning	1.51	Snyder	10/21/2015
2015	Sugar Run1	Railroad	0.01	Allegheny	06/07/2015
2015	Schoch Hollow	Debris Burning	0.85	Snyder	05/11/2015
2015	McMullen Road	Camp Fire	3.0	Tyrone	04/19/2015
2015	Riggles Gap	Debris Burning	12.05	Antis	04/12/2015
2016	Sugar Run Road	Railroad	1.7	Allegheny	07/21/2016
2016	Gwin Road	Incendiary	3.83	Logan	04/18/2016
2017	I-99 Grass Fire	Miscellaneous	0.01	Snyder	06/13/2017
2017	Mile-Maker 55.8	Equipment Use	0.25	Snyder	05/17/2017
2017	I-99 North	Miscellaneous	0.01	Snyder	05/17/2017
2017	Deer Farm	Debris Burning	0.8	Snyder	04/19/2017
2017	Bruce Reiter	Debris Burning	0.9	Logan	04/18/2017
2017	Burk Rd	Debris Burning	0.02	Freedom	04/15/2017
2017	Sugar Run	Railroad	295	Allegheny	04/11/2017
2017	Berkhiemer Ln	Debris Burning	0.1	Juniata	04/11/2017

**4.3.3.4 FUTURE OCCURRENCE**

Annual occurrences of urban and wildfires in Blair County are expected. Urban fires are most often a result of human errors, outdated wiring or occasionally arson. The occurrence of large scale and intensity wildfires is somewhat unpredictable and highly dependent on environmental conditions and human response. Weather conditions play a major role in the occurrence of wildfires, so in the event of dry drought conditions, wildfire caution should be heightened. Any fire without the quick response or attention of fire-fighters, forestry personnel, or visitors to the forest, has the potential to become a wildfire.

**4.3.3.5 VULNERABILITY**

The size and impact of a wildfire depends on its location, climate conditions and the response of firefighters. If the right conditions exist, these factors may often mitigate the effects of wildfires, however during a drought, wildfires can be devastating. Wildfires are most common in the spring (March–May) and fall (October–November) months. During spring and fall months, the lack of leaves on the trees allows the sunlight to heat and dry the existing leaves on the ground, increasing the risk of forest fires. Firefighters and other first responders can encounter life threatening situations due to forest fires. Traffic accidents during a response and then the impacts of fighting the fire once on scene are examples of the first responder vulnerabilities.

When compared with other areas of Pennsylvania, Blair County has a relatively low occurrence of wildfires. From 1992 through 2015, there are 113 fires on record, burning a total of 771 acres. This averages just under five fires and 33½ acres each year. The average size of these fires was just under seven acres. These numbers are low, however the danger lies in the interface between the woodland and developed areas. The most exposed of these areas are the subdivisions to the north of Frankstown Road on Brush Mountain. These are high-end homes interspersed in the woods on the toe of Brush Mountain. Other areas of interaction include the several developed gaps, particularly in the Allegheny Front, which are wooded except the small areas around each building.

<b>Local Hazard Vulnerability Assessment</b>	
Planning Region 1	Consistent with the general profile
Planning Region 2	Consistent with the general profile
Planning Region 3	Increased property threat along the urban-wildland interface
Planning Region 4	Consistent with the general profile
Planning Region 5	Increased property threat along the urban-wildland interface
Planning Region 6	Consistent with the general profile
Planning Region 7	Consistent with the general profile



#### **4.3.4. FLOODS (INCLUDING FLASH FLOODS AND ICE JAMS)**

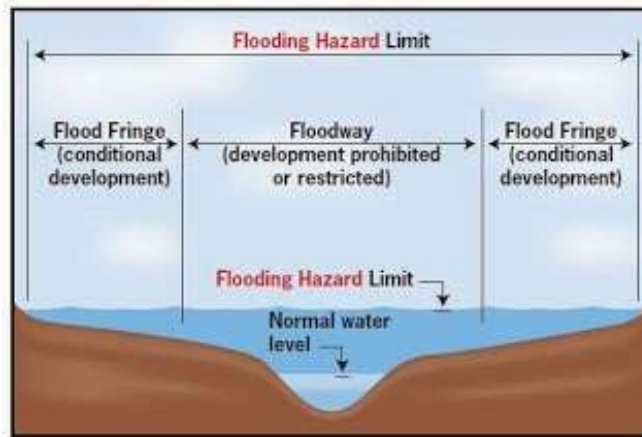
##### **4.3.4.1 LOCATION AND EXTENT**

Flooding is the temporary condition of partial or complete inundation on normally dry land and it is the most frequent and costly of all hazards in Pennsylvania. Flooding events are generally the result of excessive precipitation. General flooding is typically experienced when precipitation occurs over a given river basin for an extended period of time. Flash flooding is usually a result of heavy localized precipitation falling in a short time period over a given location. This often occurs along mountain streams and in urban areas where much of the ground is covered by impervious surfaces. Flash floods are the most common type of flooding in Blair County. The severity of a flood event is dependent upon a combination of stream and river basin topography and physiography, hydrology, precipitation and weather patterns, present soil moisture conditions, the degree of vegetative clearing as well as the presence of impervious surfaces in and around flood-prone areas.

Winter flooding can include ice jams which occur when warm temperatures and heavy rain cause snow to melt rapidly. Snow melt combined with heavy rains can cause frozen rivers to swell, which breaks the ice layer on top of a river. The ice layer often then breaks into large chunks, which float downstream, piling up in narrow passages and near other obstructions such as bridges and dams. All forms of flooding can damage infrastructure.

Floodplains are lowlands adjacent to rivers, streams and creeks that are subject to recurring floods. The size of the floodplain is described by the recurrence interval of a given flood. Flood recurrence intervals are explained in more detail in Section 4.3.4.4. However, in assessing the potential spatial extent of flooding, it is important to know that a floodplain associated with a flood that has a 10% chance of occurring in a given year is smaller than the floodplain associated with a flood that has a 0.2% annual chance of occurring. The National Flood Insurance Program publishes digital flood insurance rate maps. These maps identify the 1% annual chance of flood area. Special Flood Hazard Area and Base Flood Elevations are developed from the 1% annual chance flood event, as seen in Figure 4.3.4-1: Flooding and Floodplain Diagram. Structures located in the Special Flood Hazard Area have a 26% chance of flooding in a thirty-year period. The Special Flood Hazard Area serves as the primary regulatory boundary used by the Federal Emergency Management Agency, the Commonwealth of Pennsylvania and Blair County local governments. Federal floodplain management regulations and mandatory flood insurance purchase requirements apply to the following high risk special flood hazard areas in Table 4.3.4-1: Flood Hazard High Risk Zones. Appendix D of this hazard mitigation plan includes a flooding vulnerability map for each municipality in Blair County with vulnerable structures identified.

**Figure 4.3.4-1: Flooding and Floodplain Diagram**



Blair County is located in the Juniata River watershed. Figure 4.3.4-2 is a map showing the Federal Emergency Management Agency 1% Annual Chance Floodplain for Blair County and Figure 4.3.4-3 is a map of Blair County’s Creeks and Waterways. Past flooding events have been primarily caused by heavy rains which cause small creeks and streams to overflow their banks, often leading to road closures. Flooding poses a threat to critical facilities, agricultural areas, and those who reside or conduct business in the floodplain. The most significant hazard exists for facilities in the floodplain that process, use and/or store hazardous materials. A flood could potentially release and transport hazardous materials out of these areas. As the water recedes it would spread the hazardous materials throughout the area. Most flood damage to property and structures located in the floodplain is caused by water exposure to the interior, high velocity water and debris flow.

**Figure 4.3.4-2: 1% Annual Chance Floodplain for Blair County**



**Figure 4.3.4-3: Blair County’s Creeks and Waterways**



**Table 4.3.4-1: Flood Hazard High Risk Zones**

<b>Zone</b>	<b>Description</b>
A	Areas subject to inundation by the 1% annual chance flood event. Because detailed hydraulic analysis have not been performed, no base flood elevations or flood depths are shown
AE	Areas subject to inundation by the 1% annual chance flood event determined by detailed methods. base flood elevations are shown within these zones.
AH	Areas subject to inundation by the 1% annual chance shallow flooding (usually areas of ponding) where average depths are 1-3 feet. base flood elevations derived from detailed hydraulic analysis are shown in this zone.
AO	Areas subject to inundation by the 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are 1-3 feet. Average flood depths derived from detailed hydraulic analysis are shown within this zone.
AR	Areas that result from the decertification of a previously accredited flood protection system that is determined to be in the process of being restored to provide base flood protection.
A99	Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.
B	Area of moderate flood hazard, usually area between the limits of the 1% and 0.5% annual chance floods event. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from a 1% annual chance flood event, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
C	Area of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as above the level of a 0.5% annual chance flood event.. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain.
V	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30 - year mortgage. No base flood elevations are shown within these zones.
VE	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30 - year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
D	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.
X	If unshaded, the area determined to be outside the 0.5% annual chance flood event and protected by levee from a 1% annual chance flood event. If shaded, is shows an area of moderate flood hazard, usually the area between the limits of the 1% and 0.5% annual chance flood event.

#### 4.3.4.2 RANGE OF MAGNITUDE

Several factors determine the severity of floods, including rainfall intensity and duration, topography, ground cover and rate of snowmelt. Water runoff is greater in areas with steep slopes and little to no vegetative ground cover. The mountainous terrain of Blair County can cause more severe floods as runoff reaches receiving water bodies more rapidly over steep terrain. Urbanization typically results in the replacement of vegetative ground cover with impermeable surfaces like asphalt and concrete, increasing the volume of surface runoff and storm water, particularly in areas with poorly planned storm water drainage systems. A large amount of rainfall over a short time span can cause flash floods. Additionally, small amounts of rain can cause floods in locations where the soil is frozen, saturated from a previous wet period, or if the area is rife with impermeable surfaces such as large parking lots, paved roadways and other developed areas. The county occasionally experiences intense rainfall from tropical storms in late summer and early fall which can potentially cause flooding as well.

In winter months, local flooding could be exacerbated by ice jams in rivers. Ice jam floods occur on rivers that are totally or partially frozen. A rise in stream level will break up a totally frozen river and create ice flows that can pile up on channel obstructions such as shallow riffles, log jams, or bridge piers. The jammed ice creates a dam across the channel over which the water and ice mixture continues to flow, allowing for more jamming to occur.

Severe flooding can cause injuries and deaths, and can have long-term impacts on the health and safety of the citizens. Severe flooding can also result in significant property damage, potentially disrupting the regular function of critical facilities and have long-term negative impacts on local economies. Industrial, commercial and public infrastructure facilities can become inundated with flood waters, threatening the continuity of government and business. The special needs population must be identified and located in flooding situations, as they are often home-bound. Mobile homes are especially vulnerable to high water levels. Flooding can have significant environmental impacts when flood waters release and/or transport hazardous materials, and can also result in spreading diseases.

In areas that were developed in the decades following World War II, flooding is also a man made hazard. In these areas, development occurred in wetland areas and other poor drainage areas and the impervious cover constructed included no storm water management. This primarily occurs in Logan and Allegheny Townships, but is visible other areas as well. The lack of infrastructure results in street and parking lot flooding, and has closed some major arterials in the last few years. It also threatens housing and business interests. These areas are difficult to drain, particularly during a flood even since the property lies below the level of the flood waters. Additionally, the water drains unchecked into the rivers systems, increasing quantity and decreasing quality downstream and impacting properties miles away from the source. This also contributes to the quality issues in the Chesapeake Bay and high waters downstream in the Juniata and Susquehanna river systems.

Severe flooding also comes with many secondary effects that could have long lasting impacts on the population, economy and infrastructure of Blair County. Power failures are the most common secondary effect associated with flooding. Coupled with a shortage of critical services and supplies, power failures could cause a public health emergency. Critical infrastructure, such as sewage and water treatment facilities, can be severely damaged, having a significant effect on public health. High flood waters can cause sewage systems to fail and overflow, contaminating groundwater and drinking water. Flooding also has the potential to trigger other hazards, such as landslides, hazardous material spills and dam failures. A listing of dams at risk to flooding is found in Table 4.3.4-2: Pennsylvania Department of Environmental Protection Classified Dams In Blair County. Furthermore, an explanation of dam hazard classes is found in Table 4.3.4-3: Dam Hazard Class Definitions.

The maximum threat of flooding in Blair County is estimated by looking at potential loss data and repetitive loss data, both analyzed in the risk assessment portion of the hazard mitigation plan. In these cases, the severity and frequency of damage can result in permanent population displacement, and businesses may close if they are unable to recover from the disaster.

Although floods can cause deaths, injuries and damage to property, as naturally occurring events they benefit riparian systems which have not been disrupted by human actions. Such benefits include groundwater recharge and the introduction of nutrient rich sediment which improves soil fertility. However, human development often disrupts natural riparian buffers by changing land use and land cover, and the introduction of chemical or biological contaminants that often accompany human presence can contaminate habitats after flood events.

**Table 4.3.4-2:  
Pennsylvania Department of Environmental Protection Classified Dams in Blair County**

Name	Owner	Hazard Class*	Municipality
Mill Run	Altoona Water Authority	A-1	Logan Township
Hollidaysburg Muleshoe Reservoir	Hollidaysburg Borough Authority	B-1	Hollidaysburg Borough
Tipton	Altoona Water Authority		Antis Township
Lake Altoona			Logan Township
Bellwood			Antis Township
William L. Cochran Impounding			Logan Township
Kettle Dam			Tyrone Township
Tyrone Reservoir #2			Tyrone Municipality
Plane Nine	Altoona Water Authority		Duncansville Borough
Upper Kittanning			Logan Township
Canoe Creek	DCNR		Frankstown Township
Blair Gap	Altoona Water Authority		B-2
Allegheny Storage		C-1	Logan Township
Homer Gap No 2		C-1	Logan Township
Lakemont Park	Blair County Commissioners	C-1	Logan Township

Source: Pennsylvania Department of Environmental Protection

\*Refer to Table 4.3.4-3

In 2016, President Obama signed the Water Infrastructure Improvements for the Nation Act into law. This act created a grant program for the rehabilitation of high hazard-potential dams, defined as any dam whose failure or mis-operation will cause loss of human life and significant property destruction. The grant provides technical, planning, design, and construction assistance for the rehabilitation of dams meeting this definition.

**Table 4.3.4-3: Dam Hazard Class Definitions**

<b>Class</b>	<b>Description</b>
<b>A-1</b>	Dam has impoundment storage equal to or greater than 50,000 acre feet or a dam height equal to or greater than 100 feet. There is a substantial population at risk (numerous homes or small businesses or a large business and a school) or the economic loss is excessive such as extensive residential, commercial, or agricultural damage, or substantial public inconvenience.
<b>B-1</b>	Dam has impoundment storage less than 50,000 but greater than 1,000 acre feet or a dam height less than 100 but greater than 40 feet. There is a substantial population at risk (numerous homes or small businesses or a large business and a school) or the economic loss is excessive such as extensive residential, commercial, or agricultural damage, or substantial public inconvenience.
<b>B-2</b>	Dam has impoundment storage less than 50,000 but greater than 1,000 acre feet or a dam height less than 100 but greater than 40 feet. There is a fewer population at risk (small number of homes or small businesses) or the economic loss is appreciable such as limited residential, commercial, or agricultural damage, or moderate public inconvenience.
<b>C-1</b>	Dam has impoundment storage equal to or less than 1,000 acre feet or a dam height equal to or less than 40 feet. There is a substantial population at risk (numerous homes or small businesses or a large business and a school) or the economic loss is excessive such as extensive residential, commercial, or agricultural damage, or substantial public inconvenience.

Source: PA Code Title 25 - Environmental Protection

#### 4.3.4.3 PAST OCCURRENCE

Blair County has experienced numerous flooding, flash flooding and ice jam flooding events in the past. The flooding and flash flooding was caused by a variety of heavy storms, tropical storms, ice jams and other issues. High crest records from the United States Geologic Survey water gauge at Williamsburg are shown in Table 4.3.4-4: High water events on the Juniata River at Williamsburg, and a summary of flood event history for Blair County follows in Table 4.3.4-5: Flood Event History Since 2000.

**Table 4.3.4-4: High Water Events on the Juniata River at Williamsburg**

<b>Historic Record</b>		<b>Highs Since 2010</b>	
<b>Date</b>	<b>Level</b>	<b>Date</b>	<b>Level</b>
2004-09-18	19.46 ft	2018-09-10	16.98 ft
1996-01-19	19.15 ft	2011-09-07	14.03 ft
1889-06-01	19.10 ft	2018-02-17	12.63 ft
1936-03-18	18.58 ft	2018-08-04	12.58 ft
1972-06-23	18.39 ft	2011-09-10	14.16 ft

Table 4.3.4-5: Flood Event History Since 2000

<b>Blair County Flood Event History Since 2000</b>						
<b>Date</b>	<b>Site</b>	<b>Flood Stage (ft)</b>	<b>Crest (ft)</b>	<b>Category</b>	<b>Basin</b>	<b>Stream</b>
January 2, 2003	Williamsburg	12.00	13.49	Moderate	Juniata	Frankstown Branch
January 2, 2003	Spruce Creek	8.00	8.60	Minor	Juniata	Little Juniata River
August 9, 2003	Altoona	-	-	-	Juniata	-
September 27, 2003	Lakemont	-	-	-	Juniata	-
November 19, 2003	Williamsburg	12.00	12.85	Minor	Juniata	Frankstown Branch
November 19, 2003	Spruce Creek	8.00	9.43	Minor	Juniata	Little Juniata River
May 21, 2004	Altoona	-	-	-	Juniata	-
August 30, 2004	Hollidaysburg	-	-	-	Juniata	-
September 9, 2004	Spruce Creek	8.00	12.94	Moderate	Juniata	Little Juniata River
September 9, 2004	Williamsburg	12.00	16.91	Major	Juniata	Frankstown Branch
September 17, 2004	Williamsburg	12.00	19.46	Major	Juniata	Frankstown Branch
September 17, 2004	Spruce Creek	8.00	15.46	Major	Juniata	Little Juniata River
January 6, 2005	Countywide	-	-	-	Juniata	-
March 28, 2005	Countywide	-	-	-	Juniata	-
November 29, 2005	Spruce Creek	8.00	8.74	Minor	Juniata	Little Juniata River
November 16, 2006	Altoona	-	-	-	Juniata	-
June 20, 2009	Bellwood	-	-	-	Juniata	-
January 25, 2010	Spruce Creek	8.00	9.60	Minor	Juniata	Little Juniata River
March 14, 2010	Spruce Creek	8.00	9.84	Minor	Juniata	Little Juniata River
May 28, 2010	Blue Knob	-	-	-	Juniata	Poplar Run
November 30, 2010	Spruce Creek	8.00	8.02	Minor	Juniata	Little Juniata River
December 1, 2010	Spruce Creek	8.00	11.03	Moderate	Juniata	Little Juniata River
December 1, 2010	Williamsburg	12.00	15.27	Major	Juniata	Frankstown Branch
March 10, 2011	Williamsburg	12.00	13.77	Moderate	Juniata	Frankstown Branch
March 10, 2011	Spruce Creek	8.00	8.45	Minor	Juniata	Little Juniata River
September 7, 2011	Williamsburg	12.00	14.03	Moderate	Juniata	Frankstown Branch
September 9, 2011	Bennington	-	-	-	Juniata	-
September 9, 2011	Juniata Run Gap	-	-	-	Juniata	-
September 10, 2011	Williamsburg	12.00	14.16	Minor	Juniata	Frankstown Branch
June 20, 2015	Bennington	-	-	-	Juniata	Sugar Run Creek
February 17, 2018	Williamsburg	12.00	12.63	Minor	Juniata	Frankstown Branch
August 4, 2018	Williamsburg	12.00	12.58	Minor	Juniata	Frankstown Branch
September 10, 2018	Williamsburg	12.00	16.98	Major	Juniata	Frankstown Branch

Source: Middle Atlantic River Forecast Center and National Centers for Environmental Information

The National Flood Insurance Program identifies properties that frequently experience flooding. Repetitive loss properties are structures insured under the National Flood Insurance Program which have had at least two paid flood losses of more than \$1,000 over any ten-year period since 1978. A property is considered a severe repetitive loss property either when there are at least four losses each exceeding \$5,000 or when there are two or more losses where the building payments exceed the property value. The Hazard Mitigation Assistance Program defines repetitive loss as having incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and, at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage. As of January 2017, there are seventeen repetitive loss properties in Blair County. All municipalities in Blair County participate in the National Flood Insurance Program. The following table shows the number of Repetitive Loss Properties and Number of Flood Insurance Policies by Municipality. Furthermore, the following map of Repetitive Loss Properties in Blair County shows the location of each of these properties.

**Table 4.3.4-6: Repetitive Loss Properties**

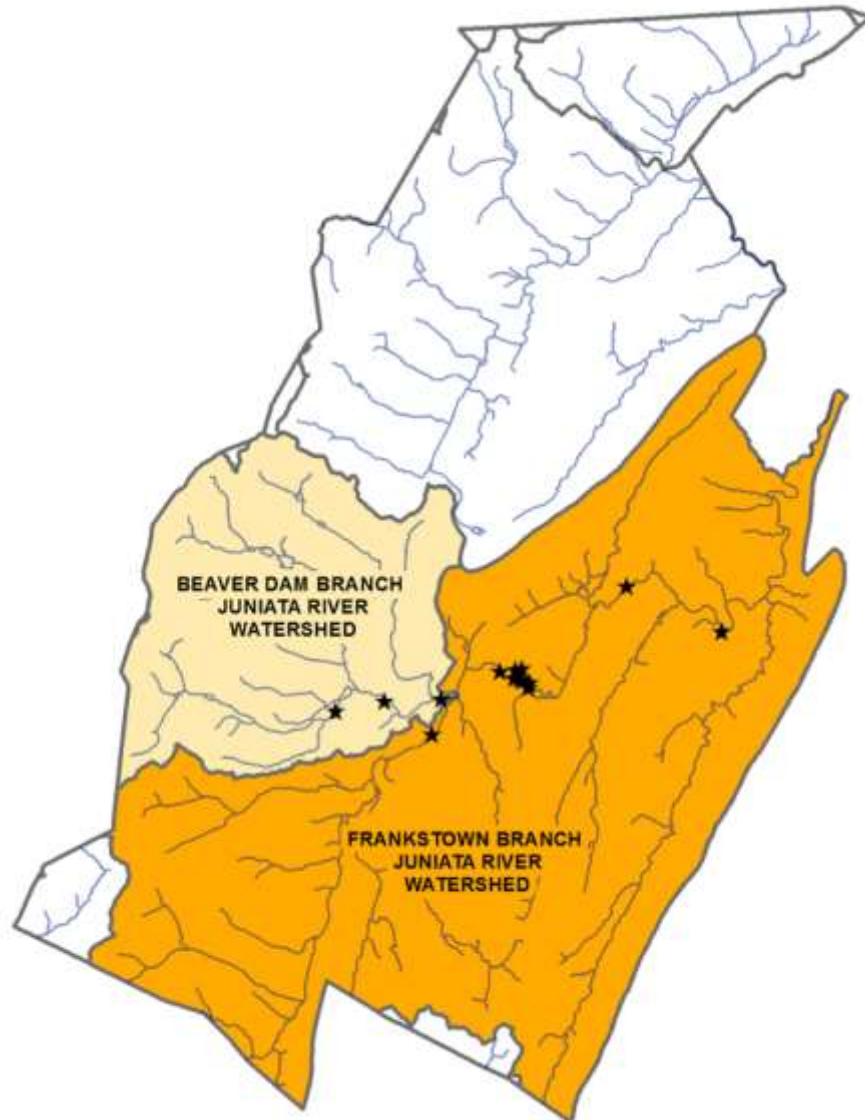
Municipality	Repetitive Loss Properties*	Severe Repetitive Loss Properties	Repetitive Loss Properties in Flood Hazard Zones by Type	Repetitive Loss Properties by Land Use Type	Number of Flood Insurance Policies
Allegheny Township	1	0	A: 1	SF Residential	59
Altoona Municipality	0	0	-	-	134
Antis Township	0	0	-	-	40
Bellwood Borough	0	0	-	-	7
Blair Township	2	0	AE: 2	SF Residential	63
Catharine Township	1	0	B: 1	SF Residential	5
Duncansville Borough	1	0	AE: 1	SF Residential	74
Frankstown Township	11	1	A: 3, AE: 7, C: 1	SF Residential	46
Freedom Township	0	0	-	-	59
Greenfield Township	0	0	-	-	57
Hollidaysburg Borough	1	1	AE: 1	SF Residential	37
Huston Township	0	0	-	-	8
Juniata Township	0	0	-	-	5
Logan Township	0	0	-	-	68
Martinsburg Borough	0	0	-	-	0
Newry Borough	0	0	-	-	1
North Woodbury Township	0	0	-	-	3
Roaring Spring Borough	0	0	-	-	7
Snyder Township	0	0	-	-	25
Taylor Township	0	0	-	-	10
Tunnelhill Borough	0	0	-	-	0
Tyrone Municipality	0	0	-	-	107
Tyrone Township	0	0	-	-	3
Williamsburg Borough	0	0	-	-	19
Woodbury Township	0	0	-	-	5
<b>Total</b>	<b>17</b>	<b>2</b>	<b>A: 4, AE: 11, B: 1, C: 1</b>		<b>842</b>

\* Includes Severe Repetitive Loss Properties

SOURCE: FEDERAL EMERGENCY MANAGEMENT AGENCY POLICY STATISTICS



**FIGURE 4.3.4-4: MAP OF BLAIR COUNTY REPETITIVE LOSS PROPERTIES**



#### **4.3.4.4 FUTURE OCCURRENCE**

Flooding is a frequent problem throughout Pennsylvania. Blair County will certainly be impacted by flooding events in the future - Blair County experiences some degree of flooding annually. The threat of flooding is compounded in the late winter and early spring months, as melting snow can overflow streams, creeks and tributaries, increasing the amount of groundwater, clogging storm water culverts and bridge openings. The National Flood Insurance Program recognizes the 1%-annual chance flood, also known as the base flood or 100-year flood, as the standard for identifying properties subject to federal flood insurance purchase requirements. A 1%-annual-chance flood is a flood which has a 1% chance of occurring over a given year, or is likely once every 100 years. The digital flood insurance rate maps are

used to identify areas subject to the 1% annual-chance flooding. A property's vulnerability to a flood is dependent upon its location in the floodplain. Properties along the banks of a waterway are the most vulnerable.

As the elements of this plan and the comprehensive plan were discussed, the nexus between flood mitigation and storm water management became a frequent topic. As the past decade has progressed empirical experience indicates the intensity of storms is increasing in terms of rainfall amounts per hour. To obtain a better understanding of storm intensity, these events will be monitored over the course of this plan to determine any trends – both spatial and temporal – that are occurring relative to baseline data available from Federal, regional, and local sources.

Storm water vulnerability is particularly acute in the areas developed prior to recognition of the need to manage runoff from development. Those areas are in the core areas of the county, and are unfortunately at the top of the Little Juniata and Beaverdam Branch watersheds in areas that were mainly wetland. The combined effects of no runoff management in an area that was essentially a large retention basin on the immediate area and downstream are readily apparent in any non-minor storm event in the form of street closures, This condition is mostly a result of inadequate or nonexistent storm water infrastructure in these areas. basement flooding, and washouts in greenway parks and other areas along the downstream areas. As Blair County is at the top of the watershed for all three major branches of the Juniata River, the impacts are felt downstream into the Susquehanna River and the Chesapeake Bay. The storm water based flooding is not expected to increase as a result of development, but could increase as a result of storm intensification. Regardless of the source of the increase, mitigation is needed.

The communities that have responsibilities under the Municipal Separate Storm Sewer System requirements of the National Pollution Discharge Eliminates System created an intergovernmental committee to address that issue. The formal committee has been active since 2018, but the municipalities have been meeting on a more informal basis since about 2012. The focus of this committee is meeting the requirements imposed on the communities, but an added benefit is the overall positive effect it will have on mitigation efforts. Additionally, this plan proposes a county-wide storm water management plan as a mitigation action. That plan will integrate the needs of state law, hazard mitigation, metropolitan transportation planning, the intermunicipal storm water committee, and federal regulations.

#### **4.3.4.5 VULNERABILITY ASSESSMENT**

Blair County is vulnerable to flooding events. Flooding puts the entire population at some level of risk, whether through the flooding of homes, businesses, places of employment, or the road, sewer and water infrastructure. Table 4.3.4-7: Structures Vulnerable to Flooding identifies how many structures are located in the special flood hazard area by municipality using data from the Blair Planning geographic information system. Critical facilities are facilities that if damaged would present an immediate threat to life, public health and safety. Appendix D of this hazard mitigation plan includes a flooding vulnerability map for each municipality in Blair County with vulnerable structures and critical facilities identified. A list of critical facilities located in the special flood hazard area is shown in Table 4.3.4-8 – Critical Facilities Vulnerable to Flooding. Flash flooding has been common in Blair County, and can occur anywhere conditions are right. Some of the most damaging floods in Blair County have been flash floods.

**Table 4.3.4-7: Structures Vulnerable to Flooding**

<b>Municipality</b>	<b>Number of Structures</b>
Allegheny Township	474
Altoona Municipality	475
Antis Township	203
Bellwood Borough	23
Blair Township	206
Catharine Township	13
Duncansville Borough	325
Frankstown Township	177
Freedom Township	211
Greenfield Township	270
Hollidaysburg Borough	137
Huston Township	33
Juniata Township	19
Logan Township	190
Martinsburg Borough	0
Newry Borough	0
North Woodbury Township	11
Roaring Spring Borough	15
Snyder Township	65
Taylor Township	26
Tunnelhill Borough	0
Tyrone Municipality	387
Tyrone Township	31
Williamsburg Borough	75
Woodbury Township	14
<b>Total</b>	<b>3380</b>

**Table 4.3.4-8 – Critical Facilities Vulnerable to Flooding**

<b>Facility Type</b>	<b>Number of Facilities</b>
Municipal Buildings	2
Police Stations	1
Fire Stations	2
Emergency Medical Services Stations	2
Treatment Plants	8

Flooding threats by municipality as identified on the Flood Insurance Rate Maps are found in Appendix D. Additional information on critical facilities and HAZUS analysis are found in Appendices E and F, respectively. The table below identifies regional vulnerabilities outside these analyses.

<b>Municipal Hazard Vulnerability Assessment</b>	
Planning Region 1	Downtown Tyrone is a known increased flood risk area due to bridge abutments creating sand bars in the stream bed as well as confluence of waters from nearly-opposing directions.
Planning Region 2	Consistent with the general profile
Planning Region 3	Legacy development in historic wetlands contributes to increased storm runoff
Planning Region 4	Consistent with the general profile
Planning Region 5	Largest floodplain areas as well as largest number of river-flood-impacted properties. Also includes legacy development contributing to storm runoff.
Planning Region 6	Consistent with the general profile
Planning Region 7	Consistent with the general profile

#### **4.3.5. HAZARDOUS MATERIALS AND ENVIRONMENTAL HAZARDS**

##### **4.3.5.1 LOCATION AND EXTENT**

Chemicals for industrial use and petroleum products can pose an environmental hazard when such materials are manufactured, extracted, used, stored or transported. Most hazardous materials incidents are unintentional, however hazardous materials could also be released in a criminal or terrorist act. Malicious uses of hazardous materials are covered in 4.3.11 Terrorism. A release can result in injury or death and may contaminate air, water and/or soils. Hazardous materials incidents can be generally broken down into the subcategories of transportation and fixed facility.

Tanker trucks, tractor trailers and rail cars often are used to transport hazardous materials. When there are transportation incidents involving these type of vehicles, hazardous materials can be released in significant quantities. Major transportation routes through Blair County include The Keystone Mainline of the Norfolk Southern Railway Company, Interstate 99, US 22 and US 220, and PA Routes 36, 350, 453, and a small part of 764.

Pipelines run throughout Blair County, and are owned by several companies, including: Peoples Natural Gas Company, Texas Eastern, Sunoco, Buckeye Partners, and Enterprise Products. These include the major transmission lines as well as utility distribution lines. There have been two minor accidents in Blair County involving pipelines since 2010. Blair County hosts the largest intermodal exchange facility for pipeline-to-surface transportation exchange outside the Pittsburgh and Philadelphia areas. It is located in Cross Keys and services truck, pipeline and rail transport.

In Pennsylvania, facilities that use, manufacture, or store hazardous materials must comply with Title III of the federal Superfund Amendments and Reauthorization Act, and the Commonwealth’s reporting requirements under the Hazardous Materials Emergency Planning and Response Act (1990-165), as amended. It is important to recognize that these facilities are not an exhaustive and comprehensive list of all locations where hazardous material resides in the county.

Oil and gas extraction facilities can also be sources of hazardous material release. Blair County has very few wells extracting natural gas and none known extracting oil. The Marcellus field does not extend into the county in any meaningful way with some exceptions in Juniata Township, where the few such wells are located. If the Utica field ever comes into play, this landscape could change dramatically, however at this time that is not likely in the short or mid-term future.

#### **4.3.5.2 RANGE OF MAGNITUDE**

Hazardous material releases can contaminate air, water and soil, and can possibly cause injuries, poisonings, or deaths. Hazardous materials fall into nine hazard classes:

- Class 1 Explosives
- Class 2 Gases
- Class 3 Flammable and combustible liquids
- Class 4 Flammable solids
- Class 5 Oxidizing substance and organic peroxides
- Class 6 Toxic substances and infectious substances
- Class 7 Radioactive materials
- Class 8 Corrosive substances
- Class 9 Miscellaneous hazardous materials/products, substances or organisms.

All nine hazard classes can be found being transported and stored at fixed facilities. Certain conditions can exacerbate release incidents:

- Weather conditions affect how the hazard occurs (e.g. transportation accidents) and develops (dispersion can take place rapidly when transported by water and/ or wind). Release can be a secondary impact of natural hazards such as tornadoes or flooding.
- Micro-meteorological effects of buildings and terrain: alters dispersion of hazardous materials
- Proximity to surface and ground water sources
- Compliance with applicable codes (e.g. building or fire codes) and maintenance failures (e.g. fire protection and containment features) can substantially increase the damage to the facility itself and to surrounding buildings

The type of material released, distance and related response time of emergency responders also significantly impact the severity and scope of hazardous material releases and clean-up efforts. Areas most proximal to the release are usually at greatest risk, but depending on the material, a release can travel great distances or remain present in the environment for long periods of time (e.g. centuries or millennia for some radioactive materials) resulting in chronic and extensive impacts on people and the environment.

Oil and gas well drilling can have a variety of effects on the environment. Abandoned oil and gas wells, not properly plugged can contaminate groundwater and consequently drinking water wells. Surface waters and soil are sometimes polluted by brine, a salty wastewater product of oil and gas well drilling, and from oil spills occurring at the drilling site or from a pipeline breach. This can spoil public drinking water supplies and be particularly detrimental to vegetation and aquatic animals, making water safety an important factor in oil and gas extraction (Gregory et al., 2011). In some cases associated with hydraulic

fracturing (fracking), methane has been found contaminating drinking water in surrounding areas (Osborn et al., 2011).

Natural gas well fires occur when natural gas is ignited at the well site. Often, these fires erupt during drilling when a spark from machinery or equipment ignites the gas. The initial explosion and resulting flames have the potential to seriously injure or kill individuals in the immediate area. These fires are often difficult to extinguish due to the intensity of the flame and the abundant fuel source.

#### **4.3.5.3 PAST OCCURRENCE**

As of late 2019, Blair County has three active oil & gas wells from Marcellus shale extraction (Pennsylvania Department of Environmental Protection, 2016). The U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration holds detailed accounts of hazardous material incident records. Detailed past occurrence of hazardous materials release in Blair County from highway travel between 2000 and 2017 have been identified. The Pipeline Hazardous Materials Safety Administration (2017) has eight recorded incidents involving the rail system, all but one of which occurred in or near Altoona. The bulk of the incidents involved package delivery services, mostly occurring within the Duncansville ZIP code. No recorded incidents have caused fatalities, however three incidents resulted in injuries.

#### **4.3.5.4 FUTURE OCCURRENCE**

Hazardous material release incidents are generally difficult to predict, but the presence and use of such known dangerous materials warrants preparation for release events. Emergency response in Blair County should be prepared to handle the types of hazardous materials housed, used, and transported in the Superfund Amendments and Reauthorization Act Title III facilities, Toxics Release Inventory facilities and oil and gas wells throughout the county. Continued good working relationships with the owners and operators of the transport companies and facilities will go a long way in mitigating the impacts of an accident, and assist when a response is needed.

#### **4.3.5.5 VULNERABILITY ASSESSMENT**

The vulnerability of a community and the environment to a spill or release of an extremely hazardous substance at a facility or from a transportation accident depends on many variables. These include: the specific chemical, the extent of the spill or release, the proximity of waterways, and the number of people residing in a radius from the facility or accident location that can reasonably be expected to be adversely affected.

Furthermore, the vulnerability of a community and the environment to a hazardous material release from a transportation incident is directly related to several specific variables; namely the mode and class of transportation. Each mode is further subject to several categories of hazard. Each mode of transportation (truck/highway, aircraft, rail, watercraft, or pipeline) has separate and distinct factors affecting the vulnerability. Transportation carriers must have response plans in place to address accidents, otherwise the local emergency response team will step-in to secure and restore the area. Quick response minimizes the volume and concentration of hazardous materials that disperse through air, water, and soil.

All types of population are evaluated in determining the population at risk within the radius of vulnerability including hospitals, schools, homes for the elderly, and critical infrastructure facilities. Populations in communities that contain Toxics Release Inventory facilities are more vulnerable to facility releases, particularly those within 1½ miles of a given facility. Jurisdictions within one-quarter mile of major highways and railways are considered more vulnerable in the event of a transportation incident involving hazardous materials. Note that there is some overlap among these vulnerable jurisdictions. For example, an individual that lives within 1½ miles of a hazardous materials site may also live within one-quarter mile of a major road.

Private water supplies such as domestic drinking water wells in the vicinity of oil and gas wells are at risk of contamination from brine and other pollutants, including methane which can pose a fire and explosive hazard. Ideally, vulnerability of private drinking well owners would be established by comparing distance of drinking water wells to known oil and gas well locations, but this extensive detailed data is not readily available at this time. Private drinking water is largely unregulated and information on these wells is voluntarily submitted to the Pennsylvania Topographic and Geologic Survey by water well drillers, and the existing data is largely incomplete and/or not completely accurate.

<b>Municipal Hazard Vulnerability Assessment</b>	
Planning Region 1	Consistent with the general profile
Planning Region 2	Consistent with the general profile
Planning Region 3	High population density and location of Norfolk Southern yards. An incident in this region would potentially impact the highest number of people
Planning Region 4	Lowest likelihood of an incident and lowest population risk.
Planning Region 5	Location of large intermodal facility and transportation crossroad. Highest likelihood of large-scale hazardous material incident
Planning Region 6	Consistent with the general profile
Planning Region 7	Consistent with the general profile

### 4.3.6. INVASIVE SPECIES

#### 4.3.6.1 LOCATION AND EXTENT

An invasive species is a species that is not indigenous to a given ecosystem and that, when introduced to a non-native environment, tends to thrive. The spread of an invasive species often alters ecosystems, which can cause environmental and economic harm and pose a threat to human health.

The phenomena of invasive species is due to human activity. Human society is globalized, and people have the capability to traverse the globe at rates unparalleled in the history of the Earth. Either intentionally or unintentionally, other species may accompany people when they travel, introducing the stowaway species to a novel ecosystem. In a foreign ecosystem, a transported species may thrive, potentially restructuring the ecosystem and threatening its health. Common pathways for invasive species introduction to Pennsylvania include (Pennsylvania Invasive Species Council, 2016):

- Contamination of internationally traded products
- Hull fouling
- Ship ballast water release
- Discarded live fish bait
- Intentional release
- Escape from Cultivation
- Movement of materials or equipment
- Unregulated sale of organisms
- Smuggling activities
- Hobby trading or specimen trading

Invasive species threats are typically divided into two main subsets:

**Aquatic Invasive Species** are nonnative, invertebrates, fishes, aquatic plants, and microbes that threaten the diversity or abundance of native species, the ecological stability of the infested waters, human health and safety, or commercial, agriculture, or recreational activities dependent on such waters.

**Terrestrial Invasive Species** are nonnative plants, vertebrates, arthropods, or pathogens that complete their lifecycle on land whose introduction does or is likely to cause economic or environmental harm or harm to human health. The location and extent of invasive threats is dependent on the preferred habitat of the species, as well as the species' ease of movement and establishment. Table 4.3.6-1: Blair County Invasive Species lists invasive species that have been found in Blair County.

#### **4.3.6.2 RANGE OF MAGNITUDE**

Some invasive species are not considered agricultural pests and do not harm humans. Other invasive species can have many negative impacts and cause significant changes in the composition of ecosystems. For example, the Emerald Ash Borer has a 99% mortality rate for any ash tree it infects. Japanese Knotweed can create an impassible underbrush hindering passage of native species as well as hindering emergency response efforts.

The aggressive nature of many invasive species can cause significant reductions in biodiversity by crowding out native species. This can affect the health of individual host organisms as well as the overall well-being of the affected ecosystem. An example of a possible worst-case scenario for invasive species is the presence of the Emerald Ash Borer in Blair County. There is a high mortality rate for trees associated with the Emerald Ash Borer and hardwood forests in the county are in danger due to this invasive species. Degradation of forest health cascades into other problems. Among other benefits, forests prevent soil degradation and erosion, protect watersheds, and sequester carbon from the atmosphere. Forests have a key role in hydrologic systems, so losing a forest amplifies the effects of erosion and flooding. Forest degradation also has adverse economic effects, impacting such activities as logging, tourism, and other production activities dependent on lumber.

The magnitude of an invasive species threat is generally amplified when the ecosystem or host species is already stressed, such as in times of drought. The already weakened state of the native ecosystem causes it to more easily succumb to an infestation.

#### **4.3.6.3 PAST OCCURRENCE**

Invasive species have been entering Pennsylvania since the arrival of European settlers. Table 4.3.6-1: Blair County Invasive Species lists all invasive species that are established in Blair County that pose a threat. Some invasive species such as the Emerald Ash Borer, Japanese Beetle, and Japanese Knotweed are also widespread in the region surrounding Blair County. While Blair County can work towards mitigating the negative impacts of such widespread species, controlling the spread of the species can be difficult. For some species such as Japanese Stiltgrass, the Asian Long-horned Beetle or the Chestnut Gall Wasp, Blair County is on the edge of the species range, meaning control efforts taken in the county can help limit the propagation of the threat even beyond the county.



**Table 4.3.6-1: Blair County Invasive Species**

<b>Common Name</b>	<b>Scientific Name</b>
Amur Honeysuckle	( <i>Lonicera maackii</i> )
Asiatic Clam	( <i>Corbicula fluminea</i> )
Autumn Olive	( <i>Elaeagnus umbellata</i> )
Bitter Dock	( <i>Rumex obtusifolius</i> )
Black Medic	( <i>Medicago lupulina</i> )
Border Privet	( <i>Ligustrum obtusifolium</i> )
Bouncing-bet	( <i>Saponaria officinalis</i> )
Brittle Naiad	( <i>Najas minor</i> )
Brown Marmorated Stink Bug	( <i>Halyomorpha halys</i> )
Buckthorn	( <i>Rhamnus cathartica</i> )
Bull Thistle	( <i>Cirsium vulgare</i> )
Butter-and-eggs	( <i>Linaria vulgaris</i> )
Canada Bluegrass	( <i>Poa compressa</i> )
Canada Thistle	( <i>Cirsium arvense</i> )
Chestnut Blight	( <i>Cryphonectria parasitica</i> )
Chicory	( <i>Cichorium intybus</i> )
Chinese Bushclover	( <i>Lespedeza cuneata</i> )
Climbing Nightshade	( <i>Solanum dulcamara</i> )
Colonial Bentgrass	( <i>Agrostis capillaris</i> )
Colt's-foot	( <i>Tussilago farfara</i> )
Common Carp	( <i>Cyprinus carpio</i> )
Common Chickweed	( <i>Stellaria media</i> )
Common Crown-vetch	( <i>Coronilla varia</i> )
Common Speedwell	( <i>Veronica officinalis</i> )
Common Velvetgrass	( <i>Holcus lanatus</i> )
Common Yarrow	( <i>Achillea millefolium</i> )
Creeping Jenny	( <i>Lysimachia nummularia</i> )
Curly Dock	( <i>Rumex crispus</i> )
Curly-leaf Pondweed	( <i>Potamogeton crispus</i> )
Cypress Spurge	( <i>Euphorbia cyparissias</i> )
Dame's Rocket	( <i>Hesperis matronalis</i> )
Dog Rose	( <i>Rosa canina</i> )
Dutch Elm Disease	( <i>Ophiostoma spp.</i> )
Emerald Ash Borer	( <i>Agrilus planipennis</i> )
English Plantain	( <i>Plantago lanceolata</i> )
Eurasian Water-milfoil	( <i>Myriophyllum spicatum</i> )
European Alder	( <i>Alnus glutinosa</i> )
European House Sparrow	( <i>Passer domesticus</i> )
European Lily-of-the-valley	( <i>Convallaria majalis</i> )
Feral Swine	( <i>Sus scrofa</i> )
Freshwater Jellyfish	( <i>Craspedacusta sowerbyi</i> )
Garden Bird's-foot-trefoil	( <i>Lotus corniculatus</i> )
Garlic Mustard	( <i>Alliaria petiolata</i> )
Giant Bentgrass	( <i>Agrostis gigantea</i> )
Giant-chickweed	( <i>Myosoton aquaticum</i> )
Goldfish	( <i>Carassius auratus</i> )
Great Hedge Bedstraw	( <i>Galium mollugo</i> )

Greater Celandine	(Chelidonium majus)
Ground-ivy	(Glechoma hederacea)
Gypsy Moth	(Lymantria dispar)
Hemlock woolly adelgid	(Adelges tsugae)
House Cat	(Felis catus)
Indian Mock Strawberry	(Duchesnea indica)
Japanese Barberry	(Berberis thunbergii)
Japanese Beetle	(Popillia japonica)
Japanese Knotweed	(Fallopia japonicas)
Japanese Stiltgrass	(Microstegium vimineum)
Kentucky Bluegrass	(Poa pratensis)
Lady's Thumb	(Persicaria maculosa)
Lesser Burdock	(Arctium minus)
Lesser Periwinkle	(Vinca minor)
Marshpepper Knotweed; Smartweed	(Persicaria hydropiper)
Meadow Fescue	(Lolium pratense)
Meadow Goat's-beard	(Tragopogon dubius)
Meadow Hawkweed	(Hieracium caespitosum)
Meadow Timothy	(Phleum pratense)
Morrow's Honeysuckle	(Lonicera morrowii)
Mugwort	(Artemisia vulgaris)
Multicolored Asian Ladybird Beetle	(Harmonia axyridis)
Multiflora Rose	(Rosa multiflora)
Norway Rat	(Rattus norvegicus)
Norway Spruce	(Picea abies)
Orange Daylily	(Hemerocallis fulva)
Orange Hawkweed	(Hieracium aurantiacum)
Orchard Grass	(Dactylis glomerata)
Oriental Bittersweet	(Celastrus orbiculata)
Oriental Lady's-thumb	(Polygonum caespitosum)
Oxeye Daisy	(Leucanthemum vulgare)
Perennial Pea	(Lathyrus latifolius)
Quagga Mussel	(Dreissena bugensis)
Rainbow Smelt	(Osmerus mordax)
Reed Canary Grass	(Phalaris arundinacea)
Rusty Crayfish	(Orconectes rusticus)
Scotch Pine	(Pinus sylvestris)
Scribner's Bluegrass	(Poa trivialis)
Sheep Sorrel	(Rumex acetosella)
Smooth brome	(Bromus inermis)
Spotted Starthistle	(Centaurea biebersteinii)
Sweet Vernal Grass	(Anthoxanthum odoratum)
Sweetclover	(Melilotus officinalis)
Tall Buttercup	(Ranunculus acris var. acris)
Tree-of-Heaven	(Ailanthus altissima)
White Clover	(Trifolium repens)
Wild Basil	(Clinopodium vulgare)
Wild Carrot	(Daucus carota)
Wild Teasel	(Dipsacus fullonum)
Yellow Iris	(Iris pseudacorus)

#### 4.3.6.4 FUTURE OCCURRENCE

According to the Pennsylvania Invasive Species Council, the probability of future occurrence for invasive species threats is growing due to the increasing volume of transported goods, increasing efficiency and speed of transportation, and expanding international trade agreements. Expanded global trade has created opportunities for many organisms to be transported to and establish themselves in new counties and regions. Climate change is contributing to the introduction of new invasive species. As maximum and minimum seasonal temperatures change, pests are able to establish themselves in previously inhospitable climates. This also gives introduced species an earlier start and increases the magnitude of their growth, possibly shifting the dominance of ecosystems in the favor of nonnative species.

In order to combat the increase in future occurrences, the Pennsylvania Invasive Species Council (a collaboration of state agencies, public organizations and federal agencies) released the Invasive Species Management Plan in April of 2010. The plan outlines the Commonwealth's goals for managing the spread of nonnative invasive species and creates a framework for responding to threats through research, action, and public outreach and communication. More information can be found at [invasivespeciescouncil.com](http://invasivespeciescouncil.com).

There are several invasive species that are found in Pennsylvania but have not yet been detected inside the county. Especially in cases like this, control efforts, heightened awareness, and public outreach and education can help prevent an invasive species from becoming established. Once a species is established, it is much more difficult to eradicate it from an ecosystem meaning prevention is very important. For a list of invasive plants found in Pennsylvania and a list of invasive plants on the Pennsylvania watch list, see the referenced 2016 publication "DCNR Invasive Plants".

#### 4.3.6.5 VULNERABILITY ASSESSMENT

Blair County's vulnerability to invasion depends on the species in question. Human activity and mobility are ever increasing, and combined with the prospects of climate change, invasive species are becoming increasingly threatening. Invasive species can have adverse economic effects by impacting agriculture and logging activities. Natural forest ecosystems provide clean water, recreational opportunities, habitat for native wildlife, and places to enjoy the tranquility and transcendence of nature. The balance of forest ecosystems and forest health are vulnerable to invasive species threats.

An interesting facet of the invasive species problem in Pennsylvania is that deer do not eat many invasive plants, giving invasive species a competitive advantage over the native species that fall prey to deer. As such, the management of deer populations in Blair County has a significant impact on the vulnerability of an ecosystem to invasive species, where overpopulation of deer favors invasive species.

There are five primary components to managing invasive plants:

**Prioritize:** Public use areas such as state parks and other healthy forest ecosystems should be prioritized over developed and private areas. Locations with lower densities of invasive plants are often easier to control and should be given quick attention. Locations where humans are disturbing the landscape opens up niche space, and often times the aggressive invasive species move in faster than native species. Such locations include: road work, ditch/ culvert work, logging activities, stream improvement/stabilization and bridge work. Notable species that are established in Blair County that are a priority to manage include Bush honeysuckle, Japanese knotweed and Multi-flora rose.

Public outreach and education is important in order to improve identification and prevention of invasion. For example, Oriental Bittersweet is a high priority for prevention, as it is highly aggressive, difficult to eradicate and when it invades an area, it kills trees by wrapping around the trunk and strangling them to death. Another high priority for prevention is Japanese Stiltgrass, which is also aggressive and fast moving, forming a thick mat that nothing else can grow through. It is also quite shade tolerant, so it can take over the understory of forests. The Asian Long-horned Beetle first attacks red maple trees, followed by many other hardwoods by boring half inch holes through the trees, weakening them structurally and causing limbs to break off, ultimately killing trees. Blair County has many red and sugar maple trees, many providing stream bank stabilization, other economic benefit, so if the Asian Long-horned Beetle ever became established in the County, it could spread quickly and have a devastating impact.

**Locate:** Detailed locations should be recorded for invasive plants so sites can be easily relocated, treated and monitored.

**Delineate:** The scale and extent of the infestation should be recorded and mapped so that the progress of the infestation can be monitored.

**Control:** Methods of control depend on the specific infestation, but the most common approaches are mechanical (cutting and hand-pulling) and chemical (herbicide treatments).

**Monitor:** Identified sites should be monitored and revisited as often as several times in a growing season (depending on the location / species). Monitoring can allow for early detection of spreading infestations. Most importantly, it prevents a relapse towards full-blown infestation.

Municipal Hazard Vulnerability Assessment	
Planning Region 1	Consistent with the general profile
Planning Region 2	Consistent with the general profile
Planning Region 3	Consistent with the general profile
Planning Region 4	Consistent with the general profile
Planning Region 5	Consistent with the general profile
Planning Region 6	Consistent with the general profile
Planning Region 7	Consistent with the general profile

### 4.3.7. PANDEMIC (INCLUDING ADDICTION AND PREVENTABLE DISEASES)

#### 4.3.7.1 LOCATION AND EXTENT

##### Pandemic & Epidemic

Pandemic is a widespread outbreak of infectious disease that impacts an extensive region, potentially spanning continents and having global impacts. An epidemic also refers to an outbreak of a rapidly spreading infectious disease, but is more regional and less widespread than a pandemic. The spread of a disease depends on the mode of transmission of the disease, how contagious it is, and the amount of contact between infected and non-infected persons. In the event of a pandemic occurring in the eastern United States, the entirety of Blair County would likely be affected. Strains of influenza, or the flu have caused epidemics and pandemics, and they commonly attack the respiratory tract in humans. Influenza pandemic planning began in response to the H5N1 (avian) flu outbreak in Asia, Africa, Europe, the Pacific,

and the Near East in the late 1990s and early 2000s. Avian flu did not reach pandemic proportions in the United States, but the county began planning for flu outbreaks. The PA Department of Health Influenza Pandemic Response Plan states that “an influenza pandemic is inevitable and will probably give little warning” (PA Department of Health, 2005). For this reason, influenza is a primary concern regarding pandemic and infectious disease in Blair County.

### **Preventable Disease**

Immunizations have begun making news recently as concerns over the impact non-immunized people may have on the overall health of society emerge. Blair County has been generally successful in immunization of school children. For the 2017-18 school year, approximately 98% of school children were immunized, with the remaining 2% obtaining a medical, religious, or philosophical exemption. One student was denied admission for lack of the immunization and lack of exemption.

Lifestyle also plays a critical role in disease prevention. An obvious indicator of an unhealthful lifestyle is obesity. Unfortunately, Blair County ranks 61<sup>st</sup> best in Pennsylvania (of 67) in terms of the percentage of obese adults. Obesity leads to life-altering conditions including pulmonary, respiratory, and digestive disorders as well as unbalanced body chemistries. As a result, a feedback loop of poor health results in the progression of the severity of these diseases. This impacts not only the health of the individual, but also their family and social circle. Ultimately, this has an impact on the health system and economy of the region. There have been increasing efforts throughout the county through the Healthy Blair County Coalition to address these lifestyle issues. The issue is also one of the five primary tasks in the new comprehensive plan.

Infectious diseases, such as Lyme disease and the West Nile virus have also been prominently featured in the news recently. Lyme Disease has increased dramatically in the past 10 years. Reported cases increased from just a half dozen in 2006 to over 150 in 2016. Estimates put the actual number (as of 2016) at about 5500. The discrepancy is partly due to the fact that many people with the disease are undiagnosed. The map below from the PA West Nile Control Program, shows that Blair County is at high risk for the virus. There are ongoing cooperative efforts with the Program to combat the spread of the virus.

### **Opioid Addiction**

While not always thought of as an infectious disease, the Commonwealth has been experiencing an epidemic of opioid addiction and abuse, resulting in increasing numbers of overdose deaths from both prescribed (e.g. fentanyl) and illicit (e.g. heroine) opioids (see Figure 4.3.7-1: PA Opioid Deaths). Overdose deaths from opioids occur when a large dose slows breathing, which can be especially likely when opioids are combined with alcohol or antianxiety drugs. While generally prescribed with good intentions, opioids can often be over-prescribed, resulting in addiction due to their highly addictive nature. The PA Department of Health indicated that in the first half of 2018, Blair County had the highest opioid prescription rate in the Commonwealth at 312.5 prescriptions per 1000 patients. While the county is not in the top tier of opioid deaths, with this prescription rate, there is great potential for the local problem to significantly worsen.

#### **4.3.7.2 RANGE OF MAGNITUDE**

##### **Pandemic**

Advancements in medical technologies have greatly reduced the number of deaths caused by influenza over time. In the early 1900s, flu pandemics could cause tens of millions of deaths, while the 2009 Swine Flu caused fewer than 20,000 deaths worldwide, and many people infected with Swine Flu in 2009 have recovered without needing medical treatment. However, the modern flu viruses are still quite dangerous. About seventy percent of those who were hospitalized with the 2009 H1N1 flu virus in the United States belonged to a high-risk group (CDC, 2009). High risk populations for influenza include children, the elderly, pregnant women, and patients with reduced immune system capability. Such high-risk populations are discussed in more detail in Section 4.3.7.5.

##### **Disease**

Immunization efforts in Blair County have been quite successful with near-100% compliance with the requirements for immunization. There does not appear to be a need to address this through this plan.

Efforts to enable and encourage a more active lifestyle are ongoing. Improving overall health improves resiliency when things go wrong and provide able-bodied assistance in time of need. Additionally, improving overall health will reduce pressure on the health system, which can then respond more efficiently when critically needed. These efforts include providing active lifestyle choices in the built environment such as fitness trails, neighborhood parks, sidewalks, and bicycle facilities. Efforts are beginning to encourage leaving the car at home for shorter trips, which has secondary benefits of reduced traffic, longer-lived infrastructure, and a cleaner environment.

In the United States, the bacteria *Borrelia burgdorferi* and *Borrelia mayonii* cause Lyme disease. The signs and symptoms of Lyme disease vary. They usually appear in stages, but the stages can overlap. For many people the initial signs are mild and often dismissed. Treatment is usually sought once the disease is established and the person begins experience in joint pain and neurological symptoms. In severe cases, the bacteria can affect the heart, liver, and eyes as well as cause severe fatigue. As mentioned above, the number of cases in Blair County has risen dramatically in the past ten years. While most cases of Lyme disease can be treated with a few weeks of antibiotic use, undetected Lyme disease can seriously damage a body's musculoskeletal and nervous system, sometimes resulting in death.

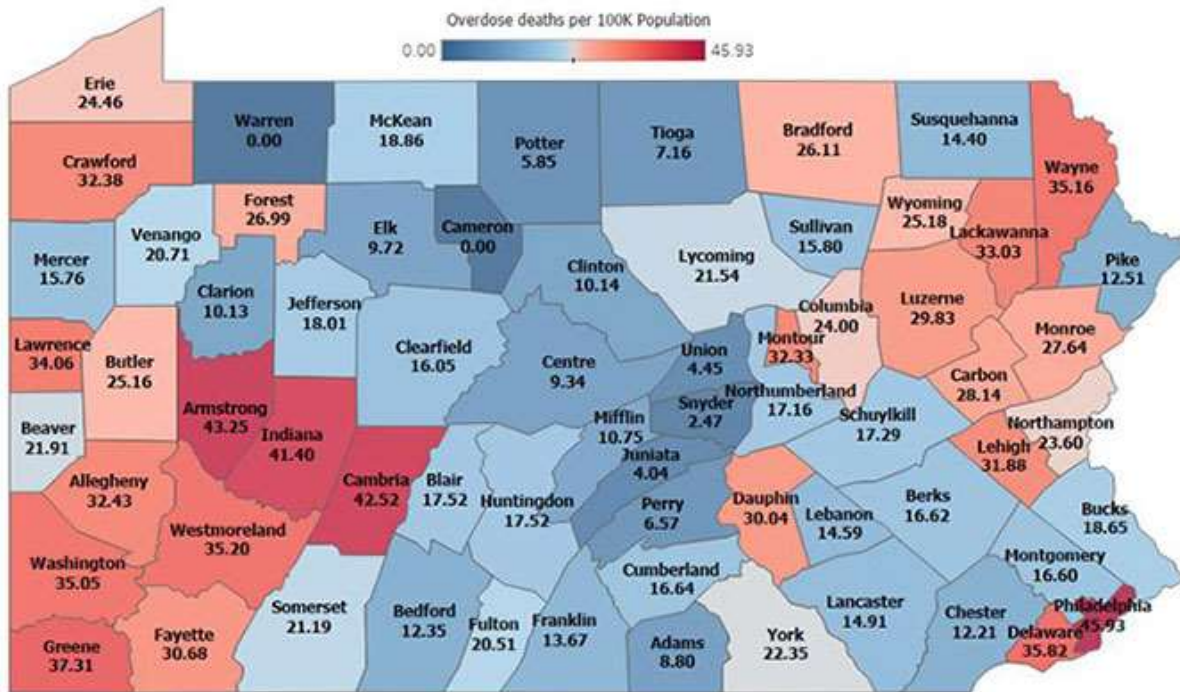
West Nile Virus originated in regions of East Africa around 1937 but spread globally. In 2012, West Nile Virus caused 286 deaths in the United States. Most West Nile infections in humans are subclinical, causing no symptoms. Approximately twenty percent of infections cause symptoms and less than one percent of cases result in severe neurological disease or death. Symptoms typically appear between two and fifteen days after infection and there is currently no vaccine for West Nile Virus. Person to person transmission of West Nile is less prevalent than person to person transmission of influenza.

##### **Addiction**

In 2015, 3,383 overdose deaths were reported in Pennsylvania, compared to 2014, when there were 2,742 overdose deaths in PA – an increase of 23.4 percent (United States Drug Enforcement Agency, 2015). Pennsylvania ranked 8th in the country for overdose deaths in 2014 at 21.9 deaths per 100,000 people (United States Drug Enforcement Agency, 2015). Unlike most other counties included in statewide

mapping data, Blair County’s opioid issues appear to originate from prescriptions and well-intentioned practices to relieve pain and suffering. The heroin scourge is certainly present, but the data indicate it is overshadowed by legal drug use.

**Figure 4.3.7-1: PA Opioid Deaths**



Source: DEA Philadelphia Field Division, HAP

### 4.3.7.3 PAST OCCURRENCE

#### Pandemic

Influenza outbreaks of Spanish Flu, Asian flu, Hong Kong Flu and Swine Flu caused deaths in the United States and are considered pandemics. The 1918-1920 Spanish Flu claimed 50 million lives worldwide and 500,000 in the United States with 350,000 cases in Pennsylvania. The Asian flu caused about 1.5-2 million deaths worldwide with 70,000 deaths in the United States, peaking between September 1957 and March 1958. Approximately fifteen percent of the population of Pennsylvania was affected by Asian flu.

The first cases of the Hong Kong Flu in the U.S. were detected in September of 1968 with deaths peaking between December, 1968 and January, 1969 (Global Security, 2011). The most recent flu outbreak to impact Blair County was the 2009 outbreak of Swine flu. There were 10,940 cases reported in Pennsylvania resulting in 78 deaths.

The 2017-18 season resulted in 122,030 cases in Pennsylvania, and 2004 in Blair County. Of those cases, 258 were fatal statewide. (Pennsylvania Department of Health, 2018)

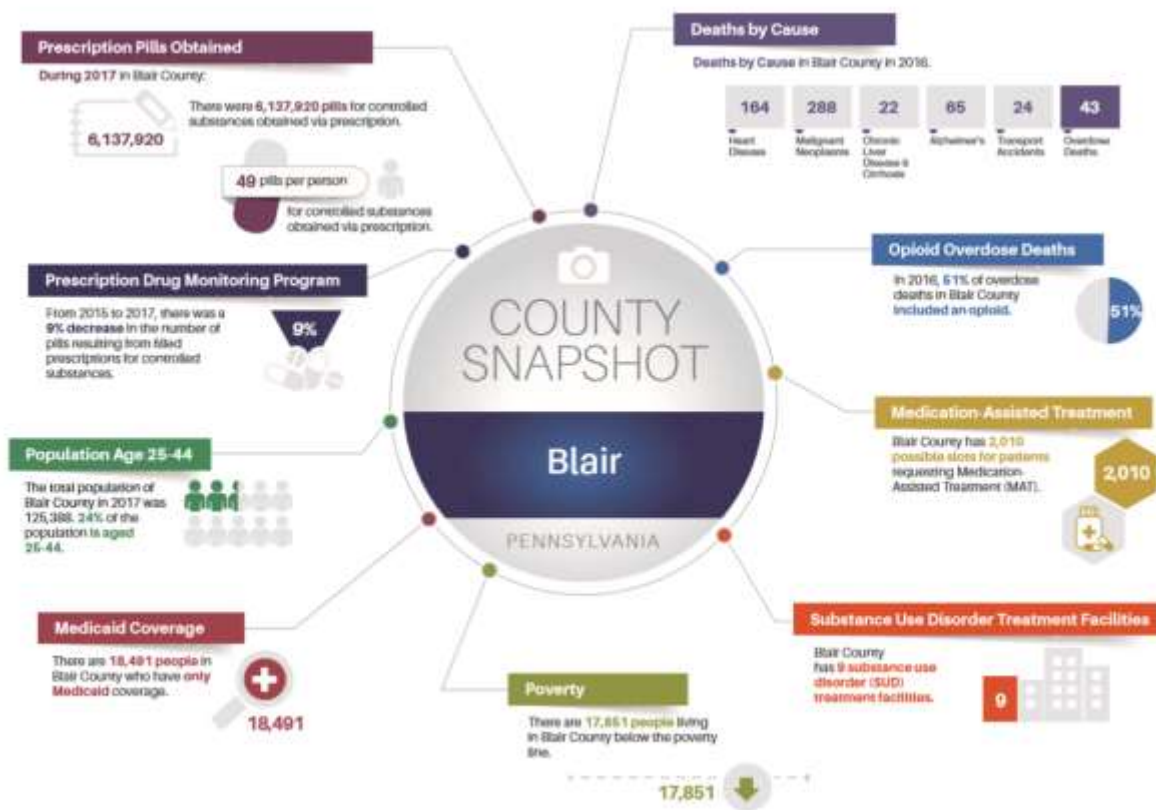
**Disease**

Cases of Lyme disease are regularly reported in Blair County. The West Nile Virus was first detected in Pennsylvania in the year 2000. The most annual reported cases of West Nile occurred in 2003, with 237 infected Pennsylvanians resulting in nine deaths. Since then, a comprehensive network has been developed in Pennsylvania to detect West Nile Virus, including trapping mosquitoes, collecting dead birds and monitoring horses, people, and in past years, sentinel chickens. West Nile Virus was detected in 41 of 67 counties in the Commonwealth in 2016, with 16 human cases (PA West Nile Virus Control Program, 2017).

**Addiction**

For the year of 2017, Blair County had 34.4 overdose deaths per 100,000 people, with 43 recorded overdose deaths occurring in the county (see Figure 4.3.7-1 – Blair County Opioid Snapshot), half of all overdose deaths in Blair County are from opioids. The following graphic provided by the University of Pittsburgh captures the situation well:

**Figure 4.3.7-1: Blair County Opioid Snapshot**





#### **4.3.7.4 FUTURE OCCURRENCE**

##### **Pandemic**

The precise timing of pandemic influenza is uncertain, but occurrences are most likely when the Influenza Type A virus makes a dramatic change, or antigenic shift, that results in a new or “novel” virus to which the population has no immunity. The emergence of a novel virus is the first step towards pandemic, and based on historical events, is expected to occur every eleven to forty-one years.

##### **Disease**

There is no known reason that the immunization rate in the county will change in the foreseeable future.

Obesity rates continue to climb in Blair County. Efforts to introduce active lifestyle choices into the fabric of the community began too recently to be reflected in the data available. We expect that impact to become visible over the next half decade or so as people become aware of the opportunities and begin utilizing them. Additionally, as these efforts have only just begun, there is a construction lag, and many other projects on the docket before such opportunities are consistently and conveniently available to all.

Lyme disease is expected to continue its consistent prevalence in Blair County, however instances of West Nile Virus have been decreasing due to extensive planning and eradication efforts. Unfortunately, the prospect of climate change could increase the prevalence of the virus as some studies show increased insect activities during a similar rapid warming event in Earth’s history (Curano et al., 2008). Other studies make projections that with the warming temperatures and lower annual precipitation that are expected with climate change, there will be an expansion of the suitable climate for mosquitos and West Nile Virus, increasing the risk that the disease poses (Harrigan et al., 2014).

##### **Addiction**

According to recent research, in states where medical marijuana has been permitted, overdose deaths from opioids have decreased about twenty-five percent, and the effect was even stronger five to six years after medical marijuana was allowed (Bachhuber et al., 2014). In those states where medical marijuana is permitted, each physician prescribed an average of 1826 fewer doses of pain medication each year (Bradford & Bradford, 2016), suggesting that medical marijuana could help prevent patients from ever being exposed to addicting opioids (Miller, 2016).

Rather than reduce pain, in some cases high doses of opioid painkillers can actually increase pain due to a phenomenon known as opioid-induced hyperalgesia (OIH). However, it is difficult to know how much of an influence it has on the opioid epidemic. Some researchers think that opioid-induced hyperalgesia could be increasing patients’ pain and in turn, increasing their dosages and dependence on opioid drugs, suggesting that patients should work with lower dosages of opioids (Servick, 2016). However, other researchers are unsure of the importance of opioid-induced hyperalgesia for opioid users (Servick, 2016).

In the event of an opioid overdose, death can sometimes be prevented with the use of the drug naloxone. Emergency medical responders have access to the treatment, and as of 2015, naloxone is available without a prescription in Pennsylvania.

#### **4.3.7.5 VULNERABILITY ASSESSMENT**

##### **Pandemic**

Certain groups are at higher risk of infectious disease infection, including people of retirement age, preschool children, pregnant women, and people with certain chronic medical conditions such as diabetes, heart disease, asthma, and kidney disease. Schools, convalescent centers, and other institutions serving preschoolers and the elderly are locations that are conducive to faster transmission of influenza. More generally, areas with higher population densities and places where people gather can be hotspots where influenza can spread more rapidly. The highest concentration of elevated-transmission risk locations in the county (schools, retirement homes and senior centers) is found in Altoona.

##### **Disease**

Population of all age groups, races, and ethnicities are vulnerable to the sedentary lifestyles and poor diets that lead to obesity. The lack of facilities – particularly sidewalks in the more developed areas and bicycle facilities that would allow commuting and other non-recreation cycling – promotes lethargy. Additionally, with the opening of a franchise of a national chain, Altoona was given the unenviable moniker of ‘fast food capital of Pennsylvania.’ Many of the grocery outlets also provide processed and sugary foods, exacerbating the obesity problem.

Persons who spend time in wooded areas are most at risk for contracting Lyme disease via tick bite. The application of tick repellent with DEET or permethrin is highly recommended. Residents should conduct thorough tick checks after spending time in woodland areas and keep on the lookout for the characteristic “bull’s-eye” rash indicative of a tick bite infected with Lyme disease.

##### **Addiction**

Deaths from prescription opioid drugs like oxycodone, hydrocodone, and methadone have increased by more than four-fold since 1999. In light of this epidemic, the Healthy Blair County Coalition formed a committee to combat the problem that opioids pose to residents. While Blair County is below the statewide average for opioid overdose deaths, it is well above the national average. The CDC offers a list of suggested actions and precautions that can be taken to prevent overdose deaths:

- Improve opioid prescribing to reduce exposure to opioids, prevent abuse, and stop addiction.
- Expand access to evidence-based substance abuse treatment, such as medication-assisted treatment, for people already struggling with opioid addiction.
- Expand access and use of naloxone- a safe antidote to reverse opioid overdose.
- Promote the use of state prescription drug monitoring programs, which give health care providers information to improve patient safety and prevent abuse.
- Implement and strengthen state strategies that help prevent high-risk prescribing and prevent opioid overdose.
- Improve detection of the trends of illegal opioid use by working with state and local public health agencies, medical examiners and coroners, and law enforcement.

<b>Municipal Hazard Vulnerability Assessment</b>	
Planning Region 1	Consistent with the general profile
Planning Region 2	Consistent with the general profile
Planning Region 3	Higher concentration of population may increase spread of infection. Also, the lower incomes in this area may hinder preventive medical measures.
Planning Region 4	Consistent with the general profile
Planning Region 5	Consistent with the general profile
Planning Region 6	Consistent with the general profile
Planning Region 7	Plain sect population may be slow to react to pandemic / infection warnings due to lack of media access as well as reluctance to engage medical intervention.

### 4.3.8. RADON

#### 4.3.8.1 LOCATION AND EXTENT

Radioactivity caused by airborne radon has been recognized for many years as an important component in the natural background radioactivity exposure of humans, but it was not until the 1980s that the wide geographic distribution of elevated values in houses and the possibility of extremely high radon values in houses were recognized. In 1984, routine monitoring of employees leaving the Limerick nuclear power plant near Reading, PA, showed that readings on Mr. Stanley Watras frequently exceeded expected radiation levels, yet only natural, nonfission-product radioactivity was detected on him. Radon levels in his home were detected around 2,500 pCi/L (pico Curies per Liter), much higher than the 4 pCi/L guideline of the Environmental Protection Agency or even the 67 pCi/L limit for uranium miners. As a result of this event, the Reading Prong section of Pennsylvania where Watras lived became the focus of the first large-scale radon scare in the world.

Radon is a noble gas that originates by the natural radioactive decay of uranium and thorium. Like other noble gases (e.g., helium, neon, and argon), radon forms essentially no chemical compounds and tends to exist as a gas or as a dissolved atomic constituent in groundwater. Two isotopes of radon are significant in nature,  $^{222}\text{Rn}$  and  $^{220}\text{Rn}$ , formed in the radioactive decay series of  $^{238}\text{U}$  and  $^{232}\text{Th}$ , respectively. The isotope thoron (i.e.  $^{220}\text{Rn}$ ) has a half-life (time for decay of half of a given group of atoms) of 55 seconds, barely long enough for it to migrate from its source to the air inside a house and pose a health risk. However, radon (i.e.  $^{222}\text{Rn}$ ), which has a half-life of 3.8 days, is a widespread hazard.

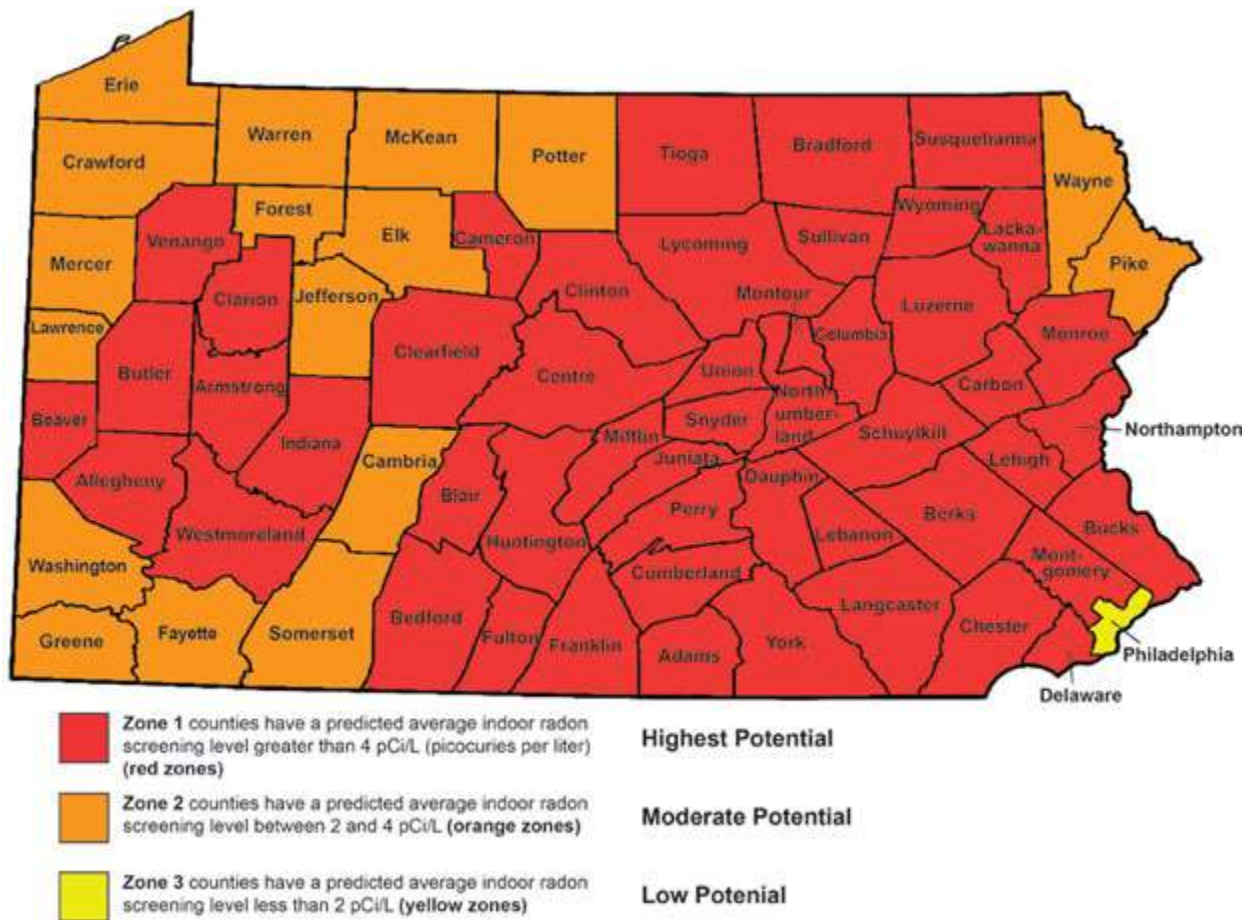
The distribution of radon is correlated with the distribution of radium (i.e.  $^{226}\text{Ra}$ ), its immediate radioactive parent, and with uranium, its original ancestor. Due to the short half-life of radon, the distance that radon atoms can travel from their parent before decay is generally limited to distances of feet or tens of feet.

Three sources of radon in houses are now recognized:

- Radon in soil air that flows into the house
- Radon dissolved in water from private wells and exsolved during water usage; this is rarely a problem in Pennsylvania;
- Radon emanating from uranium-rich building materials (e.g. concrete blocks or gypsum wallboard); this is not known to be a problem in Pennsylvania.

Each county in Pennsylvania is classified as having a low, moderate, or high radon hazard potential (see Figure 4.3.8-1). While this analysis has not been repeated since 2014, it represents the best available comprehensive radon hazard potential information available. A majority of counties across the Commonwealth, particularly counties in eastern Pennsylvania, have a high hazard potential. A high hazard potential indicates that the average indoor radon screening level for these counties is greater than 4 picocuries per liter (pCi/L). Counties with a moderate radon potential have an average indoor radon screening level between 2 pCi/L and 4 pCi/L. The City of Philadelphia is the only jurisdiction designated with a low radon hazard potential (less than 2 pCi/L) (United States Environmental Protection Agency, 2014).

**Figure 4.3.8-1: Radon Potential by PA County**



High radon levels were initially thought to be exacerbated in houses that are tightly sealed, but it is now recognized that rates of air flow into and out of houses, plus the location of air inflow and the radon content of air in the surrounding soil, are key factors in radon concentrations. Outflows of air from a house, caused by a furnace, fan, thermal “chimney” effect, or wind effects, require that air be drawn into the house to compensate. If the upper part of the house is tight enough to impede influx of outdoor air (radon concentration generally <0.1 pCi/L), then an appreciable fraction of the air may be drawn in from the soil or fractured bedrock through the foundation and slab beneath the house, or through cracks and openings for pipes, sumps, and similar features. Soil gas typically contains from a few hundred to a few thousand pCi/L of radon; therefore, even a small rate of soil gas inflow can lead to elevated radon concentrations in a house.

The radon concentration of soil gas depends upon a number of soil properties, the importance of which is still being evaluated. In general, ten to fifty percent of newly formed radon atoms escape the host mineral of their parent radium and gain access to the air-filled pore space. The radon content of soil gas clearly tends to be higher in soils containing higher levels of radium and uranium, especially if the radium occupies a site on or near the surface of a grain from which the radon can easily escape. The amount of pore space in the soil and its permeability for air flow, including cracks and channels, are important factors determining radon concentration in soil gas and its rate of flow into a house. Soil depth and moisture content, mineral host and form for radium, and other soil properties may also be important. For houses built on bedrock, fractured zones may supply air having radon concentrations similar to those in deep soil.

Areas where houses have high levels of radon can be divided into three groups in terms of uranium content in rock and soil:

- Areas of very elevated uranium content (>50 ppm) around uranium deposits and prospects. Although very high levels of radon can occur in such areas, the hazard normally is restricted to within a few hundred feet of the deposit. In Pennsylvania, such localities occupy an insignificant area
- Areas of common rocks having higher than average uranium content (5 to 50 ppm). In Pennsylvania, such rock types include granitic and felsic alkali igneous rocks and black shales. In the Reading Prong, high uranium values in rock or soil and high radon levels in houses are associated with Precambrian granitic gneisses commonly containing 10 to 20 ppm uranium, but locally containing more than 500 ppm uranium. In Pennsylvania, elevated uranium occurs in black shales of the Devonian Marcellus Formation and possibly the Ordovician Martinsburg Formation. High radon values are locally present in areas underlain by these formations.
- Areas of soil or bedrock that have normal uranium content but properties that promote high radon levels in houses. This group is incompletely understood at present. Relatively high soil permeability can lead to high radon, the clearest example being houses built on glacial eskers. Limestone-dolomite soils also appear to be predisposed for high radon levels in houses, perhaps because of the deep clay-rich residuum in which radium is concentrated by weathering on iron oxide or clay surfaces, coupled with moderate porosity and permeability. The importance of carbonate soils is indicated by the fact that radon contents in 93 percent of a sample of houses built on limestone dolomite soils near State College, Centre County, exceeded 4 pCi/L, and 21 percent exceeded 20 pCi/L, even though the uranium values in the underlying bedrock are all in the normal range of 0.5 to 5 ppm uranium.

#### **4.3.8.2 RANGE OF MAGNITUDE**

Exposure to radon is the second leading cause of lung cancer after smoking. It is the number one cause of lung cancer among non-smokers. Radon is responsible for about 21,000 lung cancer deaths every year; approximately 2,900 of which occur among people who have never smoked. Lung cancer is the only known effect on human health from exposure to radon in air and thus far, there is no evidence that children are at greater risk of lung cancer than are adults (United States Environmental Protection Agency, 2013). According to the United States Environmental Protection Agency, the average radon concentration in the indoor air of America's homes is about 1.3 pCi/L. The United States Environmental Protection Agency recommends homes be fixed if the radon level is 4 pCi/L or more. However, because there is no

Figure 4.3.8-2: Radon Health Risks Related to Smoking

**TWO EPA HEALTH RISK CHARTS**  
 From EPA's Citizen's Guide To Radon U.S. EPA 402-K02-006, Revised May 2004

**Radon Risk If You Smoke**

Radon Level	If 1,000 people who smoked were exposed to this level over a lifetime. .	The risk of cancer from radon exposure compares to . . .	WHAT TO DO: Stop smoking and .
20 pCi/L	about 260 people could get lung cancer	250 times the risk of drowning	<b>Fix your home</b>
10 pCi/L	about 150 people could get lung cancer	200 times the risk of dying in a home fire.	<b>Fix your home</b>
8 pCi/L	about 120 people could get lung cancer	30 times the risk of dying in a fall.	<b>Fix your home</b>
4 pCi/L	about 62 people could get lung cancer	5 times the risk of dying in an car crash	<b>Fix your home</b>
2 pCi/L	about 32 people could get lung cancer	6 times the risk of dying from poison	<b>Consider fixing between 2 and 4 pCi/L</b>  <b>(Reducing levels below 2 pCi/L is difficult)</b>
1.3 pCi/L	about 20 people could get lung cancer	<i>Average indoor radon levels</i>	
0.4 pCi/L		<i>Average outdoor radon levels</i>	

Note: If you are a former smoker, your risk may be lower.

**Radon Risk If You've Never Smoked**

Radon Level	If 1,000 people who smoked were exposed to this level over a lifetime. .	The risk of cancer from radon exposure compares to . . .	WHAT TO DO:
20 pCi/L	about 36 people could get lung cancer	35 times the risk of drowning	<b>Fix your home</b>
10 pCi/L	about 18 people could get lung cancer	20 times the risk of dying in a home fire	<b>Fix your home</b>
8 pCi/L	about 15 people could get lung cancer	4 times the risk of dying in a fall.	<b>Fix your home</b>
4 pCi/L	about 7 people could get lung cancer	The risk of dying in an car crash	<b>Fix your home</b>
2 pCi/L	about 4 person could get lung cancer	The risk of dying from poison	<b>Consider fixing between 2 and 4 pCi/L</b>  <b>(Reducing levels below 2 pCi/L is difficult)</b>
1.3 pCi/L	Less than 2 person could get lung cancer	<i>Average indoor radon levels</i>	
0.4 pCi/L		<i>Average outdoor radon levels</i>	

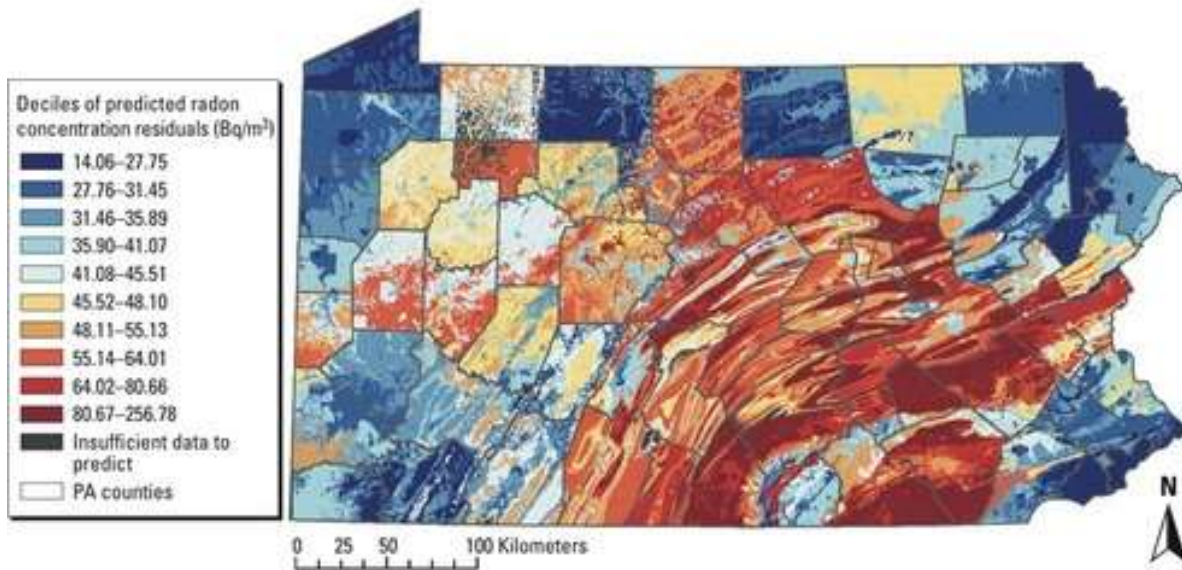
known safe level of exposure to radon, the Agency also recommends that Americans consider fixing their home for radon levels between 2 pCi/L and 4 pCi/L. Figure 4.3.8-2 shows the relationship between various radon levels, probability of lung cancer, comparable risks from other hazards, and action thresholds. As is shown in Figure 4.3.8-2, a smoker exposed to radon has a much higher risk of lung cancer (United States Environmental Protection Agency, 2013).

The worst-case scenario for radon exposure would be that a large area of tightly sealed homes provided residents high levels of exposure over a prolonged period of time without the resident being aware. This worst-case scenario exposure then could lead to a large number of people with cancer attributed to the radon exposure.

#### 4.3.8.3 PAST OCCURRENCE

Current data on abundance and distribution of radon in Pennsylvania houses is considered incomplete and potentially biased, but a study was conducted testing the basements and first floors of over 800,000 buildings throughout all 67 counties in Pennsylvania. A total of nearly 2 million data points were gathered and analyzed to determine radon concentrations in Pennsylvania, and Figure 4.3.8-3 maps the unadjusted median concentrations throughout the state and the levels of predicted radon contribution from geologic unit, county, and well water after accounting for variations in the tests, seasons, buildings, year, and average rainfall (Casey et al., 2015).

**Figure 4.3.8-3: Predicted Radon Concentrations in PA**



The United States Geological Survey conducted a study with the Pennsylvania Department of Health and Environmental Protection to examine radon levels in wells throughout the state. The data for the study was collected from 1986 to 2015 and accounts for approximately 31 percent of the land area of Pennsylvania. The study concluded that more than 14 percent of the tested wells had radon levels “at or above the Environmental Protection Agency’s proposed alternative maximum contaminant level of 4,000 picocuries per liter.” The standard maximum concentration that the EPA suggests is 300 pCi/L, but they also have this alternative maximum for states with an EPA-approved radon indoor air quality program,

which Pennsylvania does have. However, the limits are just proposed since the EPA does not currently regulate radon level in drinking water.

**4.3.8.4 FUTURE OCCURRENCE**

Radon exposure is inevitable given present soil, geologic, and geomorphic factors across Pennsylvania. Development in areas where previous radon levels have been significantly high will continue to be more susceptible to exposure. However, new incidents of concentrated exposure may occur with future development or deterioration of older structures. Exposure can be limited with proper testing for both past and future development and appropriate mitigation measures. Overall, the probability of future radon exposure hazards is considered likely.

**4.3.8.5 VULNERABILITY ASSESSMENT**

Vulnerability to radon exposure is primarily being defined as a facility located in a zip code whose average first floor and/or basement radon reading is greater than 4 pCi/L, the threshold for action. The Commonwealth’s vulnerability assessment outcome for Blair County indicated and estimated 10,645 buildings in the county could be impacted by radon. This is just an estimate since the nature of radon is such that two neighboring houses can have quite varied results, and the only way to have an accurate number would be to test every building in the county. The United State Environmental Protection Agency determines that an average radon mitigation system costs \$1,200. Based on this number and the Commonwealth’s estimate, the cost of radon treatment in the county is approximately \$12.75 million.

Radon is also among the several ‘silent killers’ people face. Because it is an odorless, tasteless, invisible gas, building occupants cannot detect its presence without having testing done. As such many people are unaware of the dangers that may be present in their very homes. Education and outreach are needed to raise awareness of the severe impact radon can have on people’s lives.

<b>Municipal Hazard Vulnerability Assessment</b>	
Planning Region 1	Consistent with the general profile
Planning Region 2	Consistent with the general profile
Planning Region 3	Consistent with the general profile
Planning Region 4	Consistent with the general profile
Planning Region 5	Consistent with the general profile
Planning Region 6	Consistent with the general profile
Planning Region 7	Consistent with the general profile

**4.3.9. STRONG STORMS (INCLUDING TORNADOS, WINDSTORMS AND HURRICANES)**

**4.3.9.1 LOCATION AND EXTENT**

**Tornados & Windstorms**

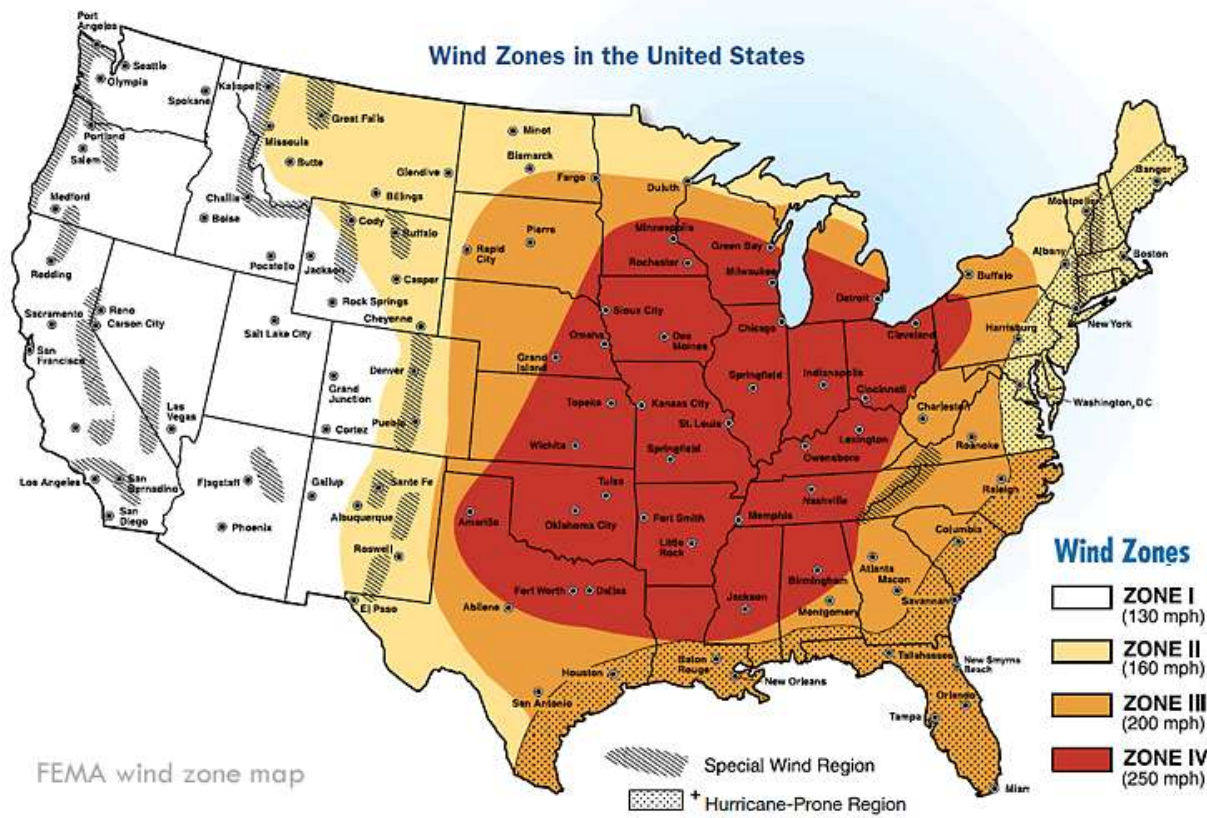
Tornados occur in the Commonwealth most frequently during the spring and summer months and are most likely to occur during the warmest times of the day. In the past 67 years, records show that 826 tornados have been reported throughout Pennsylvania (National Centers for Environmental Information, 2017). The National Weather Service estimates the Commonwealth will experience ten tornados annually.



According to the National Centers for Environmental Information (known as NCEI, formerly known as NCEI), wind speeds in tornados range from values below that of hurricane speeds to more than 300 miles per hour. The National Centers for Environmental Information continues by reporting that, “the maximum winds in tornados are often confined to extremely small areas and vary tremendously over short distances.” This is the reason that one house will be completely demolished by a tornado and the house next to it might be untouched. The width of tornados can vary greatly, from 100 feet wide to over a mile, and the forward motion of tornados can range from speeds between 0 and 50 miles per hour.

Windstorms may be caused by thunderstorms, hurricanes and tornados, but the most frequent cause of windstorms in Central Pennsylvania are thunderstorms. Straight-line winds and windstorms are experienced on a more regional scale. While such winds usually also accompany tornados, straight-line winds are caused by the movement of air from areas of high pressure to low pressure. Windstorms are generally defined with sustained wind speeds of 40 mph or greater, lasting for at least one hour, or simply winds of 58 mph or greater for any duration. A microburst is a very-localized column of sinking air, capable of producing damaging opposing and straight-line winds at the surface. A wind shear is usually found when a violent weather front is moving through; wind speeds have been recorded up to 100 mph. Wind shear is defined as a difference in wind speed and direction over a relatively short distance in the atmosphere. Figure 4.3.9-1 shows the wind zones nationwide; Blair County is in Zone III, indicating 200 mile per hour winds are possible. The county is not in any special zone or hurricane zone.

Figure 4.3.9-1: Wind Zones in the United States



## Hurricanes

Tropical depressions are cyclones with maximum sustained winds of less than 39 miles per hour (mph). The system becomes a tropical storm when the maximum sustained winds reach between 39-74 mph. When wind speeds exceed 74 mph, the system is considered a hurricane. Tropical storms impacting Blair County develop in tropical or sub-tropical waters found in the Atlantic Ocean, Gulf of Mexico, or Caribbean Sea. While Blair County is located over 300 miles from the Atlantic Coast, tropical storms can track inland causing heavy rainfall and strong winds, however Blair County is located outside the high-risk regions for hurricanes and it is unlikely that a hurricane would track through Blair County (see Figure 4.3.9-1: Wind Zones).

### 4.3.9.2 RANGE OF MAGNITUDE

#### Tornado & Windstorm

Each year, tornados account for \$1.1 billion in damages and cause over 80 deaths nationally. 2011 was the second worst year on record for deadly tornados, the worst being 1936. The number of tornado reports has increased by 14% since 1950. While the extent of tornado damage is usually localized, the vortex of extreme wind associated with a tornado can result in some of the most destructive forces on Earth.

Rotational wind speeds can range from 100 mph to more than 250 mph. In addition, a tornado's speed of forward motion can range from 0 to 50 mph. Therefore, some estimates place the maximum velocity (combination of ground speed, wind speed, and upper winds) of tornados at about 300 mph. The damage caused by a tornado is a result of the high wind velocity and wind-blown debris, also accompanied by lightning or large hail. The most violent tornados have rotating winds of 250 miles per hour or more and are capable of causing extreme destruction and turning normally harmless objects into deadly missiles.

Damages and deaths can be especially significant when tornados move through populated, developed areas. The destruction caused by tornados ranges from light to inconceivable depending on the intensity, size and duration of the storm. Typically, tornados cause the greatest damages to structures of light construction. The Enhanced Fujita Scale, also known as the "EF-Scale," measures tornado strength and associated damages. The Enhanced Fujita Scale is an update to the earlier Fujita Scale, also known as the "F-Scale," that was published in 1971. It classifies United States tornados into six intensity categories, based upon the estimated maximum winds occurring within the wind vortex, as shown in (Table 4.3.9-1: Enhanced Fujita Scale). Since its implementation by the National Weather Service in 2007, the Enhanced Fujita Scale has become the definitive metric for estimating wind speeds within tornados based upon damage to buildings and structures. Previously recorded tornadoes are reported with the older Fujita Scale values, but Table 4.3.9-1: Enhanced Fujita Scale shows Fujita Scale categories with corresponding Enhanced Fujita Scale wind speeds.

Figure 4.3.9-1: Wind Zones described the wind speed zones developed by the American Society of Civil Engineers based on tornado and hurricane historical events. These wind speed zones are intended to guide the design and evaluation of the structural integrity of shelters and critical facilities. Because Blair County falls within Zone IV, design wind speeds for shelters and critical facilities should be able to withstand a 3-second gust of up to 250 mph, regardless of whether the gust is the result of a tornado,

coastal storm, or windstorm event. Therefore, these structures should be able to withstand the wind speeds experienced in an EF5 tornado event.

**Table 4.3.9-1: Enhanced Fujita Scale**

<b>The Enhanced Fujita Scale</b>		
<b>Scale</b>	<b>Wind Speed (mph)</b>	<b>Damage</b>
EF0	65 - 85	Light damage: Some damage to chimneys. Branches broken from trees and some trees blown over.
EF1	86 - 110	Moderate damage: Moving cars blown off roads, mobile homes overturned.
EF2	111 - 135	Considerable damage: Large trees snapped or uprooted, cars lifted off the ground. Mobile homes destroyed.
EF3	136 - 165	Severe damage: Trains overturned, most trees uprooted, walls of homes destroyed.
EF4	166 - 200	Devastating damage: Well built houses destroyed, large objects thrown.
EF5	> 200	Incredible damage: Cars thrown more than 100 metres, strong buildings swept away. Extensive destruction.

Tornados can have varying secondary effects. The most common is power failure. The severe wind can dismantle power sources and cause significant structural damage. Hazardous material spills can occur if a tornado comes near a holding tank, or the spill stems from a traffic accident caused by high winds.

Windstorms of all types have caused the following problems within Blair County:

- Power failures lasting 4 hours or longer
- Loss of communication networks lasting 4 hours or more
- Residents requiring evacuation or provision of supplies or temporary shelter
- Severe crop loss and or damage

### **Hurricane**

The impact tropical storm or hurricane events have on an area is typically measured in terms of wind speed. Expected damage from hurricane force winds is measured using the Saffir-Simpson Scale (Table 4.3.9-2: Saffir-Simpson Scale). The Saffir-Simpson Scale categorizes hurricane intensity linearly based upon maximum sustained winds, barometric pressure, and storm surge potential (characteristic of tropical storms and hurricanes, but not a threat to inland locations like Blair County). Categories 3, 4, and 5 are classified as “major” hurricanes. While major hurricanes comprise only 20% of all tropical cyclones making landfall, they account for over 70 percent of the damage in the United States. While hurricanes can cause high winds and associated impacts, it is also important to recognize the potential for flooding events during hurricanes and tropical storms; the risk assessment and associated impact for flooding events is included Section 4.3.4.

**Table 4.3.9-2: Saffir-Simpson Scale**

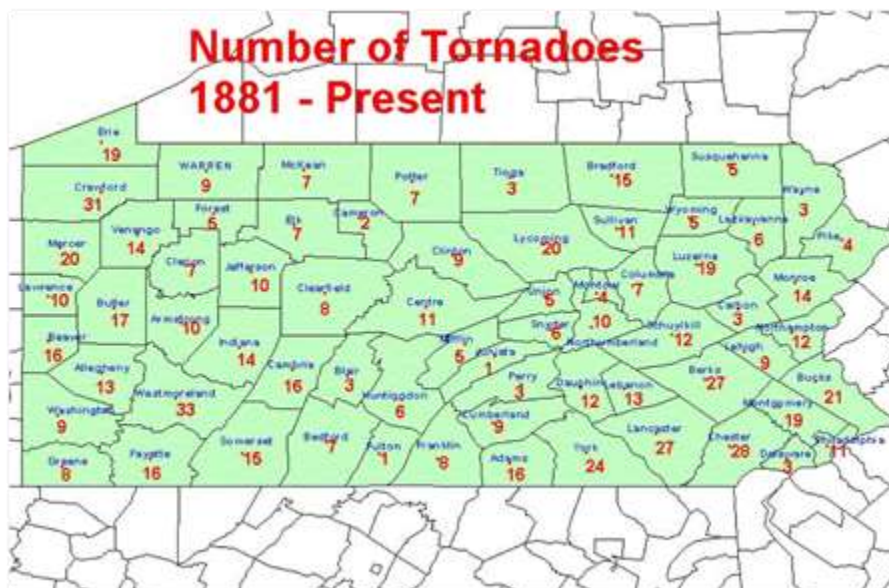
Saffir-Simpson Scale for Hurricane Classification				
Strength	Wind Speed (Kts)	Wind Speed (MPH)	Pressure (Millibars)	Pressure
Category 1	64- 82 kts	74- 95 mph	>980 mb	28.94 "Hg
Category 2	83- 95 kts	96-110 mph	965-979 mb	28.50-28.91 "Hg
Category 3	96-113 kts	111-130 mph	945-964 mb	27.91-28.47 "Hg
Category 4	114-135 kts	131-155 mph	920-944 mb	27.17-27.88 "Hg
Category 5	>135 kts	>155 mph	919 mb	27.16 "Hg
Tropical Cyclone Classification				
Tropical Depression		20-34kts		
Tropical Storm		35-63kts		
Hurricane		64+kts or 74+mph		

**4.3.9.3 PAST OCCURRENCE**

**Tornados**

Blair County has experienced just three tornados since recordkeeping began in 1881, the strongest registering the equivalent of an EF1 That said, there have been several tornado-like storms in the county, with subsequent analysis by meteorologists determining the damage was inconsistent with a tornado.

**Figure 4.3.9-2: Number of Tornados in PA (1881-Present)**



**Windstorm**

Blair County has experienced many severe wind events aside from hurricanes and tornados. Most often these are the result of intense thunderstorms, the strongest of which cause trees to fall, damage to power lines and power outages. From 1950 to December 2016, there are nearly 200 recorded severe wind events causing a total of ~\$5.3 million dollars in property damage. (National Centers for Environmental Information, 2017). Table 4.3.9-3: Storm Events in Blair County, 2013-2018 is a listing of storm events in the previous few years.

**Table 4.3.9-3: Storm Events in Blair County, 2013-2018**

<b>Storm Events in Blair County, 2013-2018</b>			
<b>Location</b>	<b>Date</b>	<b>Type</b>	<b>Property Damage</b>
Royer	January 30, 2013	Thunderstorm/Wind	\$5,000.00
Blair County	March 6, 2013	Heavy Snow	-
Tipton	May 10, 2013	Thunderstorm/Wind	\$2,500.00
Mill Run	May 10, 2013	Thunderstorm/Wind	\$10,000.00
Mill Run	May 10, 2013	Thunderstorm/Wind	-
Mill Run	May 10, 2013	Hail	-
Williamsburg	June 25, 2013	Thunderstorm/Wind	\$5,000.00
Mill Run	June 25, 2013	Thunderstorm/Wind	\$5,000.00
Curryville	July 7, 2013	Thunderstorm/Wind	\$2,000.00
Mill Run	November 1, 2013	Thunderstorm/Wind	-
Blair County	November 26, 2013	Ice Storm	-
Blair County	December 14, 2013	Winter Storm	-
Blair County	January 6, 2014	Extreme Cold/Wind Chill	-
Blair County	February 4, 2014	Winter Storm	-
Blair County	February 13, 2014	Heavy Snow	-
Lakemont	May 13, 2014	Hail	-
Canan	May 13, 2014	Thunderstorm/Wind	\$1,000.00
Blair County Airport	July 3, 2014	Thunderstorm/Wind	\$2,000.00
Mill Run	July 27, 2014	Thunderstorm/Wind	\$1,000.00
Hollidaysburg	July 27, 2014	Thunderstorm/Wind	\$1,000.00
Roaring Spring	July 27, 2014	Thunderstorm/Wind	\$1,000.00
Roaring Spring	July 27, 2014	Thunderstorm/Wind	\$1,000.00
Claysburg	July 27, 2014	Thunderstorm/Wind	\$1,000.00
Blair County	November 22, 2014	Winter Weather	-
Blair County	November 25, 2014	Heavy Snow	-
Blair County	February 15, 2015	Extreme Cold/Wind Chill	-
Blair County	February 19, 2015	Extreme Cold/Wind Chill	-
East Altoona	April 20, 2015	Funnel Cloud	-
Canan	April 20, 2015	Hail	-
Bellwood	April 20, 2015	Hail	-
Altoona	April 20, 2015	Hail	-
Mill Run	April 20, 2015	Hail	-
McKee	June 8, 2015	Thunderstorm/Wind	\$500.00
Mill Run	June 12, 2015	Thunderstorm/Wind	\$1,000.00
Roaring Spring	June 12, 2015	Thunderstorm/Wind	\$1,000.00
Bennington	June 20, 2015	Flash Flood	-
Bald Eagle	July 14, 2015	Hail	-
Blair County	January 22, 2016	Winter Storm	-
Blair County	February 15, 2016	Winter Storm	-
Klahr	February 12, 2017	Thunderstorm/Wind	\$3,000.00
Blair County	March 13, 2017	Winter Storm	-
Mill Run	April 30, 2017	Thunderstorm/Wind	\$15,000.00
Mount Etna	April 30, 2017	Thunderstorm/Wind	-
AOO Airport	May 1, 2017	Thunderstorm/Wind	\$7,000.00

## Blair Resilience: Addressing Vulnerability & Exposure

Greenwood	May 30, 2017	Hail	-
Sickles Corner	May 30, 2017	Thunderstorm/Wind	\$3,000.00
Bennington	June 15, 2017	Thunderstorm/Wind	\$1,000.00
Charlottesville	June 15, 2017	Thunderstorm/Wind	\$1,000.00
Reservoir	June 15, 2017	Flash Flood	-
Canan	August 4, 2017	Thunderstorm/Wind	\$3,000.00
Bellwood	August 4, 2017	Thunderstorm/Wind	\$2,000.00
Tyrone	August 4, 2017	Thunderstorm/Wind	\$2,000.00
Robeson Extension	August 19, 2017	Thunderstorm/Wind	\$4,000.00
Greenwood	August 19, 2017	Thunderstorm/Wind	\$4,000.00
Skelp	August 19, 2017	Thunderstorm/Wind	-
Newburg	August 19, 2017	Thunderstorm/Wind	-
Tyrone	August 19, 2017	Thunderstorm/Wind	\$15,000.00
Roaring Spring	August 19, 2017	Thunderstorm/Wind	\$3,000.00
Sproul	August 19, 2017	Thunderstorm/Wind	\$3,000.00
Geeseytown	August 19, 2017	Thunderstorm/Wind	\$50,000.00
Tunnelhill	January 12, 2018	Thunderstorm/Wind	\$1,000.00
Blair County	March 2, 2018	High Wind	-
Blair County	March 20, 2018	Winter Storm	-
Blair County	April 4, 2018	High Wind	-
New Portage Junction	July 2, 2018	Thunderstorm/Wind	\$3,000.00
Roots	July 2, 2018	Thunderstorm/Wind	\$3,000.00
Newburg	July 2, 2018	Flash Flood	-
Newburg	August 3, 2018	Flash Flood	-
Williamsburg	September 10, 2018	Flood	-
Blair County	November 15, 2018	Winter Storm	-

Source: National Centers for Environmental Information

### Hurricane

Table 4.3.9-4: History of Coastal Storms lists all coastal storms that have impacted Blair County from 1970 to October 2016. Although impacts of tropical storms are commonly felt in the Commonwealth, it is rare that a hurricane would track through Blair County.

**Table 4.3.9-4: History of Coastal Storms**

YEAR	NAME
1972	Tropical Storm Agnes
1999	Hurricane Floyd
2003	Tropical Storm Henri
2003	Tropical Storm Isabel
2004	Tropical Depression Ivan
2005	Hurricane Katrina
2006	Tropical Depression Ernesto
2008	Hurricane Ike
2011	Hurricane Irene
2011	Tropical Storm Lee
2012	Tropical Storm Sandy

#### 4.3.9.4 FUTURE OCCURENCE

##### Tornado & Windstorm

It is likely for a disastrous tornado to hit Blair County again. While the chance of being hit by a tornado is somewhat small, the damage that results when the tornado arrives can be devastating. An EF5 tornado with a 0.019 percent annual probability of occurring can carry wind velocities of 200 mph, resulting in a force of more than 100 pounds per square foot of surface area. This is a “wind load” that exceeds the design limits of most buildings.

Based on National Oceanic and Atmospheric Administration tornado activity information for Pennsylvania between 1982 and 2011, Blair County lies within an area has a 0.2% chance of having a tornado occur in any given year. Additionally, based on historic patterns, tornados are unlikely to remain on the ground for long distances, given the vertical topography of the county.

Unlike tornadoes, the high historical number of windstorms with winds over 50 knots indicates that annual chance of a windstorm is higher. According to the Federal Emergency Management Agency (Table 4.3.9-5: Annual Probability of Wind Speeds), there is high probability (92%) each year that Blair County will experience winds of 45-77 mph, however there is under a 10% chance of winds of 78-118 mph.

**Table 4.3.9-5: Annual Probability of Wind Speeds**

Wind Speed	Saffir-Simpson Scale	Annual Probability of Occurrence (%)
45-77	Tropical Storm / Category 1 Hurricane	91.59
79-118	Category 1 to 2 Hurricane	8.32
119-138	Category 2 to 3 Hurricane	0.08
139-163	Category 3 to 4 Hurricane	0.0086
164-194	Category 4 to 5 Hurricane	0.00054
195+	Category 5 Hurricane	0.00001

##### Hurricane

Although hurricanes and tropical storms can cause flood events consistent with 100 and 500-year flood levels, the probability of the occurrence of hurricanes and tropical storms is measured relative to wind speed. Table 4.3.9-5: Annual Probability of Wind Speeds shows the annual probability of winds that reach the strength of tropical storms and hurricanes in Blair County and the surrounding areas based on a sample period of 6 years. The National Oceanic and Atmospheric Administration’s Hurricane Research Division estimates that Blair County will experience impacts from a named tropical storm or hurricane with a probability of less than 10% annually.

Climate change is causing atmospheric temperatures to rise, which corresponds to a rise in ocean surface temperatures, resulting in warmer and moister conditions where tropical storms develop (Stott et al., 2010). Warmer oceans store more energy, and are capable of fueling stronger storms and it is projected that Atlantic hurricanes will become more intense and produce more precipitation as ocean surface temperatures rise (Trenberth, 2010). There are expected to be more category 4 and 5 hurricanes in the Atlantic, and the hurricane season may be elongating. Blair County can be affected by Atlantic coastal

storms, so the county should be prepared to deal with impacts of coastal storms more frequently in the future.

#### **4.3.9.5 VULNERABILITY ASSESSMENT**

##### **Tornado & Windstorm**

Tornados can occur at any time of the year, though they're more likely during peak months, which are during the summer for the northern part of the United States. Tornados are most likely to occur between 3 P.M and 9 P.M. but have been known to occur at all hours of the day or night. Factors that impact the amount of damage caused by a tornado are the strength of the tornado, the time of day and the area of impact. Usually such distinct funnel clouds are localized phenomena impacting a small area, however, the high winds of tornados make them one of the most destructive natural hazards.

There can be many secondary impacts of tornados and windstorms, including transportation accidents, hazardous material spills, flooding, and power outages. A proper warning system is vital for the public to be informed of what to do and where to go. Because of the abundance of forested areas in Blair, numerous hikers and hunters visit Blair County annually. In the event of a tornado or severe storm, these tourists and hunters have limited emergency notification measures.

Dangers that accompany thunderstorms which can produce tornados:

- Flash floods – with 146 deaths annually nationwide
- Lightning – 75 to 100 deaths annually nationwide
- Damaging straight-line winds – reaching 140 mph wind speed
- Large hail – can reach the size of a grapefruit and causes several hundred million dollars in damages annually to property and crops.

Critical facilities are highly vulnerable to high wind storms. While many severe storms can cause exterior damage to structures, tornados can also completely destroy structures, along with their surrounding infrastructure, abruptly halting operations. Severe storms and their secondary effects often accompanying tornados and can be just as threatening to the critical facilities within the county. Many critical facilities are particularly vulnerable to power outages which can leave facilities functionless, potentially crippling infrastructure supporting the population of the county. With a storm's ability to destroy structures, citizens and their possessions are often left at the will of the storm. The elderly and disabled people are vitally at risk when faced with tornados. Without assistance to evacuate, they may be unable to prepare themselves or their homes and other possessions to safely weather the storm.

The local economy can also be crippled by tornados and windstorms and their secondary effects when buildings and supporting infrastructure are destroyed in the storm. Power outages can create work stoppages while transportation accidents and road closings can limit the transportation of goods and services. Additionally, flooding cannot be discounted as it can destroy the physical structures, merchandise and equipment essential for business operation. In the case of hazardous material spills caused by windstorms, the local environment can also be negatively impacted, requiring extensive clean-up and mitigation efforts.



**Hurricane**

While Blair County is located somewhat distantly from the Atlantic coast, hurricanes and tropical storms tracking nearby can still cause high winds and heavy rains. A vulnerability assessment for hurricanes and tropical storms focuses on the impacts of flooding and severe wind. The assessment for flood-related vulnerability is addressed in Section 4.3.4.

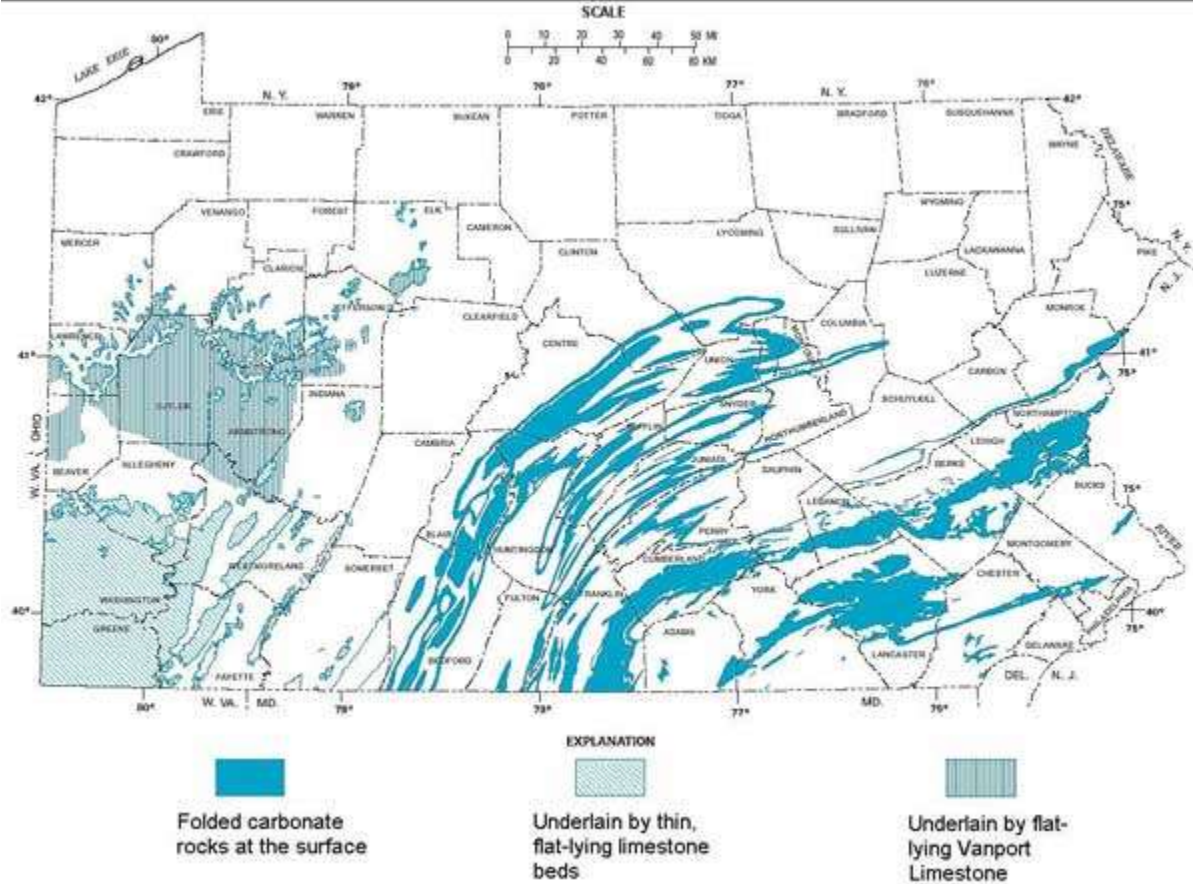
<b>Municipal Hazard Vulnerability Assessment</b>	
Planning Region 1	Extreme western fringe is more wind-vulnerable as it makes up the Allegheny Front. Ridgetops are also at increased windstorm risk.
Planning Region 2	Extreme western fringe is more wind-vulnerable as it makes up the Allegheny Front. Brush Mountain is also at increased windstorm risk.
Planning Region 3	Extreme western fringe is more wind-vulnerable as it makes up the Allegheny Front. Brush Mountain is also at increased windstorm risk.
Planning Region 4	Consistent with the general profile
Planning Region 5	Extreme western fringe is more wind-vulnerable as it makes up the Allegheny Front. Ridgetops are also at increased windstorm risk.
Planning Region 6	Morrisons Cove has a high potential for crop damage from strong storms
Planning Region 7	Extreme western fringe is more wind-vulnerable as it makes up the Allegheny Front. Dunnings Mountain is also at increased windstorm risk.

**4.3.10. SUBSIDENCE AND LANDSLIDE**

**4.3.10.1 LOCATION AND EXTENT**

Subsidence refers to gradual caving in, sinking or collapse of an area of land. Many areas of Pennsylvania have bedrock conditions that lend themselves to subsidence events. Carbonate rock like limestone and dolomite is easily eroded and dissolved by water, so if an area has carbonate bedrock, that area is susceptible to subsidence because groundwater may erode and dissolve the carbonate rock, leading to the creation of caves, swales, sinkholes and other forms of subsidence. These types of features are generally referred to as karst topography. The karst topography in Pennsylvania is shown in Figure 4.3.10-1. Areas with coal or other mineral deposits which use deep mining techniques may become susceptible to subsidence. Poor engineering practices used at the time of withdrawal or progressive degradation in geological stability can increase the risk of subsidence. Blair County historically was lightly mined, and little to no subsidence can be traced to past mining practices.

Landslides are described as downward and outward movement of slope-forming soil, rock and vegetation reactive to the force of gravity. Rockfalls, rockslides, rock topples, block glides, debris flows, mudflows and mudslides are all forms of landslides. Natural causes of landslides include heavy rain, rapid snow melt, erosion, earthquakes and changes in groundwater levels. Landslides occur most frequently in areas with moderate to steep slopes and high precipitation, and most often slope failures happen during or after periods of sustained above average precipitation or snowmelt events. Human activity can increase the likelihood of landslides by reducing vegetation cover, altering the natural slope gradient or increasing the soil water content. One location where this type of human activity is common are areas that were excavated along highways and other roadways.

**Figure 4.3.10-1: Karst-Related Topography in Pennsylvania**

#### 4.3.10.2 RANGE AND MAGNITUDE

No two subsidence areas or sinkholes are exactly alike. Variations in size and shape, time period under which they occur (i.e. gradually or abruptly), and their proximity to development ultimately determines the magnitude of damage incurred. Events could result in minor elevation changes or deep, gaping holes in the ground surface. Subsidence and sinkhole events can cause severe damage in urban environments, although gradual events can be addressed before significant damage occurs.

Problems related to subsidence include the disruption of utility services and damages to private and public property including buildings, roads, and underground infrastructure. Incidents of subsidence throughout the coal regions over the years have affected houses, garages, and trees that have been swallowed up by subsidence holes. Lengths of local streets and highways, and countless building foundations have been damaged.

Landslides can cause damage to utilities as well as transportation routes, resulting in road closure or travel delays. Fortunately, deaths and injuries due to landslides are rare in Pennsylvania. Most reported deaths due to landslides have occurred when rockfalls or other slides along highways have involved vehicles. Storm-induced debris flows can also sometimes cause death and injury. As residential and recreational development increases on and near steep mountain slopes, the hazard from these rapid

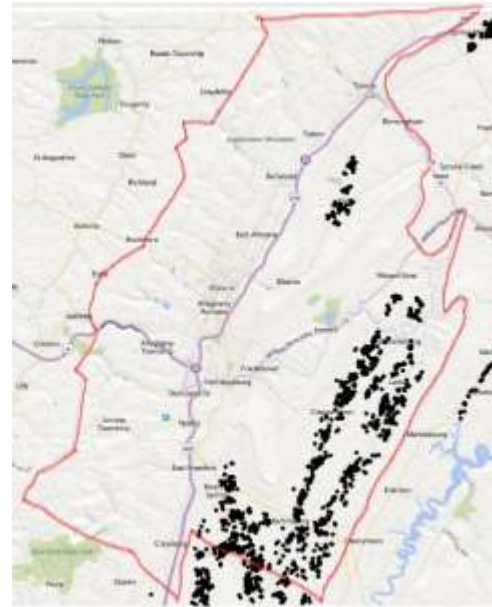
events will also increase. Most Pennsylvania landslides are moderate to slow moving and damage property rather than people.

The Pennsylvania Department of Transportation and large municipalities incur substantial costs due to landslide damage and to extra construction costs for new roads in known landslide-prone areas. A 1991 estimate showed an average of \$10 million per year is spent on landslide repair contracts across the Commonwealth and a similar amount is spent on mitigation costs for grading projects. A number of highway sites in Pennsylvania are in need of permanent repair at estimated costs of \$300,000 to \$2 million each (Pennsylvania the Department of Conservation and Natural Resources, 2010).

Figure 4.3.10-2: Blair County Sinkhole Inventory Database

#### 4.3.10.3 PAST OCCURRENCE

The Department of Conservation and Natural Resources provides an online Sinkhole Inventory Database, (shown at right) which lists a total of 2,665 identified natural karst topographic features in Pennsylvania as of 2009. Such features in Blair County occur in two valleys – Morrison Cove, and the aptly-named Sinking Valley (Department of Conservation and Natural Resources, 2009), see Figure 4.3.10-2. Many of these are known depressions in farm fields, creating ‘ghost lakes’ and reduced crop production in the specific area of the depression. No major sinkhole openings or property damage has occurred in the last quarter century within the county. Blair County contains twelve sites identified in the Pennsylvania Department of Environmental Protection’s Abandoned Mined Land Inventory, all but one of which are located in watershed protection areas. There are no major landslides on record for Blair County.



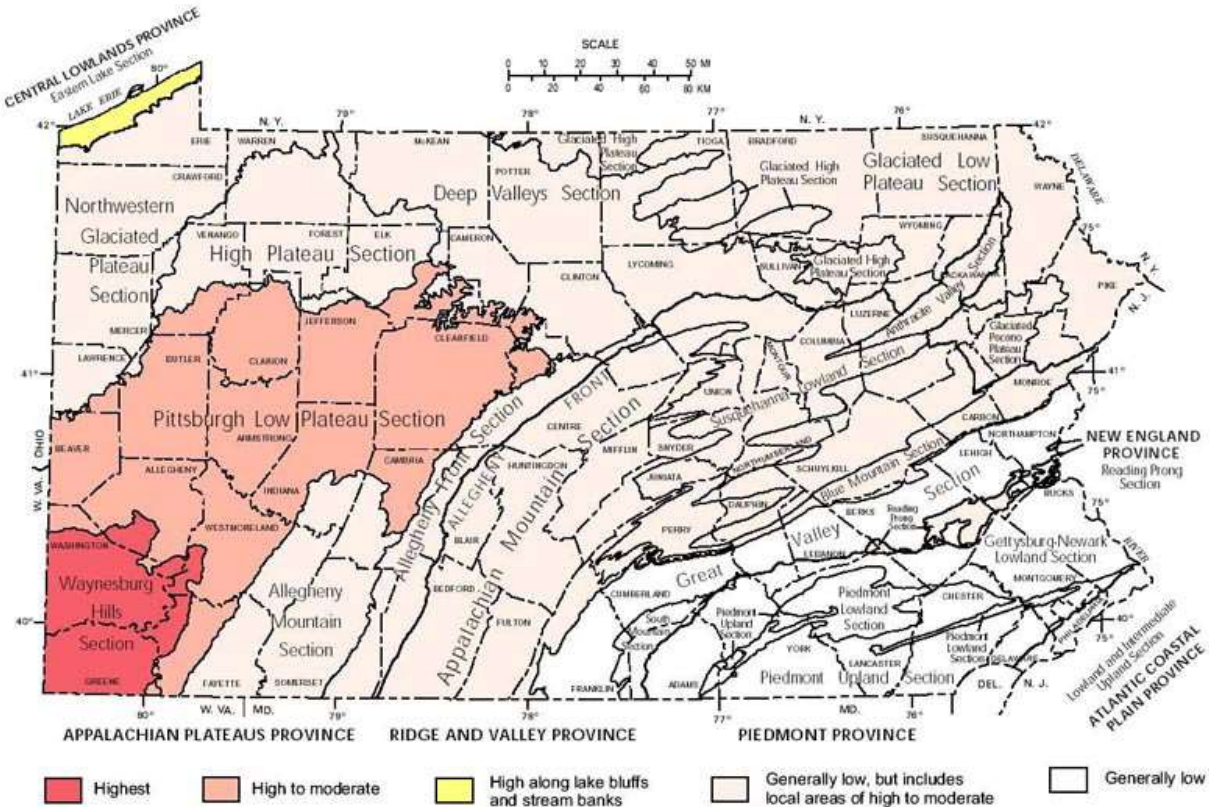
#### 4.3.10.4 FUTURE OCCURRENCE

Subsidence is not likely, based on past history, but certainly not impossible. The natural conditions contributing to subsidence and sinkholes are located in agricultural or forest areas. The specific sinkhole sites identified are in fields and away from buildings. The mining sites are also away from structures and settled area. These conditions combine to sustain a minor threat of subsidence, but past experience and specific locations indicate the impact would be low.

Based on historical events, landslides are not a serious risk for most land in Blair County, but some locations are prone to the possibility. Figure 4.3.10-3: Landslide Susceptibility shows the relative threat that landslides pose to regions in Pennsylvania. Blair County falls entirely within the zone of “generally low, but includes local areas of high to moderate” susceptibility. Areas of steep slopes associated with the banks of major watercourses in the county could collapse under heavy rainfall to produce a localized landslide. In addition, steep slopes without vegetation around the many roadcuts throughout the County are also at-risk areas for landslides. US 22 east of Canoe Creek is a known area where minor landslide have occurred, and will likely continue intermittently, although recent work by the Pennsylvania

Department of Transportation should mitigate both the threat and the impact in this location. Mismanaged intense development in steeply sloped areas could increase the frequency of occurrence.

**Figure 4.3.10-3: Landslide Susceptibility**



**4.3.10.5 VULNERABILITY ASSESSMENT**

The majority of Blair County is not particularly vulnerable to landslides. However, transportation routes throughout the county located at the base or crest of cliffs should be considered vulnerable to this hazard. A well-documented database of these locations is not available at this time. Landslides are often precipitated by other natural hazards such as earthquakes or floods, and a serious landslide can cause millions of dollars in damages. Continued enforcement of floodplain management and proper road and building construction helps to mitigate the threat of landslides. Surface water may permeate into areas that have open fractures and the build-up of surface water in fractures could lead to unexpected slide events.

Abandoned mine sites are susceptible to subsidence events, and all mining activity in Blair County has been along the Allegheny Front in the western part of the county. All but one of these old mines are in watershed protection areas, however should a property owner desire insurance, Mine Subsidence Insurance is available through the Pennsylvania Department of Environmental Protection. If citizens are aware of areas of Blair County which have been mined, but are not identified herein, the Pennsylvania Department of Environmental Protection Mine Subsidence Insurance department can be contacted at 1-800-922-1678 to have a site-specific request conducted.

Mine abandonment makes streams vulnerable to acid mine drainage. As all but one mine is located in the watershed areas of the county, this threat has been largely mitigated through the diligent efforts of local municipal water authorities. One impacted creek, Kittanning Run, still contains high levels of mine drainage. The final closure of the Cooney Brothers Mine at the headwaters of this rill should enable its cleanup and eliminate the threat the drainage poses to downstream interests.

<b>Municipal Hazard Vulnerability Assessment</b>	
Planning Region 1	Increased risk in Sinking Valley shown on above maps and geological research
Planning Region 2	Consistent with the general profile
Planning Region 3	Known 'bottomless' void under most of Dutch Hill in the City of Altoona
Planning Region 4	Consistent with the general profile
Planning Region 5	Consistent with the general profile
Planning Region 6	Increased risk in Morrison Cove shown on above maps and geological research
Planning Region 7	Consistent with the general profile

### **4.3.11. TERRORISM**

#### **4.3.11.1 LOCATION AND EXTENT**

Following several serious international and domestic terrorist incidents during the 1990's and early 2000's, citizens across the United States paid increased attention to the potential for deliberate, harmful actions of individuals or groups. The term "terrorism" refers to intentional, criminal, malicious acts. The functional definition of terrorism can be interpreted in many ways. Officially, terrorism is defined in the Code of Federal Regulations as "...the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives." (28 CFR §0.85).

The Federal Bureau of Investigation further characterizes terrorism as either domestic or international, depending on the origin, base, and objectives of the terrorist organization. However, the origin of the terrorist or person causing the hazard is far less relevant to mitigation planning than the hazard itself and its consequences.

Critical facilities are either in the public or private sector that provide essential products and/or services to the general public. Critical facilities are often necessary to preserve the welfare and quality of life in the County, or fulfill important public safety, emergency response, and/or disaster recovery functions. Critical facilities identified in the county are shelters; gas, electric and communication utilities; hospitals and other health care facilities; water and wastewater treatment plants, hazardous waste sites; and schools.

In addition to critical facilities, the county contains at risk populations that should be factored into a vulnerability assessment. These populations include not only the residents and workforce in the County, but also the tourists that visit the area on a daily basis, those that are traveling through the county on any of the interstate or major highways, marginalized groups, and racial minorities. Potential targets for attack include:

- Commercial facilities
- Abortion or Family Planning Clinics and other organizations associated with controversial issues.
- Education facilities

- Events attracting large amounts of people
- Places of worship
- Industrial facilities, especially those utilizing large quantities of hazardous materials
- Transportation Infrastructure
- Historical sites
- Government Facilities

#### 4.3.11.2 RANGE OF MAGNITUDE

Terrorism refers to the use of Weapons of Mass Destruction (including, biological, chemical, nuclear, and radiological weapons) arson, incendiary, explosive, armed attacks, industrial sabotage, intentional hazardous materials releases and cyber-terrorism. Within these general categories, however, there are many variations. Particularly in the area of biological and chemical weapons, there are a wide variety of agents and ways for them to be disseminated. Terrorist methods can take many forms, including:

- Active Shooter
- Agri-terrorism
- Arson/incendiary attack
- Armed attack
- Biological agent
- Chemical agent
- Cyber-terrorism
- Conventional bomb or bomb threat
- Hazardous material release (intentional)
- Nuclear bomb
- Radiological agent



Cyber terrorism is becoming increasingly prevalent. Cyber terrorism can be defined as activities intended to damage or disrupt vital computer systems. These acts can range from taking control of a host website to using networked resources to directly cause destruction and harm. Protection of databases and infrastructure are the main goals for a safe cyber environment. Cyber terrorists can be difficult to identify because the internet provides a meeting place for individuals from various parts of the world. Individuals or groups planning a cyber-attack are not organized in a traditional manner, as they are able to effectively communicate over long distances without delay. The largest threat to institutions from cyber terrorism comes from any processes that are networked and controlled via computer. Any vulnerability that could allow access to sensitive data or processes should be addressed and any possible measures taken to harden those resources to attack.

#### 4.3.11.3 PAST OCCURRENCE

Active shooters, as defined by the US Department of Homeland Security, is an individual actively engaged in killing or attempting to kill people in a confined area; in most cases, active shooters use firearm[s] and there is no pattern or method to their selection of victims. One of the more recent high-profile shootings occurred at the Pulse Nightclub in Orlando, Florida on June 12, 2016 where a marginalized community was targeted - 49 people were killed and 53 were wounded. A few other significant active shooter events include those that occurred at Virginia Tech (April 2007), Sandy Hook Elementary School (December

2012), San Bernardino California (December 2015), an Aurora, Colorado movie theater (July 2012) and a church in Charleston South Carolina (June 2015). A 2014 study by the Federal Bureau of Investigation concluded that there has been a significant recent increase in frequency of active shooter incidents, and the vast majority (154 of 160 shooters between 2000 and 2013) were male (United States Federal Bureau of Investigation, 2014). Of these 160 incidents, 45.6% took place in commercial environments, 24.3% took place in an educational environment, and the remaining 30.1% took place at other locations such as open spaces, military and other government properties, residential locations, houses of worship, and health care facilities (United States Federal Bureau of Investigation, 2014).

Significant international terrorism incidents in the United States include: the World Trade Center bombing in 1993, the bombing of the Murrow Building in Oklahoma City in 1995, and the September 11th 2001 attack on the World Trade Center. Blair County has not been directly impacted by any significant international terrorist incidents.

While the largest scale terrorist incidents have largely had international stimulus, many other incidents are caused by home grown actors who may have become radicalized through hate groups either in real life or online, and who may have mental health struggles. Hate groups such as the Ku Klux Klan, Aryan Nation and, more recently, the Alt-Reich have in one way or another been a part of domestic terrorism in different forms.

Two high volume highways traverse Blair County: US 22 runs east-west, and I-99 runs north-south. Additionally, the mainline of the railroad runs from just east of Tyrone to just west of the Horseshoe Curve in Blair County – a generally north-south direction between Tyrone and Altoona. The sheer number of people and goods traveling on these routes makes them potential targets.

#### **4.3.11.4 FUTURE OCCURRENCE**

The likelihood of Blair County being a primary target for a major international terrorist attack is somewhat small. More likely terrorist activity in Blair County are bomb threats or incidents at schools. It is more likely that the county transportation system will be used to carry the implements or perpetrators of terrorism to their ultimate targets.

#### **4.3.11.5 VULNERABILITY ASSESSMENT**

The probability of terrorist activity is more difficult to quantify than some other hazards. Instead of considering likelihood of occurrence, vulnerability is assessed in terms of specific assets. By identifying potentially at-risk terrorist targets in a community, planning efforts can be put in place to reduce the risk of attack. Planning should work towards identifying potentially at-risk critical facilities and systems in the community, prioritizing those assets and locations, and identify their vulnerabilities relative to known potential threats.

All communities in Blair County are vulnerable on some level, directly or indirectly, to a terrorist attack. However, communities where critical facilities are located should be considered more vulnerable. Site-specific assessments should be based on the relative importance of a particular site to the surrounding community or population, threats that are known to exist and vulnerabilities. Site managers, risk assessors, and emergency managers should consider the following questions:

**Inherent vulnerability:**

- Visibility – How aware is the public of the existence of the facility?
- Utility – How valuable might the place be in meeting the objectives of a potential terrorist?
- Accessibility – How accessible is the place to the public?
- Asset mobility – is the asset’s location fixed or mobile?
- Hazardous materials – Are flammable, explosive, biological, chemical, and/or radiological materials present on site? If so, are they well secured?
- Collateral damage – What are the potential consequences for the surrounding area if the asset is attacked or damaged?
- Occupancy – What is the potential for mass casualties based on the maximum number of individuals on-site at a given time?

**Tactical vulnerability:**

- Site planning and Landscape Design – Is the facility designed with security in mind – both site-specific and with regard to adjacent land uses?
- Parking Security – Are vehicle access and parking managed in a way that separates vehicles and structures?
- Structure – Is the building’s envelope designed to be blast-resistant? Does it provide collective protection against chemical, biological, and radiological contaminants?
- Interior Space – Does security screening cover all public and private areas?
- Mechanics – Are utilities and heating, ventilation, and air conditioning systems protected and/or backed up with redundant systems?
- Electrical – Are emergency power and telecommunications available? Are alarm systems operational? Is lightning sufficient?
- Fire Protection – Are the building’s water supply and fire suppression systems adequate, code-compliant, and protected? Are on-site personnel trained appropriately? Are local first responders aware of the nature of the operations at the facility?
- Security – Are systems and personnel in place to monitor and protect the facility?

<b>Municipal Hazard Vulnerability Assessment</b>	
Planning Region 1	Consistent with the general profile
Planning Region 2	Consistent with the general profile
Planning Region 3	Consistent with the general profile
Planning Region 4	Consistent with the general profile
Planning Region 5	Consistent with the general profile
Planning Region 6	Consistent with the general profile
Planning Region 7	Consistent with the general profile



### **4.3.12. UTILITY INTERRUPTIONS**

#### **4.3.12.1 LOCATION AND EXTENT**

Utility interruption includes any impairment of the functioning of telecommunication, gas, electric, water, or waste networks. These interruptions or outages occur because of geomagnetic storms, fuel or resources shortage, electromagnetic pulses, information technology failures, transmission facility or linear utility accident, and major energy, power, or utility failure. The focus of utility interruptions as a hazard lies in fuel, energy, or utility failure; this hazard is often secondary to other natural hazard events, particularly transportation accidents, lightning strikes, extreme heat or cold events, and coastal and winter storms.

Utility interruptions occur throughout the Commonwealth but usually are small-scale, localized incidents. Utility interruptions are possible anywhere there is utility service. This hazard has the potential to affect a significant number of Pennsylvanians. According to the 2016 estimates of the American Community Survey, there are 5.6 million occupied housing units in the Commonwealth. The United States Energy Information Administration estimates that 51 percent of these households use natural gas as their main heating fuel, while 22 percent use electricity to heat their home, and 18 percent use fuel oil (United States Energy Information Administration, 2018). This means that should a utility interruption occur statewide, nearly 4.6 million households could be without heat or cooling.

An emerging utility concern is the overall dependence on internet access. Telecommunications companies operate throughout the Commonwealth; each of these is subject to outages of a few minutes to weeks.

Solar flares are concentrated releases of magnetic energy that emanate from sunspots, and can last for minutes or hours. Solar flares can also cause coronal mass ejections from the outer solar atmosphere which are large clouds of plasma and magnetic field which induce geomagnetic currents when they reach the surface of Earth. A combination of these events can be referred to as solar storms or solar weather. Solar weather only impacts Earth when it occurs on the side of the sun that is actively facing Earth. A severe solar storm can have a geographically wide-ranging impact that can last for days or weeks (National Aeronautics and Space Administration, 2016). Most significantly, a severe solar storm has the potential to disrupt power grids, resulting in rolling blackouts.

Minor solar flares have no negative impacts on Earth thanks to the protection afforded by Earth's magnetic field and atmosphere. In fact, minor solar flares cause beautiful visual displays known as the Northern Lights or Aurora Borealis. However, severe solar storms can cause an electromagnetic pulse that is able to break through Earth's magnetic field and send current to Earth's surface, inducing geomagnetic currents. Geomagnetically induced currents impact the electrical grid and can cause transformers to burn and fail, potentially knocking out wide swatches of electricity infrastructure resulting in blackouts (Phillips, 2009).

#### **4.3.12.2 RANGE OF MAGNITUDE**

The most severe utility interruptions will be regional or widespread power and telecommunications outages. With the loss of power, electrical powered equipment and systems will not be operational. Examples may include: lighting; heating/ventilation/air conditioning and ancillary support equipment; communication (e.g., public-address systems, telephone, computer servers, and peripherals); ventilation

systems; fire and security systems; refrigerators, sterilizers, trash compactors, office equipment; and medical equipment. Power outages can cause food spoilage, loss of heat or air conditioning, basement flooding (sump pump failure), lack of light, loss of water (well pump failure), lack of phone service, or lack of internet service. However, this is most often a short-term nuisance rather than a catastrophic hazard.

The severity of a utility interruption can be compounded with extreme weather events, especially winter weather events. Interruptions can also be more severe for special needs populations that are dependent on electronic medical equipment. Utility interruptions can significantly hamper first responders in their efforts to provide aid in a compound disaster situation, especially with losses of telecommunications and wireless capabilities. Telecommunications interruptions will also hinder first responders' efforts. Additionally, an internet outage could be crippling to the economy of the state; for example, the many firms no longer cut checks except when absolutely necessary. Instead, payroll and invoicing is done electronically.

In a possible worst-case scenario, a winter storm event causes widespread power outages, leaving citizens without heat in the midst of subzero temperatures. The power outage also means that elderly populations or others at risk of health problems due to the lack of heat are unable to call for assistance or leave their homes. Power lines are unable to be repaired because of the magnitude of the storm, and the power outage lasts for several days.

#### **4.3.12.3 PAST OCCURRENCE**

Utility interruptions are largely minor, routine events, but there have been several Presidential and Gubernatorial Disaster Declarations in which a utility interruption was a major component of a disaster. A series of bankruptcies in 1972 led the major steam heat provider in Lower Merion Township to cut off heat to residents with no intention of resuming service in the wintertime; the governor declared the event a disaster. December 1974 brought heavy snow that led to widespread power outages in the Southwestern Counties, leading to a Gubernatorial Disaster Declaration. In January 1977, the nation's gas shortage coupled with severe winter weather led to a President's Declaration of Emergency. In March 2018, four nor'easters struck southeastern Pennsylvania, affecting Philadelphia, Delaware, Montgomery, Chester, Lehigh, Pike, Carbon, and Northampton counties. The storms' high winds and heavy snowfall caused down trees and powerlines, leaving an estimated 500,000 customers without power (Pennsylvania Emergency Management Agency, 2018).

According to data compiled by the Pennsylvania Public Utility Commission, rain and high winds are the most common cause of utility interruptions. In 2016, for example, 17 of the 20 electricity interruption events reported to PUC were caused by rain and high winds. These 20 events affected a total of 784,602 electricity customers in the course of the year.

From August 28 to September 4 of 1859, two severe solar storms resulted in widespread auroral displays in North and South America, Europe, Asia, Australia, and as far south as Hawaii and Cuba (Baker et al., 2008). The event is known as the Carrington Event, and resulted in the widespread disruption of telegraph lines, even setting fire to some telegraph offices (Phillips, 2014). The Carrington Event is estimated to be one of the strongest recorded geomagnetic storm events.

In March of 1989, a severe geomagnetic storm caused a widespread blackout (occurring within 90 seconds) in northeastern Canada's Hydro-Quebec power grid, resulting in millions being without

electricity for 9 hours (Baker et al., 2008). Currents from this event are estimated to be ten times less than those induced in the May 1921 event.

On May 14 of 1921, a geomagnetic storm produced ground currents that are estimated to be half as strong as the Carrington event, but ten times stronger than the 1989 event.

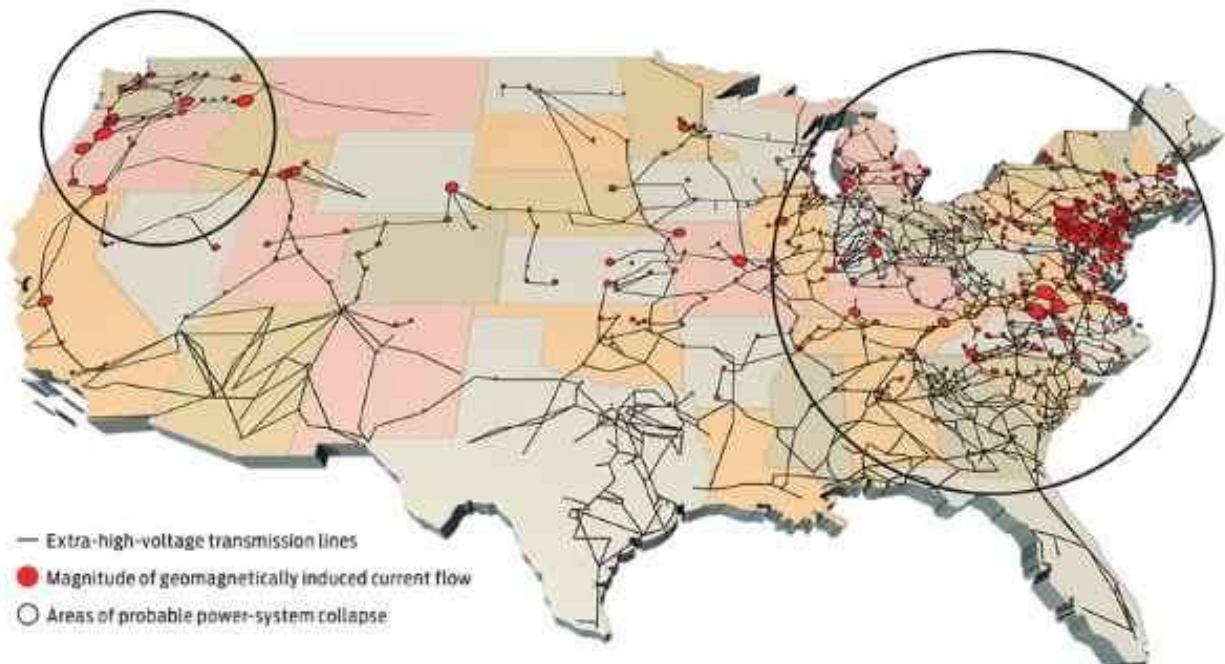
In July of 2012, a powerful solar storm produced an intense coronal mass ejection, estimated to be possibly stronger than the Carrington Event (Baker et al., 2013). Fortunately, due to the position of the event and the location of Earth in its orbit, the event missed Earth by as little as a week (Phillips, 2014). The STEREO-A spacecraft was however was in the line of fire, and was able to record valuable data on the event (Baker et al., 2013).

#### 4.3.12.4 FUTURE OCCURRENCE

Minor, short-term outage events may occur several times a year for any given area in Blair County, while major, widespread and long-term events may take place once every few years. Energy Emergencies are most often caused by severe weather events, therefore, citizens should prepare for them during severe storms.

It is estimated that the probability of occurrence in the next ten years of an extreme space weather event at the scale of the Carrington Event is twelve percent (Riley, 2012). If a solar storm on the scale of the 1921 event impacted our modern electricity infrastructure, it could permanently damage an estimated 350 transformers, and cause blackouts for 130 million people (Figure 4.3.12-1: Potential Electricity Grid Failure) (Baker et al., 2008).

**Figure 4.3.12-1: Potential Electricity Grid Failure**



#### 4.3.12.5 VULNERABILITY ASSESSMENT

All municipalities in Blair County are vulnerable to energy emergencies. Critical facilities such as emergency medical facilities, retirement homes and senior centers are particularly vulnerable to power outages. While back-up generators are often used at these facilities, loss of electricity accompanied by temperature extremes can be dangerous for elderly and other high-risk populations.

Extreme temperatures can disrupt fuel and electricity supplies, with extreme cold weather triggering a higher demand for heating oil and natural gas as well as causing low gas pressure, and extreme hot weather possibly overloading electrical grids resulting in blackouts. The majority of the county uses either natural gas or fuel oil as a fuel source. The pumping systems supplying these fuels are vulnerable to power supply loss, thereby exposing the population to a loss of fuel supply.

The National Oceanic and Atmospheric Administration monitors solar activity from the Space Weather Prediction Center, and is able to alert power grid operators of the impending geomagnetic storm so they may make efforts to protect the grid from geomagnetically induced currents (Baker et al., 2008). Events such as the 1989 Hydro-Quebec blackout have illuminated the hazard that solar storms pose to electricity infrastructure, however modern power grids are more vulnerable than ever. Power grids have become increasingly interconnected, improving efficiency in many ways, but also making them more vulnerable to wide ranging rolling failures as illustrated in Figure 4.3.12-1: Potential Electricity Grid Failure (Baker et al., 2008).

Geomagnetic storms can cause permanent damage to transformers that could result in much longer restoration times than experienced in the 1989 Hydro-Quebec outage. Transformer damage occurs when geomagnetically induced currents cause excessive internal heating resulting in melting and burning of many large-amperage copper windings and leads. Such damage cannot be repaired, and the damaged transformer must be replaced. Transformers are extremely large and heavy apparatuses, and replacement can be a long process, suggesting that efforts should be taken to protect resident transformers from geomagnetically induced currents. A workshop held by the Committee on the Societal and Economic Impacts of Severe Space Weather Events offered solutions to mitigating negative impacts of geomagnetically induced currents, suggesting that supplemental transformer neutral ground resistors should be installed because they are relatively inexpensive, have low engineering trade-offs, and can produce 60-70 percent reduction of geomagnetically induced current levels during severe solar storms (Baker et al., 2008).

The Department of Homeland Security has a Solar Storm Mitigation effort, which “aims to provide owners and operators of the electricity grid with advanced and actionable information about anticipated geomagnetically induced current levels in the event of a solar storm” (United States Government Accountability Office, 2017). According to the United States Department of Homeland Security, when provided with accurate solar storm warnings, utility operators can “make operational decisions to mitigate the impacts from solar storms. This can range from canceling maintenance work to temporarily shutting down vulnerable grid components and preventing permanent damage” (United States Department of Homeland Security, 2015).

Figure 4.3.12-2: National Oceanic and Atmospheric Administration Geomagnetic Storm Scale

Scale	Description	Effect
G 5	<b>Extreme</b>	<b>Power systems:</b> Widespread voltage control problems and protective system problems can occur, some grid systems may experience complete collapse or blackouts. Transformers may experience damage. <b>Spacecraft operations:</b> May experience extensive surface charging, problems with orientation, uplink/downlink and tracking satellites. <b>Other systems:</b> Pipeline currents can reach hundreds of amps, HF (high frequency) radio propagation may be impossible in many areas for one to two days, satellite navigation may be degraded for days, low-frequency radio navigation can be out for hours, and aurora has been seen as low as Florida and southern Texas (typically 40° geomagnetic lat.).
G 4	<b>Severe</b>	<b>Power systems:</b> Possible widespread voltage control problems and some protective systems will mistakenly trip out key assets from the grid. <b>Spacecraft operations:</b> May experience surface charging and tracking problems, corrections may be needed for orientation problems. <b>Other systems:</b> Induced pipeline currents affect preventive measures, HF radio propagation sporadic, satellite navigation degraded for hours, low-frequency radio navigation disrupted, and aurora has been seen as low as Alabama and northern California (typically 45° geomagnetic lat.).
G 3	<b>Strong</b>	<b>Power systems:</b> Voltage corrections may be required, false alarms triggered on some protection devices. <b>Spacecraft operations:</b> Surface charging may occur on satellite components, drag may increase on low-Earth-orbit satellites, and corrections may be needed for orientation problems. <b>Other systems:</b> Intermittent satellite navigation and low-frequency radio navigation problems may occur, HF radio may be intermittent, and aurora has been seen as low as Illinois and Oregon (typically 50° geomagnetic lat.).
G 2	<b>Moderate</b>	<b>Power systems:</b> High-latitude power systems may experience voltage alarms, long-duration storms may cause transformer damage. <b>Spacecraft operations:</b> Corrective actions to orientation may be required by ground control; possible changes in drag affect orbit predictions. <b>Other systems:</b> HF radio propagation can fade at higher latitudes, and aurora has been seen as low as New York and Idaho (typically 55° geomagnetic lat.).
G 1	<b>Minor</b>	<b>Power systems:</b> Weak power grid fluctuations can occur. <b>Spacecraft operations:</b> Minor impact on satellite operations possible. <b>Other systems:</b> Migratory animals are affected at this and higher levels; aurora is commonly visible at high latitudes (northern Michigan and Maine).

Municipal Hazard Vulnerability Assessment	
Planning Region 1	Consistent with the general profile
Planning Region 2	Consistent with the general profile
Planning Region 3	Potential large impact due to population density.
Planning Region 4	Potential prolonged impact due to rural area and topographical exposure
Planning Region 5	Potential moderate impact due to population
Planning Region 6	Potential prolonged impact due to rural area
Planning Region 7	Consistent with the general profile

### 4.3.13. WINTER STORMS

#### 4.3.13.1 LOCATION AND EXTENT

There are an average of thirty five winter weather events in Pennsylvania each year and such winter storms are regional events, so each county in Pennsylvania shares these hazards. However, the northern tier, western counties and mountainous regions (including parts of Blair County) generally experience storms more frequently and with a greater severity due to lake effects. Within Blair County there are variations in the average amount of snowfall that is received throughout the county because of terrain differences; higher elevations experience greater snowfalls than lower-lying areas.

On occasion Blair County can be affected by a Nor'easter, depending on its track. A Nor'easter is a storm characterized by a central low-pressure area that deepens dramatically as it moves northward along the United States Eastern seaboard. The name came from the strong northeast winds that precede and accompany the storm as it passes over New England. Nor'easters are notorious for producing heavy snow in the Central and Northeastern Mountains. Nor'easters will ordinarily produce a heavy, wet snow. There is usually a fairly consistent demarcation between rain, mixed precipitation, and snow which moves along with the storm and generally parallel to the track of the surface low. The demarcation typically pivots with the storm as the track changes direction. The mixed precipitation and rainfall are generated when warmer marine air is pulled into the storm. The heaviest snow in a Nor'easter falls to the north and west of the track of the surface low (National Weather Service, 2017).

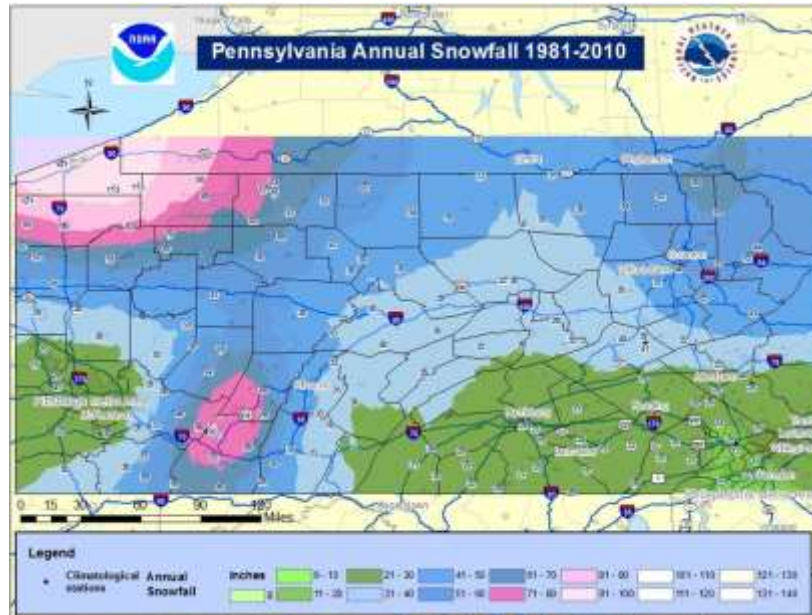
**4.3.13.2 RANGE OF MAGNITUDE**

Winter storms consist of cold temperatures, heavy snow or ice and sometimes strong winds. Descriptions of types of winter storms can be found in Table 4.3.13-1: Winter Weather Events. In severe cases, secondary effects of winter storms involve flooding, disruption to traffic, emergency medical services response capabilities, communications, electric power and other utilities. Power outages can be caused by large amounts of snow or ice weighing on and breaking power lines. Especially in rural areas, loss of electric power can result in a loss of heat for residential customers, potentially posing a threat to human life.

**Table 4.3.13-1: Winter Weather Events**

Weather Event	Classification
Heavy Snowstorm	Accumulations of four inches or more in a six-hour period, or six inches or more in a twelve-hour period.
Sleet Storm	Significant accumulations of solid pellets which form from the freezing of raindrops or partially melted snowflakes causing slippery surfaces posing hazards to pedestrians and motorists.
Ice Storm	Significant accumulations of rain or drizzle freezing on objects (trees, power lines, roadways, etc.) as it strikes them, causing slippery surfaces and damage from the sheer weight of ice accumulation.
Blizzard	Wind velocity of 35 miles per hour or more, temperatures below freezing, considerable blowing snow with visibility frequently below one-quarter mile prevailing over an extended period of time.
Severe Blizzard	Wind velocity of 45 miles per hour, temperatures of 10 degrees Fahrenheit or lower, a high density of blowing snow with visibility frequently measured in feet prevailing over an extended period time.

Long cold spells can cause rivers and lakes to freeze over. A subsequent thaw and rise in the water level then breaks the ice into large chunks and can result in ice jams when the ice begins to flow. The ice jams can act as a dam and result in flooding. Environmental impacts often include damage to shrubbery and trees due to heavy snow loading, ice build-up and/or high winds which can break limbs or even bring down large trees. While gradual melting of snow and ice provides excellent groundwater recharge, high temperatures following a heavy snowfall can cause rapid surface water runoff and severe flooding. Figure 4.3.13-1: Pennsylvania Annual Snowfall shows mean annual snowfall in Blair County to be between 31 and 50 inches.

**Figure 4.3.13-1: Pennsylvania Annual Snowfall**

#### 4.3.13.3 PAST OCCURRENCE

Winter storms occur on the average of five times a year in Blair County, with major winter storms in 1950, 1977, 1978, 1982, 1983, 1993, 1994, 1996, 1998, and 2002. The severe winter of 1977, with its extreme temperatures, heavy snow and strong winds coupled with fuel shortages, caused extreme hardship in Blair County. Motorists were stranded on several highways; household fuel oil suppliers and food stocks ran out and re-supply was impaired by drifting snow. Heavy snow and drifting closed many roads, some for more than three days. Municipal and state road crews could not keep up with drifting snow and required supplemental equipment and manpower from the private sector.

One of the most major historical severe winter events was in the winter of 1993 – 1994 when the state was hit by a series of protracted winter storms. The severity and nature of these storms combined with accompanying record-breaking frigid temperatures posed a major threat to the lives, safety and well-being of Commonwealth residents and caused major disruptions to the activities of schools, businesses, hospitals, and nursing homes.

#### 4.3.13.4 FUTURE OCCURRENCE

The prospect of climate change suggests that in general, future severe winter events will be attenuated as temperatures rise, however there is a lot of uncertainty in terms of what the future brings. Winters in 2000 and 2001 were mild and led to spring-like thunderstorms during the winter months rather than snow storms. Such thunderstorms can be followed by cold fronts and winter storms resulting in temperature drops of 50°F in a few short hours.

Winter storms are a regular, annual occurrence in Blair County and should be considered highly likely. Approximately thirty-five winter storm events occur across Pennsylvania and about five in Blair County annually.

### 4.3.13.5 VULNERABILITY ASSESSMENT

Due to the elevation effect from the Allegheny Front, locations along the western boundary generally experience greater snowfall than the remainder of Blair County. It is not unusual to see several inches along US 22 toward Tunnelhill and only have flurries in Altoona. Winter storms are a frequent event in the county. Detrimental impacts of severe winter storms are mitigated by salting, plowing and snow removal by the Pennsylvania Department of Transportation and local municipalities. Icy and snow-covered roads often result in increases in traffic incidents. Swift response to utility outages during winter storms is another significant way to mitigate damages. Residents of the mountainous and more rural areas of the county may be more susceptible during severe storms, especially when emergency medical assistance is required due to the location’s potential for isolation. There are rural areas which are susceptible to isolation due to winter storms. Residents in outlying areas often find it beneficial to keep an emergency food and fuel stock in the event of isolation or utility interruption during a winter storm.

Even for communities that are prepared to respond to winter storms, severe events involving snow accumulations that exceed six or more inches in a twelve-hour period can cause a large number of traffic accidents, strand motorists due to snow drifts, interrupt power supply and communications, and cause the failure of inadequately designed and/or maintained roof systems. Similar to the vulnerability assessment discussion for tornados and severe wind, vulnerability to the effects of winter storms on buildings is dependent on the age of the building, construction material used and condition of the structure. Unfortunately, no comprehensive database of these variables could be identified for Blair County.

<b>Municipal Hazard Vulnerability Assessment</b>	
Planning Region 1	Increased occurrence along the Allegheny Front
Planning Region 2	Increased occurrence along the Allegheny Front
Planning Region 3	Increased occurrence along the Allegheny Front and Brush Mountain
Planning Region 4	Consistent with the general profile
Planning Region 5	Increased occurrence along the Allegheny Front and toe of Brush Mountain
Planning Region 6	Consistent with the general profile
Planning Region 7	Increased occurrence along the Allegheny Front



**4.4. HAZARD VULNERABILITY SUMMARY**

**4.4.1. METHODOLOGY**

Ranking hazards helps communities set goals and priorities for mitigation based on their vulnerabilities. A risk factor is a tool used to measure the degree of risk for identified hazards in a particular planning area. The risk factor can also assist local community officials in ranking and prioritizing hazards that pose the most significant threat to a planning area based on a variety of factors deemed important by the planning team and other stakeholders involved in the hazard mitigation planning process. The system relies mainly on historical data, empirical knowledge, and information collected through development of the hazard profiles included above. The risk factor approach produces numerical values that allow identified hazards to be ranked against one another; the higher the risk factor, the greater the hazard risk.

Risk factor values were obtained by assigning varying degrees of risk to five categories for each of the hazards profiled in the plan update. Those categories include probability, impact, spatial extent, warning time and duration. Each degree of risk was assigned a value ranging from one to four. To calculate the risk factor value for a given hazard, the assigned risk value for each category was multiplied by the weighting factor. The sum of all five categories equals the final risk factor value. As an example, if a hazard was ranked a 1 for probability, a 3 for Impact, a 2 for Extent, a 4 for Warning, and a 2 for duration, it would be calculated as  $(1 \times 0.3) + (3 \times 0.3) + (2 \times 0.2) + (4 \times 0.1) + (2 \times 0.1)$  yielding a risk factor value of 2.2. Table 4.4.1-1: Risk Factor Approach Summary summarizes each of the five categories used for calculating a RF for each hazard. According to the weighting scheme applied, the highest possible risk factor value is 4.0.

**Table 4.4.1-1: Risk Factor Approach Summary**

Risk Assessment Category	Degree of Risk			Weight Value
	Level	Criteria	Index	
<b>Probability</b> <i>What is the likelihood of a hazard event occurring in a given year?</i>	Unlikely	Less than 1% annual probability	1	30%
	Possible	Between 1% and 49.9% annual probability	2	
	Likely	Between 50% and 90% annual probability	3	
	Highly Likely	Greater than 90% annual probability	4	
<b>Impact</b> <i>In terms of injuries, damage, or death, would you anticipate impacts to be minor, limited, critical, or catastrophic when</i>	Minor	Very few injuries, if any. Only minor property damage and minimal disruption on quality of life. Temporary shutdown of critical facilities.	1	30%
	Limited	Minor Injuries Only. More than 10% of property in affected area damaged or	2	

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<i>a significant hazard event occurs?</i>		destroyed. Complete shutdown of critical facilities for more than one. Day.		
	Critical	Multiple deaths and injuries possible. More than 25% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one week.	3	
	Catastrophic	High number of deaths and injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for 30 days or more.	4	
<b>Spatial Extent</b> <i>How large of an area could be impacted by a hazard event? Are impacts localized or regional?</i>	Negligible	Less than 1% of area affected	1	20%
	Small	Between 1% and 10.9% of area affected	2	
	Moderate	Between 11% and 25% of area affected	3	
	Large	Greater than 25% of area affected	4	
<b>Warning Time</b> <i>Is there usually some lead time associated with the hazard event? Have warning measures been implemented?</i>	> 24 Hours	Self-Defined: Levels of warning time and the criteria that define them may be adjusted based on the hazard addressed	1	10%
	12-24 Hours		2	
	6-12 Hours		3	
	< 6 Hours		4	
<b>Duration</b> <i>How long does the hazard event usually last?</i>	< 6 Hours	Self-Defined: Levels of duration time and the criteria that define them may be adjusted based on the hazard addressed	1	10%
	< 24 Hours		2	
	< 1 Week		3	
	> 1 Week		4	

#### 4.4.2. RANKING RESULTS

Using the methodology described in Section 4.4.1, Table 4.4.2: Countywide Risk Factor Assessment lists the risk factor calculated for each of the nineteen potential hazards identified in the 2018 plan. It should be noted that the flooding, flash flooding, ice jam flooding, tornado hazard and windstorm hazard were ranked individually instead of together. Hazards identified as high risk have risk factors greater than 2.5. Risk Factors ranging from 2.0 to 4.4 were deemed moderate risk hazards. Hazards with Risk Factors 1.9 and less are considered low risk.

Based on these results, there are four (4) high risk hazards, five (5) moderate risk hazards and four (4) low risk hazards in Blair County. The threat posed to life and property for high-risk hazards is considered significant enough to warrant the need for establishing hazard-specific mitigation actions. Mitigation actions related to future public outreach and emergency service activities are identified to address low risk hazard events.

**Table 4.4.2: Countywide Risk Factor Assessment**

Hazard	Risk Assessment Category					Factor	Risk Class
	Probability	Impact	Extent	Warning	Duration		
Flood	3	2	3	3	3	2.7	High
Radon	4	1	3	1	4	2.6	High
Hazardous Materials	3	2	2	4	3	2.6	High
Invasive Species	2	2	4	1	4	2.5	High
Winter Storm	2	2	4	1	3	2.4	Moderate
Pandemic	2	3	2	1	4	2.4	Moderate
Drought	2	2	3	1	4	2.3	Moderate
Terrorism	1	3	2	4	2	2.2	Moderate
Strong Storm	2	2	2	4	1	2.1	Moderate
Utility Interruption	2	1	2	3	2	1.8	Low
Fire Hazard	2	1	1	4	2	1.7	Low
Earthquake	1	1	2	4	1	1.5	Low
Subsidence	2	1	1	2	2	1.5	Low

A similar assessment was undertaken for the planning regions in the county. Each region was assessed in the same manner and compared with the countywide ranking. Where the regional ranking was calculated higher than the countywide ranking, the number appears in boldface type. These generally correspond to entries in the regional hazard assessment tables at the conclusion of each hazard profile. This exercise assists those implementing the plan to think and act municipally with a countywide perspective, while also recognizing that there are variations of risk between the planning regions. The Risk Factor results are aggregated in Table 4.4-3 Aggregated Regional Risk Factor Assessment.

**Table 4.4.2: Countywide Risk Factor Assessment**

Hazard	County	Planning Regions						
		1	2	3	4	5	6	7
Flood	2.7	3.0	2.7	3.0	2.7	2.7	2.7	2.7
Radon	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Hazardous Materials	2.6	2.6	2.6	2.8	2.6	2.9	2.6	2.6
Invasive Species	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Winter Storm	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Pandemic	2.4	2.4	2.4	2.6	2.4	2.4	2.6	2.4
Drought	2.3	2.6	2.3	2.6	2.3	2.6	2.6	2.3
Terrorism	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Strong Storm	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Utility Interruption	1.8	1.8	1.8	2.1	1.9	1.8	1.8	1.8
Fire Hazard	1.7	1.7	1.7	2.0	1.7	2.0	1.7	1.7
Earthquake	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Subsidence	1.5	1.8	1.5	1.5	1.5	1.5	1.8	1.5

#### 4.4.3. POTENTIAL LOSS ESTIMATES

Based on various kinds of available data, potential loss estimates were established for flood, flash flood, and ice jam flooding, tornado and windstorms. Estimates provided in this section are based on HAZUS, geospatial analysis, and previous events. Estimates are considered potential in that they generally represent losses that could occur in a countywide hazard scenario. In events that are localized, losses may be lower, while regional events could yield higher losses. Potential loss estimates have four basic components, including:

- **Replacement Value:** Current cost of returning an asset to its pre-damaged condition, using present-day cost of labor and materials.
- **Content Loss:** Value of building's contents, typically measured as a percentage of the building replacement value.
- **Functional Loss:** The value of a building's use or function that would be lost if it were damaged or closed.
- **Displacement Cost:** The dollar amount required for relocation of the function (business or service) to another structure following a hazard event.

#### Flooding Loss Estimation:

Flooding is both a moderate risk natural hazard and a moderate risk man-made hazard in Blair County. The estimation of potential loss in this assessment focuses on the monetary damage that could result from flooding. The potential property loss was determined for each municipality and for the entire county.

A county wide flood study was conducted using the Hazards U.S. Multi-Hazard software, commonly called HAZUS, which is provided by the Federal Emergency Management Agency. This software is a standardized

loss estimation software deriving economic loss, building damage, content damage and other economic impacts that can be used in local flood mitigation planning activities.

Using HAZUS, total building-related losses from a 1%-annual-chance flood in Blair County are estimated to equal \$312,510,000. Residential occupancies make up 33.50% of the total estimated building-related losses. Total economic loss, including replacement value, content loss, functional loss and displacement cost, from a countywide 1%-annual-chance flood are estimated to equal \$594,010,000. The full HAZUS Methodology and Results Report is presented in Appendix F. Additional HAZUS analysis will be conducted during the next five year cycle with local data.

#### **4.4.4. FUTURE DEVELOPMENT AND VULNERABILITY**

Population in Blair County has been decreasing since the end of World War II, although the rate of the decrease has slackened since 1990. Altoona and the boroughs have (and will continue to have) the highest population densities in the county, meaning that hazard vulnerability and loss estimates will be relatively higher in those municipalities. Development in the county is relatively uniform and stable, however Blair County has not seen a major subdivision for over a decade, and even most site planning is modest in size. The last large commercial development was the Martins Plaza in Blair Township, unless independent development is taken into consideration. In that case the industrial area along PA 764 and Theatre Drive in Allegheny Township is larger and ongoing.

These trends suggest that the increased risk that is inherent in development is somewhat self-mitigated due to the low levels of new development. Retrofitting existing properties as they change hands or uses, and conducting the mitigation efforts outlined in Section 4 should advance mitigation efforts in Blair County for the duration of this plan update.

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**- SECTION 5 -**

**CAPABILITY ASSESSMENT**

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## 5.0 CAPABILITY ASSESSMENT

### 5.1 UPDATE PROCESS SUMMARY

The capability assessment is an evaluation of Blair County's governmental structure, political framework, legal jurisdiction, fiscal status, policies and programs, regulations and ordinances, and resource availability. Each category is evaluated for its strengths and weaknesses in responding to, preparing for and mitigating the effects of the profiled hazards. A capability assessment is an integral part of the hazard mitigation planning process. Here, the county and municipalities identify, review and analyze what they are currently doing to reduce losses and identify the framework necessary to implement new mitigation actions. This information will help the county and municipalities evaluate alternative mitigation actions and address shortfalls in the mitigation plan.

A capabilities assessment survey was provided to the municipalities during the planning process at interview meetings held with local officials. These meetings were designed to seek input from key county and municipal stakeholders on legal, fiscal, technical and administrative capabilities of all jurisdictions. As such, the capabilities assessment helps guide the implementation of mitigation projects and will help evaluate the effectiveness of existing mitigation measures, policies, plans, practices and programs.

Capability issues were also raised during the public outreach efforts. Both the public survey and the outreach sessions identified public concerns regarding capability. This manifested in three primary lines of thought. First was a desire for the local municipalities to pool their resources for economy of scale and to better utilize existing equipment and personnel. Second was a desire for local police coverage without reliance on outside assistance such as the state police. This was particularly strong in some of the more populous townships without a local police force. The third capability issue was concern that the volunteer fire company system is both undermanned and underfunded. All three are interrelated and mutually supportive.

Throughout the planning process, the mitigation local planning team considered the county's 25 municipalities. Pennsylvania municipalities have their own governing bodies, pass and enforce their own ordinances and regulations, purchase equipment and manage their own resources, including critical infrastructure. These capability assessments, therefore, consider the various characteristics and capabilities of municipalities under study. Additionally, "NFPA 1600" standard recommends that a corrective action program be established to address shortfalls and provide mechanisms to manage the capabilities improvement process.

The evaluation of the following categories – political framework, legal jurisdiction, fiscal status, policies and programs, and regulations and ordinances – allows the mitigation planning team to determine the viability of certain mitigation actions. The capability assessment analyzes what Blair County and its municipalities have the capacity to do and provides an understanding of what must be changed to mitigate loss.

Blair County has a number of resources it can access to implement hazard mitigation initiatives including local planning, regulatory tools, emergency response measures, administrative assistance, technical expertise, fiscal capabilities and participation in local, regional, state and federal programs. The presence of these resources enables community resiliency through actions taken before, during and after a hazardous event. While the capability assessment serves as a good instrument for identifying local

capabilities, it also provides a means for recognizing gaps and weaknesses that can be resolved through future mitigation actions. The results of this assessment lend critical information for developing an effective mitigation strategy.

## **5.2 CAPABILITY ASSESSMENT FINDING**

All 25 Blair County municipalities participated, at a minimum, in the municipal interview conducted by Blair Planning staff in April 2018. Most municipalities also participated in most of the regular meetings held throughout the update process.

### **5.2.1. PLANNING AND REGULATORY CAPABILITY**

Municipalities have the authority to govern more restrictively than state and county minimum requirements; as long as they are in compliance with all criteria established in their respective municipal codes and general topic-oriented codes such as the Pennsylvania Municipalities Planning Code, the Storm Water Management Act, the Floodplain Management Act, and the Airport Zoning Act. Municipalities can also develop their own policies and programs and implement their own rules and regulations to protect and serve their local residents. Local policies and programs are typically identified in a comprehensive plan, implemented through a local ordinance and enforced by the governmental body or its appointee.

Municipalities regulate land use via the adoption and enforcement of zoning, subdivision and land development, building codes, building permits, floodplain management and/or storm-water management ordinances. When effectively prepared and administered, these regulations can lead to an opportunity for hazard mitigation. For example, the National Flood Insurance Program (NFIP) established minimum floodplain management criteria. Adoption of the Pennsylvania Floodplain Management Act (Act 166 of 1978) established higher standards. A municipality must adopt and enforce these minimum criteria to be eligible for participation in the National Flood Insurance Program. Municipalities have the option of adopting a single-purpose ordinance or incorporating these provisions into their zoning, subdivision and land development, or building codes; thereby mitigating the potential impacts of local flooding. This capability assessment details the existing legal capabilities at the county and municipal levels to mitigate the profiled hazards. It identifies the county's and the municipalities' existing planning documents and their hazard mitigation potential. Hazard mitigation recommendations are, in part, based on the information contained in the assessment.

#### **Comprehensive Plan**

A comprehensive plan is a policy document that states objectives and guides the future growth and physical development of a municipality. The comprehensive plan is a blueprint for the community in the coming decade. It examines how the past led to the present and charts the community's future path. The Pennsylvania Municipalities Planning Code requires counties to prepare and maintain a county comprehensive plan, and update it at least every ten years.

Blair County is one of six counties participating in *Alleghenies Ahead: Shared Strategies for a Stronger Region*, a regional comprehensive plan covering the entire Southern Alleghenies region. The plan was adopted by each of the six counties over the summer of 2018, and is designed with implementation in mind. There are eight primary goal areas, of which Blair County is focused on five: Agriculture, Broadband

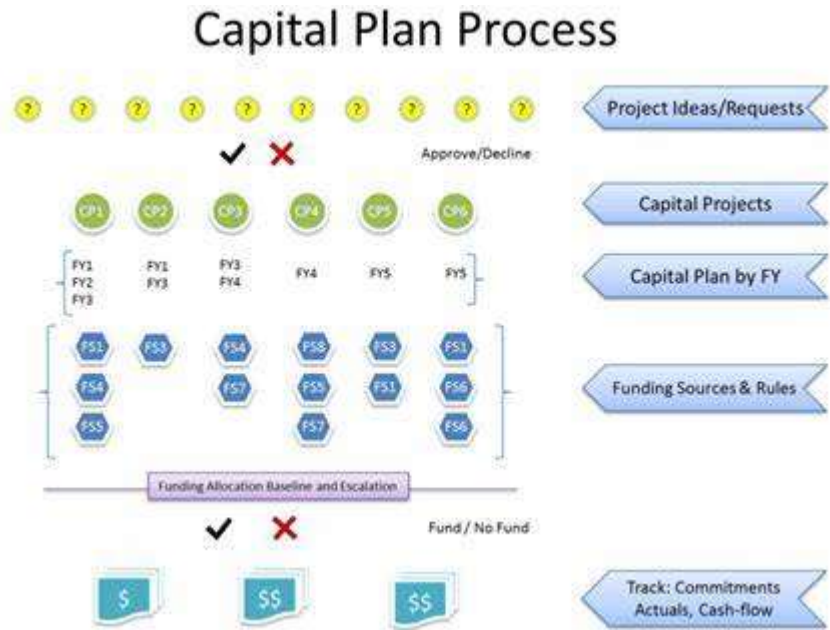


and Wireless, Cooperation and Coordination, Health, and Housing. Several of these, particularly wireless service and cooperation, overlap with the hazard mitigation plan update.

Article III of the Municipalities Planning Code enables municipalities to prepare a comprehensive plan; however, development of a comprehensive plan is voluntary.

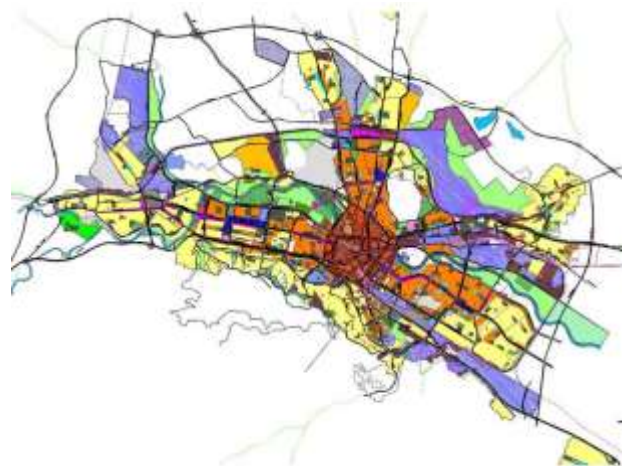
**Capital Improvements Plan**

The capital improvements plan is a multi-year policy guide that identifies needed capital projects and is used to coordinate the financing and timing of public improvements. Capital improvements relate to streets, storm-water systems, water distribution, sewage treatment and other major public facilities. A capital improvements plan should be prepared by the respective county’s planning department and should include a capital budget. This budget identifies the highest priority projects recommended for funding in the next annual budget. The capital improvements plan is dynamic and can be tailored to specific circumstances. Altoona is the only Blair County municipality with a published capital improvement plan: it is focused primarily on public works projects such as street paving.



**Zoning Ordinance**

The Municipalities Planning Code (MPC) authorizes municipalities to prepare and enact zoning to regulate land use. Its regulations can apply to: the permitted use of land; the height and bulk of structures; the percentage of a lot that may be occupied by buildings and other impervious surfaces; yard setbacks; the density of development; the height and size of signs; the parking regulations. A zoning ordinance has two parts, including the zoning map that delineates zoning districts and the text that sets forth the regulations that apply to each district. Of the 25 municipalities in Blair County, ten indicated that they have a zoning ordinance.

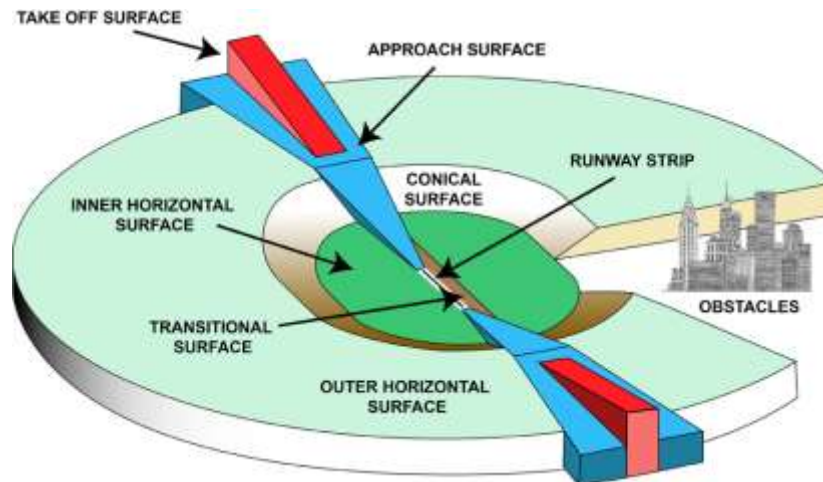


## Airport Hazard Ordinance

A safe and reliable network of public-use airports is essential to the economic stability of this Commonwealth. Unfortunately, a substantial number of Pennsylvania municipalities located near airports have not utilized land use and zoning ordinances to preserve and protect these transportation resources. Furthermore, many have not complied with Pennsylvania's Airport Hazard Zoning law, which requires those municipalities that fall within an airport hazard area to adopt, administer, and enforce airport zoning regulations (ordinances). Action must be taken to reverse the trend at the local level to allow development that is incompatible with airport operations, safety and growth. (Pennsylvania Department of Transportation, 2011)

Despite efforts from various state, regional, and local agencies, a majority of municipalities in the Commonwealth that have an airport hazard area within its boundaries have not adopted an Airport Hazard Zoning Ordinance. Based on 2006 data (the latest year published data are available):

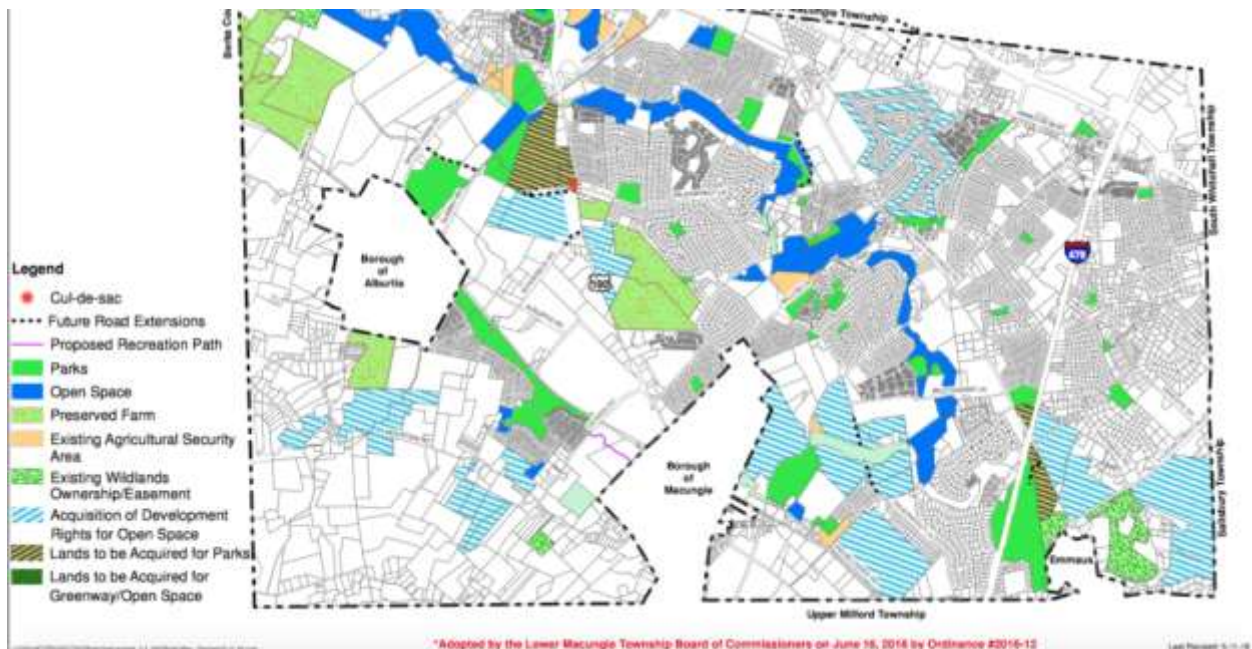
- There are 2570 municipalities in Pennsylvania.
- There are 126 public use airports.
- About 680 municipalities are required to enact airport hazard zoning.
- 159 municipalities have hazard zoning in effect (23% compliance rate).



As a result of the study, the Pennsylvania Department of Transportation Bureau of Aviation provided grant monies, maps, and model ordinances to individual municipalities to improve compliance and make for safer airspace around the airports in the Commonwealth. Blair Planning participated as a liaison between the Bureau of Aviation and the municipalities in 2014, providing the technical assistance needed to develop and adopt the appropriate Airport Hazard Ordinance for each. Of the thirteen municipalities falling under the requirement, as of 2018 nine have adopted the appropriate ordinance: Martinsburg Borough, Newry Borough, Williamsburg Borough, Allegheny Township, Blair Township, Catharine Township, Frankstown Township, Juniata Township, and Woodbury Township.

## Official Map

An Official Map shows the locations of planned future public lands and facilities such as streets, trails, parks and open space. Unlike a Zoning Map, the Official Map expresses a municipality’s interest in acquiring easements or lands for public purposes sometime in the future and notifies developers and property owners of this interest. An Official Map is not a municipal base map, existing or future land use map, a zoning map, or any map in a comprehensive plan, though these can be used to help identify areas for the Official Map ordinance. Title IV of the Municipalities Planning Code authorizes an Official Map as a “land use ordinance” with the map as the primary component of an Official Map ordinance. If a landowner seeks to build on or subdivide land noted on the Official Map, the municipality has up to a year to acquire the land from the owner before the owner may freely build or subdivide. As of 2018, no Blair County municipalities have adopted an Official Map.



## Subdivision Ordinance

Subdivision and land development ordinances include regulations to control the layout of streets, the planning of lots and the provision of utilities and other site improvements. The objectives of a subdivision



and land development ordinance are to: coordinate street patterns; assure adequate utilities and other improvements are provided in a manner that will not pollute streams, wells and/or soils; reduce traffic congestion; and provide sound design standards as a guide to developers, the elected officials, planning commissions and other municipal officials. Article V of the Municipality Planning Code authorizes municipalities to prepare and enact a subdivision and land development ordinance. Subdivision and land development ordinances provide for the

division and improvement of land. To date, seventeen of the municipalities in Blair County have developed their own subdivision ordinance.

## Storm Water Management Plan and Storm Water Ordinance

The proper management of storm water runoff can improve conditions and decrease the chance of flooding. Pennsylvania's Storm Water Management Act (Act 167) confers on the county planning commission the responsibility for development of watershed plans. A county planning commission must prepare the watershed plans in consultation with municipalities and residents. The counties must also establish a mechanism to periodically review and revise watershed plans so they are current. Plan revisions must be done every five years or sooner, if necessary. As of 2018, the county has a completed watershed management plan in place for the Beaverdam Branch, and Bob's Creek. A Phase I study was completed for the Little Juniata, but the main study has never been completed. No studies have been done for the remaining watersheds, including the Frankstown Branch. The Department of Environmental Protection has shifted to a countywide focus instead of a watershed focus. A countywide watershed management plan is on the docket at Blair Planning for completion in the next five years.



Municipalities have an obligation to implement the criteria and standards developed in the storm water management plan by amending or adopting laws and regulation for land use and development. The implementation of storm water management criteria and standards at the local level are necessary, since municipalities are responsible for local land use decisions and planning. The degree of detail in the ordinances depends on the extent of existing and projected development. The watershed storm water

management plan is designed to aid the municipality in setting standards for the land uses it has proposed. Municipalities within rapidly developing watersheds will benefit from the watershed storm water management plan and will use the information for sound land use considerations. A major goal of the watershed plan and the attendant municipal regulations is to prevent future drainage problems and avoid the aggravation of existing problems.

There are eight watersheds in Blair County. Blair County and other local municipalities have general (non-Act 167 compliant) storm-water management regulations as part of either the county or local subdivision and land development plan. Of the 25 municipalities within Blair County, thirteen have a storm water management plan and eight do not or were unsure when responding to the capability assessment.

### **Building Codes**

Building codes are important in mitigation because they are developed for a region of the country in respect to the hazards existing in that area. Consequently, structures that are built according to applicable codes are inherently resistant to many hazards, such as strong winds, floods and earthquakes; and can help mitigate regional hazards, such as wildfires. In 2003, Pennsylvania implemented the Uniform Construction Code (Act 45), a comprehensive building code that establishes minimum regulations for most new construction, including additions and renovations to existing structures.

The code applies to almost all buildings, excluding manufactured and industrialized housing (which are covered by other laws), agricultural buildings and certain utility and miscellaneous buildings. The Uniform Construction Code has many advantages. It requires builders to use materials and methods that have been professionally evaluated for quality and safety, as well as inspections to ensure compliance.



The initial election period, during which all of Pennsylvania's 2,565 municipalities were allowed to decide whether the Uniform Construction Code would be administered and enforced locally, officially closed on August 7, 2004. The codes adopted for use under the Uniform Construction Code are the 2003 International Codes issued by the International Code Council. Supplements to the 2003 codes have been adopted for use over the years since.

If a municipality has “opted in”, all Uniform Construction Code enforcement is local, except where municipal (or third party) code officials lack the certification necessary to approve plans and inspect commercial construction for compliance with Uniform Construction Code accessibility requirements. If a municipality has “opted out”, the PA Department of Labor and Industry is responsible for all commercial code enforcement in that municipality; and all residential construction is inspected by independent third-party agencies selected by the owner. The department also has sole jurisdiction for all state-owned buildings no matter where they are located. Historical buildings may be exempt from such inspections and Act 45 provides quasi-exclusion from Uniform Construction Code requirements. The municipalities in Blair County adhere to the standards of the Pennsylvania Uniform Construction Code (Act 45). All municipalities, except for one, have opted in on building code enforcement.

**Participation in the National Flood Insurance Program**

Floodplain management is the operation of programs or activities that may consist of both corrective and preventive measures for reducing flood damage, including but not limited to such things as emergency preparedness plans, flood control works and flood plain management regulations. The Pennsylvania Floodplain Management Act (Act 166) requires every municipality identified by the Federal Emergency Management Agency to participate in the National Flood Insurance Program and permits all municipalities to adopt floodplain management regulations. It is in the interest of all property owners in the floodplain to keep development and land usage within the scope of the floodplain regulations for their community. This helps keep insurance rates low and makes sure that the risk of flood damage is not increased by property development. As shown in Table 5.2-1 below, All municipalities in Blair County participate in the program.

**Table 5.2-1 Policy and Los Data by Community as of December 31, 2018**

<b>Policy and Loss Data by Community as of December 31, 2018</b>										
Community	ID	Program Entry	FIRM Date	CRS Status	Total Policies	Premium Paid	Coverage Total	Total Claimsl	Payout Total	Adjuster Expense
Allegheny Township	420961	1974-08-02	2012-03-02	No	57	\$ 93,343	\$ 9,415,000	46	\$ 318,874	\$ 35,422
Altoona City	420159	1974-06-28	2012-03-02	Yes	128	\$ 119,434	\$ 18,148,000	146	\$ 416,904	\$ 50,909
Antis Township	421385	1974-12-27	2018-05-02	No	40	\$ 60,326	\$ 9,471,000	37	\$ 89,457	\$ 15,403
Bellwood Borough	420160	1979-06-01	2012-03-02	No	6	\$ 6,140	\$ 1,118,000	0	\$ 0	\$ 0
Blair Township	421386	1974-11-22	2012-03-02	No	53	\$ 49,348	\$ 8,245,000	79	\$ 545,739	\$ 40,131
Catharine Township	420962	1974-01-18	2018-05-02	No	5	\$ 7,665	\$ 792,000	12	\$ 103,892	\$ 7,714
Duncansville Borough	420161	1974-06-28	2012-03-02	No	74	\$ 84,262	\$ 11,270,000	56	\$ 428,688	\$ 33,836
Frankstown Township	421387	1974-12-13	2012-03-20	No	42	\$ 49,082	\$ 7,558,000	184	\$ 1,710,643	\$ 88,240
Freedom Township	421388	1975-01-31	2012-03-02	No	59	\$ 54,283	\$ 9,364,000	56	\$ 338,377	\$ 30,906
Greenfield Township	421389	1975-02-14	2012-03-02	No	57	\$ 47,606	\$ 7,764,000	48	\$ 233,974	\$ 22,870
Hollidaysburg Borough	420162	1973-10-12	2012-03-02	No	33	\$ 62,030	\$ 4,264,000	151	\$ 1,189,914	\$ 67,422
Huston Township	422332	1975-01-10	2012-03-02	No	8	\$ 6,916	\$ 1,473,000	0	\$ 0	\$ 0
Juniata Township	421390	1974-12-27	2012-03-02	No	5	\$ 4,138	\$ 679,000	0	\$ 0	\$ 0
Logan Township	421391	1975-01-03	2012-03-02	No	62	\$ 48,894	\$ 12,140,000	35	\$ 79,888	\$ 15,023
Martinsburg Borough	421384	1974-12-20	2012-03-02	No	0	\$ 0	\$ 0	0	\$ 0	\$ 0
Newry Borough	422333	1975-02-07	2012-03-02	No	1	\$ 592	\$ 215,000	0	\$ 0	\$ 0
North Woodbury Township	421392	1975-01-24	2012-03-02	No	1	\$ 244	\$ 70,000	0	\$ 0	\$ 0
Roaring Spring Borough	420163	1974-02-01	2012-03-02	No	6	\$ 5,181	\$ 519,000	3	\$ 13,734	\$ 1,025
Snyder Township	421393	1975-01-10	2018-05-02	No	35	\$ 59,567	\$ 5,373,000	21	\$ 384,791	\$ 22,831
Taylor Township	421394	1975-01-17	2012-03-02	No	7	\$ 4,485	\$ 783,000	10	\$ 21,830	\$ 2,531
Tunnelhill Borough	422689	Tunnelhill Borough is Listed in Cambria County for NFIP Purposes								
Tyrone Borough	420164	1973-12-21	2018-05-02	No	94	\$ 94,468	\$ 13,828,000	103	\$ 714,186	\$ 58,857
Tyrone Township	421395	1974-12-13	2018-05-02	No	4	\$ 2,983	\$ 411,000	9	\$ 95,514	\$ 5,233
Williamsburg Borough	420165	1973-11-30	2012-03-02	No	19	\$ 24,138	\$ 1,957,000	60	\$ 634,971	\$ 37,444
Woodbury Township	420963	1974-03-15	2012-03-02	No	3	\$ 3,704	\$ 374,000	7	\$ 30,112	\$ 2,475
<b>Blair County</b>	<b>427777</b>				<b>799</b>	<b>\$ 888,829</b>	<b>\$ 125,229,000</b>	<b>1063</b>	<b>\$ 7,351,486</b>	<b>\$ 538,270</b>

Region III of the Federal Emergency Management Agency makes available to communities, an ordinance review checklist which lists required provisions for floodplain management ordinances. This checklist helps communities develop an effective floodplain management ordinance that meets federal requirements for participation in the National Flood Insurance Program.

Act 166 mandates municipal participation in and compliance with the National Flood Insurance Program. It also establishes higher regulatory standards for new or substantially improved structures which are used for the production or storage of dangerous materials (as defined by Act 166) by prohibiting them in the floodway. Additionally, Act 166 establishes the requirement that a Special Permit be obtained prior to any construction or expansion of any manufactured home park, hospital, nursing home, jail and prison if said structure is located within a special flood hazard area. As new Digital Flood Insurance Rate Maps are published, the Pennsylvania State National Flood Insurance Program Coordinator at the Department of Community and Economic Development works with communities to ensure the timely and successful adoption of an updated floodplain management ordinance by reviewing and providing feedback on existing and draft ordinances.

As a direct result of the 2012 Flood Insurance Rate Map updates, the Mayor of Tyrone engaged the United States Army Corps of Engineers Silver Jackets Team to undertake a full floodplain analysis of the Little Juniata River and certain tributaries that have a flooding impact on Tyrone. This resulted in a five year project that provided specific floodplain delineations for the study area that reflected a much more accurate depiction of the floodplain in the Tyrone Area. The study impacted a half dozen municipalities in two counties, and was completed in 2017 with the adoption of floodplain ordinance amendments recognizing the new maps.



The Pennsylvania Department of Community and Economic Development provides communities with suggested model ordinances to assist municipalities in meeting the minimum requirements of the National Flood Insurance Program along with the Pennsylvania Flood Plain Management Act. These model ordinances were recently updated with enhanced requirements and are being distributed to the municipalities of the Commonwealth, with Blair County among the first to receive them. As of 2018, all Blair County municipalities are in full compliance with this new Department of Community and Economic Development effort. These new model ordinances contain provisions that are more restrictive than state and federal requirements, including:

- Prohibition of manufactured homes in the floodway;
- Prohibition of manufactured homes within the area measured fifty feet landward from the top-of bank of any watercourse within a special flood hazard area;
- New standards on fill within the special flood hazard area;
- Special requirements for recreational vehicles within the special flood hazard area;
- Special requirement for accessory structures;
- Prohibition of new construction and development within the area measured fifty feet landward from the top-of bank of any watercourse within a special flood hazard area; and
- Providing the Blair County Conservation District an opportunity to review and comment on all applications and plans for proposed construction or development in identified floodplain areas.

The National Flood Insurance Program’s Community Rating System provides discounts on flood insurance premiums in those communities that establish floodplain management programs that go beyond National Flood Insurance Program minimum requirements. Under the Community Rating System, communities receive credit for more restrictive regulations; acquisition, relocation, or flood-proofing of flood-prone buildings; preservation of open space; and other measures that reduce flood damages or protect the natural resources and functions of floodplains.

The Community Rating System was implemented in 1990 to recognize and encourage community floodplain management activities that exceed the minimum National Flood Insurance Program standards. Subsequent program amendments specifically include incentives to reduce the risk of flood-related erosion and to encourage measures that protect natural and beneficial floodplain functions. These goals have been incorporated into the Community Rating System and communities now receive credit toward premium reductions for activities that contribute to them.

Under the Community Rating System, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet a minimum of three of the following Community Rating System goals:

- Reduce flood losses
- Protect public health and safety
- Reduce damage to property
- Prevent increases in flood damage from new construction
- Reduce the risk of erosion damage
- Protect natural and beneficial floodplain functions
- Facilitate accurate insurance rating
- Promote the awareness of flood insurance

Class	Points	SFHA	Non-SFHA
1	4,500	45%	10%
2	4,000	40%	10%
3	3,500	35%	10%
4	3,000	30%	10%
5	2,500	25%	10%
6	2,000	20%	10%
7	1,500	15%	5%
8	1,000	10%	5%
9	500	5%	5%
10	< 500	0	0

There are ten Community Rating System classes. Class 1 requires the most credit points and gives the largest premium reduction; Class 10 receives no premium reduction. Community Rating System premium discounts on flood insurance range from five percent for Class 9 communities up to 45 percent for Class 1 communities. The Community Rating System recognizes 18 credible activities, organized under four categories: Public Information, Mapping and Regulations, Flood Damage Reduction and Flood Preparedness.

All municipalities indicated that they participate in the National Flood Insurance Program, although two boroughs have no regulatory floodplains within their boundaries. Currently, Altoona is the only municipality that has successfully entered the Community Rating System program. Additional promotion will be conducted on the Community Rating System program and mitigation actions will be developed in support of the Community Rating System.



## 5.2.2. ADMINISTRATIVE AND TECHNICAL CAPABILITY

There are two home rule municipalities, eight boroughs, and fifteen townships within Blair County. Each of these municipalities conducts its daily operations and provides various community services according to local needs and limitations. Some of these municipalities have formed cooperative agreements and work jointly with their neighboring municipalities to provide services such as equipment purchase and maintenance, emergency response, infrastructure maintenance, water and sewer supply management, and regulatory compliance. Others choose to operate on their own. Municipalities vary in staff size, resource availability, fiscal status, service provision, constituent population, overall size and vulnerability to the profiled hazards.

### County Planning Department

In Pennsylvania, planning responsibilities traditionally have been delegated to each county and local municipality through the Municipalities Planning Code. A planning agency acts as an advisor to the governing body on matters of community growth and development. In Blair County, the municipalities petitioned the county commissioners, and a unique form of planning was created in 1964. Blair Planning is the county planning agency, but is financially supported by and provides services to all municipal governments in the county. The organization is independent from the county, and provides for its own staff functions, payroll, and work assignments. Each municipality provides a local contribution at an equal rate, currently 42¢ per capita. The county is also to provide space and utilities *ex gratia* in addition to its financial contribution.

Blair Planning is assigned to undertake the necessary studies and research necessary for policy, programmatic, and regulatory efforts. These generally include, the comprehensive plan, storm water management, floodplain administration, housing, hazard mitigation, solid waste, transportation, public health, recreation, and energy. Additionally, the organization assists municipalities with the development of zoning, subdivision, land development, floodplain, storm water, airport hazard, and similar ordinances as well as addressing local issues as they may arise.



### Geographer

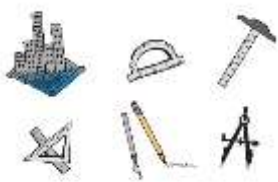
A geographer is concerned with site, situation, and spatial relationships. They study the Earth and the distribution of its land, features, and inhabitants. They also examine political or cultural structures and study the physical and human geographic characteristics of regions ranging in scale from local to global.



One of the tools used heavily by geographers is a geographic information system. A geographic information system is an integrated, computer-based system designed to capture, store, edit, analyze and display geographic information. Some examples of uses for this technology in local government are land use planning, land records management, infrastructure management, and natural resources planning. A geographic information system automates existing operations such as map production and maintenance, saving a great deal of time and money. The geographic information system also includes information about map features such as the capacity of a municipal water supply or the acres of public land. It is utilized by a majority of the Blair County Departments and Offices. In addition to Blair Planning, the county and three municipalities have this capability. The other units of local government are served by Blair Planning through their local share contributions.

## Design Professionals

A municipal engineer performs duties as directed in the areas of construction, reconstruction, maintenance and repair of streets, roads, pavements, sanitary sewers, bridges, culverts and other engineering work. The municipal engineer prepares plans, specifications and estimates of the work undertaken by the municipality. Every municipality within Blair County subcontracts a municipal engineer.



Other design professionals that occasionally perform work for municipal governments include architects, surveyors, and landscape architects. Each has a specific role in design. Architects are concerned with buildings and structures. Landscape architects generally design around the building and up to a neighborhood level. Surveyors focus on the location of objects and lines on the surface of the planet. These design professions are contracted out on an as needed basis by all municipalities in the county as well as the county itself. One exception is that Altoona has its own survey corps.

Because design plays a large role in resiliency, it is important that all design professionals have an understanding of how their designs can impact – or be impacted by – the various hazards possible in the community. Many of the professionals practicing in Blair County are aware of these elements and strive to include mitigation measures in their designs at all levels.

## Emergency Management Coordinator

Emergency Management is a comprehensive, integrated program of preparedness, response and recovery for emergencies/disasters of any kind. No public or private entity is immune to disasters and no single segment of society can meet the complex needs of a major emergency or disaster on its own.

A municipal emergency management coordinator is responsible for emergency management – preparedness, response, and recovery within the respective authority having jurisdiction.

The responsibilities of the emergency management coordinator include:

- Prepare and maintain a current disaster emergency management plan
- Establish, equip and staff an emergency operations center
- Provide individuals and organizational training programs
- Organize and coordinate all locally available manpower, materials, supplies, equipment and services necessary for disaster emergency readiness, response and recovery
- Adopt and implement precautionary measures to mitigate the anticipated effects of a disaster
- Cooperate and coordinate with any public and private agency or entity
- Provide prompt information regarding local disaster emergencies to appropriate Commonwealth and local officials or agencies and the general public
- Participate in all tests, drills and exercises, including remedial drills and exercises, scheduled by the agency or by the federal government



Blair County and its municipalities are required by law to have an emergency management coordinator. The Blair County Department of Emergency Services coordinates countywide emergency management

efforts. Currently, all municipalities in Blair County have an appointed Emergency Management Coordinator.

### **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, or an unnecessary expenditure of tax monies. 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.

Most officials interviewed (and public participating) understood the need for administration, regulation, policy, and investing monetarily in the community to mitigate hazards before disaster occurs. The long-term understanding can be a challenge since a single election can replace officials that have this understanding with those who are unaware, or even opposed to the steps needed for proper mitigation. The issue can be compounded when a specific situation calls for additional measures to properly implement the mitigation practice(s) identified for the site or municipality.

As it stands, most are willing to consider the needed mitigation measures identified herein. A recent reassessment has made many residents and elected officials sensitive to spending additional monies for all but necessary projects. Since mitigation has a long-term view, investment with local tax monies will be difficult without additional outside assistance, likely for the life of this plan. However, since current leadership understands the needs, projects will move forward with assistance.

### **5.2.3. FINANCIAL CAPABILITY**

Financial capability is significant to the implementation of hazard mitigation activities. Every jurisdiction must operate within the constraints of limited financial resources. The following information pertains to various financial sources relevant to hazard mitigation.

#### **Local Funds**

A community must be willing to invest in itself before it can reasonably expect others to make a similar investment. This is a basic premise of the comprehensive plan, and it is true with mitigation projects. Local investment comes from either the tax levy or municipal bonds, and must be committed prior to the request for outside assistance. The following discuss potential methods for local financing.



Because most capital investments involve the outlay of substantial funds, local governments can seldom pay for these facilities through annual appropriations in the annual operating budget. Therefore, numerous techniques have evolved to enable local government to pay for capital improvements over a time period exceeding one year. The state Department of Community and Economic Development publishes literature on municipal financing tools, which classifies techniques that are used to finance capital improvements. The techniques include revenue bonds, lease-purchase, authorities, special districts, current revenue, reserve funds, and tax increment financing. Most municipalities have very limited local tax funds for capital projects, however

with some forethought and creativity, reliance on others (and the loss of local control that comes with that reliance) can be limited.

### **Capital Improvement Plan**

The capital improvements plan is a multi-year policy guide that identifies needed capital projects and is used to coordinate the financing and timing of public improvements. Capital improvements relate to streets, storm-water systems, water distribution, sewage treatment and other major public facilities. A capital improvements plan should be prepared by the respective county's planning department and should include a capital budget. This budget identifies the highest priority projects recommended for funding in the next annual budget. The capital improvements plan is dynamic and can be tailored to specific circumstances.

The plan identifies the needs, prioritizes those needs based on community-driven criteria, and provides a blueprint for the community to follow when developing annual budgets and considering bonds, loans, cooperative agreements, amortization, and grants. The plan may include the type of financing anticipated with the municipality preparing such legal instruments as are necessary in advance to obtain the monies for the project or equipment in a timely manner. The capital improvement plan helps to eliminate the surprises that can arise with municipal turnover and long-lived equipment or installations.

### **General Obligation Bonds**

Some projects may be financed with general obligation bonds. A general obligation bond is secured by an issuing government's pledge to use all available resources — even tax revenues — to repay holders of the bond.

At the local government level, pledges may include a pledge to levy property taxes to meet the local government's obligation on the bondholders. For example, since property owners avoid losing their stake on their respective properties because of unpaid property tax bills, credit rating agencies rate general obligation pledges with strong credit qualities and assign them high investment grade ratings. If the



property owners are not able to pay their property taxes on or before the designated due date, the government is legally allowed to increase the property tax rate to make up for any delinquencies. On the designated due date, the general obligation pledge requires the local government to cover the debt with its available resources.

General obligation bonds also serve as a way for local governments to raise funds for projects that create streams of income for things such as roads, parks, equipment, and bridges. General obligation bonds are usually used to fund government projects that will serve the public community.

### **Municipal Authorities**

Municipal authorities are most often used when major capital investments are required. In addition to water and sewage treatment, municipal authorities have been formed for airports, bus transit systems, industrial development, parking, swimming pools and other purposes. Joint authorities have the power to receive grants, borrow money and operate revenue generating programs. Municipal authorities are authorized to sell bonds, acquire property, sign contracts and take similar actions. Authorities are

governed by authority board members, who are appointed by the elected officials of the member municipalities. Blair County has twenty-four identified authorities.

General Authorities are formed for the purpose of raising revenue, incurring debt, financing, and managing municipal capital projects. They can take on an open format to accommodate future needs, or can be formed for a specific purpose, such as funding support for transportation, health care, or recreation. Revenue is derived from the facility or service provided such as transit fares, hospital charges, or pool passes in the park.

Sewer Authorities include multi-purpose authorities with sewer projects. They sell bonds to finance acquisition of existing systems or for construction, extension, or system improvement. Sewer authority operating revenues originate from user fees. The fee frequently is based on the amount of water consumed and payment is enforced by the ability to terminate service or by the imposition of liens against real estate. In areas with no public water supply, flat rate charges are calculated on average use per dwelling unit.

Water Authorities are multi-purpose authorities with water projects, many of which operate both water and sewer systems. The financing of water systems for lease back to the municipality is among the principal activities of the local government facilities' financing authorities. An operating water authority issues bonds to purchase existing facilities or to construct, extend, or improve a system. The primary source of revenue is user fees based on metered usage. The cost of construction or extending water supply lines can be funded by special assessments against abutting property owners. Tapping fees also help fund water system capital costs.



Redevelopment Authorities are governed by the Urban Redevelopment Act of 1945, the first of its kind in the nation. Limited to counties, cities, and boroughs large enough to convert to a third-class city, the redevelopment authority has broad powers to reshape a city block or entire neighborhood. If the area is blighted (by the definition in state law), the redevelopment authority can, in conjunction with the relevant planning agency, produce a redevelopment plan for the area. Through this plan, the redevelopment authority can overcome past mistakes in development; redesign housing, businesses, streets, and utilities; identify and obtain financing; and partner with a redeveloper to carry out the redevelopment plan. This can be a powerful tool in areas prone to such hazards as flooding where redesign is the best long-term option. A more recent amendment allows for removal of spot blight on an individual property basis.

Storm Water Authorities are special-purpose authorities that essentially convert storm water management into a utility. Since many areas pipe and control storm water through infrastructure similar to drinking water and waste water, the use of an authority for a similar purpose is a logical extension of the traditional municipal authority. The storm water authority supports storm water planning, implementation, and management through its own fee structure, thereby relieving the municipality of the storm water burden. They are particularly useful in MS4 areas where financing for mitigation projects and maintenance of facilities to higher standards can be difficult otherwise.

## **Depreciation**



Tangible capital assets represent a significant investment for local governments. Presently there is no generally accepted definition of a tangible capital asset, and local government practices surrounding capital assets can vary quite considerably. Financial information about the stock and use of tangible capital assets is generally not being provided in the financial statements of local governments. This information is seen to be vital for purposes of stewardship, accountability, benchmarking, performance reporting and asset management plans, including ongoing maintenance and replacement requirements.

Depreciation is the expensing of a fixed asset over its useful life. Fixed assets are tangible assets, meaning they are physical assets that can be touched. Some examples of fixed or tangible assets that are commonly depreciated include buildings, equipment, office furniture, vehicles, land, and machinery. Since tangible assets might have some value at the end of their life, depreciation is calculated by subtracting the asset's salvage value or resale value from its original cost. The difference is removed in equal intervals over the years of the expected life of the asset. By taking this amount and placing it in savings, a large portion of the replacement cost will be available when the need arises at the end of the life-cycle of the asset.

### **Municipal Cooperation and Coordination**

Intermunicipal cooperation allows municipalities the ability to join together to accomplish a common goal. The goal is to provide equipment, staff, or municipal fixtures that benefit multiple municipalities by sharing the cost. Many municipalities are too small to make such purchases for their own operations, yet need the item in question to provide expected municipal services. Municipalities can jointly obtain what no one municipality could obtain on its own. An example in Blair County is the Intermunicipal Storm Water Committee, formed by thirteen municipalities to provide the required elements of the National Pollutant Discharge Elimination System permit for those municipalities Municipal Separate Storm Sewer Systems (MS4). There are others, such as in northern Morrison Cove, where three municipalities have an agreement to share road equipment and staff as needed.



The new comprehensive plan calls for increased municipal cooperation and coordination, and the Blair County Chamber of Commerce Policy Committee has taken the lead on implementing that element. When Blair Planning was created, it was placed under the guidance of the Government Advisory Committee, which is a cooperative body. That body is identified in the comprehensive plan as eventually taking the lead on the cooperation issue.

Municipal cooperation can also assist in emergency response. Emergency Medical Services are provided throughout the county through intergovernmental agreements and authorities. Similar solutions could be available for police and fire services; an identified concern through both the outreach workshops and public surveys. This could overcome the lack of local police in some areas as well as the lack of volunteers in many of the fire companies.

### **State and Federal Grants**

During the 1960s and 1970s, state and federal grants-in-aid were available to finance a large number of municipal programs, including streets, water and sewer facilities, airports, parks and playgrounds. During the early 1980s, there was a significant change in federal policy, based on rising deficits and a political philosophy that encouraged states and local governments to raise their own revenues for capital programs. This trend is continuing at both the state and Federal levels, leaving many municipalities needing to provide projects and services on their own, or forego them completely.

This plan will not attempt to identify individual grant and loan programs. This was done in a previous planning effort, only to see over half the programs zero-funded in the subsequent fiscal year. Following is a list of state and Federal agencies that provide relevant funding for the projects in this plan.

- CFA/DCED Flood Mitigation Program
- CFA/DCED H2O PA Flood Control Projects
- CFA/DCED H2O PA High Hazard Unsafe Dam Projects
- CFA/DCED H2O PA Water Supply, Sanitary Sewer and Storm Water Projects
- CFA/DCED PA Small Water and Sewer
- DCNR Community Conservation Partnerships Program
- DCNR Pennsylvania Heritage Areas Program
- DCNR Pennsylvania Recreational Trails Program
- DCNR Land & Water Conservation Fund
- DCED Business Financing
- DCED Keystone Communities Program
- DCED Local Government Capital Project Loan Program
- DCED Municipal Assistance Program
- DEP Growing Greener Program
- Land Use Planning and Technical Assistance Program
- PennDOT Pennsylvania Infrastructure Bank Loan
- Pennsylvania Infrastructure Investment Authority (PENNVEST)
- Pennsylvania Redevelopment Assistance Capital Program
- US Department of Commerce/Economic Development Authority Construction Grant Program
- US Department of Commerce/Economic Development Authority Planning Grants
- US Department of Commerce/Economic Development Authority Revolving Loan Fund
- US Department of Commerce/Economic Development Authority Technical Assistance Grants
- US Department of Energy Weatherization Assistance Program
- US Department of Homeland Security Grant Program
- US Department of Housing and Urban Development Community Development Block Grant
- US Department of Transportation/Federal Highway Administration Emergency Relief Program
- FEMA Community Assistance Program – State Support Services Element
- FEMA Community Disaster Loan Program
- FEMA Community Rating System
- FEMA Emergency Management Performance Grants
- FEMA Environmental Planning and Historic Preservation Program
- FEMA Flood Mitigation Assistance Program
- US Small Business Administration

#### 5.2.4. EDUCATION AND OUTREACH

Blair County has an expansive education and outreach program. It was one of the primary work elements of the 2013 hazard mitigation plan. Blair Planning has a preparedness section on its webpage, and maintains a hazard mitigation awareness section in each of the eight public libraries in the county. The Blair County Department of Emergency Services conducts some public outreach at public events to update the citizens and visitors of the county on natural and human-caused hazards, and hosts the annual SARA Summit each spring. The county conservation district conducts outreach on various activities and projects in the county, many of which are related to or directly impact hazard mitigation projects.



Education and outreach on the National Flood Insurance Program continues to be necessary. The new ordinances relative to floodplain management endorsed by the Department of Community and Economic Development, updated digital flood insurance rate maps, and new rate structures for insurance policies, necessitate continues outreach not only to the elected officials, but municipal staff, and the general public as well. Outreach is needed for the Community Rating System to reduce the cost of flood insurance in some income-critical areas.

#### 5.2.5. PLAN INTEGRATION

There are numerous existing regulatory and planning mechanisms in place at the state, county and municipal level of government which support hazard mitigation planning efforts. These tools include the 2013 Commonwealth of Pennsylvania Standard All-Hazard Mitigation Plan, *Alleghenies Ahead*, the Metropolitan Transportation Plan, Blair County Emergency Operations Plan, local emergency operation plans, local zoning ordinances, local subdivision and land development ordinances, local floodplain management ordinances, and similar efforts.

Information from several of these documents has been incorporated into this plan and mitigation actions have been developed to further integrate these planning mechanisms into the hazard mitigation planning process. Two of the major Blair County goals in the comprehensive plan have been fully considered and addressed in this hazard mitigation plan update. Recommendations from this plan update will be considered and very likely incorporated into the upcoming metropolitan transportation plan and the storm water management plan. Floodplain management ordinance information was used to aid in the establishment of local capabilities in addition to participation in The National Flood Insurance Program.

Storm-water management plans are essentially non-existent in Blair County. Two watersheds were completed nearly twenty years ago and never kept up to date. One watershed had a preliminary study completed, but the actual management plan and subsequent ordinances were never started. None of the other watersheds – including the largest – were ever considered. Blair Planning intends to undertake a countywide storm water management plan in 2021, once the Metropolitan Transportation Plan is completed. . Once in progress, Blair Planning will ensure that hazard mitigation data and principles are implemented as appropriate.

Blair County is a smaller county with a very limited amount of population and resources to appropriately ensure and implement hazard mitigation principles into all regulatory tools. Blair Planning will continue



to explore options to further enhance the implementation of these principals utilizing already multi-tasked staff and resources and will review other local and state plans that could be impacted with hazard mitigation principals over the next five-year planning period.

***Alleghenies Ahead: Shared Strategies for a Stronger Region***



Article III of the Pennsylvania Municipalities Planning code requires all Pennsylvania counties, except Philadelphia, to adopt a comprehensive plan and update it at least every ten years. The Blair County Commissioners adopted *Alleghenies Ahead: Shared Strategies for a Stronger Region* as the

county's comprehensive plan in July 2018. Work on that plan and this one overlapped. Data and some goals are shared between the plans where appropriate. The two major goal areas of the comprehensive plan that have direct bearing on this document and are discussed below.

Broadband and Wireless Service. Broadband and cellular services that are reliable and high quality are essential to economic competitiveness and public safety. Anecdotes abound about their shortcomings in the Southern Alleghenies. Of the six counties in the Southern Alleghenies, Blair County is the 'best served' although that level of service is still inadequate as compared to the larger urban areas and unreliable outside of the immediate Altoona area. Incidents like the active shooter in Reese and the CSX derailment in Hyndman exposed quite explicitly how inadequate the wireless communications system is in the region. AT&T has been selected by the First Responder Network Authority (FirstNet) to build and manage the first broadband network dedicated to America's police, firefighters and emergency medical services. The FirstNet network will cover all fifty states, five territories and the District of Columbia, including rural communities and tribal lands in those states and territories. It has already been implemented in the region as a result of the Hyndman incident.

The Southern Alleghenies Planning and Development Commission has formed a broadband task force to implement this goal of the plan. The task force is currently identifying gaps in coverage, funding sources, innovative methods to expand coverage, and economies of scale. A pilot system was initiated in Huntingdon County to test the viability of the co-op model for local rural service, and the task force is actively seeking relationships with the four electric co-ops in the region to emulate the service setup implemented in Tioga County around Wellsboro and Mansfield. With the adoption of this plan, greater focus will be given to the effects service gaps have on first responders on-site as well as the ability to disseminate information to the public regarding lock-downs, shelter in place orders, and general announcements. It is likely that Williamsburg will be the target of these considerations due to known communication issues in that area.

Cooperation and Coordination. The region's ability to implement its priorities and maintain critical assets is tied to how well a variety of partners work together. Many issues cut across municipal boundaries and require productive working relationships between multiple entities and sectors. Alleghenies Ahead represents acknowledgement by the entire region of the importance of collaboration and the potential power of a unified regional voice on select issues and the economic benefits when services, materials, and equipment are shared. Many respondents had a concern on the capacity of two of three primary emergency response services: police and fire. Concern is that there is not enough personnel to serve a county where the demographics have shifted significantly since the current setup was implemented. Regional cooperation is one tool that could be used to address these concerns.

The Blair County Chamber of Commerce has a Policy Committee that has had intermunicipal coordination and cooperation as its focus for a number of years. This committee has agreed to undertake the implementation responsibilities for the cooperation and coordination goal of the comprehensive plan. The committee is aware of the prominence the issue has gained with the hazard mitigation planning process and is ready to assist with implementing a hazard mitigation focus as well. This element is more difficult to implement than most since it requires some surrendering of autonomy for the greater good. Many people in positions of authority recognize the value of this concept, but often feel it is best implemented elsewhere. Since some of the issues surrounding cooperation and coordination are new for the first responder community and are likely to directly impact positions of authority, the committee will be undertaking the implementation with great care, and may lean on others where the first responder community is concerned.

### **Metropolitan Transportation Plan**

Formerly known as a long-range transportation plan, each metropolitan planning organization must prepare a Metropolitan Transportation Plan, in accordance with 49 USC 5303(i), to accomplish the objectives outlined by the metropolitan planning organization, the commonwealth, and the public transportation providers with respect to the development of the metropolitan area's transportation network. This plan must identify how the metropolitan area will manage and operate a multi-modal transportation system (including transit, highway, bicycle, pedestrian, and accessible transportation) to meet the region's economic, transportation, development and sustainability goals for a twenty-year planning horizon.



The Altoona Metropolitan Planning Organization will be undertaking its next metropolitan transportation plan in 2019 with a regulatory deadline for completion in late 2020. The plan will draw heavily on the same data relied upon for the comprehensive plan and this plan document. Overlapping elements include freight transportation, mass passenger transportation, and alternative transportation options to provide active choices that will improve health. This planning effort will be just getting under way as the hazard mitigation plan update is winding down.

The freight element of the plan, sometimes referred to as a goods movement study, will analyze the movement of freight into, out of, and through the county. The focus is generally on truck traffic and rail, but with the number of pipelines and the intermodal facility in the center of the county, pipeline movement will be included as well. Much of this information is sensitive, and will be handled discretely, however the result will be a picture of the flow of commodities in Blair County. As a result of the hazard mitigation planning efforts, the freight element of the metropolitan transportation plan will include a discussion of hazardous materials, including points in the system that need improvement to reduce risk and/or enhance the safety of the travelling public and surrounding properties.

The plan will also have an element on mass passenger transportation, including local transit, demand response services, and intercity bus and rail. The plan will be concerned with the movement of passengers in a manner similar to the freight element, but as a result of some discussions during the development of the hazard mitigation plan, will also include an examination of accessibility (both in terms of disability and access generally) and security. Security of the transportation system is crucial as those with nefarious purposes can use the system both to carry their materials and personnel, as well as a target.

## Comprehensive Economic Development Strategy



The Comprehensive Economic Development Strategy contributes to effective economic development in America's communities and regions through a locally-based, regionally-driven economic development planning process. Economic development planning successfully serves as a means to engage community leaders, leverage the involvement of the private sector, and establish a strategic blueprint for regional collaboration. The Comprehensive Economic Development Strategy provides the capacity-building foundation by which the public sector, working in conjunction with other economic actors, such as individuals, firms, and industries, creates the environment for regional economic prosperity. Simply put, a Comprehensive Economic Development Strategy is a strategy-driven plan for regional economic development. The Southern Alleghenies Planning and Development Commission conducts the planning and programming for the Comprehensive Economic Development Strategy in Blair County. The next iteration is due in 2020, and will have similar goals as the regional *Alleghenies Ahead*, but with an economic development perspective.

The Comprehensive Economic Development Strategy will include a component on broadband, which will be coordinated with the Alleghenies Ahead planning efforts to enhance and increase coverage throughout the region. As mentioned above, the elements of this plan will also be coordinated with the Alleghenies Ahead task force to ensure communications coverage in the times of an incident as well as other benefits to the community derived by such technologies.

## Storm Water Management

As mentioned earlier, storm water management planning in Blair County has been lacking. This is primarily due to a lack of funding and an inability to do such a plan in-house. With the advent of the York County approach to storm water management planning and its endorsement by the Pennsylvania Department of Environmental Protection, staff is now able to undertake this important project. Given the timeline for the Metropolitan Transportation Plan, however, the storm water planning will need to be delayed until 2021.

The Pennsylvania Department of Environmental Protection entered into a contract with Blair Planning in 2010 to complete a countywide storm water management plan, dependent on state funding for the project. In an odd twist, the intended funding source was zero-funded within a month of that agreement being signed. As a result, the countywide project has been deferred. Two watersheds have completed, but outdated, storm water management plans which are discussed below. The Little Juniata watershed has a phase one study, which was completed in 2003. The remaining watersheds have had no planning.

The Beaverdam Branch encompasses the southern half of Altoona and Logan Township, the vast majority of Duncansville, Hollidaysburg, and Allegheny Township, and portions of Blair Township and Frankstown Township. Appropriate ordinances were put in place in accordance with the plan, but those ordinances are out of date with current practice. The plan has not been updated since it was adopted in 1998.

The Bobs Creek watershed, which is one of the main headwaters of the Raystown Branch of the Juniata River, was completed by the Bedford County Planning Commission in 2003. It covers Greenfield and

Juniata Townships in Blair County. Ordinances are in place that conform to the plan, but again are not in conformance with modern practice. This plan has also not been updated since it was adopted.

Storm water management planning ties directly into hazard mitigation because of its close relationship to man-made flooding. Much of our flooding issues are exacerbated by poor development practices, some of which were done in ignorance. We now deal with these legacy developments, which should be retrofitted with modern storm water management facilities to reduce flooding impacts throughout the county. The countywide plan, proposed to begin in 2021, will directly make the connection between good storm water practices and flood mitigation.

We see the storm water management plan as a critical part of the flood mitigation activities throughout the county, as well as downstream. Flooding in the county is a natural phenomenon exacerbated by human activity. Much of the development built prior to 2000 directly contributes to the flooding problems the county experiences today. In defense of those developers, much was built in ignorance of the impact the development would have on flooding since much of the knowledge we now have was gained subsequent to the building activity.

The plan is expected to address the standard elements required by a storm water management plan in Pennsylvania, but also specifically include elements to address future development from a flood mitigation perspective. With the data available, an argument can also be put forth for the retrofitting of existing development to reduce its contribution to the current problem. Part of the storm water management planning process is the requirement that all municipalities within the jurisdiction of the plan adopt a storm water ordinance that implements the plan. As part of the plan development, (a) model ordinance(s) will be developed and recommended for municipal adoption.

### **Blair County Emergency Operations Plan**



The Pennsylvania Emergency Management Services Code requires each county and municipality to prepare, maintain and keep current an Emergency Operations Plan. The Blair County Office of Emergency Services is responsible for preparing and maintaining the county's Emergency Operations Plan, which applies to both the county and municipal emergency management operations and procedures.

The Emergency Operations Plan is reviewed annually. Whenever portions of the plan are implemented in an emergency event or training exercise, a review is performed and changes are made where necessary. These changes are then distributed to the county's municipalities.

The complete risk assessment section, mitigation actions and mitigation project opportunities identified in the Blair County Hazard Mitigation Plan will assist with decreasing hazard specific risk and vulnerability. Understanding the risks and vulnerability in the county and municipalities will allow for emergency management and other response agencies to better direct planning, response and recovery aspects.

### **Local Ordinances**

The importance of local ordinances in hazard mitigation was discussed earlier, however it bears repeating that coordinating the content of local ordinances – particularly those that deal with the built environment – can have a dramatic long-term benefit for communities in avoiding or reducing certain hazard situations.

Zoning. Zoning regulates the use of land and the height, bulk, and density of development. Most boroughs in the county have adopted a zoning ordinance, but only two townships have. In the rural areas, zoning is unwelcome and, given recent development trends, unnecessary. Many of the municipalities that have zoning have integrated flood management into the ordinance. No mass amendments to zoning are anticipated as an implementation step to this plan.

Subdivision and Land Development. This ordinance regulates the actual development of the land. It generally includes provisions for street design, lot layout, environmental protection, and parking. Most townships have such an ordinance, but few boroughs do. Many have included storm water management requirements within the subdivision and land development ordinance. There are a few implementation steps that would benefit from some adjustments to some of the local subdivision and land development ordinances. These will be identified specifically and Blair Planning will work with those municipalities needing an adjustment to adopt the needed amendment.

Floodplain Management. This ordinance regulates development activity within the regulatory floodplain as delineated on the Flood Insurance Rate Map, and is a requirement for participation in the National Flood Insurance Program. All Blair County municipalities updated their flood management requirements to comply with the Pennsylvania Department of Community and Economic Development model in 2018. Additional adjustments may become necessary once the storm water management plan is completed. The extent of these adjustments cannot be determined at this time.

Storm Water Management Ordinance. Most municipalities have some form of storm water management ordinance loosely based on the requirements of the Beaverdam Branch Storm Water Management Plan. This plan is very much out of date, and was not intended to provide policy direction outside its namesake watershed. All municipalities will be required to update their storm water management requirements once the new countywide plan is complete. Changes to these ordinances may impact the subdivision and land development ordinances and floodplain management ordinances as well.

Ensuring consistency between these planning mechanisms is critical. To that end, Blair County and its municipalities must ensure that the components of the hazard mitigation plan are integrated into existing community planning mechanisms and are generally consistent with goals, policies and recommended actions. Blair Planning will utilize the existing maintenance schedule of each plan to incorporate the goals, policies and recommended actions as each plan is updated.

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**- SECTION 6 -**

**MITIGATION STRATEGY**

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## 6.0 MITIGATION STRATEGY

### 6.1 UPDATE PROCESS SUMMARY

The goals and objectives listed in the Blair County Hazard Mitigation Plan were first examined at a regular meeting of the Hazard Mitigation Planning Committee. During the five-year review, the Committee members and general public were afforded the opportunity to comment on the goals, objectives, and actions that were listed in the existing hazard mitigation plan. In addition, the Plan was posted on the Blair Planning website ([www.blairplanning.org](http://www.blairplanning.org)) throughout the course of the plan update process. Correspondence distributed to the municipalities referenced the website and welcomed comments on the HMP to the Committee.

The general mitigation planning approach used to develop this plan is based on (1) the Federal Emergency Management Agency publication entitled *Developing the Mitigation Plan: Identifying Mitigation Actions and Implementing Strategies*, and (2) the Pennsylvania All-Hazard Mitigation Planning Standard Operating Guide. The Standard Operating Guide includes the following four steps, which were used to support mitigation planning for this Plan:



1. Review of Mitigation Goals and Objectives: Existing mitigation goals and objectives were examined during a 2017 Hazard Mitigation Planning Committee meeting, which was open to members of the public and county stakeholders. The Committee and members of the general public were afforded the opportunity to comment on the goals and objectives that were listed in the existing 2013 Plan through the Committee meeting, a public survey, and one of three workshops held regionally throughout the county. Mitigation goals and objectives were updated using the latest information gathered through the hazard profiles, vulnerability assessments, and the risk assessment; they were also compared to the State Hazard Mitigation Plan goals and objectives.
2. Develop and Update Mitigation Strategies: Mitigation actions were identified based on the risk assessment, mitigation goals and objectives, existing policies, public response to the surveys and workshops, input from the Committee, and municipal planning partners.
3. Mitigation Strategy Prioritization and Implementation: The potential mitigation actions were qualitatively evaluated as described in more detail in Section 6.4 of this Plan. Mitigation actions were prioritized into three categories: high, medium, and low. High priority and medium priority mitigation actions are generally recommended for implementation before low priority actions; however, based on County and community-specific needs, cost estimation, and available funding, some low priority mitigation actions may be addressed first.
4. Document the Mitigation Planning Process: The entire mitigation planning process is documented throughout this Plan, particularly in Section 3.

### 6.1.1 REVIEW OF 2013 MITIGATION GOALS AND OBJECTIVES

Mitigation goals are general guidelines that explain what the County wants to achieve. Goals are usually expressed as broad policy statements representing desired long-term results. Mitigation objectives describe strategies or implementation steps to attain the identified goals. Objectives are more specific statements than goals; the described steps are usually measurable and can have a defined completion date.

The 2013 Plan included 6 goals and 14 objectives; many of the goals and objectives had the same wording and intent, but were hazard-specific. During the 2018 update process, the Committee decided to condense the overlapping entries into one entry that addresses reductions in the possibility of damage and loss to existing community assets stemming from all hazards. This approach ensures that additional goals would not have to be added to the mitigation strategy if more hazards were added to the plan in the future, and makes the mitigation goals and objectives easier to track during implementation. This section includes a review of the 2013 goals and objectives for inclusion in the 2018 Plan Update. A detailed discussion of goals and objective for the 2018 Plan is included in Section 6.2.

#### **GOAL: Community Rating System Rankings**

This goal proved to be more than what the municipal officials felt they could handle. The concept will be reworked to reflect the lessons learned in the last five years. (Note: Altoona obtained a Community Rating System Score prior to the efforts of this Hazard Mitigation Plan, and will continue its own pursuit of program benefits.)

##### **OBJECTIVE: Raise Awareness**

The Community Rating System has been discussed at several municipal meetings as well as intermunicipal and Hazard Mitigation Planning Committee meetings. Municipalities are aware of the program, but lack staff time to meet the requirements above the basic National Flood Insurance Program standard. A Community Rating System awareness component will be carried forward to maintain what has been accomplished.



##### **OBJECTIVE: Document Actions**

This was not undertaken due to a lack of available municipal staff time. This will not be carried forward as a component, however county-level organizations stand ready to assist any municipality desiring to obtain a Community Rating System score.

#### **GOAL: Special Needs Database**

A special needs database has been developed utilizing Smart-911 technology and services. The availability and support for Smart-911 has been integrated into the framework of the Blair county Department of Emergency Services as a mainstay. This goal is accomplished, and will not be identified in upcoming updates (although the service will continue).

##### **OBJECTIVE: Develop Technology, Database, and Protocols**

The county is utilizing the technology and services of Smart-911 to achieve this objective.

##### **OBJECTIVE: Market to Targeted Population**

Marketing is ongoing through standard advertisements, brochures, special-needs groups, and social media. Marketing is integrated into the framework of county operations and will be ongoing.



**GOAL: Hazard Education Program**

The hazard education program has been well-received and met with good success. These efforts will continue in the future. This goal will be modified to incorporate newly-identified needs and strengthen current successes and carried into the new update.

**OBJECTIVE: Identify High-Risk Areas and Populations**

The assessment intended under this objective has been substantively completed. Continued monitoring to account for shifting demographics, settlement and commuting patterns, and hazard conditions will be carried forward into the next five year period.

**OBJECTIVE: Develop and Distribute Literature**

Literature needs identified and distributed centered on storm events, flooding, and radon. Additional materials were developed on public responsibilities relative to emergency orders such as ‘evacuate’ and ‘shelter in place.’ This element will be carried forward.

**OBJECTIVE: Maintain High Quality Responder Training**

The Blair County Department of Emergency Services has continued providing its excellent training programs and outreach. This item will also be carried forward.

**GOAL: Storm Preparedness and Awareness**

This goal was similar to the Hazard Education Goal and the results overlapped substantially. The intent of the goal has been met, and it will be rolled into the Hazard Education Program going forward.

**OBJECTIVE: Raise Public Awareness**

Awareness was raised through special training programs, literature distribution, radio distribution, online offerings, and social media. This will be rolled into the Hazard Education Program.

**OBJECTIVE: Develop Public Response**

This was done in close conjunction with the Hazard Education Program, and will be included there henceforth.



**GOAL: Continue Flood Program Initiated Under 2008 plan**

Flooding continues to threaten the county and is likely the largest ongoing hazard threat that can be substantially mitigated. A separate flood goal with its own objective will continue into the update period.

**OBJECTIVE: Identification of Flood Impacts**

This objective is substantially completed. Monitoring will continue with updates done as conditions and technologies warrant

**OBJECTIVE: Continue Buyout Program**

Although there appears to be low private interest in this program, it is felt it is an indispensable tool in the flood mitigation toolbox, and public sector participation and interest remain strong. Therefore this will be carried forward.

**OBJECTIVE: Address Vulnerable Facilities**

Work is ongoing. It is likely there will always be improvements that can be done as some of these facilities are in harm's way by the nature of the service or function the facility provides. The element will be incorporated into several new action steps and carried forward through those efforts.

**GOAL: Transportation Improvements**

The elements of this goal have been recognized by the Metropolitan Planning Organization and incorporated into its planning and programming schedules. Specific action items may be needed for transportation in the future, however this goal as a separate entry will not be carried forward.

**OBJECTIVE: Improve PA 764 Corridor**

This project has been included on the Altoona Metropolitan Planning Organization planning and programming documents and is considered complete for the purposes of hazard mitigation planning.

**OBJECTIVE: Identify Hazardous Material Choke Points**

This project has been included in the scope of the 2020 Metropolitan Transportation Plan and is considered complete for hazard mitigation purposes. Should the Metropolitan Transportation Plan identify an item appropriate for action within hazard mitigation auspices, it will be included where appropriate in a subsequent amendment or update to the Hazard Mitigation Plan.

**6.1.2 MITIGATION ACTION REVIEW**

Mitigation actions provide detailed descriptions of specific work tasks to accomplish in order to achieve the mitigation goals and objectives. There were 58 actions identified in the 2013 Plan, which all participants and stakeholders discussed and/or reviewed during the planning process. This section provides a review of the status of the 2013 mitigation actions, and the determination on if the action is to be continued into the 2018 Mitigation Action Plan.

**GOAL: Community Rating System Rankings**

*Complier's Note: The Community Rating System Goal was put in place to assist municipalities in obtaining a Community Rating System score. As noted above, Altoona had independently obtained a score prior to (and independent from) the 2013 Plan Update. Because Altoona had already completed these steps, the status notes for the Community Rating System. Action Steps do not include Altoona.*

**OBJECTIVE: Raise Awareness**

**ACTION STEP: Raise Awareness of the Community Rating System**

This action step was undertaken immediately upon plan adoption, and has been periodically ongoing since 2013. Blair Planning will continue to promote the system in the coming years, and this action step will be included as an action step under the goal related to flood mitigation.

**ACTION STEP: County Assistance**

County assistance – through Blair Planning and through the Blair County Department of Emergency Services – has been offered several times throughout the five-year life of the 2013 update. Blair Planning will continue to offer this assistance as part of its local planning activity. As a formal action step, mention that assistance is available will be included in the continued efforts to raise awareness of the Community Rating System, however a separate action item will not be included in the future.

**ACTION STEP: Repetitive Loss Property Identification**

This item was undertaken from 2013 through 2015 and is complete. This will be rolled into another action item under the flood mitigation goal.

**ACTION STEP: Federal Emergency Management Agency Kickoff Meeting**

A kickoff meeting was held with representative of the Department of Community and Economic Development and the Federal Emergency Management Agency in 2014, with nearly every municipality in attendance. Most determined that staff availability was insufficient to participate in the Community Rating System. This item is considered complete.

**ACTION STEP: Rating Roadmap**

This was reviewed at the kickoff meeting, with Blair Planning standing ready to follow up with any interested municipality. At this time, there is insufficient staff resources at the municipal level to follow through. This item will not be moved forward as a separate item.

**OBJECTIVE: Document Actions**

**ACTION STEP: Identify Adopted Ordinances and Plans**

Blair Planning completed this step in preparation for the kick-off meeting. A library of land-based ordinances is maintained in the Blair Planning offices. This action step is complete.

**ACTION STEP: Identify Related Municipal Actions**

As a result of the kick-off meeting, this element was determined by the municipalities to be beyond the staffing limitations identified above. This item will not be carried forward, however Blair Planning will assist any municipality with this task should it desire to obtain a Community Rating System score.

**ACTION STEP: Maintain Maps and Certificates**

This requirement was reviewed at the kick-off meeting, and Blair Planning ensured that all municipalities had a current set of maps and certificates as well as online access to the digital Flood Insurance Rate Map information. This action item is complete.

**ACTION STEP: Document Education Efforts**

As no municipality chose to engage this goal, this action step was not started. It will not be carried forward, but like above, Blair Planning stands ready to assist if needed.

**GOAL: Special Needs Database**

**OBJECTIVE: Develop Technology, Database, and Protocols**

**ACTION STEP: Develop Database Attachment**

Blair County Department of Emergency Services has provided the intended function through a contract with Smart 911. This action step is complete.

**ACTION STEP: Develop the Database Structure**

Blair County Department of Emergency Services has provided the intended function through a contract with Smart 911. This action step is complete.

**ACTION STEP: Develop Update Mechanism**

Blair County Department of Emergency Services has provided the intended function through a contract with Smart 911. This action step is complete.

**ACTION STEP: Engage Third-Party Databases for Verification**

Blair County Department of Emergency Services has provided the intended function through a contract with Smart 911. This action step is complete.

**ACTION STEP: Ensure HIPAA Compliance**

Blair County Department of Emergency Services has provided the intended function through a contract with Smart 911. This action step is complete.

**OBJECTIVE: Market to Targeted Population**

**ACTION STEP: Identify People, Locations, and Needs**

Blair County Department of Emergency Service worked with advocacy groups for the elderly and disabled as well as medical and service providers to identify these needs. The initial push envisioned for this action step is complete.

**ACTION STEP: Engage Social Service Agencies**

Outreach has been done with various advocacy groups for the elderly and disabled as well as medical and service providers. This action step is complete, with an intent for ongoing outreach to keep people aware of the service as part of the normal function of the Blair County Department of Emergency Services.

**ACTION STEP: Direct Marketing**

Advertising has been placed in various publications, brochures are available in waiting rooms and community gathering areas, and information is available online. These efforts are part of the daily operation of the Department of Emergency Services and will continue in that capacity. This action step is complete.

**GOAL: Hazard Education Program**

**OBJECTIVE: Identify High-Risk Areas and Populations**

**ACTION STEP: Map High Risk Geographic Areas**

High risk areas have been identified. This action step is complete.

**ACTION STEP: Develop Map-On-The-Fly Product**

This action item was deferred in favor of disseminating training and literature as well as the Smart-911 system. It will be picked up during the next Plan Update.

**ACTION STEP: Identify High Risk Populations**

High risk populations have been identified. This action step is complete.

**ACTION STEP: Develop Language-Specific Literature**

Discussion with state and Federal officials regarding limited English proficiency revealed an extremely small number of people needing translated services. Additionally, these people represented over a dozen languages among them, making the impact of translating into any single language minimal. A live phone translation service has been provided to all municipalities through a contract Blair Planning holds for limited English proficiency grant requirements. Local awareness of the potential need is present and the need will be monitored, however the action step does not seem necessary at this time.

**OBJECTIVE: Develop and Distribute Literature**

**ACTION STEP: Increase County Emergency Management Agency and Local Emergency Management Agency Visibility**

The Blair County Department of Emergency Services has substantially increased its visibility and the visibility of their local counterparts since 2013. This action step is fulfilled.

**ACTION STEP: Identify Needed Topics**

Topics were identified and pre-published information was obtained from several sources. Topics focused on storms, floods, hazardous materials, and radon. This action step is complete.

**ACTION STEP: Develop General Information Brochure**

General publications were found and used in lieu of local development of the same material. This action step is complete.

**ACTION STEP: Develop Detailed Information Booklet**

Detailed publications were found and used in lieu of local development of the same material. This action step is complete.

**ACTION STEP: Ensure Clarity and Comprehension**

The materials selected were vetted through people not involved in government, development, planning, or emergency management and were found to adequately communicate the needed material. This action step is complete.

**ACTION STEP: Promote the Rapid Notify System**

This is promoted in print material, and also online. This action step is complete.

**ACTION STEP: Promote Smartphone Apps**

Subsequent studies for the comprehensive plan identified spotty and unreliable wireless service as a major concern for the county. As such vigorous promotion of apps that rely on such wireless service seemed counter-productive. Some apps are identified and supported, but efforts stopped short of active promotion pending correction of the wireless problem. This will be carried forward either as part of the Hazard Education Program, or as part of the objective to bolster wireless service in the area.

**OBJECTIVE: Maintain High Quality Responder Training**

**ACTION STEP: Offer Tabletop Simulation Exercises**

The Blair County Department of Emergency Services continued to offer and promote high-quality simulation exercises. This item was fulfilled and will be carried forward.

**ACTION STEP: Offer On-Site Simulation Exercises**

The Blair County Department of Emergency Services continued to offer and promote high-quality simulation exercises. This item was fulfilled and will be carried forward.

**ACTION STEP: Continue Annual SARA Summit**

The Blair County Department of Emergency Services through the Local Emergency Planning Committee has continued to offer this extremely popular summit on an annual basis. This item was fulfilled and will be carried forward.

**GOAL: Storm Preparedness and Awareness**

**OBJECTIVE: Raise Public Awareness**

**ACTION STEP: Training for General Public**

The Blair County Department of Emergency Services continued to offer and promote high-quality training for the general public. This item was fulfilled and will be carried forward.

**ACTION STEP: Training for Public Officials**

The Blair County Department of Emergency Services continued to offer and promote high-quality training for public officials. This item was fulfilled and will be carried forward.

**ACTION STEP: Distribute Severe Weather Literature**

Severe weather literature was distributed with the literature package developed for the Hazard Education Program. This action item is complete.

**ACTION STEP: Promote the Emergency Activation System**

The Blair County Department of Emergency Services and Blair Planning continued to promote the emergency activation system through distributed literature and online. This action item is complete.

**ACTION STEP: Distribute All-Hazard Weather Radios**

The Blair County Department of Emergency Services continued to distribute all-hazard weather radios at various events and venues. This action item is complete.

**OBJECTIVE: Develop Public Response**

**ACTION STEP: Develop Informational Pamphlet**

The informational pamphlet was selected from a pre-published set as part of the Hazard Education Program and distributed with the package of information under that program, This action item is complete.

**ACTION STEP: Develop Informational Booklet**

The informational booklet was selected from a pre-published set as part of the Hazard Education Program and distributed with the package of information under that program, This action item is complete.

**ACTION STEP: Provide Sky-Warn Course**

A Sky-Warn course was offered at the Blair County Emergency Management Agency in 2015. This action item is complete.

**ACTION STEP: Promote Rapid Notify**

This is promoted in print material, and also online. This action step is complete.

**ACTION STEP: Promote Smartphone Apps**

Subsequent studies for the comprehensive plan identified spotty and unreliable wireless service as a major concern for the county. As such vigorous promotion of apps that rely on such wireless service seemed counter-productive. Some apps are identified and supported, but efforts stopped short of active promotion pending correction of the wireless problem. This will be carried forward either as part of the Hazard Education Program, or as part of the objective to bolster wireless service in the area.

**GOAL: Continue Flood Program Initiated Under 2008 Plan**

**OBJECTIVE: Identification of Flood Impacts**

**ACTION STEP: Maintain National Flood Insurance Program Compliance**

All municipalities in Blair County maintained National Flood Insurance Program compliance for the period of the 2013 Plan Update. This action item is fulfilled and will be continued.

**ACTION STEP: Identify All Public Lands Containing Flood Hazard**

This was completed with Blair Planning geographic information system services. This action item is complete.

**ACTION STEP: Identify Critical Facilities Impacted By Flood Hazard**

This was completed with Blair Planning geographic information system services. This action item is complete.

**ACTION STEP: Improve Blair County Assessment Database**

Blair County undertook a countywide reassessment during the operational period of the 2013 Plan Update. As part of that undertaking, the database was improved. This action item is complete.

**OBJECTIVE: Continue Buyout Program**

**ACTION STEP: Promote Voluntary Participation**

Blair Planning and a number of municipalities continued to promote voluntary participation in the buyout program. Interest on the part of private landowners remained low, however public officials continue to support the program. This item was fulfilled and will be carried forward.

**ACTION STEP: Expand Communities Participating**

Three additional municipalities are willing to participate, but had no willing participants. Because local officials are supportive, this item will be carried forward.

**ACTION STEP: Create Land Bank or Greenway in Flood Areas**

Extensive discussions were had relative to a countywide land bank. The result is a land bank housed with the Altoona Redevelopment Authority. Intent is to expand it as interest and ability warrant. This item is complete, and work will continue moving forward.

**OBJECTIVE: Address Vulnerable Facilities**

**ACTION STEP: Relocate Critical Buildings**

No buildings were relocated, however such relocation was to occur with larger factors related to the facility. The action item will be combined with the stock and maintenance yard action item below and carried forward through new flood-related action items.

**ACTION STEP: Relocate Stock and Maintenance Yards**

No yards were relocated, however stock was relocated in three yards to avoid a potential incident. The action item will be combined with the building relocation action item noted above.

**ACTION STEP: Reinforce Unmovable Facilities**

Reinforcement actions were undertaken on several water treatment facilities that are necessarily located in the floodplain. Additional opportunities for reinforcement are present, and this item will be carried forward through new flood-related action items.

**ACTION STEP: Continue Dam Maintenance**

The municipal authorities responsible for the several dams throughout the county continue to maintain and service the dams regularly. Most are classified as high-hazard, however the maintenance done keeps them in excellent repair. This item is fulfilled and will carry forward.

**GOAL: Transportation Improvements**

**OBJECTIVE: Improve Pa 764 Corridor**

**ACTION STEP: Conduct Traffic Study**

The needed steps for the PA 764 corridor study and improvements are now included in the planning and programming pipeline of the Altoona Metropolitan Planning Organization and will be carried out through those channels. This action item is considered complete for the purposes of hazard mitigation planning.

**ACTION STEP: Install Way-Finding For Commercial Drivers**

The needed steps for the PA 764 corridor study and improvements are now included in the planning and programming pipeline of the Altoona Metropolitan Planning Organization and will be carried out through those channels. This action item is considered complete for the purposes of hazard mitigation planning.

**ACTION STEP: Install Warning Notices for Non-Commercial Drivers**

The needed steps for the PA 764 corridor study and improvements are now included in the planning and programming pipeline of the Altoona Metropolitan Planning Organization and will be carried out through those channels. This action item is considered complete for the purposes of hazard mitigation planning.

**OBJECTIVE: Identify Hazardous Material Choke Points**

**ACTION STEP: Engage the Pennsylvania Department of Transportation**

The identification of hazardous material choke points will be included as part of the freight analysis in the Metropolitan Transportation Plan. This action item is considered complete for the purposes of hazard mitigation planning.

**ACTION STEP: Conduct County Wide Survey of Choke Points**

The identification of hazardous material choke points will be included as part of the freight analysis in the Metropolitan Transportation Plan. This action item is considered complete for the purposes of hazard mitigation planning.

**ACTION STEP: Conduct Marcellus Shale Road Survey**

Interest in Marcellus Shale in Blair County abruptly ceased within two month of the adoption of the 2013 Update. There is no indication that interest will be renewed in the next five years. This action item is now considered unnecessary and will be dropped.



### **6.1.3 STATUS OF IDENTIFIED RELATED ACTIVITIES**

#### **Storm Water Management Planning**

No funding was identified to undertake storm water management planning in Blair County as identified in the 2013 Plan Update. However, the thirteen municipalities that make up the Altoona urban area that are subject to the Municipal Separate Storm Sewer System (MS4) requirements of the National Pollution Discharge and Elimination System (NPDES) have formed an intergovernmental committee to deal with specific storm water funding and projects within that urban area. These efforts have gained widespread attention and are used as a model for other multimunicipal regions.

Changes in some grant funding as well as changes in the approach the Pennsylvania Department of Environmental Protection takes toward the development of storm water management plans has made the possibility of completing one for Blair County more likely during the cycle of the 2018 Plan Update. Development of a storm water management plan is included as an action step below.

#### **County Comprehensive Plan Update**

Blair County participated in the development of *Alleghenies Ahead: Shared Strategies for a Stronger Region* and adopted it as the county comprehensive plan in July 2018. This is a six-county joint plan with regional and county-level goals and action steps. Two of the elements identified in that plan were also identified in the development process of this Hazard Mitigation Plan. The poor availability of wireless and broadband services and the need for intermunicipal cooperation and coordination have a large role in mitigation, response, and recovery, and will be addressed via objectives and action items below.

#### **Countywide Certified Floodplain Manager**

This was a need identified but not fully investigated as part of the 2013 Plan Update. In the intervening five years, this concept has been more thoroughly studied. The consensus remains that a countywide manager would be beneficial since many of the municipalities have limited staff and limited number of properties impacted by the regulatory floodplain. Blair Planning investigated housing the function within its organization, however the legal structure of the organization does not easily permit enforcement of regulations. A backup position of having Blair Planning provide the service to municipalities via a contract with a third party is being actively investigated at the time this is written. An action item dealing with this matter will be added to the flood mitigation goal below.

#### ***Designing To Heal Protocol***

The *Designing to Heal* Protocol will be considered during any regulatory update involving zoning, subdivision, land development, floodplain management, storm water management, official maps, or similar controls. There have been no such efforts other than minor amendments since the 2013 Plan Update

*Designing to Heal* proposes to pre-design communities so that a disaster does not have as great an impact as it might otherwise. As part of the development review process, this second element can be incorporated so as to reduce impact of future disasters in Blair County. It will be strongly considered for inclusion in the Metropolitan Transportation Plan, and the proposed storm water management plan.

## **Public Information Campaign**

The public information campaign improvements discussed in the 2013 Plan Update are ongoing and will be ongoing as technology continues its rapid pace of change. Strides have been made in the last five years and will continue so information can be distributed to those who need it in a timely manner. This is a basic function, and will no longer appear in subsequent updates.

## **6.2 MITIGATION GOALS AND OBJECTIVES**

Based on the results of the review of current conditions and the mitigation goals and objectives established in 2013, the Hazard Mitigation Planning Committee developed five goals with nineteen objectives for inclusion in the 2018 Plan. The 2018 Plan goals and objectives are in line with State mitigation goals, embody the overarching needs and concerns of the County and participating municipalities, and address both natural and non-natural hazard risk reduction. The 2018 County Hazard Mitigation Plan goals and objectives are listed below:

### **GOAL 1: Continue public education and awareness of existing and potential hazards**

OBJECTIVE 1A: Continue the annual SARA Summit

OBJECTIVE 1B: Provide public outreach, training, and education relative to property owners' vulnerability as well as strategies to mitigate the risks from these hazards.

OBJECTIVE 1C: Increase public awareness of which actions should be taken during an emergency

OBJECTIVE 1D: Maintain a database that identifies a caller's medical conditions to 911.

### **GOAL 2: Prevent injury and property damage from existing and potential hazards**

OBJECTIVE 2A: Maintain database of critical facilities, structures, and populations including source(s) of vulnerability, level(s) of vulnerability, and protection measures needed.

OBJECTIVE 2B: Enhance planning efforts to identify and correct areas of increased transportation incidents across all modes.

OBJECTIVE 2C: Direct new growth away from hazard-prone areas, or mitigate hazards in-place.

OBJECTIVE 2D: Modify the regulatory environment to recognize and accommodate hazardous areas and situations.

### **GOAL 3: Reduce the risk of flood damage throughout the county**

OBJECTIVE 3A: Encourage removal of man-made development in identified flood hazard areas

OBJECTIVE 3B: Retrofit all developed areas with state-of-the-art best management practices, particularly at times of construction, demolition, change of use, or change of lease.

OBJECTIVE 3C: Maintain compliance with the National Flood Insurance Program requirements.

OBJECTIVE 3D: Continue to promote and expand participation in the Community Rating System

OBJECTIVE 3E: Recognize and address the direct link between local flooding and storm water management practices

OBJECTIVE 3F: Ensure existing drainage systems such as ponds, pipes, culverts, channels, and such are both adequate and functioning properly

OBJECTIVE 3G: Implement storm water mitigation projects in conjunction and/or cooperation with the Municipal Separate Storm Sewer System permit requirements under the National Pollution Discharge and Elimination System.

**GOAL 4: Enhance emergency services throughout the county**

OBJECTIVE 4A: Maintain high-quality responder training

OBJECTIVE 4B: Monitor and ensure all high-hazard dams have a current emergency action plan

OBJECTIVE 4C: Promote participation in the local volunteer fire and rescue companies throughout Blair County.

OBJECTIVE 4D: Develop a plan to evaluate, identify, and address capacity overlaps and deficiencies in fire, police, and medical responder services.

OBJECTIVE 4E: Develop air hazard ordinances for helipads designated for emergency support services, including those at the various hospitals.

OBJECTIVE 4F: Develop wireless and broadband infrastructure to provide communications support for emergency responders and critical personnel and facilities.

**GOAL 5: Protect existing natural areas that contribute to hazard mitigation**

OBJECTIVE 5A: Develop replicable stream bank stabilization and riparian buffer best management practices to eliminate erosion and reduce surface runoff into streams

OBJECTIVE 5B: Adopt a storm water management plan in compliance with the requirements of the Pennsylvania Department of Environmental Protection that also focuses on storm water management as a means to mitigate flood impacts.

OBJECTIVE 5C: Ensure highway maintenance and operations do not contribute to the degradation of natural areas and do not contribute to hazard situations.

**6.3 IDENTIFICATION & ANALYSIS OF MITIGATION TECHNIQUES**

The mitigation strategy in the updated Hazard Mitigation Plan should include analysis of a comprehensive range of specific techniques or actions. The Federal Emergency Management Agency, through the March 2013 Local Mitigation Handbook, and the Pennsylvania Emergency Management Agency, through the October 2013 Standard Operating Guide, identify four categories of hazard mitigation techniques.

- **Regulation:** Government authorities, policies, or codes that influence the way land and buildings are developed and built. Examples include, but are not limited to: comprehensive plans, subdivision regulations, building codes and enforcement, and National Flood Insurance Program and Community Rating System participation. Regulation is marked below only if the county or municipal government can enact, administer, and/or enforce the regulation.
- **Infrastructure:** Modifying existing structures and infrastructure or constructing new structures to reduce hazard vulnerability. Examples include, but are not limited to: acquisition and/or elevation of structures in flood prone areas, utility undergrounding, structural retrofits, floodwalls and retaining walls, detention and retention structures, and culverts.
- **Environment:** Actions that minimize damage and losses and also preserve or restore the functions of natural systems. Examples include, but are not limited to: sediment and erosion control, stream corridor restoration, forest management, conservation easements, and wetland restoration and preservation.
- **Awareness:** Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate the hazards, and may also include participation in national programs. Examples include, but are not limited to: radio or television spots, websites with maps and information, provide information and training, National Flood Insurance Program outreach, StormReady, and Firewise Communities.

HAZARD	REGULATION	INFRASTRUCTURE	ENVIRONMENT	AWARENESS
Drought	*	*		*
Earthquake			*	
Fire Hazard	*	*	*	*
Flood, Flash Flood and Ice Jam	*	*	*	*
Hazardous Materials and Environmental Hazards	*	*		*
Invasive Species	*		*	*
Pandemic and Preventable Diseases				*
Radon	*	*		*
Subsidence and Landslides	*	*	*	*
Terrorism		*		*
Tornados, Wind Storms and Hurricanes	*	*	*	*
Utility Interruptions		*		*
Winter Storms	*	*		*

## 6.4 MITIGATION ACTION PLAN

The Hazard Mitigation Planning Committee developed a framework for the Mitigation Action Plan. The attendees reviewed current risk assessment for the county and their municipalities and the four new Mitigation Techniques identified by the Federal Emergency Management Agency. The attendees were then provided with a progress report on 2013 mitigation actions to review the previous actions identified in 2013 to determine if these were still relevant to their current conditions. Subsequently, the Committee and municipal officials were asked to identify new actions to address risks in their community. The public was also asked to identify new actions or hazards through the public survey and the three outreach sessions.

The final list of 55 mitigation actions in the table below is made up of actions developed by the Committee along with actions developed by municipalities and other stakeholders. In addition, the list includes 2013 actions and projects that were identified as still viable or not yet complete. At least one mitigation action was established for each municipality in Blair County. More than one action is identified for several municipalities. Each mitigation action is intended to address one or more of the goals and objectives identified in Section 6.2.

Mitigation actions were evaluated using the Multi-Objective Mitigation Action Prioritization criteria from the Pennsylvania Emergency Management Agency’s Standard Operating Guide. The criteria are as follows:

- **Effectiveness:** The extent to which an action reduces the vulnerability of people and property. This is 20% of the total score.
- **Efficiency:** The extent to which time, effort, and cost is well used as a means of reducing vulnerability. This is 30% of the total score
- **Multiple Hazards:** The action reduces vulnerability for more than one hazard. This is 20% of the total score.
- **High Risk:** The action reduces vulnerability for people and property from a hazard(s) identified as high risk. This is 15% of the total score.
- **Criticality:** The action pertains to the maintenance of critical functions and structures such as transportation, supply chain management, data circuits, etc. This is 15% of the total score.

Scores of 1, 2, or 3 were assigned for each multi-objective mitigation action prioritization criterion where 1 is a low score and 3 is a high score. Only whole numbers were assigned. Actions were prioritized using the cumulative score assigned to each. For example, an action receiving scores of 3 for Effectiveness, 3 for Efficiency, 2 for Multiple Hazards, 1 for High Risk, and 2 for Criticality would be calculated as  $(3*0.2)+(3*0.3)+(2*0.2)+(1*0.15)+(2*0.15)$  for a total score of 2.35. Each mitigation action was given a priority ranking as follows:

- High Priority                      2.5 and up                      **Red**
- Medium Priority                    1.9 – 2.49                      **Yellow**
- Low Priority                        Below 1.9                        **Green**

The Mitigation Action Plan, detailed in the table below, includes the details of each identified action, the municipality that the action pertains to, the mitigation technique the action pertains to, the hazard the action addresses, the department or agency responsible for implementing the agency, the schedule that the action will be implemented in, potential funding sources for implementing the action, and the priority score derived using the Multi-Objective Mitigation Action Prioritization criteria.

Blair Resilience: Addressing Vulnerability & Exposure

No	Action	Location	Objective	Hazard	Agency	Schedule	Funding	Score
<b>COUNTYWIDE</b>								
1	Participate in the Regional Broadband Task Force	Countywide	2A, 4F	All	Blair Planning, Blair EMA	Ongoing	Local Share	3.00
2	Work with FirstNet to install missing wireless infrastructure	Countywide	4F	All	Blair Planning, Blair EMA	Ongoing	TBD	3.00
3	Provide first responder and Emergency Operations Center training on a regular basis	Countywide	4A, 4C	All	Blair EMA	Ongoing	Levy	3.00
4	Develop a capacity plan for first responders	Countywide	4C, 4D	All	Blair Planning, Blair EMA	2022	Levy, HMPG	3.00
5	Develop Continuity of Operations plans for all municipal governments, districts, and authorities	Countywide	2A, 4D	All	Blair Planning, Blair EMA	2020-2023	Levy, HMPG	3.00
6	Develop a flood-inclusive storm water management plan	Countywide	3E, 3G, 5B	Flood, Landslide, Subsidence	Blair Planning	2021	Local Share, UPWP, HMPG, DEP	2.85
7	Offer and promote Smart 911	Countywide	1D	All	Blair EMA	Ongoing	Levy	2.85
8	Maintain public awareness materials in the public library system	Countywide	1B, 1C	All	Blair Planning	Annual	Local Share	2.80
9	House a countywide flood administrator at / via Blair Planning	Countywide	2A, 3C, 3E	Flood	Blair Planning	2000	Local Share	2.80
10	Monitor high-hazard dam Emergency Action Plans	Countywide	2A, 4B	Flood	Blair EMA, Dam Owners	Ongoing	Levy	2.65

No	Action	Location	Objective	Hazard	Agency	Schedule	Funding	Score
11	Continue NFIP Compliance	Each Municipality	2A, 3C, 3E	Flood	Municipality, Blair Planning	Ongoing	Levy	2.65
12	Implement program to remove dangerous trees killed by invasive species that are now a threat to roadways and community assets.	Countywide	2C	Invasive Species	Blair Planning, Municipal Governments	2020-2022	TBD	2.50
13	Host the annual SARA Summit	Countywide	1A	Hazardous Materials	Blair EMA	Annual	LEPC	2.40
14	Establish countywide radon awareness and testing program	Countywide	1B	Radon	Blair Planning, Municipal Governments	2020	TBD	2.30
15	Ensure the Metropolitan Transportation Plan includes freight analysis and identifies areas in the system with increased potential for incidents.	Countywide	2B	Hazardous Materials, Landslide, Flood	Blair Planning (via AMPO)	2020	Local Share, UPWP	2.30
<b>MULTIPLE MUNICIPALITIES</b>								
16	Adopt air hazard ordinance to ensure access to the hospital helipads	Altoona, Roaring Spring and Taylor, Tyrone and Snyder	4E	All	Blair Planning, Municipal Governments	2023	PennDOT, Levy	3.00
17	Remove blighted properties to reduce the risk of urban fires and clandestine labs	Altoona, Bellwood, Martinsburg, Williamsburg	2C, 2D,	Clandestine Labs, Urban Fire	Municipal Government	2020	TBD	2.85
18	Update land-based plans and ordinances	Blair, Catharine, Williamsburg, Woodbury	2D	All	Blair Planning, Municipal Governments	Start 2020	Levy, DCED, DEP, Others	2.85

No	Action	Location	Objective	Hazard	Agency	Schedule	Funding	Score
19	Install dry hydrants in identified areas	Antis, Catharine, Frankstown, Freedom, Huston, North Woodbury, Taylor, Tyrone Twp, Williamsburg	3B	Wildfire	Municipal Government, Local VFC	2021-2022	Levy, TBD	2.80
20	Implement a voluntary floodplain buyout program	Allegheny, Altoona, Blair, Duncansville, Frankstown, Freedom, Greenfield, Roaring Spring, Tyrone, Williamsburg	3A	Flood	Municipal Government (Blair Planning assisting if/where needed)	On Request	FEMA	2.65
21	Acquire generator for continuity of operations and/or shelters	Greenfield, Martinsburg, North Woodbury, Taylor, Williamsburg	4D	All	Municipal Government	2021	TBD	2.50
22	Establish an emergency shelter	Greenfield, Williamsburg	4D	All	Municipal Government	2022	TBD	2.35
23	Develop hazard response plan and work with railroad to address the bisection of the community by the Bald Eagle Railroad	Tyrone and Snyder	2B	Hazardous Materials	Municipal Government, Railroad (Blair Planning assist if needed)	2021	TBD	1.80
24	Develop plan to lessen time the train is blocking Wye Switches area, Blair Street and consider eliminating Jones Street rail crossing.	Hollidaysburg and Blair	2B	Hazardous Materials	Municipal Government, Railroad (Blair Planning assist if needed)	2021	TBD	1.30



Blair Resilience: Addressing Vulnerability & Exposure

No	Action	Location	Objective	Hazard	Agency	Schedule	Funding	Score
<b>INDIVIDUAL MUNICIPALITIES</b>								
25	Address digital communication deficiencies (wired and wireless)	Williamsburg	4F	All	Blair Planning, Blair EMA, Regional Broadband Task Force	Ongoing	TBD	3.00
26	Study stream management on Brush Run between 5th and 17th Streets	Altoona	3B, 3F	Flood	City, Blair Planning	2021	TBD	2.65
27	Enhance participation in the Community Rating System and promote it to others	Altoona	3D	Flood	City, with Blair Planning when needed	Ongoing	Levy	2.65
28	Increase storage capacity in Lakemont Pond in conjunction with Intermunicipal Storm Water Committee	Logan	3C	Flood	Intermunicipal Storm Water Committee, Township	2020	Levy, Local Shares, Storm Water Grants	2.65
29	Implement obstruction removal, bank stabilization and riparian buffer programs on all three streams in the borough	Duncansville	3B, 3F, 5A	Flood	Borough	2022	TBD	2.65
30	Implement obstruction removal, bank stabilization and riparian buffer programs along Poplar Run	Newry	3B, 3F, 5A	Flood	Borough	Start 2021	TBD	2.65
31	Implement obstruction removal, bank stabilization and riparian buffer programs along Poplar Run	Blair	3B, 3F, 5A	Flood	Township	Start 2022	TBD	2.65

No	Action	Location	Objective	Hazard	Agency	Schedule	Funding	Score
32	Implement obstruction removal, bank stabilization and riparian buffer programs along the Juniata River and Beaverdam Branch	Frankstown	3B, 3F, 5A	Flood	Township	Start 2021	TBD	2.65
33	Implement obstruction removal, bank stabilization and riparian buffer programs along Poplar Run	Freedom	3B, 3F, 5A	Flood	Township	Start 2021	TBD	2.65
34	Develop and provide program (s) for invasive insect removal from houses, focusing on bedbugs	Altoona	2C	Invasive Species	City	2020-2022	TBD	2.50
35	Commercial Vehicle Management Plan on Tunnelhill Street	Tunnelhill	2B	Hazardous Materials	Borough, Blair Planning	20211	Levy, Local Share, AMPO	2.45
36	Study stream management on Spring Run relative to volume and velocity threatening adjacent housing	Altoona	3B, 3F	Flood	City	2022	TBD	2.45
37	Establish better traffic control on High Street at First Street and Second Street	Williamsburg	2B	Hazardous Materials	Borough, Blair Planning	2020	TBD	2.45
38	Address frequent wrecks and truck tip-overs on the Short Mountain S-Curves (US 22)	Catharine	2B	Hazardous Materials	Township, Blair Planning	2020	TBD	2.45

No	Action	Location	Objective	Hazard	Agency	Schedule	Funding	Score
39	Address Plank Road flooding through a retrofit of best management practices onto commercial properties between PA 36 and I-99	Logan	3B, 3F	Flood	Township, Land Owners	Start 2020	Levy, Private	2.35
40	Address Plank Road flooding through a retrofit of best management practices onto commercial properties south of I-99	Allegheny	3B, 3F	Flood	Township, Land Owners	Start 2021	Levy, Private	2.35
41	Address runoff-induced flooding through a retrofit of best management practices onto commercial properties along PA-764	Allegheny	3B, 3F	Flood	Township, Land Owners	Start 2022	Levy, Private	2.35
42	Improve storm water drainage on Piney Creek Road at the south end of town to eliminate roadway damage and flooding of adjacent properties	Williamsburg	3F, 5C	Flood, Landslide, Subsidence	Borough, PennDOT	2021	TBD	2.35
43	Improve storm water drainage on Clover Creek Road as it descends into town to eliminate roadway damage and flooding of downhill properties	Woodbury	3F, 5C	Flood, Landslide, Subsidence	Borough, PennDOT	2021	TBD	2.35

Blair Resilience: Addressing Vulnerability & Exposure

No	Action	Location	Objective	Hazard	Agency	Schedule	Funding	Score
44	Conduct study and upgrade or replace storm facilities on Ski Gap Road and Polecat Road	Greenfield	3F,5C	Flood, Landslide, Subsidence	Township, PennDOT	2021	TBD	2.35
45	Address bridge on T-371 over Bobs Creek	Juniata	3F,5C	Flood	Township, Blair Planning	2022	TBD	2.35
46	Study stream management on Mill Run along Union Avenue	Altoona	3B, 3F	Flood	City, Blair Planning	2023	TBD	2.30
47	Monitor progress and support implementation of freight traffic improvements along PA-764 between US-22 and the intermodal tank farm.	Allegheny	2B	Hazardous Materials	Blair Planning, Township	Ongoing	Local Share	2.25
48	Remove retaining wall and re-grade area on Main Street near the paper mill to stabilize the hillside and retain access on the highway and railroad.	Roaring Spring	2B, 2C, 5C	Landslide, Hazardous Materials	Borough, Blair Planning	2021	TBD	2.00
49	Address rail tunnel safety concerns	Tunnelhill	2B	Hazardous Materials	Borough, Railroad, Blair Planning if needed	2022	TBD	1.95
50	Provide new access to Woodland Terrace	Allegheny	2B, 2C	All	Township, Blair Planning	Start 2021	Levy, TBD	1.85
51	Provide new access to Penn Farms area via PA 36	Blair	2B, 2C	All	Township, Blair Planning	Start 2021	Levy, TBD	1.85

No	Action	Location	Objective	Hazard	Agency	Schedule	Funding	Score
52	Install flashing signals and advance warning signs at rail siding crossing US 22 at Scotch Valley Road	Hollidaysburg	2B	Hazardous Materials	Borough, Railroad, Blair Planning if needed	2021	TBD	1.80
53	Remove the eastern rail bridge at the wye near Tyrone Station to eliminate the obstruction the center pylon creates in the Little Juniata River	Tyrone	3B	Flood	Borough, Railroad, Silver Jackets	2022	TBD	1.65
54	Remove abandoned rail bridge at Plummer Hollow to eliminate the obstruction the center pylon creates in the Little Juniata River	Snyder	3B	Flood	Township, Bridge Owner, Silver Jackets	2022	TBD	1.65
55	Address beaver dam flooding on the Bald Eagle Creek along Bald Eagle Valley Road	Snyder	3A, 3F	Flood	Blair Planning, Township	2020	TBD	1.35

As relates to the placement of dry hydrants, the following locations in the county were identified throughout the planning process:

- Antis Township: Little Juniata River at Tipton and Pineroft as well as the Bells Gap Run at Tuckahoe Street and Grandview Road.
- Catharine Township: Juniata River at Ganister and Mount Etna as well as Yellow Springs Run along Polecat Hollow Road.
- Frankstown Township: Juniata River at Lind’s Crossing, Reese, and Flowing Springs, and the Canoe Creek in Canoe Creek upstream and downstream of the reservoir.
- Freedom Township: Poplar Run in the Puzzletown area.
- Huston Township: Clover Creek at Miller Road and Piney Creek in Clappertown.
- North Woodbury Township: Clover Creek in Henrietta and Fredericksburg, and the bridge in Millerstown if stream capacity is sufficient.
- Taylor Township: Plum Creek in East Sharpsburg.
- Tyrone Township: Multiple locations along the interaction between Sinking Run and Kettle Road.
- Williamsburg Borough: in the industrial area.

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**- SECTION 7 -**

**PLAN MAINTENANCE**

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## 7.0 PLAN MAINTENANCE

### 7.1 UPDATE PROCESS SUMMARY

Monitoring, evaluating, and updating this plan is critical to maintaining its value and success in Blair County's hazard mitigation efforts. Ensuring effective implementation of mitigation activities paves the way for continued momentum in the planning process and gives direction for the future. This section explains who will be responsible for maintenance activities and what those responsibilities entail. It also provides a methodology and schedule of maintenance activities including a description of how the public will be involved on a continued basis. The Planning Committee elected to keep the methodology and schedule are similar to what is outlined in the 2013 Plan, but to put more emphasis on integrating the mitigation goals, objectives, and actions identified in the Mitigation Strategy into the other ongoing planning efforts to ensure implementation and tracking of actions throughout the five-year plan maintenance process.

### 7.2 MONITORING, EVALUATING, AND UPDATING THE PLAN

The Blair County Hazard Mitigation Planning Committee will remain intact as the organization responsible for monitoring, evaluating, and updating this plan. The Director of Blair Planning shall continue to serve as coordinator for the Committee. Each participating jurisdiction is also expected to appoint a municipal hazard mitigation representative to support the jurisdiction's input to the monitoring, evaluating, and updating responsibilities identified in this section. Additionally, members may be appointed from certain industries, areas, or employers to ensure a well-rounded perspective on the Committee so that no single viewpoint dominates.



Blair Planning will request a representative be named by each municipality each January, however knowing that individual commitments change during the year, each jurisdiction and its representatives are responsible for informing the Blair Planning of any changes in representation by formal letter. The Blair County Planning Commission Chairperson will strive to keep the Committee makeup as a uniform representation of planning partners and stakeholders within the planning area, and ensure a representative cross-section of the community is seated. The following sections

describe the monitoring, evaluating, and updating processes and protocols for the Blair County Hazard Mitigation Plan.

#### 7.2.1 MONITORING

The Hazard Mitigation Planning Committee shall be responsible for monitoring progress on, and evaluating the effectiveness of, the Plan and documenting this progress in a series of semi-annual progress reports. The progress reports will be presented to the Blair County Planning Commission by the Planning

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Director or Committee representative on a semi-annual basis following a Hazard Mitigation Planning Committee meeting. The progress report shall include:

- Progress on the implementation of mitigation actions, including efforts to obtain outside funding for mitigation actions, and any obstacles or impediments to the implementation of actions;
- Incidents and losses from identified hazards occurring in Blair County, including their nature and extent, and the effects that hazard mitigation actions have had on such impacts and losses;
- Any new hazards or priorities that need to be addressed, included potential mitigation actions;
- Training or technical assistance needed to achieve mitigation goals
- Identification and description of any urgent funding needs; and
- Public and stakeholder input and comments on the plan.

Blair Planning will maintain records of each goal, objective, and action step on a continual basis so that an up-to-date assessment can be made of any of the elements of the plan, or the plan as a whole, on short notice. The Planning Director shall include brief updates to the Commission at each of its regularly scheduled monthly meetings. Municipalities and Committee members will assist in informing these records when requested.

To prepare the semi-annual progress report, each member of the Hazard Mitigation Planning Committee will ascertain the status of any projects slated for their appropriate jurisdiction. Municipal officials will supply the relevant information for the municipalities, and private sector representatives will supply relevant information in a manner that provides the needed information, but consistent with confidentiality expectations in the private sector. Information provided will directly inform the six major points of the progress report listed above, as well as any other items that may be relevant to hazard mitigation planning, including other planning efforts being undertaken.

The first semi-annual meeting of the Hazard Mitigation Planning Committee each year will be called by Blair Planning once all representatives have been identified for the calendar year. The second will be called approximately six months later. This will usually result in meetings in late winter and late summer. Additional meetings may be held when appropriate. Meetings of the Hazard Mitigation Planning Committee shall be advertised, open to the public, and include a public comment period. Records shall be filed in the files related to this Plan.

Presentation of the progress report to the Blair County Planning Commission shall be at the subsequent monthly meeting of the Commission. The Commission shall ensure that progress is made toward the plan goals and objectives, and that other planning efforts are integrated, and work well together. The Commission shall file the report, with any additional comments and findings it may wish to add, into the files related to this Plan.

Additionally, each municipality shall maintain vigilance relative to any action steps within its jurisdiction and report significant progress or setbacks to the Planning Director in a timely manner. Should the situation warrant, the Planning Director shall call an extra meeting of the Committee to address the situation, make any needed adjustments, or take any other appropriate action necessary. Included in this vigilance is any public input received that necessitates consideration and/or action before the next semi-annual meeting is held.



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### 7.2.2 EVALUATING

The evaluation of the hazard mitigation plan is an assessment of whether the planning process and actions have been effective, the plan's goals are being reached, and changes are needed. An annual public meeting will be held for educational and informative purposes. These annual meetings will provide the public with an update on the current status of the plan, implementation efforts, and action items. It will also solicit comments, suggestions, criticisms, and volunteers from the public regarding elements of the current plan as well as any new item(s) that may need to be added. This annual meeting will be publicized in accordance with the Blair Planning Public Participation Policy, which is adopted in accordance with obligations it has under Federal law. Records of the meeting will be kept with the hazard mitigation files for this iteration of the plan.

The status of the Plan will be discussed and documented at the annual public meeting that includes members of the Hazard Mitigation Planning Committee. Evaluations will be informed by the progress reports and ongoing monitoring of the plan and its goals, objectives, and action steps. From these reports and monitoring, the evaluations will assess whether:

- Goals and objectives address current and expected conditions;
- Documentation has been completed for any germane incidents that occurred during the last year;
- The nature or magnitude of the risks has changed;
- The Plan is being implemented into land use processes on the municipal level;
- Current resources are appropriate for implementing the Plan;
- Different or additional resources are now available;
- Actions are cost effective;
- Technical, political, legal, or coordination issues are hindering implementation;
- Outcomes have occurred as expected;
- Changes in personnel, financial, or physical resources have impacted plan; and
- New entities or personnel should be included, including other local governments.

As part of the annual meeting, the Committee will review the mitigation goals, objectives, activities, and projects using the following performance-based indicators:

- Achievement of the goals and objectives;
- Projects completed;
- Project evaluation based on current needs of the mitigation plan;
- Feasibility of goals, objectives, or actions;
- Resources required to implement mitigation activities;
- Timeframe sufficiency to address actions;
- Budget adequacy for action items;
- Resource availability to implement actions;
- Under/over spending regarding proposed mitigation action budgets;
- Lead or support agency commitment; and
- Newly created entities with the authority or ability to implement mitigation actions (or are required to meet goals, objectives, and actions.)

Finally, the Committee will evaluate the ways other programs and policies have conflicted or augmented planned or implemented measures, and shall identify policies, programs, practices, and procedures that

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could be modified to accommodate hazard mitigation actions. Other programs and policies can include those that address economic development, the environment, historic preservation, land use, recreation, redevelopment, outreach, public education, public health, public safety, transportation, et cetera.

The meeting discussion will result in an annual evaluation report based on the local progress reports provided by each jurisdiction, monitoring information, prior progress reports, prior annual evaluation reports, information presented at the annual meeting, and other information as appropriate and relevant. These reports will provide data for the five-year update of this Plan and will assist in pinpointing implementation challenges.

Should the annual evaluation report indicate a need for a course change, a lagging action item, a change in budget, personnel, or responsible agency, the Hazard Mitigation Planning Committee shall meet more frequently to make the needed changes up to and including a formal plan amendment to properly accommodate the findings of the annual evaluation. The frequency and subject matter of these additional meetings will be dictated by the annual evaluation.

The plan will also be evaluated and revised following any major disasters to determine whether the recommended actions remain relevant and appropriate. The risk assessment will also be revisited to see if any changes are necessary based on the pattern of disaster damages or if data listed in the Section 4.3 (Hazard Profiles) of this plan have been collected to facilitate the risk assessment. This is an opportunity to increase the community's disaster resistance and build a better and stronger community.

### **7.2.3 UPDATING**

This plan update is expected to meet the hazard mitigation needs of Blair County for the next five years. With that stated, unfortunate events happen which could necessitate the need for an interim update. An interim update will be the result of a poor annual evaluation, an unexpected change in the situation, an incident related to one of the hazards in the plan, a major disaster, or a need to make a change to coordinate with another planning effort.

Informal interim updates will be noted in the annual evaluation reports and the resulting progress reports. These would include items such as a change in the lead agency, updating a timeline within the life of the plan, budgetary changes, and similar items. Once noted, implementation will proceed unless additional issues are flagged, at which time they will be reconsidered and updated once again.

A formal interim update will be treated similarly to the regulatory five-year update described below. Additional meetings of the Hazard Mitigation Planning Committee will be needed as well as additional outreach and public input. Issues requiring new assessments, mitigation strategies, and action steps will require a formal update and be developed as fits the issue mandating the need for such an update. The adoption process will also match the process for the five-year update.

Federal regulations require that, every five years, local hazard mitigation plans be reviewed, revised as appropriate, and resubmitted for approval to remain eligible for benefits awarded under the Disaster Mitigation Act of 2000. This plan is updated on a five-year cycle from the date of plan adoption.

To facilitate the formal update process, the Planning Director shall designate the semi-annual Hazard Mitigation Planning Committee meeting nearest to three years from the date of plan approval to develop and commence with the implementation of a detailed plan update program. The Planning Director shall

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invite representatives from the Pennsylvania Emergency Management Agency to this meeting to provide guidance on plan update procedures. This program shall, at a minimum, establish the parties responsible for managing and completing the plan update effort, features needed to be included in the updated plan, and a detailed timeline with milestones to ensure that the update is completed according to regulatory requirements. At this meeting, the Committee shall determine the financial and physical resources needed to complete the update.

Blair Planning and the Blair County Emergency Management Agency shall be jointly responsible for ensuring that needed resources are secured. The update process will entail additional meetings of the Hazard Mitigation Planning Committee during the update process. These meetings will be held in accordance with the established timeline, and will include people not normally on the committee to ensure a broad representation of the community. Steps will be taken to ensure this broad representation so that no one viewpoint or industry has undue influence over the outcome of the updated plan.

Following each five-year update of the Plan, the updated plan will be distributed for public comment. After all comments are addressed, the Plan will be revised and distributed to all Committee members, municipalities, school districts, municipal authorities, and the Pennsylvania State Hazard Mitigation Officer. It will also be distributed to public outlets in accordance with the Blair Planning Public Participation Plan.

### **7.3 CONTINUED PUBLIC INVOLVEMENT**

Blair County is committed to involving the public in the continual reshaping and updating of this hazard mitigation plan. Blair Planning is responsible for monitoring the plan and for the five-year review/update of the plan. In this capacity, it will also be the responsibility of Blair Planning to coordinate with the other parties in interest to implement long-term public participation activities.

Copies of this updated hazard mitigation plan will be catalogued and kept on file at public libraries and municipal buildings throughout the County. In addition, the updated plan will be posted on the Blair Planning web site. This site will also contain contact information to which people can direct their comments or concerns. These will be reviewed and discussed by the Committee at its semi-annual meetings, with any appropriate actions or responses documented. Additional public outreach will be made in accordance with the Blair Planning Public Participation Policy.

The Committee will continue to meet at least on a semi-annual basis to ensure the plan is being implemented and to stay on top of any issues that may arise. These meetings will be publicized in accordance with the Blair Planning Public Participation Policy, and a public comment period will be provided at the beginning of each meeting to allow any member of the public to address the Committee with concerns, ideas, or comments relative to hazard mitigation.

Blair Planning shall ensure the following:

- Compliance with the Blair Planning Public Participation Policy;
- Public comment and input on both the Plan and hazard mitigation in general are recorded, addressed, and filed, as appropriate;
- The Blair Planning website is maintained and updated, as appropriate;
- All public and stakeholder comments received are documented and maintained;

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- Copies of the latest approved plan are available for review and distribution at the Blair Planning office, along with instructions to facilitate public input and comment on the plan; and
  - Public notices, including media releases, are made to inform the public of the availability of the plan, particularly during plan update cycles.

An annual public meeting will be held for educational and informative purposes. These annual meetings will provide the public with an update on the current status of the plan, implementation efforts, and action items. It will also solicit comments, suggestions, criticisms, and volunteers from the public regarding elements of the current plan as well as any new item(s) that may need to be added. This annual meeting will be publicized in accordance with the Blair Planning Public Participation Policy, which is adopted in accordance with obligations it has under Federal law. Records of the meeting will be kept with the hazard mitigation files for this iteration of the plan.

Finally, similar to that which was completed for this hazard plan update, a public meeting will be held after each five-year review/update of the plan. This meeting will provide the public an opportunity to express concerns, opinions, or ideas about the plan.

The hazard mitigation planning cycle is unending. Hazards and threats will continue, and it is the responsibility of each person, company, government, and society to do what is reasonably necessary to mitigate those threats. Through this planning effort, Blair County and its constituent municipalities look forward to reduce vulnerability and exposure to its people, property and way of life.

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# SECTION 8

# PLAN ADOPTION

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Adoption Resolutions will be inserted here

Adoption will take place once FEMA and PEMA complete their reviews.

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**- APPENDIX A -**  
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**- APPENDIX B -**  
**LOCAL MITIGATION PLAN**  
**REVIEW TOOL**

## LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* demonstrates how the Local Mitigation Plan meets the regulation in 44 CFR §201.6 and offers States and FEMA Mitigation Planners an opportunity to provide feedback to the community.

- The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

<b>Jurisdiction:</b> Blair County	<b>Title of Plan:</b> BRAVE	<b>Date of Plan:</b> 2018
<b>Local Point of Contact:</b> David W McFarland III	<b>Address:</b>	
<b>Title:</b> Director	423 Allegheny Street, Suite 046 Hollidaysburg, PA 16648	
<b>Agency:</b> Blair Planning		
<b>Phone Number:</b> 814-693-2080 x5	<b>E-Mail:</b> dmcfarland@blairplanning.org	

<b>State Reviewer:</b> Ernest Szabo	<b>Title:</b> State Hazard Mitigation Planner	<b>Date:</b> 10/7/2019
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<b>FEMA Reviewer:</b> Mari Radford	<b>Title:</b> Community Planning Lead	<b>Date:</b> February 7, 2020
<b>Date Received in FEMA Region</b> <i>(insert #)</i>	2/6/2020	
<b>Plan Not Approved</b>		
<b>Plan Approvable Pending Adoption</b>	2/7/2020	
<b>Plan Approved</b>		

**SECTION 1:**

**REGULATION CHECKLIST**

**INSTRUCTIONS:** The Regulation Checklist must be completed by FEMA. The purpose of the Checklist is to identify the location of relevant or applicable content in the Plan by Element/sub-element and to determine if each requirement has been ‘Met’ or ‘Not Met.’ The ‘Required Revisions’ summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is ‘Not Met.’ Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

<b>1. REGULATION CHECKLIST</b>	<b>Location in Plan (section and/or page number)</b>	<b>Met</b>	<b>Not Met</b>
<b>Regulation (44 CFR 201.6 Local Mitigation Plans)</b>			
<b>ELEMENT A. PLANNING PROCESS</b>			
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	pp. 11 - 18 Appendix C	X	
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	pp. 11 - 18 p. 114 Appendix C	X	
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	pp. 14 - 15 pp. 120, 134 Appendix C	X	
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	pp. 12 – 13, 18 pp. 114 -118	X	
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	pp. 147 - 148	X	
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i))	pp. 144 - 147	X	
<b>ELEMENT A: REQUIRED REVISIONS</b>			

<b>ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT</b>			
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	pp. 21 - 27 pp. 30 - 92	X	
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))	pp. 30 - 92	X	
B3. Is there a description of each identified hazard’s impact on the community as well as an overall summary of the community’s vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))	pp. 30 - 92	X	
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	pp. 47 - 48	X	
<b><u>ELEMENT B: REQUIRED REVISIONS</u></b>			
<b><u>ELEMENT C. MITIGATION STRATEGY</u></b>			
C1. Does the plan document each jurisdiction’s existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	pp. 5 - 6 pp. 99 - 114	X	
C2. Does the Plan address each jurisdiction’s participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))	pp. 105 - 107 Section 6.4 Item 11 (page 136)	X	
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	pp. 131 - 132	X	
C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))	pp. 132 - 142	X	
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	pp. 134 - 142	X	
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	pp. 114 - 118 pp. 145 - 146	X	
<b><u>ELEMENT C: REQUIRED REVISIONS</u></b>			



<b>ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION</b> (applicable to plan updates only)			
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	pp. 120 - 131	X	
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	pp. 120 - 131	x	
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	pp. 120 - 131	X	
<b><u>ELEMENT D: REQUIRED REVISIONS</u></b>			
<b>ELEMENT E. PLAN ADOPTION</b>			
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	pp. 149 - 150		
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	pp. 149 - 150		
<b><u>ELEMENT E: REQUIRED REVISIONS</u></b>			
<b>ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)</b>			
F1.			
F2.			
<b><u>ELEMENT F: REQUIRED REVISIONS</u></b>			

**SECTION 2:  
PLAN ASSESSMENT**

**INSTRUCTIONS:** The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

***Plan Strengths and Opportunities for Improvement*** is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

***Resources for Implementing Your Approved Plan*** provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

## A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Love the title and the compact plan@ Just shy of 300 pages is a good length for depth of information and brevity that will allow its use.

Population data starting on page 8 is dated; how do the annual population estimates (FactFinder) <https://www.census.gov/programs-surveys/popest.html> compare? We are looking for overall trends – are you gaining/losing population? Getting older/younger? Waiting until your next plan will make it much harder to capture these changes and the impact on your vulnerability. The plan states that survey data is not reliable in the county; are you able to make this analysis with other data points? School enrollment, senior citizen resources, vulnerable population tracking?

Community participation was pretty good. Do you feel the combination of outreach methodologies helped?

The PA State Hazard Mitigation Plan was updated in 2018. Was this used as a resource for identified hazards, state priorities and funding sources?

4.3.1.5 – great data and analysis on droughts impacts on agriculture. Since this data is already 4 years old (released in 2017 likely gathered in 2016) its worth reviewing this again annually for significant changes.

Wildfire profile does not mention if local firefighting capacity has is volunteer or provided via professional firefighters. Many PA counties are finding it hard to staff volunteer firehouses thus making them more vulnerable to both urban and wildfire. Also local opioid abuse has had an impact on emergency responders. What has Blair County's experience been?

Page 42 (Flood Profile) identified mobile homes as being particularly vulnerable to flooding. Have these been identified and mapped throughout the county? Consider adding this step as an mitigation action and following through with an outreach campaign for evacuation planning and enforcement of permitting requirements under the local floodplain ordinance.

Add High Hazard Potential Dam (HHPD) Rehabilitation grant language to support future project applications.

Repetitive Loss has 2 definitions and both must be included in the plan:

- 1. The NFIP defines Repetitive Loss as 2 or more claims of at least \$1000 over a 10 year rolling period. This is the data that appears in this plan.**
- 2. The Hazard Mitigation Assistance program defines Repetitive Loss as having incurred flood-related damage on 2 occasions, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and, at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.**

Altoona is the only CRS participating community in the Blair County Plan. Have you reached out to ISO for a courtesy review of the plan before finalizing edits? The city will be relying on the local HMP for Activity 510 credit which can have a huge impact on their CRS class.

Goals and Strategies section is well organized and I agree your consolidated approach makes sense. Hopefully it will be easier to track progress at your annual reviews and to document in the next plan update.

Designing to Heal sounds like a great approach to land use and design decisions. We would love to hear more about this initiative!

I had to dive into the back of the plan to see who participated in the plan update. While you mention reaching out to sectors beyond the localities themselves, I don't see a lot of participation. How can this be improved next update or perhaps reaching out to them for the plan annual reviews? I would encourage you to include universities, Chambers of Commerce, large employers in addition to utilities, hospitals and other non profits.

**SECTION 3:**  
**MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)**

**INSTRUCTIONS:** For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were 'Met' or 'Not Met,' and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type	Plan POC	Mailing Address	Email	Phone (814)	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State
1	Allegheny	Township	Silke Morrison	3131 Colonial Drive, Duncansville, PA 16635	secretary@alleghenytownship.us	695-9563	Yes	Yes	Yes	Yes		
2	Altoona	Home Rule	Linda Rickens	301 Twelfth Street, Suite 100, Altoona, PA 16601	council@altoonapav.gov	949-2410	Yes	Yes	Yes	Yes		
3	Antis	Township	Lori DelBondo	909 North Second Street, Bellwood, PA 16617	sectreas@atlanticbbn.net	742-7361	Yes	Yes	Yes	Yes		
4	Bellwood	Borough	Hope Ray	516 Main Street, Bellwood, PA 16617	hray@bellwoodborough.com	742-8591	Yes	Yes	Yes	Yes		
5	Blair	County	Helen Schmitt	423 Allegheny Street, Hollidaysburg, PA 16648	hschmitt@blairco.org	696-3000	Yes	Yes	Yes	Yes		

Blair Resilience: Addressing Vulnerability & Exposure

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type	Plan POC	Mailing Address	Email	Phone (814)	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State
6	Blair	Township	Betty Robertson	375 Cedarcrest Avenue, Duncansville, PA 16635	betty@blairtownship-pa.org	695-0265	Yes	Yes	Yes	Yes		
7	Catharine	Township	Eleanor Harclerode	1229 Recreation Drive, Williamsburg, PA 16693	catharinetownship@yahoo.com	832-3851	Yes	Yes	Yes	Yes		
8	Duncansville	Borough	Paula Fox	1146 Third Avenue, Duncansville, PA 16635	paula@duncansvillepa.org	695-9548	Yes	Yes	Yes	Yes		
9	Frankstown	Township	Beverly Henderson	2122 Frankstown Road, Hollidaysburg, PA 16648	frankstowntwpp@atlanticbbn.net	695-7151	Yes	Yes	Yes	Yes		
10	Freedom	Township	Lisa Edmundson	131 Municipal Street, East Freedom, PA 16637	twp@freedomtownshippa.org	695-8051	Yes	Yes	Yes	Yes		
11	Greenfield	Township	Arlene Kuntz	477 Ski Gap Road, Claysburg, PA 16625	greenfieldtownship@gmail.com	239-5313	Yes	Yes	Yes	Yes		
12	Hollidaysburg	Borough	Patti Duron	401 Blair Street, Hollidaysburg, PA 16648	pduron@hollidaysburgpa.org	695-7543	Yes	Yes	Yes	Yes		

Blair Resilience: Addressing Vulnerability & Exposure

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type	Plan POC	Mailing Address	Email	Phone (814)	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State
13	Huston	Township	Dorothy Stahl	1230 Piney Creek Road, Martinsburg, PA 16662	hustwp@outlook.com	793-2381	Yes	Yes	Yes	Yes		
14	Juniata	Township	Ronald Neff	901 Poplar Run Road, Duncansville, PA 16635	Ronald_neff@msn.com	695-5335	Yes	Yes	Yes	Yes		
15	Logan	Township	Tiffany Noonan	100 Chief Logan Circle, Altoona, PA 16602	tnoonan@atlanticbbn.net	944-5349	Yes	Yes	Yes	Yes		
16	Martinsburg	Borough	Rich Brantner	110 South Walnut Street, Martinsburg, PA 16662	rnrantner@martinsburgpa.org	793-3213	Yes	Yes	Yes	Yes		
17	Newry	Borough	Mike Seno	713 Shamrock Lane, Newry, PA 16665	mdseno@atlanticbbn.net	695-0168	Yes	Yes	Yes	Yes		
18	North Woodbury	Township	Sharon Brower	113 Cranberry Road, Martinsburg, PA 16662	nwtownship@atlanticbbn.net	793-4357	Yes	Yes	Yes	Yes		
19	Roaring Spring	Borough	Lisa Gates	616 Spang Street, Roaring Spring, PA 16673	rsboro@atlanticbbn.net	224-4814	Yes	Yes	Yes	Yes		
20	Snyder	Township	Dixie Confer	108 Baughman Hollow Road, Tyrone, PA 16686	snydertwo@comcast.net	684-1048	Yes	Yes	Yes	Yes		

Blair Resilience: Addressing Vulnerability & Exposure

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type	Plan POC	Mailing Address	Email	Phone (814)	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State
21	Taylor	Township	Barbara Greenleaf	7217 Woodbury Pike, Roaring Spring, PA 16673	Taylortownship@gmail.com	224-2738	Yes	Yes	Yes	Yes		
22	Tunnelhill	Borough	Catherine Kent	808 Portage Street, Gallitzin, PA 16641		866-4668	Yes	Yes	Yes	Yes		
23	Tyrone	Home Rule	Kim Gurekovich	1100 Logan Avenue, Tyrone, PA 16686	kgurekovich@tyroneboropa.com	684-1330	Yes	Yes	Yes	Yes		
24	Tyrone	Township	Susan Zerbe	152 Burket Road, Tyrone, PA 16686	tyrtwpsec@aol.com	937-4501	Yes	Yes	Yes	Yes		
25	Williamsburg	Borough	Joe Lansberry	305 East Second Street, Williamsburg, PA 16693	JLL16693@gmail.com	832-2051	Yes	Yes	Yes	Yes		
26	Woodbury	Township	Eleanor Harclerode	6385 Clover Creek Road, Williamsburg, PA 16693	woodburyblair@comcast.net	832-2296	Yes	Yes	Yes	Yes		



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**- APPENDIX C -  
MEETING & OTHER  
PARTICIPATION  
DOCUMENTATION**

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**Hazard Mitigation Planning Committee**

**DATE:** Wednesday, January 11, 2017

**TIME:** 1:00 PM

**PLACE:** Blair County Emergency Management  
615 4th Street  
Altoona, Pennsylvania

THOSE PRESENT	REPRESENTING
1. Drew McKeen	LEPC member
2. Donald BT	Blair Township
3. Donald Gallice	Autran / LEPC
4. MICHAEL SEILER	UPMC ALTOONA
5. Walt Piper	LEMC TAYLOR TWP
6. Terri Lingenfelter	LEMC Greenfield
7. Roger Lingenfelter	LEMC Greenfield
8. Jeff Keener	LEMC N. Woodbury Twp
9. Annis Gehret	Hollidaysburg Borough
10. Cassandra Schmirck	Logan Township
11. Silke Morrison	Allegheny Twp.
12. Craig Hamilton	Woodbury Twp.
13. Joe Lansberry	Williamsburg Borough
14. Rich Brantner Jr	Martinsburg Borough
15. Mark Taylor	Blair County EMA
16. Cris Stacey	Blair County EMA
17. Tim Hileman	City of ALTOONA EMC
18. Jane Gill	City of Altoona. →
19. Sheryl Dumbir	BCPC
20. Jamie Klink	BCPC
21. Michael Wall	BC EMA
22. Matt Starr	Altoona Police
23. Dawn McFaul	BCPC
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## **BLAIR COUNTY PLANNING COMMISSION**

### Minutes of the Hazard Mitigation Committee Meeting

January 11, 2017

Logan Township  
100 Chief Logan Circle  
Altoona, PA 16602

Mr. McFarland gave a status update on where we are on the current Hazard Mitigation Plan and the startup of the 2018 plan. There was a total list of 36 hazards last time and before consolidating that list it was over 50 hazards, some of which were quite similar. There are a few hazards we need to look at as we have experienced them at a higher rate than expected in the current plan.

In terms of our goals for the 2013 plan, we are in good shape. There are a few things that went a little slower than we thought; however, we have met a little better than 65% of our goals.

The education programs were split between education generally and some education for hazardous materials. We did have a public education campaign by putting literature in all the libraries. If PEMA has updates, we can add the information in the libraries.

The evacuation routes are difficult because you don't know exactly where the hazard may happen. If a dam breaks, there are some evacuation routes of who will be affected and who need to be called. If there is a derailment and there are hazardous materials, some of the corridors have been identified so we know who needs to get out of that location.

Transportation improvements as expected will take two cycles. The Burns Avenue at 764 Intersection needed to be added to the transportation improvements through MPO and PennDOT. That has been done. Hazard Mitigation choke points are those points in the county which have similar issues. We know there are hazardous materials either incoming or outgoing in the transportation system that makes it a little touchy. PennDOT wanted us to take a step back and look at the freight system in total.

Storm Preparedness is increasing public awareness and identifying appropriate public response. That overlaps with some of the education program and some evacuation routes. How do we communicate to people if the power is going to be out for a couple of weeks or how do we communicate with people who have to shelter in place? There is a brochure that is to be finished and distributed by the end of the cycle. There will be an electronic version and one in paper.

The Community Rating System is a program whereby the community takes certain steps to the Flood Insurance Program either through the enhancements of their ordinances or keeping better records when issuing permits. The only municipality in Blair County with a CRS rating is Altoona at a rating of 8. Some municipalities are keeping records which need to be documented and they could probably get an 8 or 9 rating. When the rating gets better, the people in the municipality receive a lower premium on rates for flood insurance. There are a lot of municipalities not keeping records which is a basic requirement of the flood program. Flood maps for the municipalities have been issued.

Flood Mitigation is a left over from the 2008 plan which was not fully identified which needed to be identified in terms of residences, structures and public facilities in the floodplain. Steps could be taken to booster the facilities in the floodplain either by moving them, elevating them or some other type of treatment to them.

Municipal Flooding Issues – there were a number of complaints in the Tyrone area when the new maps came out. When the original maps were done in 1970, there was a big gap that weren't put on the maps and the new maps had that gap in and a lot of people that were in the floodplain wasn't in the floodplain and now were added to the floodplain. If any property appears to be within the floodplain, the bank or lender needs to require flood insurance on the property. If it isn't in the floodplain, you are required to provide that proof to the bank by some kind of letter or amendment. Building code companies do not handle flood insurance unless it is specifically in their contract and most will not allow that to be added. A Certified Floodplain Manager is going to be put back on the table to take care of the issues that are not being taken care of now. It doesn't make sense for every municipality to hire a Certified Floodplain Manager as there isn't that much floodplain work with the exception of a couple municipalities within the urban core.

Special Needs Households was done within the first year. It is to alert the 911 staff if the incoming call is from a special needs household. This is direct assistance for those needing it most. If there is a general wide notice for shelter in place or to evacuate, we would know where those people are located.

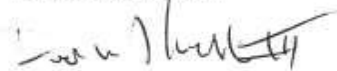
Discussion was held concerning a certified floodplain manager, flooding issues, GIS, special needs households and the disabilities register. EMA can send out notices for shelter in place to all the municipalities now to let people know what is going on. EMA is now holding meetings with the municipalities.

The Hazard Mitigation planning is a mandate under EMA 2K which is Disaster Management Act of 2000. The 2018 plan update is due September 30, 2018 which means we have it to PEMA and if they are happy with it, they send it to FEMA. When FEMA is happy with it, they send it back to us and the County adopts it which we are looking at March or April next year to have a 99% draft. We need to have all the municipalities sign off on it plus the county, PEMA and FEMA by September 30th.

When the plan was submitted in 2013, FEMA did not like our format. Their model plan for the 2018 submission will be used. Some of the hazards that did not make the cut last time that we have been hearing about are the methamphetamine labs, technological, and being more specific about the hazardous material spills. Cambria County has in their plan sink holes and they want to know why they were not ranked higher in our plan. The top three concerns in the last plan were flooding, hazardous materials and the lack of public awareness.

Future meetings will be scheduled for Wednesday's every ten weeks until the plan is finished. After the plan is done a meeting will be scheduled every four months.

Respectfully Submitted



David W. McFarland, III, AICP  
Planning Director

January 11, 2017

Page 2



Blair Resilience: Addressing Vulnerability & Exposure

BLAIR COUNTY COMMUNITY RESILIENCE  
WORKSHOP

**DATE:** Tuesday, July 18, 2017  
**TIME:** 6:00 PM – 9:00 PM  
**PLACE:** Logan Township Municipal Building  
 100 Chief Logan Circle  
 Altoona, Pennsylvania

THOSE PRESENT	REPRESENTING	PHONE NUMBER	EMAIL ADDRESS
1. Jeff Ketner	N. Woodbury Twp	814-773-4897	mketner@atlanticblair.net
2. Jett Blake	Logan Township	814-949-3959	jblake@lctfire.com
3. Jennifer Farabaugh	Western PA Conservancy	814-696-9356	jfarabaugh@paconserve.org
4. Jane Gill	City of Altoona	814-949-2449	jjgill@altoonapa.gov
5. Carolyn Ite	Western PA Conservancy	814-696-9356	cite@paconserve.org
6. David McFadden	Blair Planning	814-693-7050	dcmcfad@blairplanning.org
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<p><b>For Rent</b></p> <p>3 Bed- appliance &amp; dryer at lease. See electric 5306</p> <p><b>omes For</b></p> <p>3000 St. bedroom, Home on \$800 + electric. 5153 rental</p> <p><b>ices /</b></p> <p><b>NAME TION</b></p> <p>given that for Regis- tration Name Department of the Com- monwealth of Pennsylvania 2017 for licensing at 16000 A 16000 address of interest is in July 278 Piney Crest was filed in with 54</p> <p><b>E</b></p> <p>via School district bids joint par- ticipating for the bid.</p> <p>s and in- be ob- calling 006 or by from the 16000</p>	<p><b>310 - Public Notices / Legals</b></p> <p><b>INVIATION FOR BIDS</b></p> <p>Antis Township Supervisors will receive sealed bids until 1:00 p.m. prevailing local time on the 27th day of July, 2017 at the Antis Township Municipal Building 309 N. 2nd Street, Selkirk, PA 16817. The bids will be publicly opened and read aloud at the Township Municipal Building on the same day at 1:30 p.m. to the following contract:</p> <p><b>Contract 2017-1: N. 9th Street Storm Sewer Project</b></p> <p>The project includes approximately 390 lineal feet of 30" storm sewer, 3 inlets, end walk, rock lined swales and other appurtenances.</p> <p>Contract Documents may be obtained at the office of Stittler, McGraw &amp; Associates, Inc. Payment for the Contract Documents will be \$159.00, which price includes 8% Pennsylvania Sales Tax. Digital Copies are available in PDF format on Compact Disk at a 50% discount of the paper copies cost. All checks should be made payable to Stittler, McGraw &amp; Associates, Inc. Fee is non-refundable. A \$10.00 (\$5.00 for Digital) fee for postage and handling will be required for Contract Documents that are mailed to bidders. Faxed bid will not be accepted.</p> <p>A certified check or bank draft, made payable to the Owner of a satisfactory Bid Bond on the form provided, executed by the Bidder and an acceptable surety in an amount equal to ten percent (10%) of the total of the Bid must be provided.</p> <p>The successful bidder will be required to furnish and pay for satisfactory Performance and Payments Bonds, on the forms provided each in the amount of one hundred percent (100%) of the Contract Price.</p> <p>Bidders for this contract shall have completed projects similar in character and scope and will be required to provide with their Bid a Qualifications Statement for prime contractor and all subcontractors.</p> <p>In addition to the Equal Employment requirements of Executive Order 11246 regarding discrimination, the CONTRACTOR must establish a 6.9% goal for female participation and a 1% goal for minority participation in higher aggregate on-site construction work force for contracts in excess of \$10,000.</p> <p>Antis Township Supervisors are utilizing Federal Funds for this project, including PA DCED Community Development Block Grant, County Entitlement and Competitive Grant Program funds, and has adopted a Minority and Women Business Enterprise (M/WBE) in accordance with Executive Orders 11625, 12138, and 12432 and a Section 3 Action Plan in accordance with Title 24 Part 135 Code of Federal Regulations. As such, the bidders must submit documentary evidence of minority and women business enterprises and Section 3 business concerns who have been contacted and to whom commitments</p>	<p><b>310 - Public Notices / Legals</b></p> <p><b>PUBLIC NOTICE</b></p> <p>Notice is hereby given that a Community Resiliency Workshop will meet from 6:00 PM to 9:00 PM on the following dates and locations in Blair County.</p> <p><b>Tuesday, July 18, 2017 -- LOGAN TOWNSHIP MUNICIPAL BUILDING 100 Chief Logan Circle Altoona, PA 16602</b></p> <p><b>Friday, July 21, 2017 -- NORTHERN BLAIR COUNTY RECREATION CENTER 4080 E. Pleasant Valley Blvd. Altoona, PA 16601</b></p> <p><b>Tuesday, July 25, 2017 -- CLAYSBURG COMMUNITY CENTER 122 Senior Drive Claysburg, PA 16825</b></p> <p>The meeting is for the purpose of input and discussion of the 2018 Hazard Mitigation Plan.</p> <p>The meeting site is fully ADA accessible; however, any person needing further accommodation should contact the Blair County Planning Commission at 814-893-2080 at least two days prior to the meeting.</p> <p><b>David W. McFarland III, Director Blair County Planning Commission</b></p> <p><b>July 11, 2017</b></p> <p><b>PUBLIC NOTICE</b></p> <p>Notice is hereby given that the Government Advisory Committee will meet at 11:00 AM on Wednesday, July 19, 2017 at Prime Station, 501 Municipal Drive, Duncansville, PA 16835.</p> <p>The meeting is for the purpose of electing officers and discussing the 2018 Hazard Mitigation Plan.</p>	<p><b>705 - Bargain Counter</b></p> <p>(1) Marlboro duffie bag, \$15. Ladies large black leather coat, \$15. Cherlie bedspread, \$8. 942-0593</p> <p>(1) Wooden shelf unit, handmade, Grade-A White Pine Wood, \$35. 814-884-2519</p> <p>(2) pieces of used rubber roofing. (1) 12' x 13', \$25. (1) 9' x 7', \$10. (814) 934-6058.</p> <p>(3) Inground pool ladders. Sliding board with ladder, filter and pump. (814) 687-3518 9am-Noon</p> <p>(32) Matchbox cars in plastic case, \$35. Tripod light. Vixtar VPT120, new, \$20. 814-201-2583</p> <p>(4) Truck tires. Bridgestone 275/55R20, decent tread, \$30/all. (814) 835-8078</p> <p>(400) Late Cabbage Plants, Bulk field planting. Not in single containers. \$0.10c each. 695-3377</p> <p>(40) DVD movies for \$49 or \$1 each. 814-832-6121.</p> <p>16" Poulan electric chain saw, nice condition, \$49. (814) 943-6402</p> <p>1920's Antique Mirror, \$25. (814) 884-1807</p> <p>18'x31' Above Ground Pools \$899 Site prep extra 800-549-1823</p> <p>2 Old Reel Type Lawn Mowers, \$12 each. 2 Burning Barrels, \$12 each. (814) 505-3357</p> <p>24 x 68 x 14" mirror, \$40 (814) 317-7118</p> <p>4 boxes of Surplus ammo \$458 R. and 7.5 Swisa. \$10 per box, 685-1642</p> <p>4 Oak porch swing, new, never used, \$49. (814) 695-5995</p> <p>42" round formica table with 2 chairs, \$49. (814) 844-7429</p> <p>5 drawer dresser, 36" wide, good condition, \$40. (814) 846-7070</p> <p>8K DVD movies \$40</p>	<p><b>705 - Bargain Counter</b></p> <p>Framed 45L x 21H reprint of Altoona's Cricket field, 1924 PRR olympic baseball game, \$35. 886-2007</p> <p>Free standing trapeze bar/pull up bar, new, \$45 obo. (814) 886-8934</p> <p>Gas grill, very good condition, great for home or camp, \$45. (814) 330-2657</p> <p>Golf clubs, ladies right handed, complete set with bag, \$49. (814) 695-1221</p> <p>Hobart commercial slicer, \$49. (814) 944-5998</p> <p>Hoover steam vac carpet cleaner with attached tools, very good condition, \$45. 944-4254, 931-8788</p> <p>Jewelry armkors, new, \$49. (814) 944-4757. (814) 232-6888</p> <p>Kitchen Stool, 24" high, metal seat, \$35. 12 volt spotlight, \$10. 943-5278.</p> <p>Ladies gentry worn white tuxedo shirts, size 12-3 for \$10. (814) 931-6445</p> <p>La-Z-Boy Sofa Bed (weedleath tone, clean, nice condition, \$190 obo (814) 944-2313</p> <p>Leather Blue Recliner, good shape, \$49. (814) 932-8368.</p> <p>Loft bed with desk (metal), perfect for student, like new, 2 years old, \$300 (814) 330-8485</p> <p>Lowrey electric organ &amp; seat, 42 1/2" wide x 38" high, \$25. (814) 550-7482</p> <p>Nice TV Stand, \$20 Sunbeam Microwave, \$15 Cane with Feet, \$5. 931-9882</p> <p>Nicotine transdermal system, step 1 stop smoking aids, 21mg, 2 boxes for \$30. 232-8469</p> <p>Oak 4th wall quilt rack, \$20. (814) 793-2977</p> <p>Over 100 bolts, all different, nice, \$49. 895-7863, 330-8033.</p> <p>Refrigerator, includes everything for the kitchen</p>	<p><b>750 - Pets For Sale</b></p> <p>ACA Yellow Lab Puppies Family raised Looking for a loving home. Shots, vet checked. Price negotiable (814) 755-2055</p> <p>Anatolian Shepherd Pups. Rare, beautiful, gentle guards &amp; pets. Shots, wormed, \$500. (814) 623-8243 Facebook: Mansour Farms</p> <p>Yorkshire Terrier Puppies, wormed, shots, papers, parents on premises. Ready August 2nd 814-639-2506, 677-2971</p> <p><b>765 - Miscellaneous For Sale</b></p> <p>Go-Go Elite 3 wheel handicapped scooter. 250 watt capacity with front &amp; 2 rear baskets, manual, charger, easy to transport, \$400. (814) 932-4546</p> <p>Invacare Handicap 4 Wheel Scooter. Good batteries, breaks down for transport, \$450. (814) 742-8258</p> <p><b>775 - Yard Sales</b></p> <p>Altoona Driveway Sale Fri. 7/14 &amp; Sat. 7/15, 8-11 Recliner, rime, gaming chair, Bruno stairlift, ladies Eddie Bauer XL, Mens Aero modern housewares 211 Laurel Drive</p> <p><b>MAP IT!</b></p> <p>Altoona Garage Sale Every Fri., Sat. &amp; Sun. 9am-3pm. 2927 Walnut Avenue, Rear. Enter thru 306 St. Alley. 2nd Garage on Left</p> <p><b>MAP IT!</b></p> <p>Altoona Moving Sale Fri. 7/14, Sat. 7/15 &amp; Sun. 7/16, 8am-6pm Vintage trinkets, clothing, shoes, jewelry, hand crafted dream catchers. Unique home decor, furniture &amp; much much more!</p>
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**Hazard Mitigation Planning Committee**

**DATE:** Wednesday, March 22, 2017  
**TIME:** 10:00 AM  
**PLACE:** Logan Township Municipal Building  
 100 Chief Logan Circle  
 Altoona, Pennsylvania

THOSE PRESENT	REPRESENTING	EMAIL ADDRESS	PHONE #
1. David McFarland	Blair Planning	dmcfarland@blairplanning.org	814 693 7080
2. Randy Lingenfelter	Blair Township	R.Lingenfelter@blairtownship.pa.gov	814 693 4363
3. Donald Orr	Blair Township	Don@blairtownship.pa.gov	814 693 4363
4. Tom Lingenfelter	Greenfield Twp	eng_tv@yahoo.com	814 239-8343
5. Roger Lingenfelter	Greenfield Twp	rogerlingy@hotmail.com	814 239 8343
6. WALT PAPER	TRULAR TWP	dadp43@centurylink.net	814-937-0879
7. Jeff Kestner	H. Woodbury Twp	mweste@atlanticbbn.net	814-944-9856
8. Rich Brantner	Martinsburg Borough	rbrantner@martinsburgpa.gov	505-8582
9. Jane Gill	Altoona	Jgill@altoonapa.gov	949-2449
10. Silke Morrison	Allegheny Twp	silleg@alleghenyatlanticbbn.net	695-9563
11. Tom Gehret	Hillsdale Borough	TGehret@hillsdaleboroughpa.org	695-7543
12. Norman A. Bumbarger	Logan Township	nbumbarger@logantownship.pa.gov	944-5345
13. Joe Hansberry	Williamsburg Borough	JLH16693@gmail.com	312-7837
14. USA DISTANCE	WILLIAMSBURG BOROUGH	boroll6693@gmail.com	832-2051
15. Ed Bender	Freedom Twp		695-8051
16. MIKE SEILER	UPMC Altoona	SEILERMS@UPMC.EDU	505-2901
17. Michael Wall	Blair County EMA	mwall@atlanticbbn.net	940-5900
18. Cris Stacey	Blair County EMA	cstacey@atlanticbbn.net	940-5901
19. Mark Taylor	Blair County EMA	mtaylor@atlanticbbn.net	940-5900
20. Jamie Flink	Blair County Planning	jflink@blairplanning.org	693-2080
21. Sheryl Durbin	BCPC	sdurbin@blairplanning.org	693-2080
22.			
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**Hazard Mitigation Planning Committee**

10:00 AM, March 22, 2017

Logan Township Municipal Complex

**Agenda**

1. Call to Order
2. Grant Funding Update
3. Countywide Flood Administration
4. Overview of 2018 Timeline, Plan Content, and Administrative Expectations
5. Community Stakeholders for Resiliency Workshop(s)
6. Community Resiliency Workshop Scheduling
7. Other Business
8. Adjourn

Hazard Mitigation Plan Meeting Minutes  
Wednesday March 22, 2017

The Hazard Mitigation meeting was held at the Logan Township building at 10:00 a.m. Refer to sign-in sheet.

Dave McFarland, chair, explained the timeline and expectations of the 2018 plan. Planning a spring 2018 submission, with a due date of September 2018. The county received a grant for the Blair County Hazard Mitigation Plan update. The first municipality to adopt the new plan in 2018 meets the requirement of the grant. Though every municipality in Blair County has to adopt the plan to satisfy state requirements.

Flooding is the most prevalent hazard identified in the 2013 plan. It will most likely be the same for 2018 though there are other hazards. The 2013 plan was for every municipality to enter into the Community Rating System (CRS) with establishing a county level floodplain position. Though many municipalities were not ready or that. There was discussion on accomplishing that task.

The plan content and style will remain the same. The format will change to a standard format. The Blair County Comprehensive Plan is being updated about the same time. It will not contradict the Hazard Mitigation Plan. There will be a tie-in of plans.

The 2018 plan update will consist of community resilience workshops to identify the community hazards. The hazards are ranked as natural, social, and technological. The workshops will be set up in three locations. One in each areas of the county, the northern, central and in the southern parts of the county. The workshops will include key players in the county, including the hospitals, school districts and universities, bigger companies, railroads etc. The information from the workshops will go back to the committee to establish the plan.

The intent is to have the community meetings prior to the next committee meeting – ten weeks away, May 31, 2017.

Meeting adjourned.

Respectfully submitted,  
Jane Gill  
Recording Secretary

**HOME Choice "Rent-To-Buy" Program**  
3 Bedroom Home Available  
(Located at 1477 Washington Avenue, Altoona)

Income Limits Apply  
Must be Employed  
Credit Check & Criminal Background Check  
\$15 Non-Refundable Application Fee

For application information, call 814-2029 or pick-up an application at the Altoona Housing Authority, 2700 Pleasant Valley Blvd., Altoona.

We are an Equal Opportunity Housing Provider. We do not discriminate on the basis of race, color, national origin, religion, sex, marital status or disability.



Altoona Housing Authority  
**INDEPENDENT LIVING FOR 50+ INDIVIDUALS & COUPLES**  
Our Waiting List is Open for 1 & 2 Bedroom Apartments

Rent based on income  
All utilities included  
On site laundry  
Resident activities

For application information, call 814-2011 or pick-up an application at the Eleventh Street Tower Office, 1100 Eleventh Street, Altoona.

Hours: M, W & F 8:00 am - 4:00 pm  
T & Th 8:00 am - 12 pm

Income limits apply

We are an Equal Opportunity Housing Provider. We do not discriminate on the basis of race, color, national origin, religion, sex, marital status or disability.

Beautiful 1st floor front tub 2 bedroom apartment in Hollersburg, \$820/mo. includes water, sewer, trash, outside maintenance. Call (814) 696-4110

**230 - Homes For Rent**

3/4 Bedroom, \$675/mo. + all utilities/security. Will consider small pet for extra fee. (814) 502-4425

711 Potbrogrove Road Split level, 2 bedrooms & Den, fully equipped kitchen, washer & dryer, central air, outside maintenance & parking. \$800 + utilities & security deposit. (814) 201-2601

**310 - Public Notices / Legals**

**NOTICE**

Notice is hereby given that a meeting of the comprehensive plan steering committee for Blair County will be held at the Duncansville, P.O.s, 110 Patchway Road, Duncansville, PA on Wednesday, January 18, 2017 at 3:30 PM for the purpose of discussing the elements of an updated regional comprehensive plan, part of which will cover Blair County. The steering committee is a committee of the Blair County Planning Commission. The site is ADA-compliant, however anyone requesting further accommodation should call the Blair County Planning Commission at 814-693-2060 at least two days prior to the meeting.

January 15, 2017

**NOTICE**

Notice is hereby given that the Hazard Mitigation Planning Committee will meet at 10:00 AM at the Logan Township Municipal Building, 100 Chief Logan Circle, Altoona, PA on the following dates: March 22, 2017; May 31, 2017; August 9, 2017; and October 18, 2017. This committee is a joint committee of the Local Emergency Planning Committee and the Blair County Planning Commission. These meetings are for the purpose of monitoring, implementing, and updating the county-wide Hazard Mitigation Plan. The meeting site is fully ADA accessible; however, any person needing further accommodation should contact the Blair County Planning Commission at 814-693-2060 at least two days prior to the meeting.

January 15, 2017

**Altoona Mirror Hot Ad!!!!**

102.28  
E1191

**Hazard Mitigation Planning Committee**

DATE: Wednesday, August 9, 2017  
 TIME: 10:00 AM  
 PLACE: Logan Township Municipal Building  
 100 Chief Logan Circle  
 Altoona, Pennsylvania

THOSE PRESENT	REPRESENTING	EMAIL ADDRESS	PHONE #
1. Ed Bender	Freedom Twp		695-8051
2. Roger Lingenfelter	Greenfield		239-8343
3. Rich Brantaer	Martinsburg Poro		505-8582
4. Mike Wall	Blair County EMA		940-5901
5. MIKE SEILER	UPMC		505-2501
6. Tina Eidenleiss	DCPC		693-2080
7. Silke Munish	Allegheny Twp.		695-9563
8. Norm Bomberger	Logan Twp		944-5349
9. David McArthur	Blair Planning		693-2080
10. Cris Stacey	Blair EMA		940-5901
11. Jamie KLINK	Blair Planning		693-2080
12. Sheryl Durbin	Blair Planning		693-2080
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## **BLAIR COUNTY PLANNING COMMISSION**

### Minutes of the Hazard Mitigation Committee Meeting

August 9, 2017

Logan Township  
100 Chief Logan Circle  
Altoona, PA 16602

Mr. McFarland noted there was a training that a number of other members were attending. We have an intern exclusively devoted for hazard mitigation. Instead of calling the plan Hazard Mitigation Plan we have given it a name, BRAVE, Blair Resilience: Addressing Vulnerability & Exposure. Mr. McFarland summarized the current status of the plan. A survey has been conducted of the hazards and the community resiliency workshops held. We need to determine what hazards to focus on. The last plan had a list of 36 which were consolidated and then ranked. The ranking came down to four. This plan should get down to three or four.

There were some open ended questions on the survey, some of which should be discussed. There was some overlap in the six county comprehensive plan. One of the outcomes for this study and that study was collaboration.

The Hazard Mitigation Plan has a September 30<sup>th</sup> deadline for next year.

Quite a few of our municipalities are not meeting the national flood insurance program requirements. We need to see if we want to put in the next plan for a CRS (Community Rating System) manager. We are facilitating data collection. For outreach, we have been assisting with public communication. The books have been put in each of the libraries. We have printed the survey for people who did not have online access. The survey was put online, on our website, twitter, and facebook accounts.

Each municipality has the option to adopt the plan; if they do not want to participate, their funding stream would be reduced. We did a thorough review of the 2013 Hazard Mitigation Plan. We have new and refreshed data. We are looking for some 2016 data to add in to the data for our trending data. There was a Blair Planning day at the Altoona Curve in June where the Hazard Mitigation Plan was promoted along with other projects. There were also three community resiliency workshops held in the county. We are engaged in an inventory of critical infrastructure -- municipal buildings, ambulance and fire stations that may be at risk in different types of hazards. One thing we do not have a lot of data on are our shelters. We need to do evacuation routes; FEMA has strongly noted they want to see some evacuation planning in place. We still need to identify repetitive loss properties which lists specific properties. The natural hazards are being mapped which helps identify risks and vulnerabilities. Part of the community resiliency workshops was to identify the community hazards by identifying community structures and community features and then identify whether they are a strength or a vulnerability.

There will be a set of maps for the whole county identifying where the floodplain, and the floodway are and having streets on the map making it easier to use than the maps online.

There were three community resiliency workshops. One was held at the Northern Blair County Recreation Center, Logan Township Municipal Building and Claysburg Community Center. The results of those were combined with the online public surveys to identify the top five natural hazards from the public perspective. They were: flooding, storms, drought, winter weather and invasive species. Another suggestion was tornadoes to add to the list and possibly sink holes. Human induced hazards from a public perspective were: hazard materials, infectious diseases, pandemic meth and clandestine lab, infrastructure failure, and domestic terrorism. FEMA has training now that has flooding as more of a man-made hazard because of our development patterns. If we would treat our stormwater in a better way, a lot of our flooding situation would go away. One of the projects under this plan is to undertake a countywide stormwater management plan project.

Hazard mitigation is helping people be prepared and take steps with the community so that we are not as needful for the emergency responders. It helps people help themselves and prevent the preventable aspects of a disaster. Hazard mitigation helps with projects to open funds to get some of the projects done. FEMA expects us to do what we put into this plan. Projects that would help mitigate flooding, a drought situation, etc. are things to put into the plan. Poor communication with population best practices to handle hazard events is one of the projects we might want to put into the plan. Instead of being reactive, be proactive. We don't get a lot of public participation unless it touches us personally. Communication has come up as an issue in both the current planning effort and also the healthy county effort. How do we get people out? A decent amount of our elderly are retired and living alone. Do we have services in place which will meet their needs if something goes wrong? That is something that has come out on our survey. In terms of our projects, is there a project or a program we can put in place through this plan that can address those issues? Retirement homes have plans if something goes wrong at their facility.

There is an issue with Tyrone Borough regarding the floodway which FEMA wants addressed with this plan. Tyrone Borough did engage the Silver Jackets through the Army Corps of Engineers after the 2012 floodplain maps went into effect and some of the people were put into the floodplain. One township in Huntingdon County made substantive comments which may make the map take further time going into effect.

Something that has come up in the six county comprehensive plan region wide is too many small EMS, PD, VFC, boroughs, and single purpose type government units. The different surveys for the Comprehensive Plan and the Hazard Mitigation Plan are both suggesting consolidation and cooperation. The idea being if we can get things more consolidated there might be personnel re-distribution. Some are having trouble recruiting people. Our poor communication of people not wanting to hear new ideas or want to listen to what is going on. In the survey there were remarks that there was a lack of police protection in some of the townships.

More collaboration issues was a complaint stating we don't talk back and forth with communication, people aren't talking with EMA, there were a lot of complaints of the lack of local police, and no disaster recovery planning. The plans are kept under lock and key and people are not aware we have them. Maybe there is a way to get the knowledge out there is disaster recovery planning going on. The cooperation between neighboring services was another concern on the survey. These items are the public perception. Countywide mobile alerts would be of value. They are actually available; maybe we need to get more outreach to the rural areas. Dry hydrants was discussed. People do not realize how much forest area we have in the county and how much of it is non-accessible if something were to go wrong.

The community resiliency workshops were of value. It was a value for us and the people who attended. FEMA is auditing us to make sure the hazard mitigation gets done. Projects that we put in the plan should be the kind we will be able to get accomplished. Things to think about are:

- How do we get people involved and interested?

August 9, 2017

Page 2

- CRS programming for the floodplain issues, was touched on in the 2013 plan
- How can we be more proactive in addressing the hazard mitigation strategies?

We need data for hazardous materials incidents, for meth and clandestine labs or at least their presence and data for infrastructure failure being sewer rupture, waterline break, power outages, even broadband outages, wild fires, and infectious disease outbreaks. FEMA likes to see the data by year for the years we are missing, 2013, 2014, 2015 and 2016. We want to get some good projects in the plan so people can see the community is taking care of itself.

Next meeting is October 18 at Logan Township Municipal Building at 10:00 AM.

Respectfully Submitted

David W. McFarland, III, AICP  
Planning Director

**HOME Choice "Rent-To-Buy" Program**  
 3 Bedroom Home Available  
 (Located at 1477 Washington Avenue, Altoona)

Income Limits Apply  
 Must be Employed  
 Credit Check & Criminal Background Check  
 \$15 Non-Refundable Application Fee

For application information, call 949-2029 or pick-up an application at the Altoona Housing Authority, 2700 Pleasant Valley Blvd., Altoona.

We are an Equal Opportunity Housing Provider. We do not discriminate on the basis of race, color, national origin, religion, sex, familial status or disability.

**aha**  
 Altoona Housing Authority

**INDEPENDENT LIVING FOR 50+ INDIVIDUALS & COUPLES**  
 Our Waiting List is Open for 1 & 2 Bedroom Apartments

Rent based on income  
 All utilities included  
 On site laundry  
 Resident activities

For application information, call 949-2011 or pick-up an application at the Eleventh Street Tower Office, 1100 Eleventh Street, Altoona.

Hours: M, W & F  
 8:00 am - 4:00 pm  
 T & Th 8:00 am - 12 pm

Income limits apply

We are an Equal Opportunity Housing Provider. We do not discriminate on the basis of race, color, national origin, religion, sex, familial status or disability.

Beautiful 1st floor furnished 2 bedroom apartment in Hollidaysburg.  
 \$20/mo. includes water, sewer, trash, outside maintenance.  
 Call (814) 693-4110

**230 - Homes For Rent**

3/4 Bedroom, \$675/mo. + all utilities/security. Will consider small pet for extra fee.  
 (814) 502-4425

711 Potlodge Road Split level, 2 bedrooms & Den, fully equipped kitchen, washer & dryer, central air, outside maintenance & parking. \$800 + utilities & security deposit.  
 (814) 201-2601

**310 - Public Notices / Legals**

**NOTICE**

Notice is hereby given that a meeting of the comprehensive plan steering committee for Blair County will be held at the Duncansville Hose's, 110 Patchway Road, Duncansville, PA on Wednesday, January 18, 2017, at 3:30 PM for the purpose of discussing the elements of an updated regional comprehensive plan, part of which will cover Blair County. The steering committee is a committee of the Blair County Planning Commission. The site is ADA-compliant, however anyone requesting further accommodation should call the Blair County Planning Commission at 814-693-2080 at least two days prior to this meeting.

January 15, 2017

**NOTICE**

Notice is hereby given that the Hazard Mitigation Planning Committee will meet at 10:00 AM at the Logan Township Municipal Building, 100 Chief Logan Circle, Altoona, PA on the following dates: March 22, 2017; May 31, 2017; August 9, 2017; and October 18, 2017. This committee is a joint committee of the Local Emergency Planning Committee and the Blair County Planning Commission. These meetings are for the purpose of analyzing, implementing, and updating the county-wide Hazard Mitigation Plan. The meeting site is fully ADA accessible; however, any person needing further accommodation should contact the Blair County Planning Commission at 814-693-2080 at least two days prior to the meeting.

January 15, 2017

Altoona Mirror Hot Ads!!!

102 28  
 E1191



**Hazard Mitigation Planning Committee**

DATE: Wednesday, November 15, 2017  
 TIME: 1:30 PM  
 PLACE: Logan Township Municipal Building  
 100 Chief Logan Circle  
 Altoona, Pennsylvania

THOSE PRESENT	REPRESENTING	EMAIL ADDRESS	PHONE #
1. <i>Patricia Brown</i>	<i>Rhora Twp</i>	<i>Patricia.Brown@msd.com</i>	<i>616-3474</i>
2. DANIEL DRUMM	ALTOONA FD	<i>ddrumm@altoonapb.gov</i>	<i>814-949-2230</i>
3. <i>Craig Hamilton</i>	<i>Woodbury Twp</i>		<i>832-2296</i>
4. <i>Trey Bookhammes</i>	<i>Williamsburg Boro</i>	<i>trey_bookhammes@gru.com</i>	<i>832-2051</i>
5. <i>Denny Walls</i>	<i>Frankstown Twp</i>	<i>Gaeseystown@yahoo.com</i>	<i>695-7151</i>
6. <i>Bill Harris</i>	<i>Tyrone Township</i>	<i>ffemt2492@gmail.com</i>	<i>931-9649</i>
7. <i>Jim Gehret</i>	<i>Holidayburg Borough</i>	<i>manager@holidayburgpa.org</i>	<i>695-7543</i>
8. <i>Jennifer Eger</i>	<i>Bellwood Borough</i>	<i>bellwoodoffice@sd.com</i>	<i>742-8591</i>
9. <i>Cassandra Schmick</i>	<i>Logan Twp</i>	<i>c.schmick@logantownship-pa.gov</i>	<i>944-5349</i>
10. <i>Silla Morrison</i>	<i>Allegheny Twp</i>	<i>allegetwp@atlanticbbs.net</i>	<i>185-9563</i>
11. <i>Cris Fredrickson</i>	<i>Blair County EMA</i>	<i>cfredrickson@atlanticbbs.net</i>	<i>940-5901</i>
12. <i>Michael Wall</i>	<i>Blair County EMA</i>	<i>mwall@atlanticbbs.net</i>	<i>940-5901</i>
13. <i>Kathleen Merrill</i>	<i>Blair County EMA</i>	<i>kmerrill@atlanticbbs.net</i>	<i>940-5901</i>
14. <i>Mark Taylor</i>	<i>Blair County EMA</i>	<i>mtaylor911@atlanticbbs.net</i>	<i>814-4197</i>
15. <i>JENNIS IRON</i>	<i>Roaring Spring Boro</i>	<i>dir@roaring-spring.com</i>	<i>330-4264</i>
16. <i>Tina Enderlein</i>	<i>BCPC</i>	<i>tenderlein@blairplanning.org</i>	<i>693-2080 x3</i>
17. <i>Jamie Klink</i>	<i>BCPC</i>	<i>jklink@blair-planning.org</i>	<i>693-2080</i>
18. <i>David McFarland</i>	<i>BCPC</i>	<i>d.mcfarland@blairplanning.org</i>	<i>693-2080 x5</i>
19. <i>Sheryl Durbin</i>	<i>BCPC</i>	<i>sdurbin@blairplanning.org</i>	<i>693-2080</i>
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## **BLAIR COUNTY PLANNING COMMISSION**

### Minutes of the Hazard Mitigation Committee Meeting

November 15, 2017

Logan Township  
100 Chief Logan Circle  
Altoona, PA 16602

Mr. McFarland welcomed everyone for attending and noted the Hazard Mitigation Steering Committee meeting will be the last one for 2017. He reviewed the committee's responsibilities and the status of the plan. Based on guidance from FEMA (Federal Emergency Management Agency) they want a quantitative ranking of hazards. There also needs to be a discussion on capability of capacity assessment.

There is a September 8, 2018 deadline to have the plan approved, completed, approved by FEMA and approved by each local municipality. Mr. McFarland apologized for members just joining the process. We thought we had an updated and complete email list, thanks to EMA we discovered we did not and now have an updated list.

The data sets and graphics have been updated along with our website. There was an online survey and three community resilience workshops held. The data acquisition has been completed. We are maintaining social media presence, integrating public outreach into the plan and evaluating evacuation routes. We are in the process of assessing risk and social vulnerability, determining capacity strengths and weaknesses, and identifying potential mitigation strategies.

Spreadsheet of BRAVE: Hazard Prioritization Matrix was distributed for members to prioritize hazards both Natural and Human-Made. The form was filled out by members in order of Probability/Impact/Spatial Extent/Warning Time and Duration of Risk Assessments in rankings of 1 to 3. These were collected after about 20 minutes. Mr. McFarland noted FEMA and PEMA (Pennsylvania Emergency Management Agency) both made it clear that flooding is a non-negotiable priority in Blair County.

Mr. McFarland reviewed "capacity" as to what it means to the Hazard Mitigation Plan and reviewed some of the Comprehensive Plan as it relates to the Hazard Mitigation Plan. For the vast majority of land cover, Blair County is undeveloped. If there were a need somewhere, how do we get the people out if there is a need, how do we get the resources there to the facility. A capacity matrix was in a packet given to members with plans, resources, financial and education listed which was reviewed. On the last sheet the degree of capability should be marked by municipality. Members were requested to return the matrix when completed to Mr. McFarland.

Mr. McFarland stated FEMA does expect us to implement our strategies in the plan. We need to think through what our strategy might be, what our action plans are going to be and put that in place. It will be a 5-year window at the beginning of next October through the next 5-years. There was a list of mitigation strategy examples which Mr. McFarland gave with a short explanation of each example.

November 15, 2017

Page 1

423 ALLEGHENY STREET, SUITE 046 • HOLLIDAYSBURG, PENNSYLVANIA 16648  
Phone: 814-692-2080 • Fax: 814-696-2190 • TTY: 711

Our next steps are to have members complete capability assessment forms and identify strategies to address hazards of concern. Our goal will be to develop action plans designed to support the mitigation strategies. The next meeting will be at 10:00 AM on January 3<sup>rd</sup> at Logan Township Municipal Building.

Respectfully Submitted

David W. McFarland, III, AICP  
Planning Director

ATTACHMENTS: BRAVE Blair Resilience Addressing Vulnerability and Exposure Overheads 11/15/17  
BRAVE: Hazard Prioritization Matrix  
Capability Matrix

November 15, 2017

Page 2

**215 - Apartments for Rent**

1195 Maple Hollow Road  
2 Bedroom, 1 Bath  
apartment on 1-level in  
Maple Hollow.  
NOT MH Townhouses  
\$675/mo., quiet & private.  
You pay electric, trash,  
phone & cable. No pets.  
(814) 695-5394

2111 7th Avenue.  
1 Bedroom, 1st floor.  
\$550/month.  
Includes utilities, stove &  
fridge. No pets.  
(814) 695-4784

Altoona 1 Bedroom,  
1 Bath, 1st Floor. \$750 per  
month. Includes all utilities  
& 1 car garage. Free 1st  
month's rent with lease.  
(814) 327-6414



Altoona Housing Authority

**INDEPENDENT LIVING  
FOR 50+ INDIVIDUALS  
& COUPLES**

Our Waiting List is Open  
for 1 & 2 Bedroom  
Apartments

Rent based on income  
All utilities included  
On site laundry  
Resident activities

For application  
information, call 949-2011  
or pick-up an application  
at the  
Eleventh Street Tower  
Office,  
1100 Eleventh Street,  
Altoona.

Hours: M, W & F

**230 - Homes For Rent**

Altoona, great location.  
Newly renovated, 2 or 3  
bedrooms, appliances,  
large yard, off street  
parking and more.  
(814) 742-7439

**240 - Mobile Homes For Rent**

Greenwood, 3 bedroom,  
fenced in yard,  
\$750/month includes  
water, sewer & trash.  
Security deposit. No pets.  
814-943-2185

**310 - Public Notices /  
Legals**

**PUBLIC NOTICE**

A meeting of the Blair  
County Hazard Mitigation  
Planning Committee will  
be held at 1:30 PM on  
Wednesday, November  
15, 2017 at Logan Town-  
ship Municipal Building,  
100 Chief Logan Circle,  
Altoona, PA 16602. The  
meeting is for the purpose  
of input and discussion of  
the 2018 Hazard Mitiga-  
tion Plan. The meeting  
site is fully ADA accessi-  
ble; however, any person  
needing further accommo-  
dation should contact the  
Blair County Planning  
Commission at  
814-693-2080 at least two  
days prior to the meeting.

David W. McFarland III  
Director  
Blair County Planning  
Commission

November 1, 2017

**705 - Bargain Counter**

(8) Pittsburgh Pirate em-  
broidered regulation  
comhole bags, \$49. (814)  
943-6777

10 Window Awnings &  
2 Porch Awnings.  
\$1000 obo for all.  
(814) 215-4364

100' wire fencing. 3 1/2 ft.  
tall, \$35. 1 55 gallon burn-  
ing barrel, \$12. (814)  
505-3357

2 Matching Modern cue  
sticks with an extra shaft,  
\$200  
(814) 944-9029

2 Old fashion 18" push  
mowers, \$25 obo for both,  
(814) 695-1401

20,000 BTU Kerosene  
heater, includes container  
and kerosene, \$25. (814)  
944-7458

4' Oak porch swing, new,  
never used, #1 white oak,  
\$49. (814) 695-5995

5 ft. Aluminum Ladder,  
\$25. New 7.5A Electric  
Leaf Blower, \$20. (814)  
296-2074.

8' Step ladder, \$40. New  
clip case for cellphone, \$9.  
(814) 695-3890

Air Hockey Table with 2  
pushers & 3 pucks, 38" w x  
66" x 30", \$40. (814)  
215-1165 Altoona.

Akai 50" tv, in good run-  
ning condition, \$30 (814)  
946-9204

All in the Family DVD set,  
\$25. 10 Christian CD's,  
\$10. 5 Sally Hansen nail  
polish, \$10. 505-7714

Childs booster seat with  
tray for 8 months to 2  
years, \$10. (814)  
674-3789

**705 - Bargain Counter**

Set of Junior large boys  
ice hockey: Knee pads,  
new protection vest &  
shorts, \$30, 942-7949.

Sit and cycle exercise  
bike. Lightweight, like new  
condition, \$45. (814)  
931-9882

Stereo Speakers, \$16.  
Like New Pink Guitar,  
\$18. (15) Records, \$1  
each. 814-239-8105

Totes, womens eastmar  
eve black winter boots  
size 8 medium, new, \$20  
814-232-9469

White decorated Christ-  
mas table cloth, 60"x96"  
\$20. 814-943-2855

Young mens camo winte  
coat, size medium, \$12  
Womens white faux fur  
small, \$25. 932-8268

**750 - Pets For Sale**

AKC Bernese Mountain  
Pups. Ready now.  
4 females, \$1200 each.  
2 males \$1000 each.  
Vet checked, shots,  
dewormed, very playful &  
friendly. Nice markings.  
(814) 652-6456

GERMAN SHEPHERD/  
HUSKY PUPPIES  
2 Males, 4 Females  
\$900 each. Ready 11/20  
Will hold with deposit  
(570) 713-8393

PRICED REDUCED  
Yorkie Toy Poodle Mix  
Puppies: Brown to  
Chocolate colors. Very  
small & cute. Male-\$725.  
Ready 11/8.  
(814) 832-2293

**765 - Miscellaneous Ea**

**Hazard Mitigation Planning Committee**

DATE: Wednesday, January 3, 2018  
 TIME: 10:00 AM  
 PLACE: Logan Township Municipal Building  
 100 Chief Logan Circle  
 Altoona, Pennsylvania

THOSE PRESENT	REPRESENTING	EMAIL ADDRESS	PHONE #
1. Bill Harris	Tyrone Twp	ffent2492@gmail.com	814-931-9649
2. Silke Morrison	Allegheny twp	allegtwpe@att.net	695-9563
3. Cassandra Schimidt	Logan Twp	cschimidt@logantownship-pa.gov	944-5349
4. MICHAEL SEILER	UPMC	SEILER MJ @ UPMC .EDU	505-2901
5. Tim Hileman	City of Altoona	thileman@altoonapa.gov	381-6210
6. Jeff Blah	Logan Twp	jblah@ktfire.	931-0170
7. Mark Taylor	BLAIR EMA		371-4198
8. Cris Fredrickson	Blair EMA	cfredrickson@atlanticbb.net	940-5905
9. Sheryl Durbin	Staff		
10. Jamie Klink	Staff		
11. David McFaul	Staff		
12. Rich Brantner	Martinsburg		505-8582
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## **BLAIR COUNTY PLANNING COMMISSION**

Minutes of the Hazard Mitigation Committee Meeting

January 3, 2018

Logan Township  
100 Chief Logan Circle  
Altoona, PA 16602

Mr. McFarland noted he received a number of emails this morning regarding non-attendance due to the cold temperatures and which was giving them other priorities. Mitigation strategies were planned on being discussed today. It was suggested to schedule another meeting later in the month for more participation, due to the low attendance. Information and ideas were discussed with members in attendance today.

- There is countywide interest in the flood buyback program. This will be developed into an action plan for the next five years.
- Stormwater related ideas which could be put into the plan.
- Continuity of operations. EMA has been going around to municipalities with information and some of the cost of that could be included for funding as well.
- EOC (Emergency Operations Center) a plan is in work at the City level to do drills, exercises, etc.
- Community Rating System – The City has one in place. Is there interest from the municipalities, either Blair Planning or somebody come in to help the other municipalities, in getting the CRS in place? A lot of the information is available at the municipality level but not organized or inventoried. More information was requested on what the savings and what the flood insurance premium would be by municipality. Mr. McFarland stated the flood insurance rates are available at the county level and may be available by municipal level.
- Dry hydrants – Having a system put in along the road to use river water in the Reese, Ganister area, and a couple other places where there isn't public water.
- A countywide program possibly could be in place which the City of Altoona has done would be to perform fire code inspections for businesses and home owners.

### THE TOP FIVE HAZARD RANKS FOR BLAIR COUNTY

#### NATURAL

1. Flooding
2. Strong Storms
3. Drought
4. Extreme Temperatures
5. Invasive Species

#### HUMAN INDUCED

1. Transportation Accidents
2. Pandemic
3. Clandestine Labs
4. Utility Interruptions
5. Domestic Terrorism

January 3, 2018

Page 1

455 ALLEGHENY STREET, SUITE 046 - HOLLIDAYSBURG, PENNSYLVANIA 16640  
Phone: 814-696-2080 • Fax: 814-696-3490 • TTY: 711

- Mr. McFarland noted that maybe radon testing should be looked at as it is showing up on the health side. It didn't show up as one of the top five hazards but a simple radon awareness program as a mitigation action could be included in the plan.

The timeline for the plan is to have it 75% complete in March with discussion; have it distributed for comments and have a meeting for completion. Then it will be sent down to FEMA for a yes or no; make those changes and bring it back to this committee for approval. As soon as the municipalities adopt it will be on the books. It needs to be adopted before September 30<sup>th</sup>. Another meeting will be scheduled for the end of January or beginning of February.

Respectfully Submitted



David W. McFarland, III, AICP  
Planning Director

January 3, 2018

Page 2

**215 - Apartments for Rent**

2 Bedroom Country Apartment. 6 miles from Altoona Campus, no pets, \$525 + security (814) 942-9070

**1<sup>st</sup> DAY**

Now accepting applications. Luxury 1 bedroom apartment. 1st floor. Stove, refrigerator, heat, water & trash included. 506 4th St., Altoona. References & credit check required. No pets. (814) 330-7416

**220 - Unfurnished Apartments**

Holidaysburg 2 bedroom apartment, \$800 + security deposit. All appliances included. No pets. One year lease. 814-696-4349 10am-3pm after 3pm 814-937-9502

**227 - Townhouses for Rent**

4028 4th Ave., Altoona 3 bedroom Townhouse, \$550 + utilities. (814) 886-8888

**230 - Homes For Rent**

1016 17th Ave., Altoona Nice House, 4 bedroom, off street parking, no pets. \$675/month + Utilities/Security 814-329-3032

Greenwood Beautiful 1 1/2 bedrooms. \$595/mo. + electric. Washer, Dryer, Stove and fridge. References and deposit. No pets. (814) 945-0571 or after 5pm 942-6833

**310 - Public Notices / Legals**

**LEGAL NOTICE**

Notice is hereby given that the proposed budget for the year 2018 of the Patton Borough Council, Patton, PA, is available for public inspection in the office of the Borough Secretary. The budget can be reviewed between the hours of 9:00am-12:00pm, 1:00pm-4:00pm Monday through Friday. Please note 2018 proposed budget do not call for any increases in water or sewer rates or increases in tax Millage rate.

Donna Dunegan, Borough Secretary  
November 25, 2017

**What's Selling in the Classifieds?**  
Anything from Appliances to Zippers.  
For information on placing an ad, call the  
**Altoona Mirror Classifieds 946-7422**

then be publicly opened, and read aloud, at 1:00 pm (EDT) **Wednesday December 6, 2017 at the AWA's office located at 900 Chestnut Avenue.** Copies of the bidding documents are open and on file for public inspection at the AWA's Purchasing Office at 900 Chestnut Avenue, Altoona, PA., between the hours of 7:00 am. and 3:00 pm., daily except weekends and holidays. Prospective bidders may obtain copies of the documents during these hours, by mail upon request, by phone (814) 949-2213, or on the AWA's website @[www.altoonawater.com](http://www.altoonawater.com). (homepage link) A Bid Bond in the amount of ten (10%) percent of the total bid price must be accompany each proposal.

**No bidder may withdraw their bid within seven (7) days after the bid opening**

John H. Swope  
Purchasing Manager  
November 25, 2017

**Newspaper Notification of Submittal of a Remedial Investigation Report (for Site-Specific Standard for Soil and Groundwater) (Section 304(n)(2)(i))**

Notice is hereby given that a Remedial Investigation Report will be submitted to the Pennsylvania Department of Environmental Protection, Southcentral Regional Office, to provide technical characterization information for the site-specific cleanup standard at the former F.L. Smith Machine Company, 899 Plank Road, Allegheny Township, Duncansville Borough, Blair County, Pennsylvania.

This notice is made under the provision of the Land Recycling and Environmental Remediation Standards Act, the Act of May 19, 1995, P.L. #4, No. 2.

November 25, 2017  
[www.HOT-ADS.com](http://www.HOT-ADS.com)

**November 25, 2017**

**PUBLIC NOTICE**

A meeting of the Blair County Hazard Mitigation Planning Committee will be held at 10:00 AM on Wednesday, January 3, 2018 and March 14, 2018 at Logan Township Municipal Building, 100 Chief Logan Circle, Altoona, PA 16602. The meeting is for the purpose of input and discussion of the 2018 Hazard Mitigation Plan. The meeting site is fully ADA accessible; however, any person needing further accommodation should contact the Blair County Planning Commission at 814-893-2080 at least two days prior to the meeting.

David W. McFarland III, Director  
Blair County Planning Commission  
November 25, 2017

**340 - Giveaways**

14 week old Female Pitbull/Boxer mix puppy brindle, free to a good home. (814) 742-7692

8 week old kittens, 4 females, 1 male. To good homes. (814) 887-3289

Full size mattress, boxspring and bed frame, excellent condition. You pick up and haul away. 941-4424

LG Plasma tv 50", 4 years old, doesn't work. (814) 935-8076

**Visit us at**  
[altoonamirror.com](http://altoonamirror.com)

2 piece all season all mats, new, \$20. Trubag stand, \$5 (814) 944-8303

2 womens leather dress jackets. 1 red & 1 burgundy, size 1X, \$20 each. 412-295-9406 Altoona, PA

26" Girls bike, Sharnan Roadmaster Sport, \$40 (814) 943-2855

4 Peace Lillies, \$4 each. pair of ladies dress shoes size 9 1/2 narrow, \$3 each (814) 943-0457

6 1/2 foot deluxe silk Ficus tree, like new, beautiful & full, \$49, (814) 931-6918

6" in line duct fan, \$15 Comfort zone 1500 watt electric heater, \$12 (814) 946-1126

8 sided Collapsible dog yard, 42"H, \$15. 10 candle fireplace insert, \$15. 932-2989

Akal 50" TV, floor model (not flat screen), in good running condition, colored, \$30. (814) 946-9204

Built in Whirlpool Dishwasher, \$150.

3 Piece direct stud shower unit with base, \$250 (814) 674-5952

Christmas tree 7 ft. assembled green full, \$30. (814) 944-4679

Club chefman toaster oven, 1,000 watt oven, 9 liter interior, new in box, \$15. 814-943-3495

Electrical wire 12-2 MC cable, 100 feet, \$45. 943-1559.

Eureka canister vac with bags, \$7. Dirt Devil power stick, \$5. Bissell stick vac, \$4. (814) 931-9882

[www.HOT-ADS.com](http://www.HOT-ADS.com)



**Hazard Mitigation Planning Committee**

**DATE:** Wednesday, January 31, 2018  
**TIME:** 10:00 AM  
**PLACE:** Logan Township Municipal Building  
 100 Chief Logan Circle  
 Altoona, Pennsylvania

THOSE PRESENT	REPRESENTING	EMAIL ADDRESS	PHONE #
1. Cassandra Schmick	Logan Township	csmick@logantownship-pa.org	814-944-5349
2. Bill Kibler	ALTOONA MIRROR	bkibler@altoonamirror.com	949-7038
3. Tina Enderlein	BLPC	tenderlein@blairplanning.org	814-693-2050x3
4. MIKE SEILER	UPMC	SEILERMS@UPMC.EDU	811 506 2901
5. Ed Bender	Freedom Twp		695-2051
6. Rich Brantner	Martinsburg	rbrantner@martinsburgpa.net	525-8582
7. Dustin Russell	Martinsburg		381-6290
8. Jeff Kettner	N. Woodbury Twp Dunsmuirville Boro	jkettner@att.net	414-9850
9. Jim Gebert	Holidayburg	manpei@holidayburgpa.org	695-7543
10. Terri Lingenfelter	Greenfield Twp	eng-tve@yahoo.com	239-8343
11. Bill Harris	Tyrone Twp	ffemta49a@gmail.com	931-9649
12. Derek Carlins	Blair EMA	dcarlins@att.net	940-5501
13. Cris Fredrickson	Blair EMA	cfredrickson@att.net	9405905
14. David McFadden	Blair Planning	dmcfa@blairplanning.org	693-2080
15. Jamie Klink	Blair Planning	jklink@blairplanning.org	693-2080
16. Sheryl Durbin	Blair Planning	sdurbin@blairplanning.org	693-2080
17. Michael Tofano	City of Altoona	mtofano@altoonapa.gov	949-2230
18.			
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Blair County Planning Commission  
Altoona Metropolitan Planning Organization  
Blair County Government Advisory Committee

Minutes of the Hazard Mitigation Committee Meeting

January 31, 2018

Logan Township  
100 Chief Logan Circle  
Altoona, PA 16602

The meeting opened with a moment of silence in memory of Carla Dosh from EMA who passed away last night. Mr. McFarland reviewed numbers for the community rating system from the current plan and numbers from FEMA who just published a new set of numbers. It was noted the numbers are actually decreasing from last years. There was discussion on the community rating system. It was decided there was not enough interest in pursuing the community rating system. There will be a mention of the CRS in the plan. When we do our reports and hold these meetings that helps with the City's rating and any other municipality who may want to voluntarily join in which would help their rating as well.

The first countywide project mentioned last time was the flood buyback program. The flood buyback program filters money directly to the municipality to tear down the building on the property. The property has to be held in perpetuity as open space. The program is voluntary but it is not always perceived that way. If this is put into the plan, it is expected we would participate. It was agreed to be written very generally and not refer to a specific location.

Another countywide project mentioned was stormwater management which has to tie back into flooding. A lot of the stormwater is stormwater mismanagement. This could be written up for potential grant money for projects as they develop that tie into flooding or property damage.

The topic of continuity of operation drills was brought up last time rather it be in the field or table top. Mr. McFarland commented with the following questions: What happens if the entire upper echelon of the municipality is knocked out of commission? Do the people that the responsibility falls on, know the responsibility falls on them and do they know what to do with it? If we put this in the plan, what do we mean by it, who is going to take responsibility for it, how do we do it, who is going to do it, every year -- every two years or once in a five year cycle and do we do it on a municipal level? Discussion was held and agreed this should be a plan which could be added to EMA's outreach to municipalities.

Mr. McFarland noted another project was fire code inspection which there is not a statewide fire code. The idea was to utilize the city firemen to go out to the properties that are changing hands by sale or by a lease to double check residential properties to make sure they are up to fire code. Discussion was held but the idea was decided not to be put in the plan.

Dry hydrant installation was brought up a couple of times over the past few meetings. This would be added to put in dry hydrants in some rural areas along the rivers where there is a population that isn't served by a water system. Possible dry hydrant locations are Reese, McKee, Ganister, Thomastown, Puzzletown, Jugtown, Sproul, Sinking Valley, Arch Spring, and Henrietta. Steps would be identifying the area, obtaining easements, and installing the pipe work.

January 31, 2018

Page 1

Mr. McFarland will put Education and Outreach in the plan under the Capacity section, which are in place and established from the 2013 plan.

The next meeting is on March 14<sup>th</sup> and the following one will be in about ten weeks and a final meeting about five weeks later before it is sent into FEMA.

Respectfully Submitted

David W. McFarland, III, AICP  
Planning Director

January 31, 2018

Page 2

Spacious 3 bedroom apartment. 1811 20th Ave. Altoona. Includes water. \$625/month. Move in \$1425. Section 8 approved. No pets. Call Keith 610-220-7813

**220 - Unfurnished Apartments**

Holidaysburg  
1 bedroom apartment, \$550 + utilities + security. All appliances included. No pets. One year lease. 814-696-4349 10am-3pm after 3pm 814-937-9502

Holidaysburg  
2 bedroom apartment, \$600 + security deposit. All appliances included. No pets. One year lease. 814-696-4349 10am-3pm after 3pm 814-937-9502

**230 - Homes For Rent**

805 1st Avenue, Altoona. Nice 3 bedroom, 1 1/2 bath. \$625/mo. plus security. Fenced yard. Garbage included. (814) 941-7865

All one floor, 2 bedroom, 1 bath. New carpet, Central air, carpet. Holidaysburg. Call: (814) 330-3408

**310 - Public Notices / Legals**

**PUBLIC NOTICE**

A meeting of the Blair County Hazard Mitigation Planning Committee will be held at 10:00 AM on Wednesday, January 31, 2018 at Logan Township Municipal Building, 100 Chief Logan Circle, Altoona, PA 16602. The meeting is for the purpose of discussing mitigation strategies for the 2018 Hazard Mitigation Plan. The meeting site is fully ADA accessible; however, any person needing further accommodation should contact the Blair County Planning Commission at 814-693-2080 at least two days prior to the meeting.

David W. McFarland III,  
Director  
Blair County Planning Commission  
January 7, 2018

(814) 937-3107  
Spacious 3 bedroom apartment. 1811 20th Ave. Altoona. Includes water. \$625/month. Move in \$1425. Section 8 approved. No pets. Call Keith 610-220-7813

**220 - Unfurnished Apartments**

Holidaysburg  
1 bedroom apartment, \$550 + utilities + security. All appliances included. No pets. One year lease. 814-696-4349 10am-3pm after 3pm 814-937-9502

Holidaysburg  
2 bedroom apartment, \$600 + security deposit. All appliances included. No pets. One year lease. 814-696-4349 10am-3pm after 3pm 814-937-9502

**230 - Homes For Rent**

805 1st Avenue, Altoona. Nice 3 bedroom, 1 1/2 bath. \$625/mo. plus security. Fenced yard. Garbage included. (814) 941-7865

All one floor, 2 bedroom, 1 bath. New carpet, Central air, carpet. Holidaysburg. Call: (814) 330-3408

**310 - Public Notices / Legals**

**PUBLIC NOTICE**

A meeting of the Blair County Hazard Mitigation Planning Committee will be held at 10:00 AM on Wednesday, January 31, 2018 at Logan Township Municipal Building, 100 Chief Logan Circle, Altoona, PA 16602. The meeting is for the purpose of discussing mitigation strategies for the 2018 Hazard Mitigation Plan. The meeting site is fully ADA accessible; however, any person needing further accommodation should contact the Blair County Planning Commission at 814-693-2080 at least two days prior to the meeting.

David W. McFarland III,  
Director  
Blair County Planning Commission  
January 7, 2018

**Hazard Mitigation Planning Committee**

**DATE:** Wednesday, April 4, 2018  
**TIME:** 10:00 AM  
**PLACE:** Logan Township Municipal Building  
 100 Chief Logan Circle  
 Altoona, Pennsylvania

THOSE PRESENT	REPRESENTING	EMAIL ADDRESS	PHONE #
1. Ed Bender	Freedom Twp		6958051
2. Tim Hileman	City of Altoona	thh@cityofaltoona.org	381-6210
3. Rick Brantner	Martinsburg Borough	rbrantner@martinsburgpa.org	505-8582
4. Denny Walls	Frankstown Twp		695-7151
5. Jeff Kether	Duncansville Boro N. Cassinbury Twp	jkether@shys.com	414-9852
6. Jan Gehret	Willardsburg Boro	jgehret@hillsidesburgpa.org	695-7543
7. Terri Lingenfetter	Greenfield Twp	eng-tv@yahoo.com	239-8343
8. Kate Merrill	Blair County EMA	kmerrill@atlanticbbn.net	940-5901
9. Nichole Kubler	Snyder Twp Residential	nreese11183@gmail.com	814-631-8647
10. Craig Hamilton	Woodbury Twp		814-832-2296
11. Trey Backhaus	Williamsburg Boro	trey.backhaus16@gmail.com	814-414-7744
12. Brie Kubler	Mirror	bkubler@altoonamirror.com	949-7038
13. Jamie Klink	BCPC	jklink@blair-planning.org	693-2080
14. Cassandra Schmick	Logan Township	cschmick@logantownshippa.org	944-5349
15. Silke Morrison	Allegheny Township	secretary@alleghenytownship.us	415-7563
16. Mark Taylor	EMA	mtaylor911@atlanticbbn.net	981-4193
17. PALMER BROWN	BLAIR TWP	Patricia.Boss@kpn.com	696-3474
18. Cris Fredrickson	Blair County EMA	cfredrickson@atlanticbbn.net	940 5905
19. Dawn McFurtul	Blair Planning		
20. Tina Enderle	Blair Planning	tenderle@blairplanning.org	693-2080
21. Sheryl Durbin	Blair Planning		
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Blair County Planning Commission  
Altoona Metropolitan Planning Organization  
Blair County Government Advisory Committee

Minutes of the Hazard Mitigation Committee Meeting

April 4, 2018

Logan Township  
100 Chief Logan Circle  
Altoona, PA 16602

Mr. McFarland noted he attended a Hazard Mitigation workshop. One of the things that needs to be in our plan is a profile from every municipality with a wish list for the plan. Each municipality will be contacted for their list in the next six weeks and ideas brainstormed at this meeting. Some things that will be asked from the municipalities will be copies of comprehensive plans, floodplain ordinances, zoning, subdivision ordinances, and other plans such as lay of the land, environmental land, and natural environment of the land. How do they play into the hazard mitigation planning process and how do they support mitigation strategies long term?

- Nicole Kibler, a Snyder Township resident, living on South Eagle Valley Road, spoke about the damage involving her property, which is one of three households having a problem with flooding due to beaver dams. Mr. McFarland said he would give her a call and probably stop by her property.
- The City of Altoona noted the hazard materials being carried on I-99; there are a lot of issues that can be worked on in regards to the railroad tracks. The notification system, evacuation plans, transportation plans, shelter in place plans are some of the things that have been done to mitigate some of the risks but they all can be improved upon. Blight has been a big problem in the past.
- Williamsburg, Woodbury -- transportation issues are 866 and Clover Creek going out of town.
- Blair -- flooding issues on the Beaverdam branch, Fort Fetter area, railroad bridge in Hollidaysburg, Frankstown branch flooding issues; transportation -- large population in the Penn Farms area, there are three ways out and none of the them are good. If a disaster happens, there is no way to get them out. Discussion was held on different scenarios. Comprehensive plan is 38 years old -- cost to update is a major factor. There is a bridge in Newry and one on Charger Highway.
- Frankstown -- roads become under water and inaccessible when flooding occurs, Route 22 has as much hazard material transportation as I-99.
- Duncansville -- 3<sup>rd</sup> Avenue is in Duncansville but Wye Switches is not -- problem with trains and traffic; there is flooding by the park, there were projects to reinforce the banks but it reached the banks and looks like it is an overflow. Drainage issues are not being addressed.
- Allegheny -- Same problem with the tracks, trains need to get to the farm and chemical plant, not a whole lot of flooding.

April 4, 2018

Page 1

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423 ALLEGHENY STREET, SUITE 046 • HOLLIDAYSBURG, PENNSYLVANIA 16648  
Phone: 814-693-2080 • Fax: 814-696-3490 • TTY: 711

## Blair Resilience: Addressing Vulnerability & Exposure

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- North Woodbury Township – transportation wise there is one line of the upper railroad, the airport is one of the biggest issues; flooding wise some of the culverts and drainpipes have been replaced which seems to have taken care of drainage issues down Henrietta road and by the dog park. There is a decent amount of truck traffic on Route 164.
- Freedom – problem with erosion along Puzzletown Road, trees are falling in streams; sewer line washed out at least 30 feet into yards near the Lions Club.
- Greenfield -- drainage issue along Ski Gap and Pole Cat Hollow, a lot of trees are down, assuming it is an erosion issue. Working on getting some shelters in the area. There is only one that has been declared a shelter; other potential shelters will need a generator. There is some small stream flooding.

MS4 communities have minimum control measures which could be applied across the county which could be something we could share.

Mr. McFarland reported he is planning to have a 75% document with the wish lists prior to the next meeting. The hazards and profiles are done.

The next meeting of the Hazard Mitigation committee will be Wednesday, May 2<sup>nd</sup>.

Respectfully Submitted,

David W. McFarland, III, AICP  
Planning Director

April 4, 2018

Page 2

No. 14441 rights title and record of A. D. Wells and Corbin K. Ellis

No. 14442 rights title and record of A. D. Wells and Corbin K. Ellis

No. 14443 rights title and record of A. D. Wells and Corbin K. Ellis

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No. 14467 rights title and record of A. D. Wells and Corbin K. Ellis

No. 14468 rights title and record of A. D. Wells and Corbin K. Ellis

310 - Public Notices / Legal

NOTICE OF EXECUTOR

Notice of Executor for the estate of... [Legal notice text]

PUBLIC NOTICE

A meeting of the Blair County Planning Commission... [Public notice text]

340 - Giveaways

Giveaway items for sale... [Giveaway text]

350 - Personals

Personals section... [Personals text]

705 - Bargain Counter

Bargain counter items... [Bargain counter text]

705 - Bargain Counter

Car wash and other items... [Bargain counter text]

810 - Help Wanted

Help wanted advertisement... [Help wanted text]

810 - Help Wanted

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825 - Trucks For Sale

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810 - Help Wanted

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Help wanted advertisement... [Help wanted text]



**Hazard Mitigation Planning Committee**

DATE: Wednesday, May 2, 2018

TIME: 10:00 AM

PLACE: Logan Township Municipal Building  
100 Chief Logan Circle  
Altoona, Pennsylvania

THOSE PRESENT	REPRESENTING	EMAIL ADDRESS	PHONE #
1. Ed Bender	Freedom Twp		695-8051
2. Rick Brantner	Martinsburg Borough		505-8582
3. Denny Walls	Frankstown Twp		695-7151
4. Terri Lingenfelter	Greenfield	eng-tv@yahoo.com	239-8343
5. Janie Gill	Altoona	j.gill@altoonapa.gov	949-2449
6. Tom Hileman	Altoona	thileman@altoonapa.gov	949-2529
7. Tom Gehring	Holidaysburg	jgehrt@holidaysburgpa.org	615-7543
8. Joe Hansberry	Williamsburg Borough	JLL16693@gmail.com	312-7897
9. Cris Fredrickson	Blair County EMA	cfredrickson@albaticbba.net	940-5905
10. Jennifer Eger	Bellwood Borough	bellwoodoffice@adison	742-8591
11. Tina Endrejatni	BCPC	tendrejatni@blairplanning	693-2080
12. PALMER BROWN	Blair FWJ	PalmerBrown@nsil.com	696-3474
13. MICHAEL SEILER	UPMC	SEILERMS@UPMC.EDU	505-2561
14. BILL KIBLER	MIROR	b.kibler@altoonainc.com	949-7638
15. Jeff Ketter	Duncansville Boro N Woodbury Twp	jketter@duncansvillepa.org	414-9850
16. Dawn M. F. ...	Blair Planning		
17. Jamil Klink	Blair Planning		
18. Cassandra Schmick	Logan Township	c.schmick@logantownship-pa.gov	944-5349
19. Sheryl Durbin	Blair Planning		
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Blair County Planning Commission  
Altoona Metropolitan Planning Organization  
Blair County Government Advisory Committee

Minutes of the Hazard Mitigation Committee Meeting

May 2, 2018

Logan Township  
100 Chief Logan Circle  
Altoona, PA 16602

Mr. McFarland distributed a draft of a list of the county and municipalities hazard mitigation project broken down by municipality. Projects can be added and a number of municipalities wanted the list to go before their municipal meeting. FEMA said that every municipality who wants to participate in the plan must have at least one project listed. A project does not need to be completed in five years but they want to know if we have looked at this for the past three years and if it doesn't make sense to do it, we can pull the project off the list and maybe put something else on in its place.

Mr. McFarland reviewed the list of projects with the committee. In addition to the projects listed the following were suggested to be added.

- Countywide – in regards to blight, there are a lot of problems with rodents and general health problems which led to a discussion of bed bugs. Education to the public on how to get rid of bed bugs would be a place to start. Also, ticks are a problem in some area. Lyme disease is very prevalent here and we are one of the worst counties in the state. Is blight a countywide problem or just related to specific areas? Radon came up in almost every municipality but not to a level they were willing to add it to the list. There was enough interest that maybe it should be added as a countywide project.
- Freedom Township – specific areas were Jugtown Bridge and two areas on Puzzletown Road.

Discussion was held on rather than having ten hazards in the plan, we should trim the list back so that we only identify the top hazards which were identified. Since there were no projects from any of the municipalities for drought, invasive species, domestic terrorism, pandemic and clandestine labs would be removed from the list of top hazards. As the top hazards we would have flooding, strong storms, extreme temperatures, utility interruptions, transportation accidents, and radon.

The other items will be profiled such as the bed bug education but would not be identified as the top hazards. Every hazard the state has identified that is occurring in Blair County is being profiled in the plan.

For the profile, we are looking for the policies, ordinances and plans that directly address the human and environment interaction. We need the comprehensive plan, act 537, zoning, stormwater, subdivision ordinances and plans, If municipalities have accepted the statewide building code and if you are relying on any PennDOT documentation for the roads for drainage. Mr. McFarland noted he does not need the document, just that you have a zoning ordinance, it was dated on this date or last updated on this date. For the population, land area, etc. we will just pull it from census data.

May 2, 2018

Page 1

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423 ALLEGHENY STREET, SUITE 046 • HOLLIDAYSBURG, PENNSYLVANIA 16648  
Phone: 814-693-2080 • Fax: 814-696-3490 • TTY: 711

As soon as the last few municipalities respond back to Mr. McFarland, he will get the hazard mitigation plan emailed out to committee members. We are hoping by the end of June or beginning of July to have the plan sent to FEMA and PEMA which the turnaround time should be 4-6 weeks. The county has to adopt it and one municipality, and then they consider the obligation has been met. The other municipalities that want to join in and have the benefits of the plan have to adopt it sometime through the fall.

Respectfully Submitted

David W. McFarland, III, AICP  
Planning Director

May 2, 2018

Page 2

Page C6 - Altoona Mirror

Thursday, March 15, 2018

No. 14 All rights, title and interest of Alan D. Walls and Dawn N. Walls...
ALL that certain mortgage, agreement and tract of land...
SECTION 10 of an original plat on the southern right of way...
CONTAINING 5400.0 square feet of land according to a survey and plan by surveyor dated July 25, 1977...

BEING KNOWN AS 5419 East Pleasant Valley Blvd...
BEING THE SAME PREMISES which Margaret L. Hewitt...
All that certain lot or piece of land, situate, lying and being in the City of Altoona...

South Avenue (formerly Twenty-five (25) feet to a point...
The foregoing description is taken from the description of the Deed Recd. Paul William Wisniewski and husband...
All that certain lot or piece of land, situate, lying and being in the City of Altoona...

same Southeastward twenty-five (25) feet to a point...
Being the same property conveyed to Michael B. Balthasar...
Parcel No. 01-08-05-161-00-000

310 - Public Notices / Legal
NOTICE OF EXECUTION
STATE OF PENNSYLVANIA
Ladies Tavernery of...
Executive: Mark Durkin

795 - Bargain Counter
Couch with pillow and recliner...
Electric oil fill tank...
Furniture, back with black cushions...

810 - Help Wanted
WORK WITH OUR TEAM
Excellent Full and Part Time Job Opportunities
Trade Publication Specialist...
All of these great opportunities offer Monday through Friday schedules...

810 - Help Wanted
American Customer Care is conveniently located off of Pleasant Valley Blvd in Altoona, PA 16602

925 - Trucks For Sale
Great Buy!
2007 Dodge Dakota...
2014 Red Dodge Caravan...
945 - Motorcycles
Great Buy!
2001 Suzuki 600 2nd...
2013 Honda 600...
955 - Trailers & RV's
1984 Caravan M2 Motor Coach...
2000 Old Brand Com...
2015 Fleet Power...
970 - Boats
WOW!
1978 Old Brand...
975 - Automobile Parts
2003 Chevy Blazer 4 Door...

NEWSPAPER DELIVERY OPPORTUNITY
ALTOONA MIRROR
EBENSBURG, WILMORE MOTOR ROUTE: Approximately 126 \$55975...
NORTHERN CAMBRIA BUNDLE TRIP: Approx. Chest Springs, Pa. to...
CARRIERS IN AND AROUND THE UPMC ALTOONA AREA: Work...
ROARING SPRING, WOODBURY, & NEW ENTERPRISE MOTOR ROUTE: One Mt. Frosty Hollow Road...
JUNATA AREA: 83 papers, N. and S. - N. on St. Roadway, N. 14th Ave - N. 22nd Ave...

PUBLIC NOTICE
A hearing of the Blair County Hazard Mitigation Planning Commission will be held at 10:00 AM on Wednesday, April 11, 2018...

Large Penscopes...
Mar 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31...
Phone: 814-338-3821

SOCIAL MEDIA CONTENT WRITER
Growing company has an opening for a social media content writer...
Company offers 401(k), paid holidays, vacation and health insurance.

310 - Public Notices / Legal
NOTICE OF EXECUTION
STATE OF PENNSYLVANIA
Ladies Tavernery of...
Executive: Mark Durkin

Circulation Department
946-7480 or 1-800-287-4480
Altoona Mirror
Making It Happen For You

345 - Garages
2 being built...
FREE: Time, money, sweat...
New: 2018...
350 - Personnel
A DIVORCE \$219 TOTAL...
795 - Bargain Counter
Full length...
795 - Pets For Sale
AKC English Springer Spaniel...

345 - Garages
2 being built...
FREE: Time, money, sweat...
New: 2018...
350 - Personnel
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AKC English Springer Spaniel...



RECEIVED  
 DEC - 6 2017  
 PLANNING  
 COUNTY

WILLIAMSBURG BOROUGH

1. Planning and Regulatory Capability: Please indicate whether the following planning or regulatory tools and programs are currently in place or under development for your jurisdiction by placing an "X" in the appropriate box, followed by the date of adoption/update. Then, for each particular item in place, identify the department or agency responsible for its implementation and indicate its estimated or anticipated effect on hazard loss reduction (Supports, Neutral or Hinders) with the appropriate symbol and also indicate if there has been a change in the ability of the tool/program to result in loss reduction. Finally, please provide additional comments or explanations in the space provided.

Tool/Program	Status		Dept. / Agency Responsible	Comments
	In Place	Date Adopted or Updated		
EXAMPLE: Hazard Mitigation Plan	X	1/12/2015	Hazero County EMA	Review available in 2009 revised mitigation strategy completed once active
Hazard Mitigation Plan	X			
Emergency Operations Plan	X			
Disaster Recovery Plan				
Evacuation Plan				
Continuity of Operations Plan	X			
NFIP	X			
NFIP-CRS				
Floodplain Regulations	X			
Floodplain Management Plan				
Zoning Regulations	X			

Tool/Program	Status			Dept. / Agency Responsible	Comments:
	In Place	Date Adopted or Updated	Under Development		
Subdivision Regulations					
Comprehensive Land Use Plan (or General, Master or Growth Mgmt. Plan)					
Open Space Management Plan (or Parks/Rec or Greenways Plan)					
Stormwater Management Plan / Ordinance					
Natural Resource Protection Plan					
Capital Improvement Plan					
Economic Development Plan					
Historic Preservation Plan					
Farmland Preservation					
Building Code	X				
Fire Code	X				
Other					



**2. Administrative and Technical Capability:** Please indicate whether your jurisdiction maintains the following staff members within its current personnel resources by placing an "X" in the appropriate box. Then, if YES, please identify the department or agency they work under and provide any other comments you may have in the space provided or with attachments

<b>Staff/Personnel Resources</b>	<b>Yes</b>	<b>No</b>	<b>Department / Agency</b>	<b>Comments</b>
Planners (with land use / land development knowledge)				
Planners or engineers (with natural and/or human caused hazards knowledge)				
Engineers or professionals trained in building and/or infrastructure construction practices (includes building inspectors)				
Emergency manager				
Floodplain manager				
Land surveyors				
Scientists or staff familiar with the hazards of the community				
Personnel skilled in Geographic Information Systems (GIS) and/or FEMA's HAZUS program				
Grant writers or fiscal staff to handle large/complex grants				
Other				

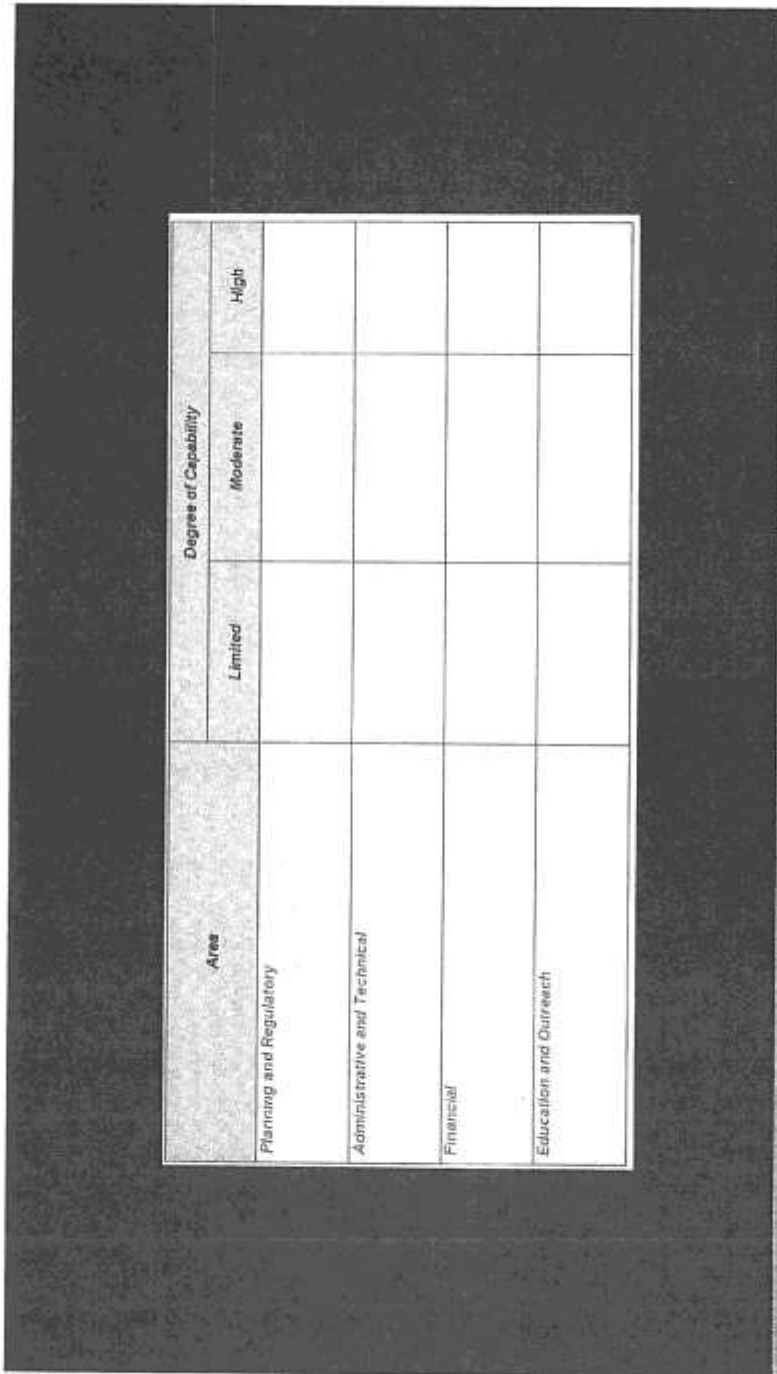


3. **Financial Capability:** Please indicate whether your jurisdiction has access to or is eligible to use the following local financial resources for **hazard mitigation purposes** (including as match funds for State of Federal mitigation grant funds). Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments

Financial Resources	Yes	No	Department / Agency	Comments
Capital Improvement programming				
Community Development Block Grants (CDBG)	X			
Special purpose taxes				
Gas / electric utility fees				
Water / sewer fees	X			
Stormwater utility fees				
Development impact fees				
General obligation, revenue, and/or special tax bonds				
Partnering arrangements or Intergovernmental agreements				
Other				

**4. Education and Outreach.** Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information. Then, identify the primary department or agency responsible for its administration or allocation and provide any other comments you may have in the space provided or with attachments.

Program/Organization	Yes	No	Department / Agency	Comments
Firewise Communities Certification				
StormReady certification				
Natural disaster or safety related school programs				
Ongoing public education or information program (e.g. responsible water use, fire safety, household preparedness, environmental education)				
Public-private partnership initiatives addressing disaster-related issues				
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.				
Other				



Area	Degree of Capability		
	Limited	Moderate	High
Planning and Regulatory			
Administrative and Technical			
Financial			
Education and Outreach			

**BRAVE: Hazard Prioritization Matrix**

MUNICIPALITY: *ALTONJA*

Hazard Risk	Hazard Natural (N) Human-Made (H)	Risk Assessment Category						Risk Factor (RF)
		Probability	Impact	Spatial Extent	Warning Time	Duration		
	Clandestine Lab (H)	4	1	1	4	2		
	Civil Disturbance (H)	4	2	2	4	2		
	Drought (N)	4	1	4	1	4		
	Earthquake (N)	1	2	4	4	2		
	Extreme Temperature (N)	4	1	4	1	3		
	Flooding (H)	4	4	4	4	3		
	Flooding (N)	4	2	2	2	2		
	Hailstorm (N)	3	1	4	2	1		
	Invasive Species (H)	1	1	1	1	4		
	Landslide (N)	2	1	1	4	1		
	Mass Contamination (H)	1	2	1	4	1		
	Pandemic (H)	1	4	4	2	4		
	Radon (N)	4	4	4	1	4		
	Strong Storm (N)	4	2	4	1	2		
	Subsidence (N)	3	1	1	4	3		
	Terrorism (H)	1	3	2	4	4		
	Tornado/Strong Wind (N)	4	1	4	1	2		
	Transportation Accident (H)	4	3	3	4	4		
	Urban Fire/Explosion (H)	4	1	1	4	2		
	Utility Interruption (H)	4	1	4	4	2		
	Wildfire (N)	1	1	1	4	1		

# Blair County Community Resilience Survey

## 2018 Hazard Mitigation Plan



This is a community-driven survey intended to identify hazards, risks, and vulnerabilities, local challenges and strengths, and actions to improve community resilience to all hazards. Your answers will help us determine your priorities regarding planning for hazards in your community and guide the 2018 Hazard Mitigation Plan update for Blair County. A map is provided at the end of this survey if you need help identifying your municipality.

If you have any questions, contact Blair County Planning Commission at (814) 693-2080.

**Please return this survey to Blair County Planning Commission at your earliest convenience.**

What municipality do you live in?

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Allegheny Township   | <input type="checkbox"/> Antis Township          | <input type="checkbox"/> Bellwood Borough       |
| <input type="checkbox"/> Blair Township       | <input type="checkbox"/> Catharine Township      | <input type="checkbox"/> City of Altoona        |
| <input type="checkbox"/> Duncansville Borough | <input type="checkbox"/> Frankstown Township     | <input type="checkbox"/> Freedom Township       |
| <input type="checkbox"/> Greenfield Township  | <input type="checkbox"/> Hollidaysburg Borough   | <input type="checkbox"/> Huston Township        |
| <input type="checkbox"/> Juniata Township     | <input type="checkbox"/> Logan Township          | <input type="checkbox"/> Martinsburg Borough    |
| <input type="checkbox"/> Newry Borough        | <input type="checkbox"/> North Woodbury Township | <input type="checkbox"/> Roaring Spring Borough |
| <input type="checkbox"/> Snyder Township      | <input type="checkbox"/> Taylor Township         | <input type="checkbox"/> Tyrone Borough         |
| <input type="checkbox"/> Tyrone Township      | <input type="checkbox"/> Williamsburg Borough    | <input type="checkbox"/> Woodbury Township      |

Other \_\_\_\_\_

What municipality do you work in?

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Allegheny Township   | <input type="checkbox"/> Antis Township          | <input type="checkbox"/> Bellwood Borough       |
| <input type="checkbox"/> Blair Township       | <input type="checkbox"/> Catharine Township      | <input type="checkbox"/> City of Altoona        |
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| <input type="checkbox"/> Snyder Township      | <input type="checkbox"/> Taylor Township         | <input type="checkbox"/> Tyrone Borough         |
| <input type="checkbox"/> Tyrone Township      | <input type="checkbox"/> Williamsburg Borough    | <input type="checkbox"/> Woodbury Township      |
| <input type="checkbox"/> Other _____          |  |   |

What are the strengths in your community? \_\_\_\_\_

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What are the challenges in your community? \_\_\_\_\_

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How should we address these challenges? \_\_\_\_\_

What hazards are most likely to impact Blair County? (Check all that apply)

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Flooding               | <input type="checkbox"/> Drought                    | <input type="checkbox"/> Extreme temperatures     |
| <input type="checkbox"/> Landslide              | <input type="checkbox"/> Subsidence, sinkholes      | <input type="checkbox"/> Invasive species         |
| <input type="checkbox"/> Wildfire               | <input type="checkbox"/> Tornadoes, wind storms     | <input type="checkbox"/> Thunderstorms            |
| <input type="checkbox"/> Infectious disease     | <input type="checkbox"/> Hurricane, tropical storms | <input type="checkbox"/> Hazardous material spill |
| <input type="checkbox"/> Infrastructure failure | <input type="checkbox"/> Other _____                |   |

If you ever experienced or been impacted by a disaster, please describe: \_\_\_\_\_

---

Explain any concerns about experiencing a disaster in the future: \_\_\_\_\_

---

If you live in Blair County, do you rent or own? \_\_\_\_\_

Do you live in the regulatory floodplain? \_\_\_\_\_

If you've answered yes to both questions, do you have flood insurance? If no, why not?

---

Would you attend public education classes and/or training related to hazard awareness and preparedness if they were made available? \_\_\_\_\_

If yes, please describe the classes and/or training you are interested in \_\_\_\_\_

---

What is the best way for us to communicate with you? (Check all that apply)

County website

Blair Planning website

Mail

Email

Text

Social media

Optional: Contact Information

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

Optional: Comments

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Thank you for your participation.  
Please return this survey to Blair County Planning Commission at your earliest convenience.

## Elected Officials

Title	Name	Address
State Senator	John Eichelberger	309 Allegheny Street, #1, Hollidaysburg
State Representative	John McGinnis	1331 12th Avenue, Suite 104, Altoona
State Representative	Judy Ward	324 Allegheny Street, Hollidaysburg
U.S. Congressman	Bill Shuster	310 Penn Street, #200, Hollidaysburg
U.S. Senator	Robert Casey	817 East Bishop Street, Suite C, Bellefonte
U.S. Senator	Pat Toomey	1397 Eisenhower Boulevard #302, Johnstown
Altoona Mayor	Matthew Pacifico	1301 Twelfth Street, Suite 200, Altoona
Altoona Vice-Mayor	Michael Haire	1301 Twelfth Street, Suite 100, Altoona
Altoona Council	David Butterbaugh	1301 Twelfth Street, Suite 100, Altoona
Altoona Council	William Neugebauer	1301 Twelfth Street, Suite 100, Altoona
Altoona Council	Christie Jordan	1301 Twelfth Street, Suite 100, Altoona
Altoona Council	Erik Cagle	1301 Twelfth Street, Suite 100, Altoona
Altoona Council	Matthew Cacciotti	1301 Twelfth Street, Suite 100, Altoona
Allegheny Supervisor	David Burchfield, Jr.	4738 Mill Road, Duncansville
Allegheny Supervisor	Fred Imler, II	859 Broad Avenue, Duncansville
Allegheny Supervisor	Donald Fowkes, Jr.	2079 Maple Hollow Road, Duncansville
Antis Supervisor	David Worthing	PO Box 156, Bellwood
Antis Supervisor	Robert Smith, Jr.	104 Bland Street, Tyrone
Antis Supervisor	Leo Matuszewski	169 Beechwood Drive, Altoona
Antis Supervisor	Charles Caracciolo, II	1174 North 2nd Street, Tyrone
Antis Supervisor	Kenneth Hostler	321 Lee Drive, Tyrone
Bellwood Mayor	John Winesickle	600 North 8th Street, Bellwood
Bellwood Council	Andrew Stowell	411 South 2nd Street, Bellwood
Bellwood Council	Timothy Flanagan	335 Main Street, Bellwood
Bellwood Council	Herbert Shelow	319 Clark Street, Bellwood
Bellwood Council	Ilene Fellabaum	308 South 2nd Street, Bellwood
Bellwood Council	Kathy Dietzel	822 North 4th Street, Bellwood
Bellwood Council	James Bilka	424 North 1st Street, Bellwood
Bellwood Council	David Snyder, Jr.	620 East 5th Street, Bellwood
Blair Supervisor	Richard Lasek	111 Crown Vic Court, Duncansville
Blair Supervisor	Palmer Brown	2 Palmer Drive, Duncansville
Blair Supervisor	Edward Silveti	654 Orchard Avenue, Duncansville
Catharine Supervisor	Marc Isenberg	936 Yellow Springs Drive, Williamsburg
Catharine Supervisor	Ralph Dispoli	468 Walnut Springs Drive, Williamsburg

Blair Resilience: Addressing Vulnerability & Exposure

Catharine Supervisor	Kenneth Brennaman	1593 Yellow Springs Drive, Williamsburg
Duncansville Mayor	Dale Shaw	1116 3rd Avenue, Duncansville
Duncansville Council	Cynthia Blontz	1107 4th Avenue, Duncansville
Duncansville Council	April Davis	1227 4th Avenue, Duncansville
Duncansville Council	Jeanette Mills	511 14th Street, Duncansville
Duncansville Council	Jeff Wolfe	1110 3rd Avenue, Duncansville
Duncansville Council	David Shaw	922 7th Avenue, Duncansville
Frankstown Supervisor	Kenneth Wertz, Jr.	2567 West Loop Road, Hollidaysburg
Frankstown Supervisor	James Grove	570 Turkey Valley Road, Hollidaysburg
Frankstown Supervisor	George Henry, Jr.	196 South Park Lane, Hollidaysburg
Freedom Supervisor	Daniel Giarth, Jr.	308 Raymond Road, East Freedom
Freedom Supervisor	Maureen Hamor	408 Mansion Drive, Duncansville
Freedom Supervisor	Edward Bender	272 Back Street, East Freedom
Greenfield Supervisor	Joseph Claar	489 Showalter Road, East Freedom
Greenfield Supervisor	James Betar	399 Bedford Street, Claysburg
Greenfield Supervisor	Ray Benton	309 Bedford Street, Claysburg
Hollidaysburg Mayor	John Stultz, Jr.	1015 Walnut Street, Hollidaysburg
Hollidaysburg Council	Joe Dodson	522 Wayne Street, Hollidaysburg
Hollidaysburg Council	Sean Burke	901 Walnut Street, Hollidaysburg
Hollidaysburg Council	Stephanie Wertz	318 Bedford Street, Hollidaysburg
Hollidaysburg Council	Joseph Pompa	207 Hickory Street, Hollidaysburg
Hollidaysburg Council	Patrick Plummer	PO Box 621, Hollidaysburg
Hollidaysburg Council	Mark Shawley	1309 Walnut Street, Hollidaysburg
Hollidaysburg Council	Jeffrey Ketner	1208 North Juniata Street, Hollidaysburg
Huston Supervisor	Melvin Edwards	489 Poverty Hollow Road, Williamsburg
Huston Supervisor	James Walter	744 North Barrens Road, Martinsburg
Huston Supervisor	Gerald Burket	131 Cody Lane, Martinsburg
Juniata Supervisor	Mark Sease	756 Valley Forge Road, Duncansville
Juniata Supervisor	David Kane	1429 Valley Forge Road, Duncansville
Juniata Supervisor	David Rimbeck	1451 Valley Forge Road, Duncansville
Logan Supervisor	James Patterson	2721 Quad Street, Altoona
Logan Supervisor	David Rhoa	3488 Colonel Drake Highway, Altoona
Logan Supervisor	Joseph Metzgar, Jr.	3046 Homers Gap Road, Altoona
Logan Supervisor	Ryan Rimbeck	1641 St. Francis Lane, Altoona
Logan Supervisor	Edwin Frontino	408 Jayne Lane, Altoona
Martinsburg Mayor	Rex Hartman	304 Bassler Street, Martinsburg
Martinsburg Council	Janet Blattenberger	209 East Christiana Street, Martinsburg

Blair Resilience: Addressing Vulnerability & Exposure

Martinsburg Council	Linda Smith	118 Spring Street, Martinsburg
Martinsburg Council	Edward Bennet, Sr.	504 West Allegheny Street, Martinsburg
Martinsburg Council	Durban Metzler	310 East Allegheny Street, Martinsburg
Martinsburg Council	Connie Lamborn	122 Woodlawn Avenue, Martinsburg
Martinsburg Council	Douglas Smith	306 Woodlawn Avenue, Martinsburg
Martinsburg Council	Paul Dickson	503 East Allegheny Street, Martinsburg
Newry Mayor	Allen Dodson	1016 Shamrock Lane, Newry
Newry Council	Donald Gonsman	16252 Dunnings Highway, Newry
Newry Council	Richard Giarth	732 Shamrock Lane, Newry
Newry Council	Kristina Giarth	732 Shamrock Lane, Newry
Newry Council	Anne Seno	933 Patrick Lane, Newry
Newry Council	Mike Seno	414 South Street, Newry
North Woodbury Supervisor	Terry Heeter	142 Mill Race Road, Martinsburg
North Woodbury Supervisor	Joseph Donaldson	2329 Cove Land, Martinsburg
North Woodbury Supervisor	Dave Hoover	1318 Curryville Road, Curryville
Roaring Spring Mayor	Ronald Glunt	822 James Street, Roaring Springs
Roaring Spring Council	Erin Wyandt	532 Maple Street, Roaring Spring
Roaring Spring Council	Jeffrey Steward	524 Park Avenue, Roaring Spring
Roaring Spring Council	Sue Ann Biddle-Feather	900 Garver Street, Roaring Spring
Roaring Spring Council	Kayla Noel	805 Robinson Avenue, Roaring Spring
Roaring Spring Council	William Brumbaugh	419 Walnut Street, Roaring Spring
Roaring Spring Council	Dennis Igou	500 Locust Street, Roaring Spring
Roaring Spring Council	Rodney Green	511 New Street, Roaring Spring
Snyder Supervisor	James Burket	1548 Decker Hollow Road, Tyrone
Snyder Supervisor	Robert Nelson	PO Box 200, Tyrone
Snyder Supervisor	James Kost	7 Christy Lane, Tyrone
Taylor Supervisor	William Replogle	4194 Cove Mountain Road, Roaring Spring
Taylor Supervisor	Paul Closson	217 Railroad Drive, Roaring Spring
Taylor Supervisor	Jerome Dodson	299 Lighthouse Lane, Roaring Spring
Tyrone Mayor	William Fink	401 Washington Avenue, Tyrone
Tyrone Council	William Latchford	524 Oak Street, Tyrone
Tyrone Council	Christy Ray	506 Washington Avenue, Tyrone
Tyrone Council	Courtney Rhoades	1757 Madison Avenue, Tyrone
Tyrone Council	Michelle Miller	317 Washington Avenue, Tyrone
Tyrone Council	Robert Dollar, Sr.	900 Washington Avenue, Tyrone
Tyrone Council	Nathan Verilla	517 West 15th Street, Tyrone
Tyrone Council	Charles Mills, Sr.	1350 Logan Avenue, Tyrone

Blair Resilience: Addressing Vulnerability & Exposure

Tyrone Supervisor	John Burket	237 Burket Road, Tyrone
Tyrone Supervisor	Michael Luther	546 Hobbit Hollow Road, Altoona
Tyrone Supervisor	Timothy Bottonfield	3924 Kettle Road, Altoona
Williamsburg Mayor	Theodore Hyle	623 West 3rd Street, Williamsburg
Williamsburg Council	Dennis Hammel	119 East 3rd Street, Williamsburg
Williamsburg Council	Melissa Hartman	722 West 2nd Street, Williamsburg
Williamsburg Council	Edgar Patterson	220 Plum Street, Williamsburg
Williamsburg Council	Jonathan Detwiler	717 West 2nd Street, Williamsburg
Williamsburg Council	Matthew Sabol	135 East 3rd Street, Williamsburg
Williamsburg Council	James Foresio	510 West 3rd Street, Williamsburg
Williamsburg Council	Donald Zimmerman	200 East 2nd Street, Apt 3, Williamsburg
Woodbury Supervisor	Edward Clark	185 Clark Lane, Williamsburg
Woodbury Supervisor	Craig Hamilton	220 Ridge Road, Williamsburg
Woodbury Supervisor	Paul Harclerode	6590 Clover Creek Road, Williamsburg

## Municipal Departments

Department	Address
Blair County Assessment Office	423 Allegheny Street, Suite 041, Hollidaysburg
Blair County Emergency Services	614 4th Street, Altoona
Blair County GIS	423 Allegheny Street, Suite 011, Hollidaysburg
Blair County Chamber of Commerce	3900 Industrial Park Drive, Suite 12, Altoona
Blair County Conservation District	1407 Blair Street, Hollidaysburg
Altoona Fire Department	1319 Washington Avenue, Altoona
Altoona Community Development Department	1301 Twelfth Street, Suite 400, Altoona
Altoona Finance Department	1301 Twelfth Street, Suite 104, Altoona
Altoona Public Works Department	1301 Twelfth Street, Suite 300, Altoona
Altoona Mobile Emergency Department Authority	1012 7th Avenue, Altoona
Williamsburg Public Library	511 West Second Street, Williamsburg
Altoona Area Public Library	1600 5th Avenue, Altoona
Martinsburg Community Library	201 South Walnut Street, Martinsburg
Bellwood-Antis Public Library	526 Main Street, Bellwood
Roaring Spring Community Library	320 East Main Street, Roaring Spring
Claysburg Area Public Library	PO Box 189, Claysburg
Tyrone-Snyder Public Library	1000 Pennsylvania Avenue, Tyrone
Hollidaysburg Area Public Library	1 Furnace Road, Hollidaysburg

Places of Worship	
Name	
Islamic Center of Altoona	
Allegheny Sangha	
Kingdom Hall	
Unitarian Universalist Fellowship	
Muslim Student Association	
Jewish Student Association	
Agudath Achim Congregation	
Temple Beth Israel	
Chabad Lubavitch Jewish Center	
Christian Student Fellowship	
Catholic Campus Ministry	
Students About Living Truth	
Overflow Church	
New Life Worship Center	
Center City Church	
Allegheny Synod	
Element Church	
Faith Baptist Church of Altoona	
Catalyst Church	
Hope Community Church	
Pleasant Valley Assembly of God	
Second Avenue United Methodist Church	
The Vinyard Church	
St. Luke's Episcopal Church	
Altoona Bible Church	
Evangelical Lutheran Conference and Ministerium	
Mardorf United Methodist Church	
Saint Mina Coptic Orthodox Church of Altoona	
Saint Rose of Lima	
Abundant Life Assembly of God	
Our Lady of Fatima Church	
Jaggard First United Methodist Church	
Our Lady of Mount Carmel	
Lakemont United Methodist Church	

New Creation in Chrust Ministry
Sacred Heart Roman Catholic Church
Juniata United Methodist Church
Trinity Lutheran Church
Altoona Restoration Church of God
St. Mary's Church
Zion Lutheran Church
Calvary Baptist Church
St. George Orthodox Church
Fairview United Methodist Church
Bellwood Calvary United Methodist Church
Bread of Life Baptist Church
First Baptist Church of Altoona
Holy Trinity Greek Orthodox Church
Champion Life Church
Cathedral of the Blessed Sacrament
Diocese of Altoona-Johnstown
St. Mark Catholic Church
St. John's Catholic Church
Lakemont First Church of God
Juniata Valley Gospel Church
Holy Trinity Episcopal Church
First United Methodist Church of Hollidaysburg
First Presbyterian Church
First Baptist Church of Hollidaysburg
Hollidaysburg Church
St. Michael the Archangel Catholic Church
St. Patrick Catholic Church
Claysburg Bible Church
Upper Claar Church
Lower Claar Church of the Brethren
Claysburg Church of the Brethren
Lighthouse Baptist Church
Claysburg Church of God
Emmanuel Baptist Church
Albright Church
First Church of the Brethren



Bare Memorial Church of God
Roaring Spring Church of Christ
Curryville Church of the Brethren
Diehl's Crossroads Church of the Brethren
Brethren in Christ Church
Martinsburg Mennonite Church
Martinsburg Grace Brethern Church
St. Matthew Lutheran Church
Martinsburg Church of God
Smithfield Church
St. John's United Church of Christ
Martinsburg Memorial Church of the Brethren
Target One Ministries
Faith Assembly of God
St. Thomas More Church
Trinity United Methodist Church
St. Luke's Lutheran Church
Roaring Spring Mennonite Church
Grace United Church of Christ
Christ Lutheran Church
Smith Corner Mennonite Church
St. Paul Lutheran Church
New Life Alliance Church
Vicksburg Grace Brethern Church
Leamersville Church
Leamersville Grace Brethern
Newry Lutheran Church
Puzzletown Road Bible Church
Dry Run Independent Baptist
New Hope Baptist Church
St. Catherine of Siena Catholic Church
Faith Evangelical Lutheran Church
Altoona District Methodist Church
Hicks Memorial United Methodist Church
Christian Missionary Alliance
St. John's Reformed Church
Grace Bible Church

The Franciscan Friars, Third Order Regular
West Loop Missionary Church
Reservoir Bible Church
Heritage Baptist Church
Clappertown Church and Missionary Alliance
Canoe Creek Brethren in Christ
St. Joseph Roman Catholic Church
Williamsburg Church of the Brethren
Williamsburg Christian and Missionary Alliance
Fairview Church of the Brethren
Williamsburg Church of God
Williamsburg United Methodist Church
Lazarus Ministries
Yellow Springs Mennonite Church
St. John Evangelical Lutheran Church
Sinking Valley Presbyterian Church
Grace Baptist Church
Church of the Good Shepherd United Methodist Church
Christ United Methodist Church
Tyrone First Presbyterian Church
St. Matthew's Roman Catholic Church
Wesley United Methodist Church
Trinity Episcopal Church
Northwood Baptist Chapel
Community Worship Center
Tyrone Emmanuel Baptist Church
St. John's Lutheran Church
Calvary Tyrone
First English Lutheran Church
Huntingdon Presbytery
Tyrone Mennonite Church
Bible Baptist Church
Hillside Community Church
Tyrone Church of the Brethren
Tyrone Alliance Church
Grazierville United Methodist Church
Tipton Baptist Church

Faith Bible Church
Bellwood Church of the Brethren
Calvary United Methodist Church
Grace Lutheran Church
Bellwood Trinity United Methodist Church
St. Joseph Roman Catholic Church
Logan Valley Presbyterian Church
Logan Valley Baptist Church
Riggles Gap Bible Church
Asbury United Methodist Church
Altoona Church of Christ
Greenwood United Methodist Church
First Church of Christ
First Evangelical Lutheran Church
Community Baptist Church
Fourth Street Church of God
Wehnwood United Methodist Church
First Grace Brethren Church
Grace Fellowship Church
Duncansville Grace Fellowship Church
First United Church of Christ
Mother Gethsemane Church
St. James Lutheran Church
St. Mary's Rectory
Saints Peter and Paul Orthodox Church
Altoona Apostolic Church
Providence Presbyterian Church
Simpson-Temple United Methodist Church
Mount Zion Baptist Church
Altoona Seventh-Day Adventist Church
Fourth Avenue Mennonite Church
Twenty-Eighth Street Church
St. Mina Coptic Orthodox Church of the Brethren
Broad Avenue United Methodist
Evangelical Methodist Church
Church of Jesus Christ of Latter-day Saints
Ward Avenue United Presbyterian

Canan Station Mennonite Church
Spring of Hope Community Church
Carson Valley Church of the Brethren
Foot of Ten Independent Baptist
Church of Jesus Christ of Latter-day Saints
Westminster Orthodox Presbyterian Church
Our Lady of the Lourdes
Altoona Full Gospel Church
Restored Apostolic Church
Holy Rosary Church
Altoona First Church of Christ
Cornerstone Fellowship of Mill Run
Conemaugh Valley Baptist Association
St. Catherine's Church
Garden Heights United Methodist Church
Third Presbyterian Church
First Lutheran Church
New Life Community Church of Altoona
Frankstown Park Missionary Church
Geeseytown Lutheran Church
Mount Olivet Lutheran Church
Fields of Harvest Fellowship
Berean Baptist Church
Bethany Lutheran Church
St. Therese of the Child Jesus Roman Catholic Church
St. John's Lutheran Church of Clover Creek
Schum Memorial United Methodist Church
Salem United Church of Christ
East Freedom Chapel
Altoona First Southern Baptist Church
Faith Tabernacle Church
Bethel African Methodist Episcopal Church
Archway Ministries
Immaculate Conception Parish
Llyswen United Methodist Church
Christ Community United Methodist Church
Broad Avenue Presbyterian Church

Bell Avenue New Life Outreach Church
Christ's Second Lutheran Church
Church of the Holy Nativity
Eighteenth Street Community Church
Family Bible Church
Fourth Evangelical Lutheran Church
Grace Alive Church of Altoona
Grace Family Bible Church
Independent Bible Church
New Covenant Fellowship of Altoona
New Dimensions in Christ
Sixteenth Street Methodist Church
Single Adult Ministries
Otterbein United Methodist Church
St. Joseph Friary
St. Bernardine Monastery
Tabernacle of Jesus Christ
Altoona Church of God
Altoona Alliance Church
Juniata Church of the Brethren
St. Mary's Church of Altoona
Altoona Church of the Nazarene
Way of Truth Ministries
King of Glory Revivals
Royer United Methodist Church
Williamsburg Independent Bible Baptist Church
Tipton United Methodist Church
Pinecroft United Methodist Church
Mines United Methodist Church
Cove Forge United Methodist Church
Claysburg United Methodist Church
Bald Eagle United Methodist Church
Clover Creek Church of the Brethren
Living Water Family Worship Center
Morrisons Cove Baptist Church

Engineering Firms	
Name	Phone
Stiffler, McGraw & Associates, Inc	(814) 696-6280
Concurrent Technologies Corporation	(814) 569-1165
EADS Group	(814) 944-5035
Gwin, Dobson & Foreman, Inc	(814) 943-5214
Keller Engineers, Inc	(814) 696-7430
P. Joseph Lehman, Inc	(814) 695-7500
Levine Engineering, LLC	(814) 946-4859
Minetech Engineers, Inc	(814) 946-4242
Keystone Environmental, Health, & Safety Services, Inc	(814) 696-9574
Pyramid Engineering, PC	(814) 946-9910

Community Centers	
Name	Phone
Jewish Memorial Center	(814) 944-4072
Hollidaysburg Area YMCA	(814) 695-4467
Jaffa Shrine Center	(814) 944-4043
Garver Memorial YMCA	(814) 224-5101
Northern Blair County Recreation Center	(814) 742-9500
East Juniata Community Center	(814) 949-2207
6th Ward Community Center	(814) 949-2231
Booker T. Washington Center	(814) 949-3465

Education	
Name	Phone
Northwestern Human Services School East Freedom	(814) 696-3390
Northwestern Human Services School Altoona	(814) 944-3733
Penn State Altoona	(814) 949-5000
Penn State Altoona Continuing Education	(814) 949-5535
Penn State Extension	(814) 940-5889
Pennsylvania Highlands Community College	(814) 201-7325
South Hills School of Business & Technology	(814) 944-6134
Spring Cove School District	(814) 224-5124
Saint Patrick School	(814) 695-3819
Tyrone Area School District	(814) 684-0710
Williamsburg Community School District	(814) 832-2125
YTI Career Institute	(814) 944-5643
Altoona Area School District	(814) 946-8424
Appalachia Intermediate Unit 8	(814) 940-0223
Bellwood-Antis School District	(814) 742-2271
Bishop Guilfoyle Catholic High School	(814) 944-4014
Claysburg-Kimmel School District	(814) 239-5141
Greater Altoona Career & Technology Center	(814) 946-8450
Grier School	(814) 684-3000
Hollidaysburg Area School District	(814) 695-7431
Holy Trinity Elementary Campus	(814) 695-6112
Holy Trinity Middle School Campus	(814) 942-7835
Holy Trinity Elementary Campus	(814) 381-7011
St. Matthew School	(814) 684-3510
Blair County Christian School	(814) 696-3702
Blair County Head Start	(814) 946-5247
Penn-Mont Academy	(814) 696-8801

Major Employers	
Name	Phone
Sheetz, Inc	(814) 946-3611
Sheetz Distribution Services LLC	(814) 239-1600
Smith Transport, Inc	(814) 224-5155
Duncansville Walmart	(814) 693-0531
Altoona Walmart	(814) 949-8980
Appvion	(814) 224-2131
HH Brown Shoe Company, Inc	(814) 793-3786
DelGrosso's Amusement Park	(814) 684-3538
Skills of Central PA, Inc	(814) 949-4800
NPC, Inc	(814) 239-8787
New Pig Corporation	(814) 684-0101
Blair Companies	(814) 949-8287
Veeder-Root	(814) 695-4476
CCK, Inc	(814) 684-2270
New Enterprise Stone & Lime Company	(814) 766-2211
Roaring Spring Paper Products	(814) 224-5141
Roaring Spring Giant Eagle	(814) 224-5128
Altoona Giant Eagle	(814) 946-1845
McLanahan Corporation	(814) 695-9807
Leonard S. Fiore, Inc	(814) 946-3686
American Eagle Paper Mills	(814) 684-1610
Diocese of Altoona-Johnstown	(814) 695-5579
White Deer Run	(814) 943-1699
Duncansville Martin's Foods	(814) 695-2696
Altoona Martin's Foods	(814) 949-3721
Altoona Martin's Foods	(814) 949-2320



Non-Profit Organizations	
Name	Phone
Allegheny Ridge Corporation	(814) 940-1922
AMBUCS Altoona	(814) 201-1099
AMED	(814) 943-8993
American Red Cross	(814) 944-6146
Blair County Community Action Agency	(814) 946-3651
Blair County Farm Bureau	(814) 832-2201
Association for the Blind and Visually-Impaired	(814) 944-2021
Center for Independent Living	(814) 949-1905
United Way of Blair County	(814) 944-0884
Family Services Incorporated	(814) 944-3583
Healthy Blair County Coalition	(814) 944-0884
Southern Alleghenies Planning & Development Commission	(814) 949-6500
Central Pennsylvania Humane Society	(814) 942-5402

Conservation Organizations	
Name	Phone
Alliance for the Chesapeake Bay	(717) 737-8622
Chesapeake Bay Foundation	(717) 234-5550
Chesapeake Conservancy	(443) 321-3610
Natural Biodiversity	(814) 650-7556
Western Pennsylvania Conservancy	(814) 696-9356
American Rivers Mid-Atlantic Pittsburgh Office	(412) 727-6130
Juniata Clean Water Partnership	(814) 506-1190

Nursing Facilities	
Name	Phone
Allegheny Lutheran Social Ministries	(814) 696-4500
Altoona Center for Nursing Care	(814) 946-2700
Elmcroft Senior Living	(814) 695-8425
Garvey Manor & Our Lady of the Alleghenies	(814) 695-5571
Epsworth Healthcare and Rehabilitation Center	(814) 684-0320
Life Services Assisted Living Duncansville	(814) 693-7675
Hillview Healthcare and Rehabilitation Center	(814) 946-0471
Hollidaysburg Veterans' Home	(814) 696-5201
The Village at Morrisons Cove	(814) 793-2104
St. Leonard's Home, Inc	(814) 695-9581
Presbyterian Village at Hollidaysburg	(814) 693-4000
Maybook Hills Rehabilitation and Healthcare Center	(814) 944-0845
Homewood Retirement Center at Martinsburg	(814) 793-3728
Senior Care Altoona	(814) 943-2273
Grane Home Health Care	(814) 695-2109
Grance Hospice Care	(814) 695-2793

Rail & Utilities			
Name	Phone	Email	Contact
Altoona Water Authority	(814) 949-2222		
Amtrak	(814) 946-1100		Paul Engelman
Norfolk Southern Corporation	(814) 949-1551		Ernie McClellan
Penelec	(814) 947-6303		
The Everett Railroad Company	(814) 695-9628		Shannon Rodgers

Hospitals & Healthcare	
Name	Phone
Altoona Arthritis and Osteoporosis Center	(814) 693-0300
AseraCare Hospice	(814) 941-2900
Blair HealthChoices	(814) 696-5680
Children's Miracle Network at Geisinger	(814) 943-8887
Circle of Life Holistic Health Center, Inc	(814) 944-7961
Colonial Courtyard at Tyrone	(814) 686-5970
CrossRoads Physical Therapy & Rehabilitation, Inc	(814) 696-3400
Empower3 Center for Health	(814) 317-5063
HealthSouth Rehabilitation Center	(814) 944-3535
Home Instead Senior Care	(814) 693-2911
James E. Van Zandt Veterans Affairs Medical Center	(814) 943-8164
MedExpress Urgent Care	(814) 946-3801
Conemaugh Nason Medical Center	(814) 224-2141
The Circulatory Centers	(814) 942-2147
Tyrone Regional Health Network	(814) 684-1255
University of Pittsburgh Medical Center Altoona	(814) 889-2011

Blair Resilience: Addressing Vulnerability & Exposure

---

Dear **POTENTIAL STAKEHOLDER**,

We now find ourselves in a new era of more unpredictable and severe weather that can potentially cause more damage to our community.

In order to be as proactive as we can in preparing and protecting our community, I would like to personally invite you to join me at a Community Resilience Workshop.

**TUESDAY, JULY 18, 2017**

**6:00 – 9:00PM**

LOGAN TOWNSHIP  
MUNICIPAL BUILDING  
100 CHIEF LOGAN CIRCLE  
ALTOONA, PA 16602

**FRIDAY, JULY 21, 2017**

**6:00 – 9:00PM**

NORTHERN BLAIR COUNTY  
RECREATION CENTER  
4080 EAST PLEASANT VALLEY BOULEVARD  
ALTOONA, PA 16601

**TUESDAY, JULY 25, 2017**

**6:00 – 9:00PM**

CLAYSBURG  
COMMUNITY CENTER  
122 SENIOR DRIVE  
CLAYSBURG, PA 16625

This workshop will bring together community members like you to comprehensively identify and prioritize steps to reduce risk and improve resilience across Blair County. This workshop will help clarify and advance comprehensive community resilience planning and hazard mitigation efforts.

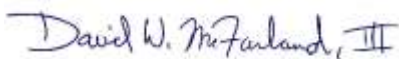
The workshop objectives are as follows:

- Understand connections between hazards and local planning/mitigation efforts
- Evaluate strengths and vulnerabilities of residents, infrastructure, and natural resources
- Develop and prioritize actions for the municipality, local organizations, businesses, private citizens, neighborhoods, and community groups
- Identify immediate opportunities to advance actions that reduce the impact of hazards and increase resilience in Blair County

Please RSVP for the workshop as soon as possible by contacting Sheryl Durbin at (814) 695-2080 or [sdurbin@blairplanning.org](mailto:sdurbin@blairplanning.org).

I hope you or a designee can join me at this important workshop.

Looking Forward,



David W, McFarland, III, AICP, Director

2018 Hazard Mitigation Plan  
Hazard Assessment  
All Events

Hazard Identification	Probability			Final Rank
	Occurrence	Human	Property	
<b>Natural Hazard</b>				
Cold Snap				
Conflagration				
Drought				
Earthquake				
Flooding				
Heat Wave				
High Winds				
Infestation				
Pandemic				
Severe Thunderstorm				
Subsidence				
Tornado				
Tropical Storm				
Wildfire				
Winter Storm				
<b>Social Hazard</b>				
Active Shooter				
Bomb Threat				
Civil Disturbance				
Cyber Attack				
Domestic Issue				
Hostage/Barricade				
Prison Riot				
Terrorist Event				
Workplace Violence				
<b>Technological Hazard</b>				
Aircraft Accident				
AMD Treatment Fail				
Bridge Failure				
Clandestine Lab				
Dam Failure				
Full Power Loss				
Hazardous Material				
Highway Incident				
IS/Telecom				
Natural Gas Loss				
Pipeline Incident				
Rolling Elec. Outages				
Sewer Loss				
Shale Site Incident				
Train Accident				
Water Loss				
Wind Farms				



**RSVP – Community Resilience Workshops**

LOGAN TOWNSHIP – JULY 18, 2017

Jennifer Farabaugh – Watershed Manager, Juniata and Potomac Region, Western Pennsylvania Conservancy

Dennis Wisor – Transportation Program Manager – Blair Senior Services, Inc.

NORTHERN BLAIR COUNTY RECREATION CENTER – JULY 21, 2017

Anne C. Stich – Pennsylvania Department of Transportation, Engineering District 9-0

Tina Enderlein

CLAYSBURG COMMUNITY CENTER – JULY 25, 2017

Rich Brantner Jr. – LEMC Martinsburg Borough

Jeffrey Ketner – North Woodbury Township

Nicole Germaux – Blair County Community Action

REGRETS –

Melanie Shildt – United Way – Please keep in loop. -- [mshildt@unitedwayofblaircounty.org](mailto:mshildt@unitedwayofblaircounty.org)

Here is a screenshot of the Blair Planning Website Home Page during plan development. The banner in the center alternated between BRAVE, Alleghenies Ahead, and WalkWorks as all were under development simultaneously.





Twitter announcement of the survey. The survey was available online as well as hard copy to those who lacked sufficient online service to reasonably participate in that format.



The Facebook announcement of the same survey.



**Blair Planning**  
Published by Abby Waldorf [?] · June 15 · ✨

People of Blair County: this year, we are updating our Hazard Mitigation Plan. Public participation is a vital part of the planning process, so we ask that you take a few minutes to complete this survey on resiliency and hazards in your community. Your input is greatly appreciated!

### Blair County Community Resilience Survey

This is a community-driven survey intended to identify hazards, risks, and vulnerabilities, local challenges and strengths, and actions to improve community resilience to all hazards. Your answers will help us determine your priorities regarding planning for hazards in your community and guide the 2018 Hazard Mitigation Plan update for Blair County.

If you have any questions, contact Blair County Planning Commission at (814) 693-2080.

\* Required

**What municipality do you live in? \***

- Allegheny Township
- Antis Township
- Bellwood Borough
- Blair Township

**Blair County Community Resilience Survey**  
This is a community-driven survey intended to identify hazards, risks, and vulnerabilities, local challenges and strengths, and actions to improve community resilience to all hazards. Your answers will help us determine your priorities...  
DOCS.GOOGLE.COM

4 people reached [Boost Post](#)

Like Comment Share

Twitter announcement of the Community Resilience Workshops. Three were held throughout the county to encourage local support and regional perspectives.

**Blair Planning**  
@BlairPlanning

In order to be as proactive as we can in preparing and protecting our community, we will be hosting Community Resilience Workshops.

**BRAVE**  
BLAIR RESILIENCE: ADDRESSING VULNERABILITY & EXPOSURE

**COMMUNITY RESILIENCE WORKSHOPS**

**TUESDAY, JULY 18, 2017 6-9PM**  
Logan Township Municipal Building  
100 Chief Logan Circle  
Altoona, PA 16602

**FRIDAY, JULY 21, 2017 6-9PM**  
Northern Blair County Recreation Center  
4080 East Pleasant Valley Boulevard  
Altoona, PA 16601

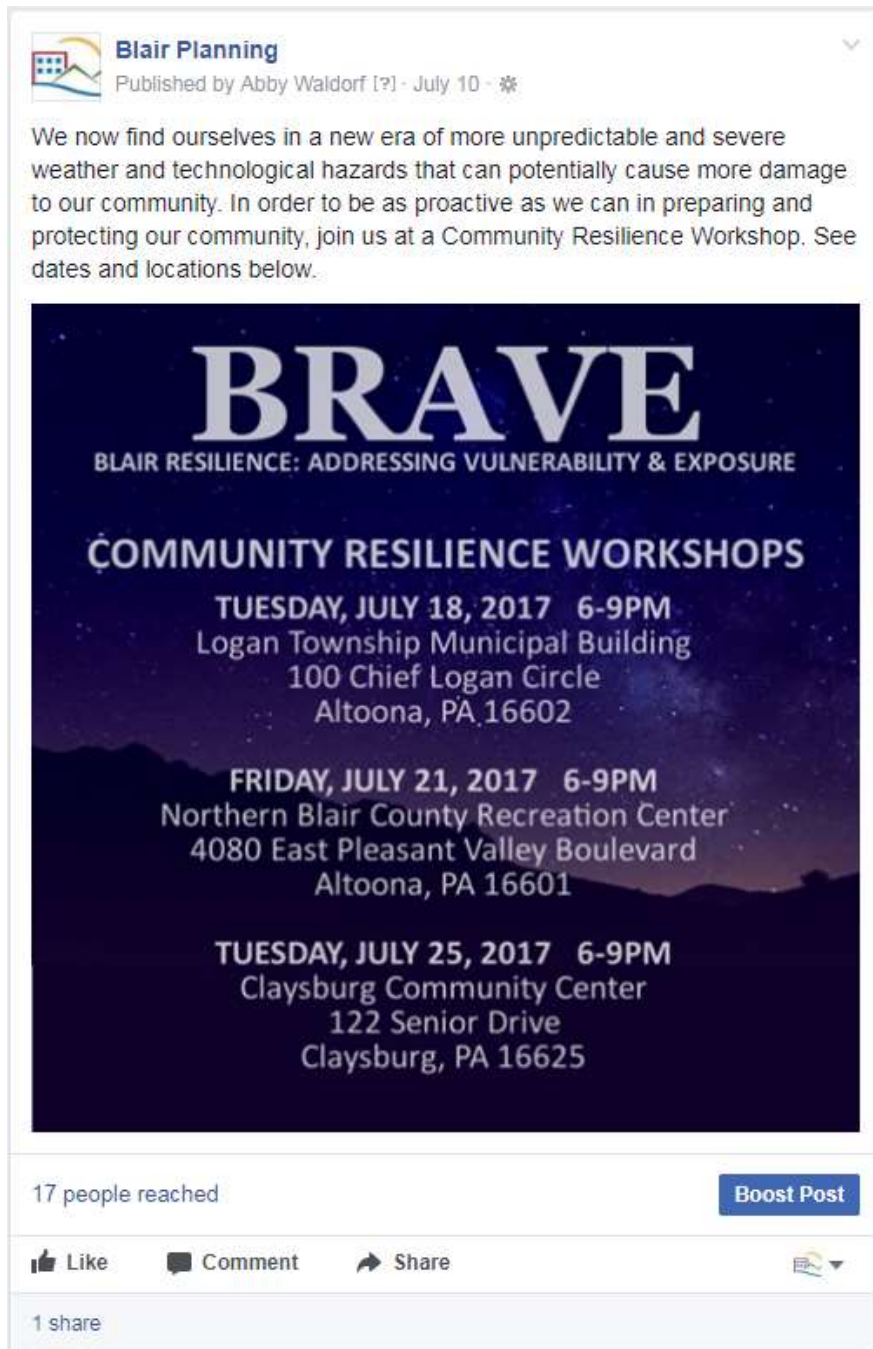
**TUESDAY, JULY 25, 2017 6-9PM**  
Claysburg Community Center  
122 Senior Drive  
Claysburg, PA 16625

12:36 PM - 12 Jul 2017 from [Hollidaysburg, PA](#)

1 Retweet 1 Like

1 1 1

The Facebook announcement of the Community Resilience Workshops



**Blair Planning**  
Published by Abby Waldorf [?] · July 10 · 🌟

We now find ourselves in a new era of more unpredictable and severe weather and technological hazards that can potentially cause more damage to our community. In order to be as proactive as we can in preparing and protecting our community, join us at a Community Resilience Workshop. See dates and locations below.

**BRAVE**  
BLAIR RESILIENCE: ADDRESSING VULNERABILITY & EXPOSURE

**COMMUNITY RESILIENCE WORKSHOPS**

**TUESDAY, JULY 18, 2017 6-9PM**  
Logan Township Municipal Building  
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Northern Blair County Recreation Center  
4080 East Pleasant Valley Boulevard  
Altoona, PA 16601

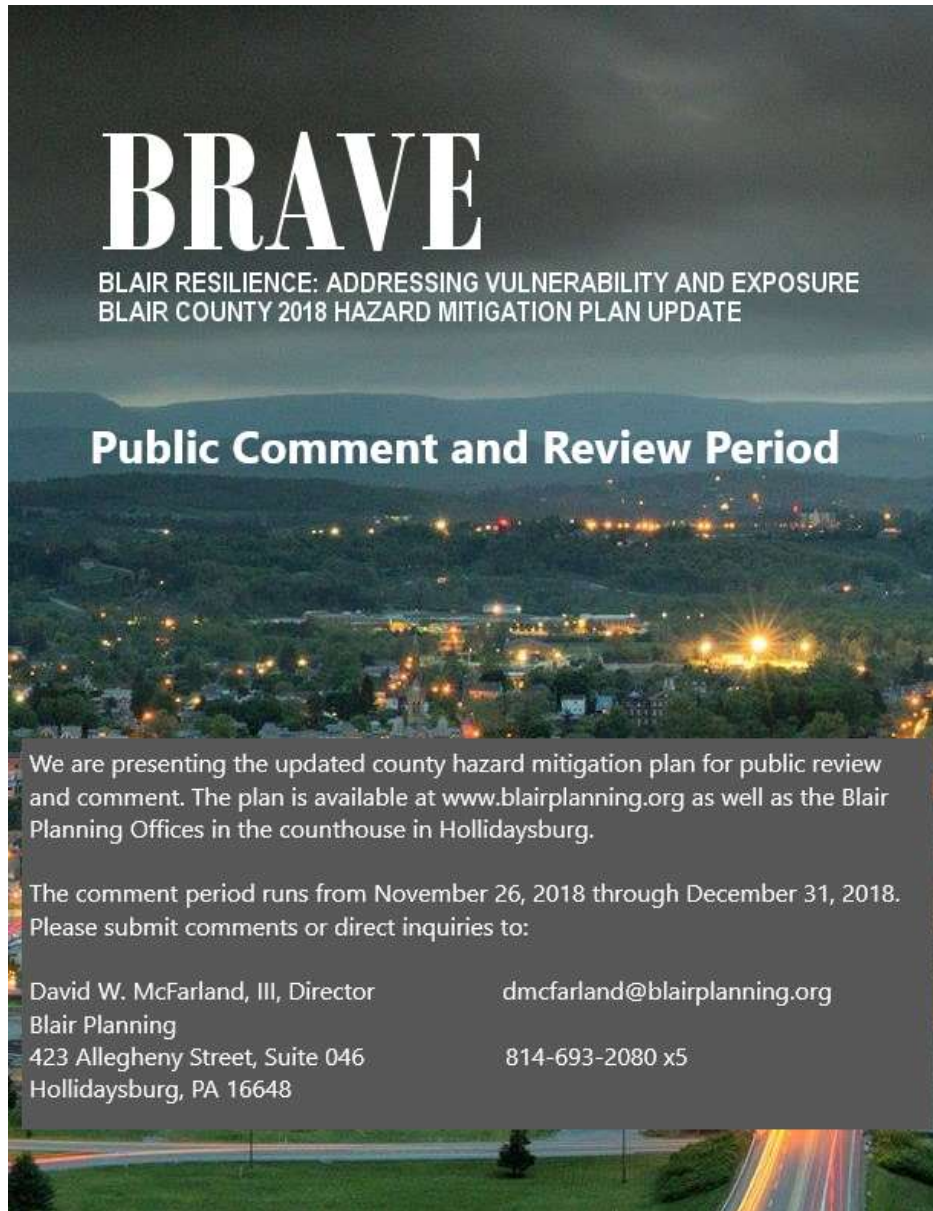
**TUESDAY, JULY 25, 2017 6-9PM**  
Claysburg Community Center  
122 Senior Drive  
Claysburg, PA 16625

17 people reached [Boost Post](#)

👍 Like    💬 Comment    ➦ Share    📷

1 share

The public comment period was announced via this flyer. This was sent to all known participants in the plan preparation process, county planning directors in adjacent counties (Bedford, Cambria, Centre, Clearfield, and Huntingdon), posted on the Blair Planning website, and posted on Twitter and Facebook. No comments were received during the advertised period. Final formatting edits were made in January.



## Comments Received Throughout the Process

- Lack of Resources: Too many small EMS, PD, and VFCs. Consolidate all into one countywide PD, one countywide EMS, and one countywide VFC for administration and allocate stations and locations according to need under that single administration.
- Poor communication - unwillingness to listen to or accept new ideas. Lack of police coverage, particular in Frankstown Township where we are reliant on the State to provide police coverage.
- Antis Township needs its own police department. Reliance on the State is ... lacking.
- Departmental collaborations are lacking.
- Stakeholders other than first responders do not nest their plans with EMA
- No local police force and no disaster recovery planning
- Cooperation between neighboring fire and EMS services
- Snyder Township needs to jointly go in with Tyrone to offer local law enforcement service to its residents. We are a half hour away from the state police offices, which is an unacceptable response time, and we shouldn't mooch off the borough using theirs in lieu of a trooper.
- I believe flooding and lack of green infrastructure and riparian areas are major challenges.
- Awesome. Now we're supposed to be scared even in our houses. Will you people stop with the fear-mongering already?
- Poor communication with population about best practices to handle hazard events. Very "reactive" rather than planning ahead. Our politicians have decided to allow a very dangerous natural gas pipeline go right through our communities even though our county gets no economic benefit from it. Do our citizens even know that their homes are within feet of the pipeline and do they know how to handle or detect an imminent explosion like the one that they had near Pittsburgh last year?
- The alien problem is real. What are we doing to prepare for the mass invasion?
- People are keeping more to themselves, not getting to know one another in neighborhoods. Strength in numbers! Look out for one another! Especially those older adults living alone with no family nearby, like myself.
- County and AASD spending money the citizens do not have and raising taxes on an already poor tax payer base. Also, Kettle Road flooding has become worse since the regrading of the road. Tyrone Township has not properly addressed this issue. My home is literally being eroded from flooding rains.
- Recent thunderstorm power was out 15 hours inside the borough [Roaring Spring].

- You {redacted obscenities} bureaucrats need to stop with the {redacted obscenities} Agenda 21 crap! The people won't tolerate it!
- County wide emergency mobile / cellular alerts would be of value.
- If this leads to hazard mitigation projects, consider drought remediation for the farmers. Perhaps large water tower structures they can draw from for their livestock when things get really dry. Also consider pump hydrants along the Juniata River in Reese, Ganister, Roberson Ext and Mt Etna. May need property owner permission to cross, but the accessibility would be worth it.
- The Community Resilience Workshop I attended on 7/17 was of value
- Thank you for your attention to all of these issues.
- Thanks for doing this survey. PLEASE take note of the responses of all of us and consider the suggestions in them, and maybe actually put some of them into place? (Don't just read them then set them aside and forget about them.)
- Stop wasting money on all this planning BS and redirect the money to addressing housing needs and feeding the people who can't make ends meet. I bet the money spent just reading this comment could have provided a family of four their lunch today.

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**- APPENDIX D -**

**LOCAL MUNICIPALITY**

**FLOOD VULNERABILITY MAPS**

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Figure 1: Allegheny Township

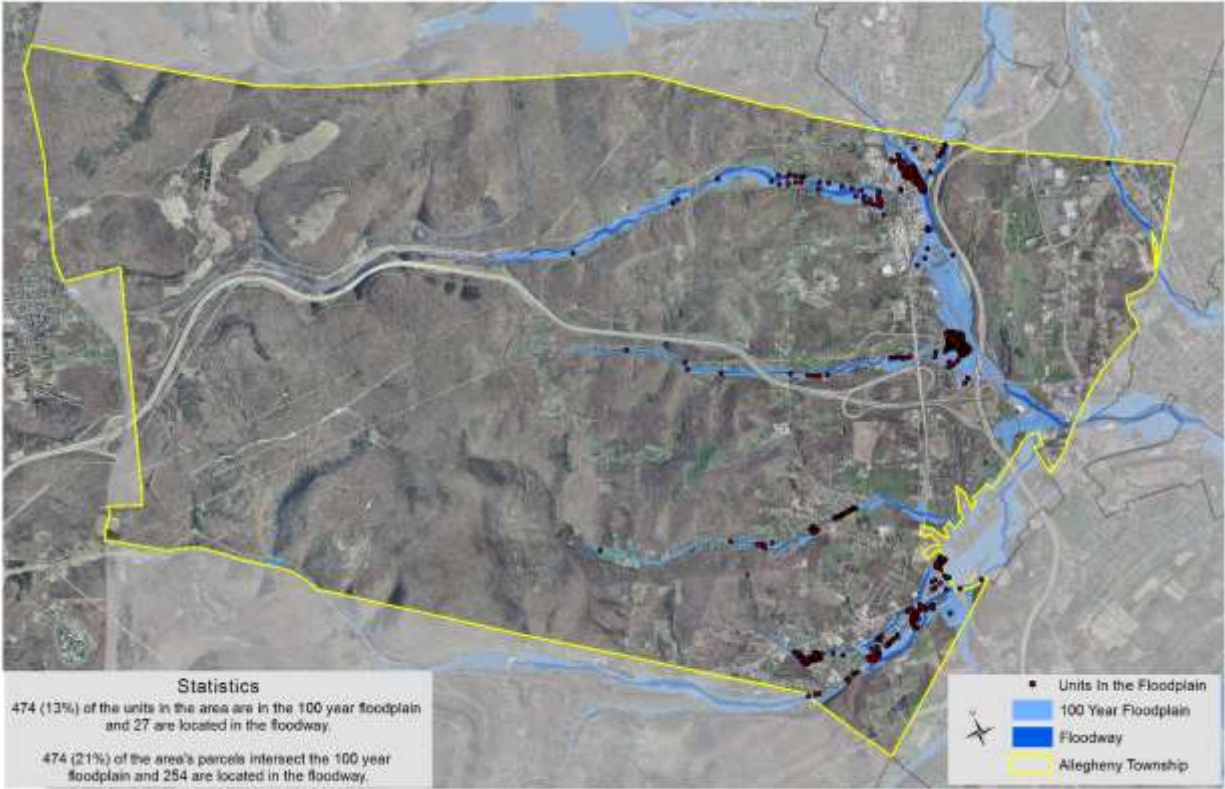


Figure 2: Altoona (Home Rule Municipality)

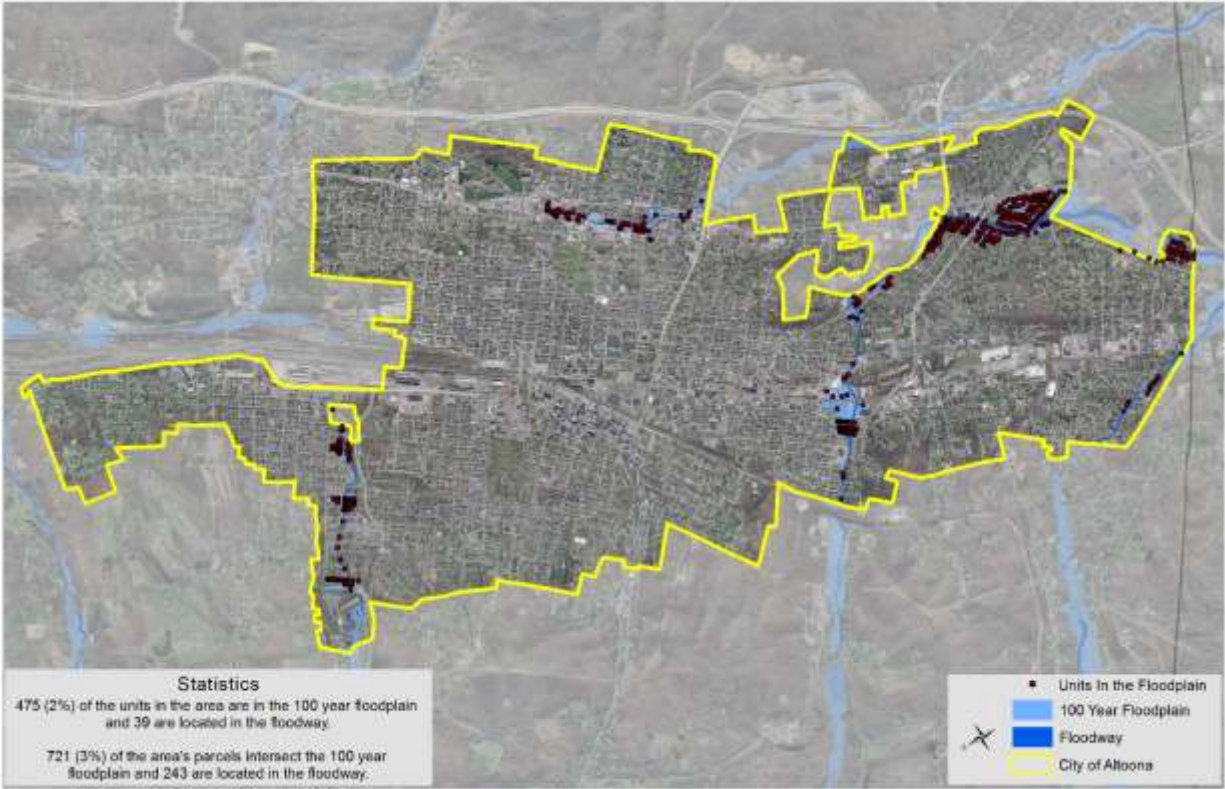


Figure 3: Antis Township

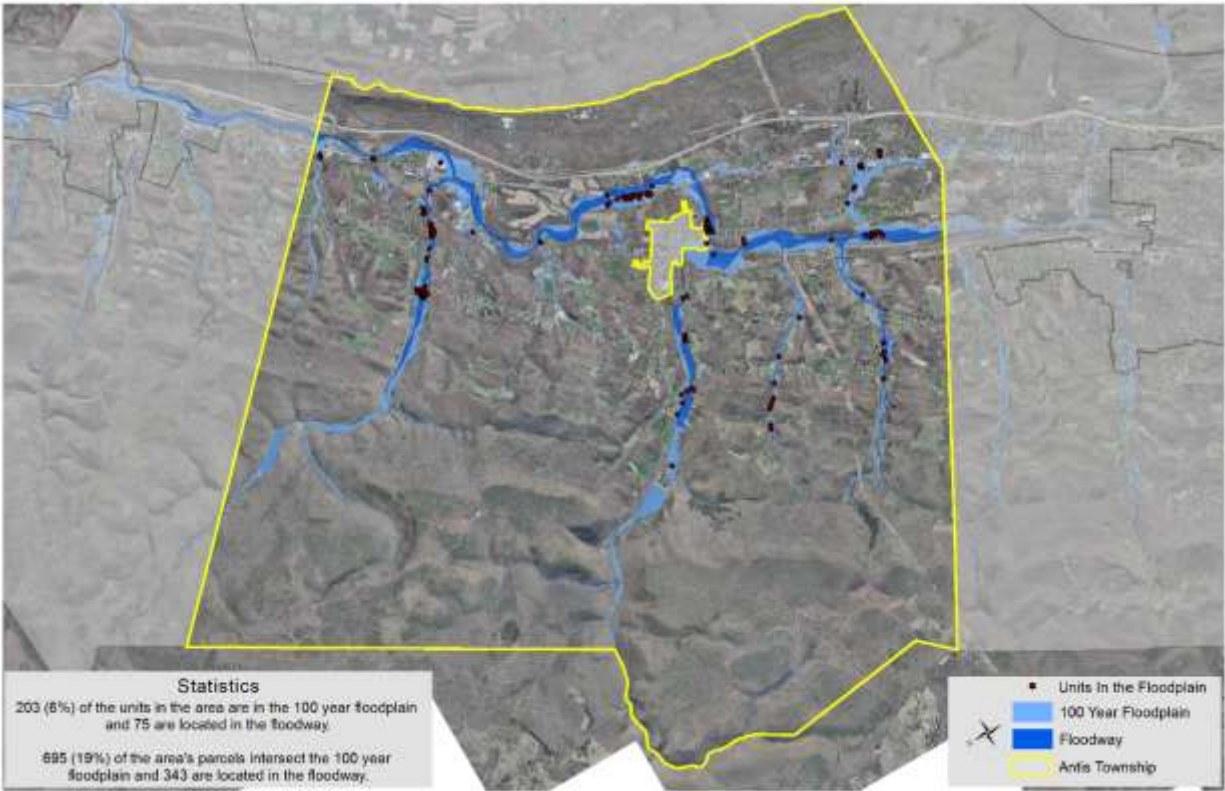


Figure 4: Bellwood Borough



Figure 5: Blair Township

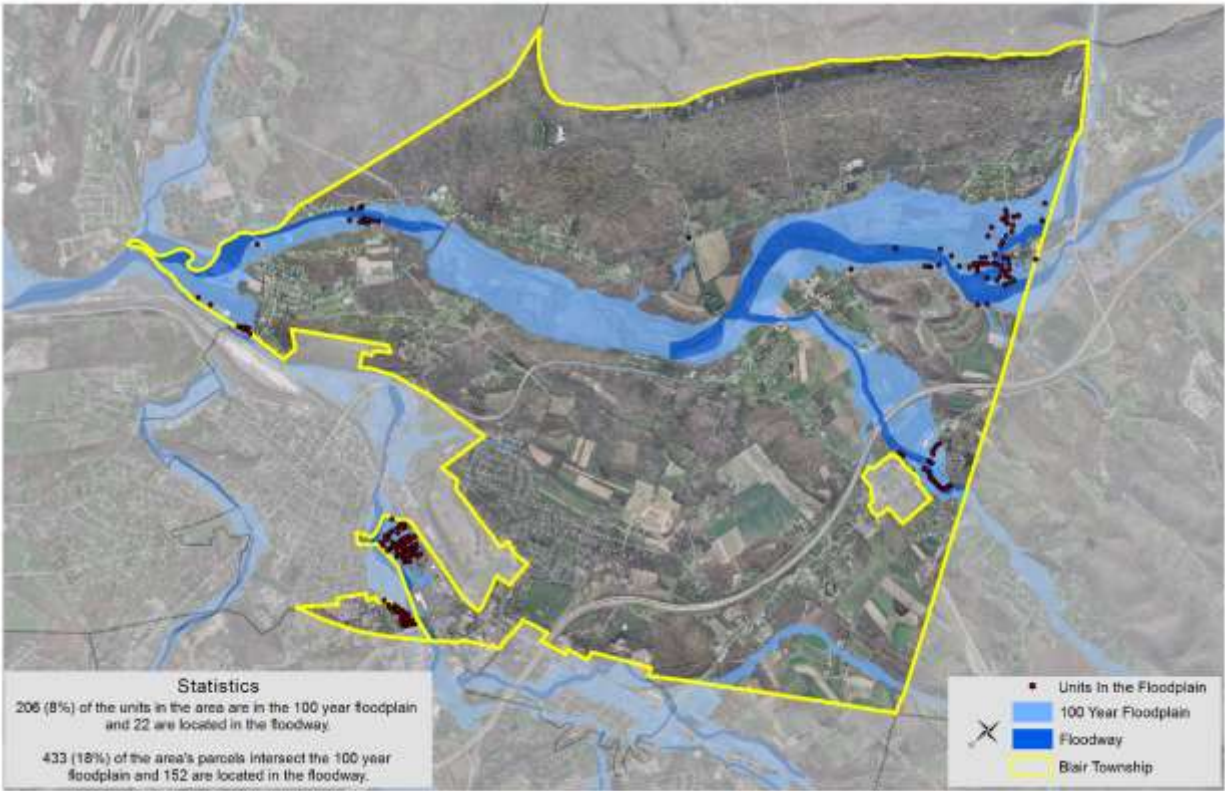


Figure 6: Catharine Township



Figure 7: Duncansville Borough

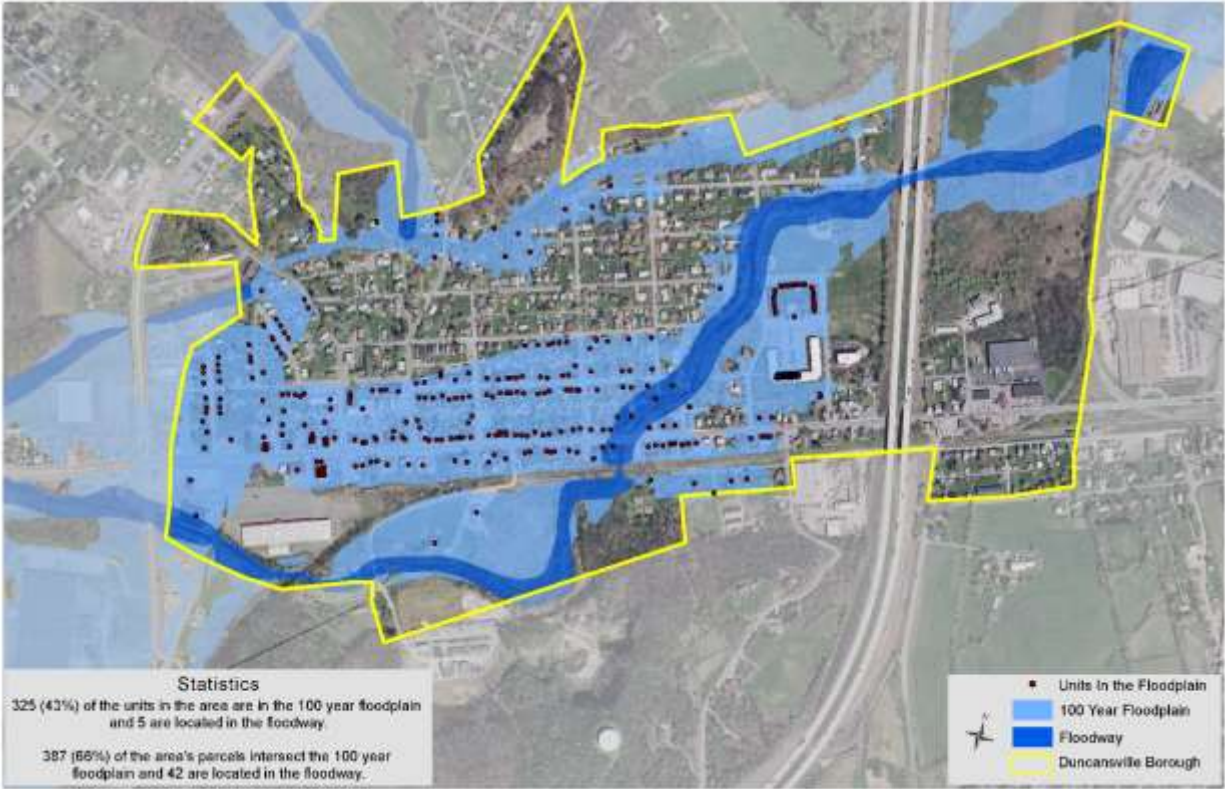


Figure 8: Frankstown Township

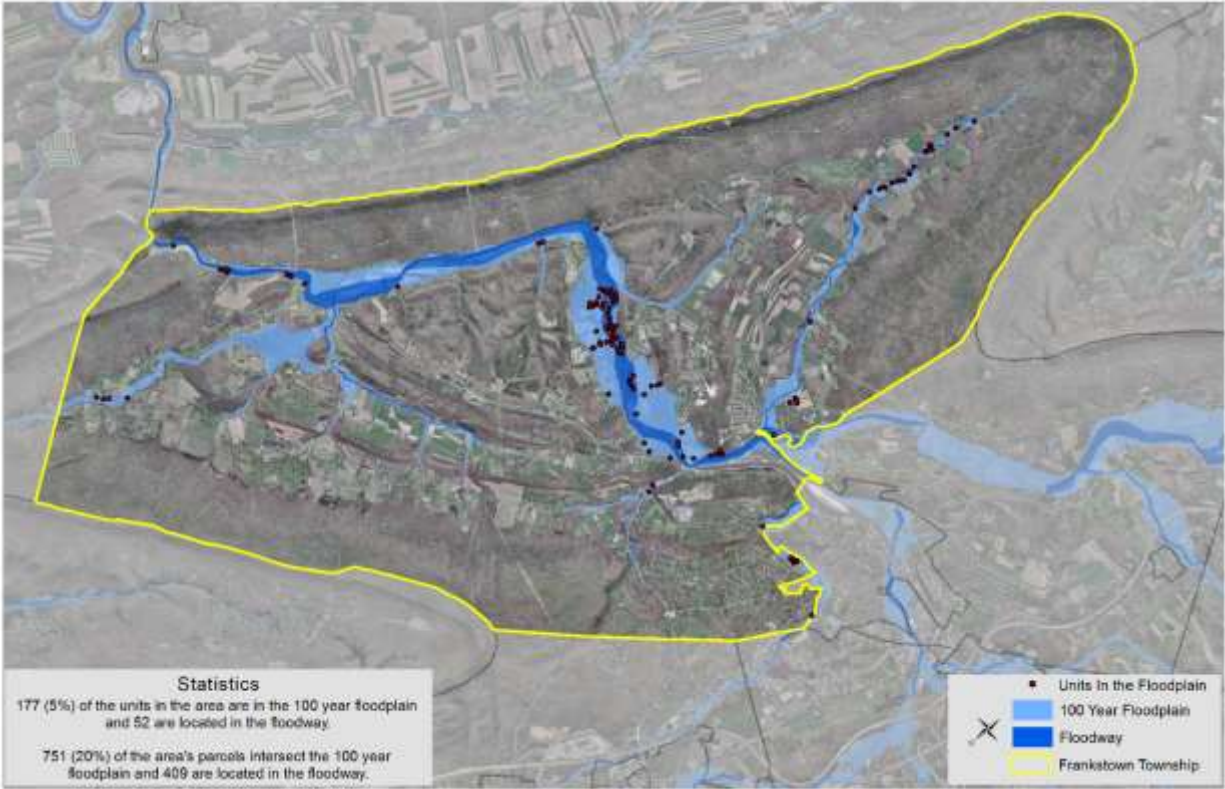




Figure 9: Freedom Township

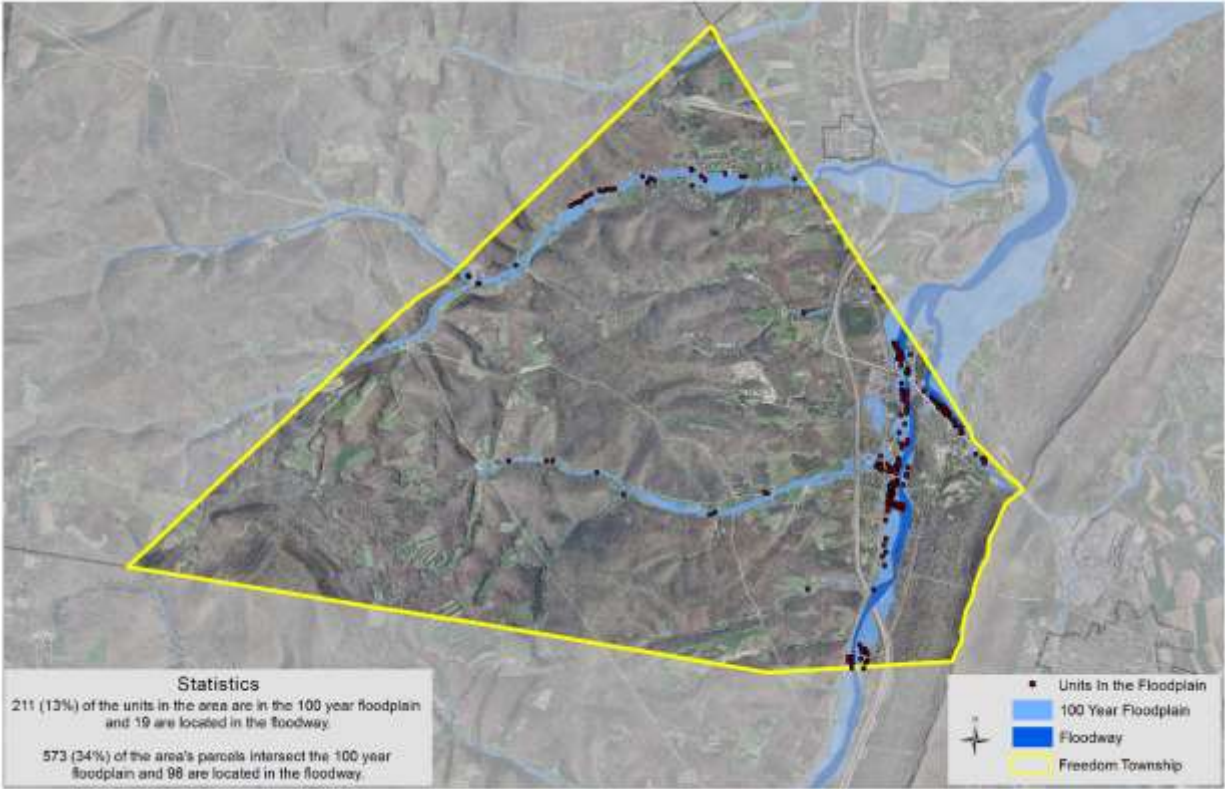


Figure 10: Greenfield Township

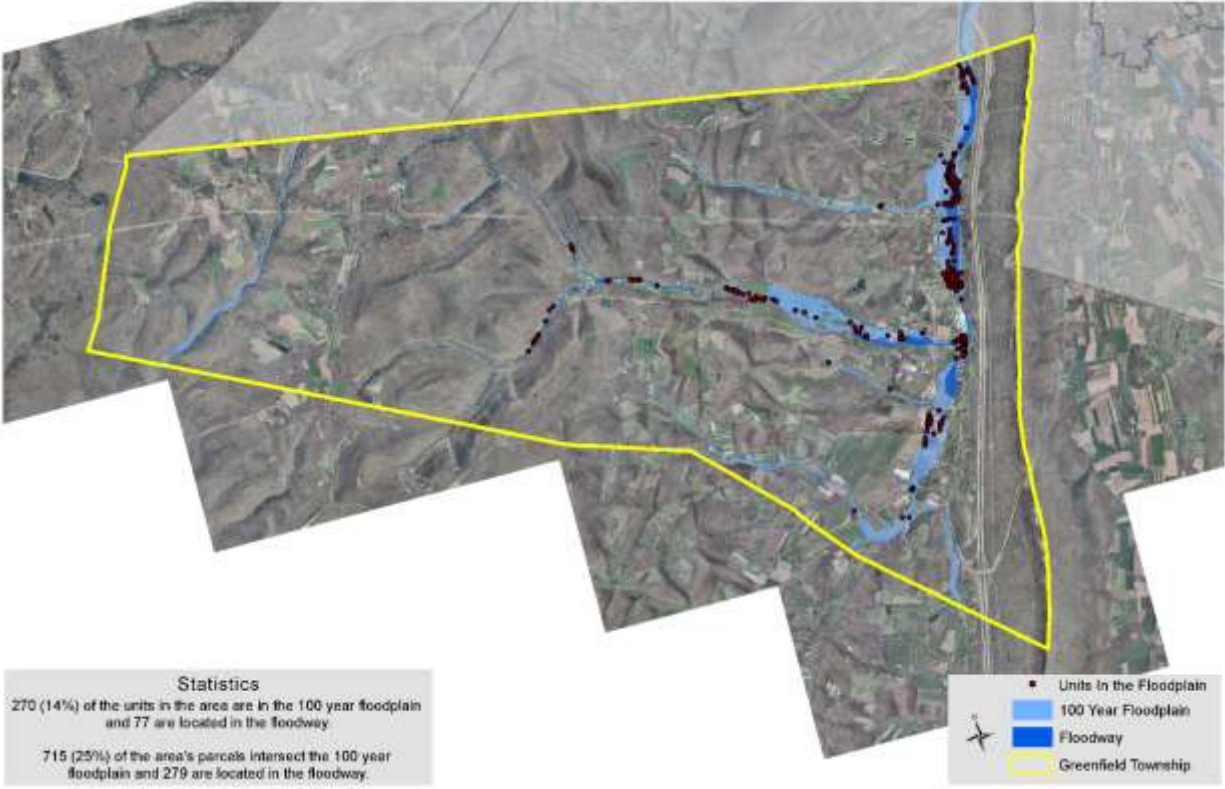


Figure 11: Hollidaysburg Borough



Figure 12: Huston Township



Figure 13: Juniata Township

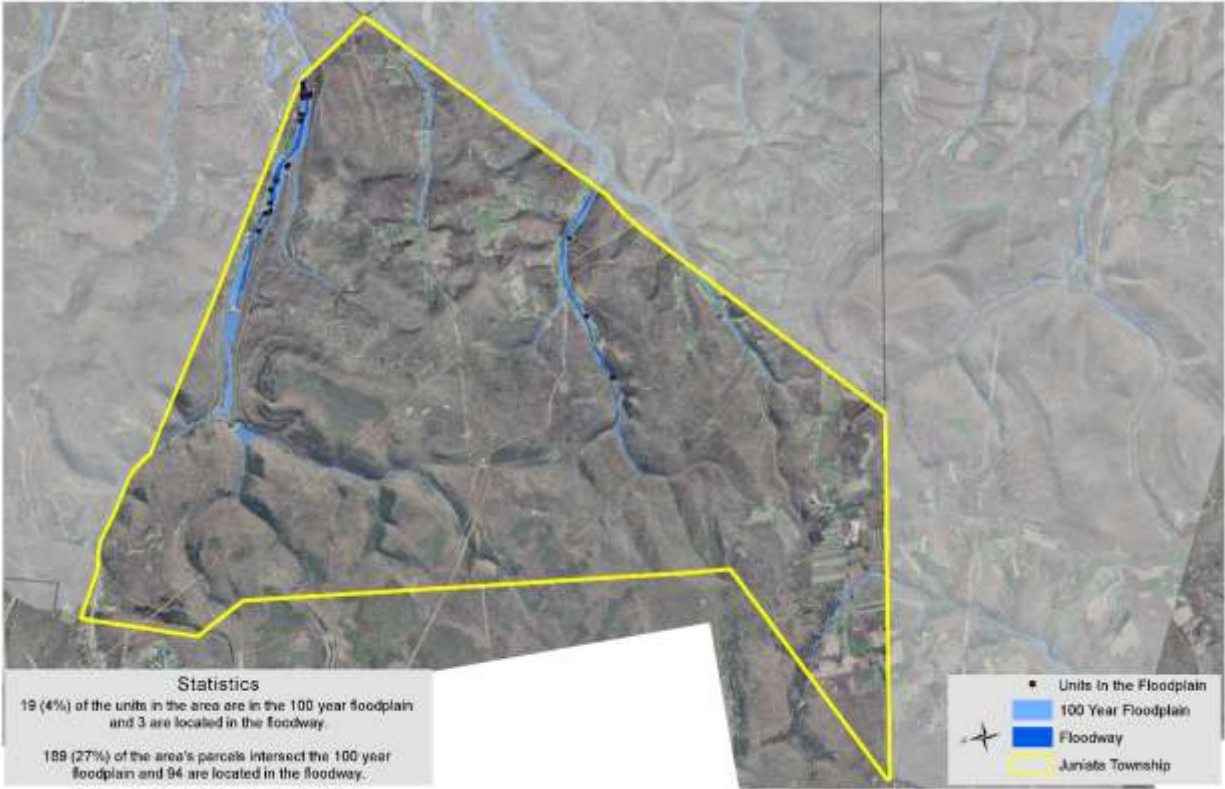


Figure 14: Logan Township

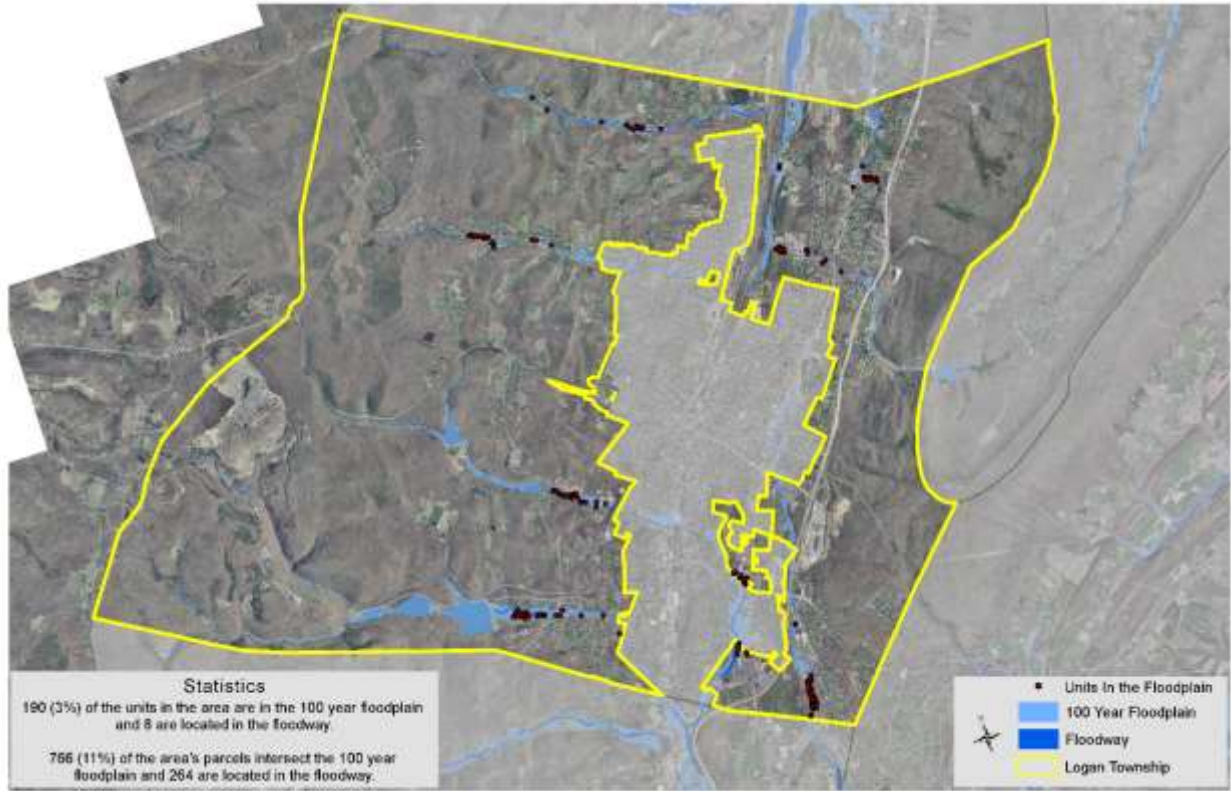


Figure 15: Martinsburg Borough



Figure 16: Newry Borough





Figure 17: North Woodbury Township

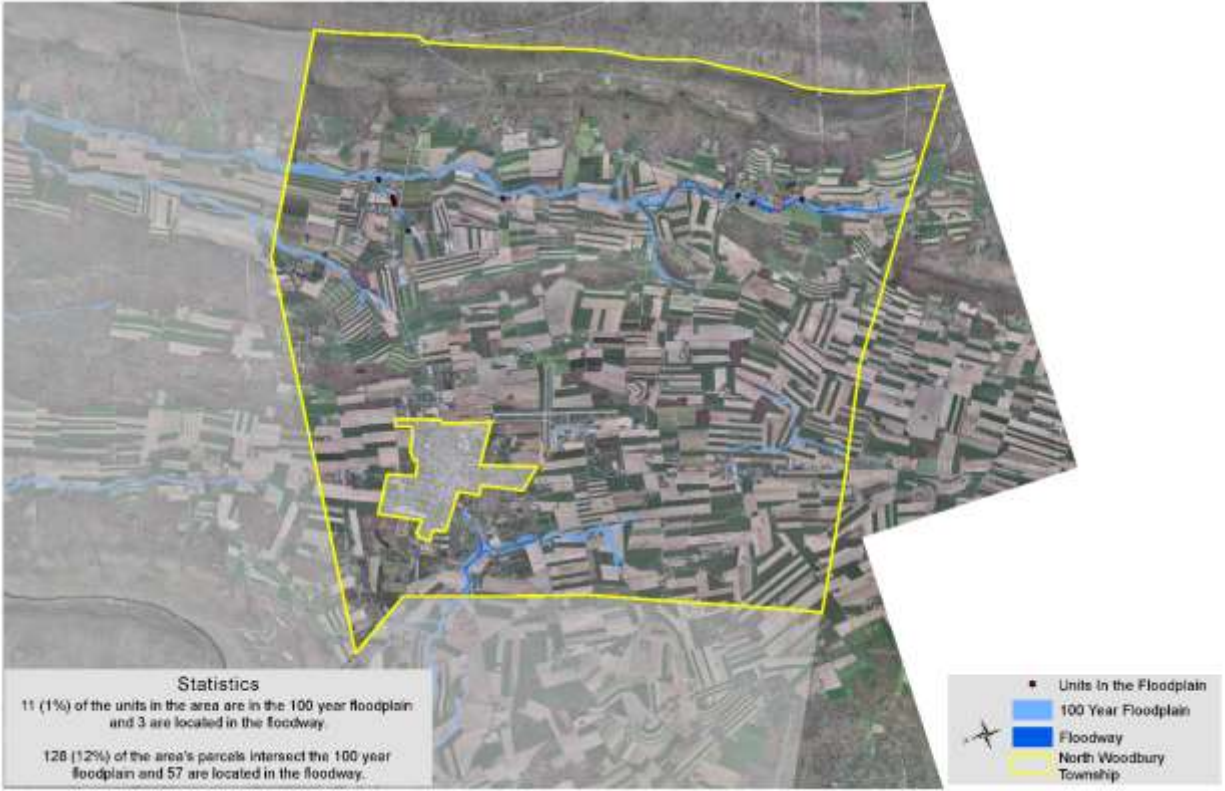


Figure 18: Roaring Spring Borough



Figure 19: Snyder Township

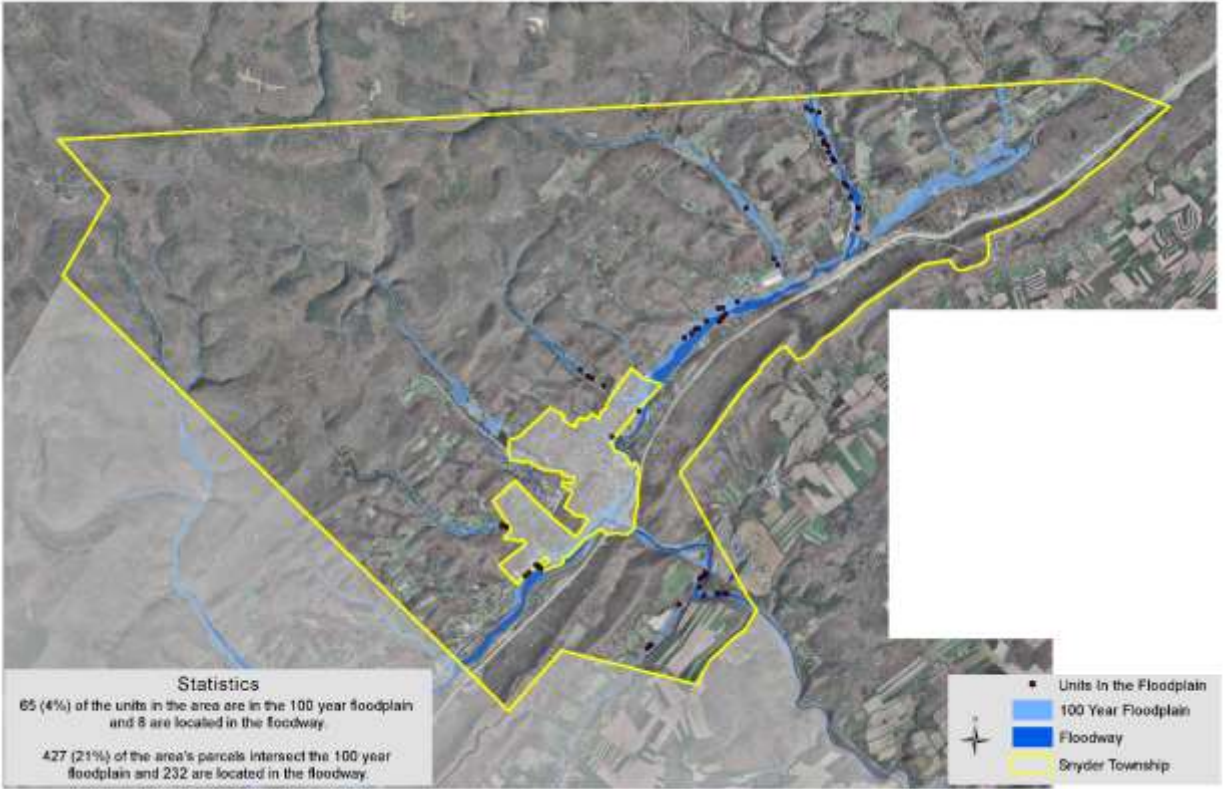


Figure 20: Taylor Township

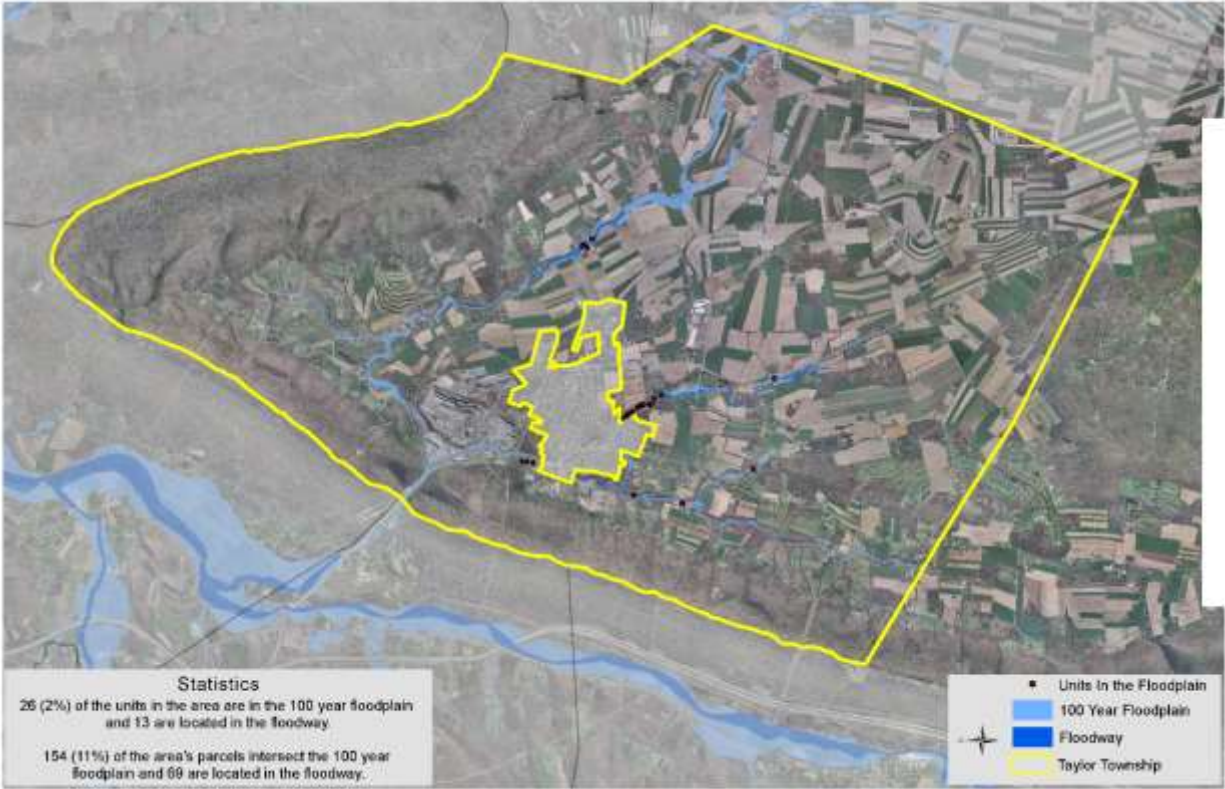


Figure 21: Tyrone (Home Rule Municipality)



Figure 22: Tyrone Township

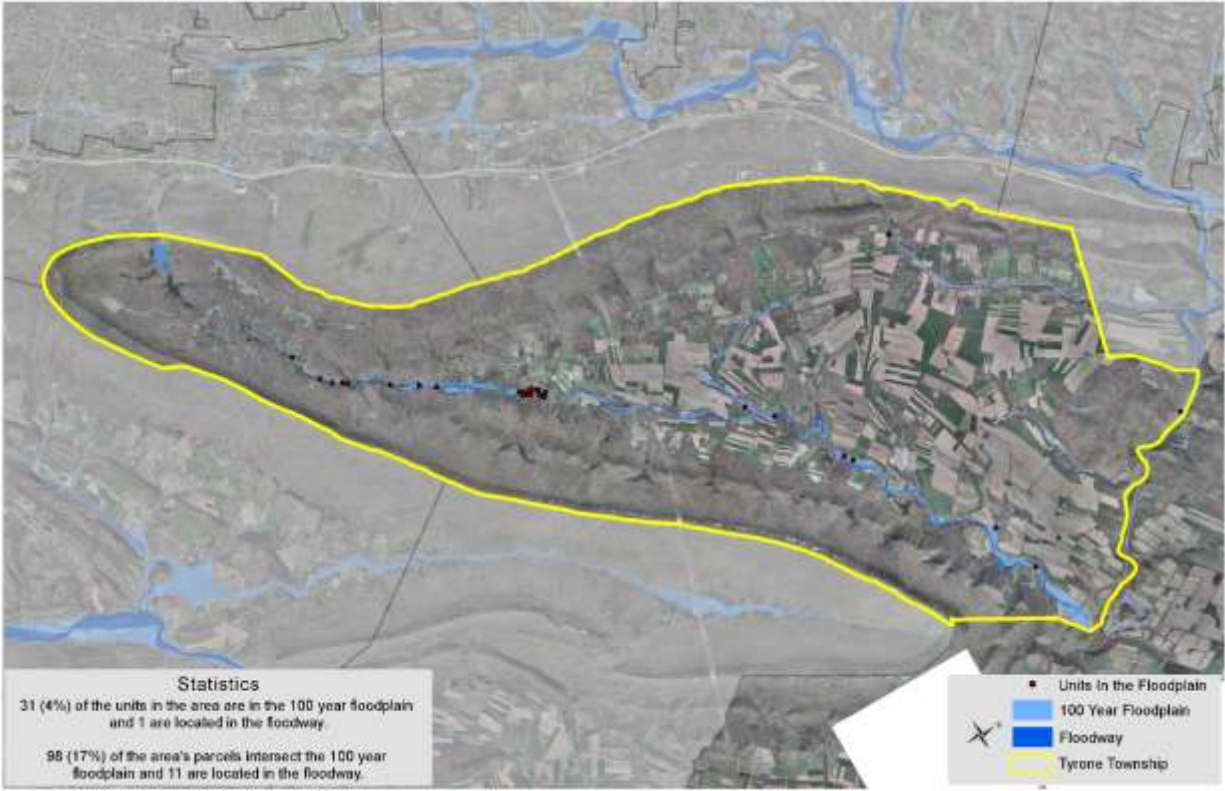


Figure 23: Williamsburg Borough



Figure 24: Woodbury Township





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**- APPENDIX E -**  
**CRITICAL FACILITIES**

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Emergency Services Facilities		
AMED 400 Tyrone	1216 Blair Ave	Tyrone Municipality
AMED 430 Altoona	1012 7 <sup>th</sup> Ave	Altoona Municipality
AMED 440 Roaring Spring	808 E Main St	Roaring Spring Borough
AMED 480 Lakemont	312 Lotz Ave	Logan Township
Bellwood 450	601 N 3 <sup>rd</sup> St	Bellwood Borough
Duncansville 420	1414 Peach St	Duncansville Borough
Duncansville 429	1934 Plank Rd	Allegheny Township
Hollidaysburg 410	801 Scotch Valley Rd	Hollidaysburg Borough
Hollidaysburg 419	303 W Allegheny St	Martinsburg Borough
Hollidaysburg 419	1381 Plank Rd	Allegheny Township
Williamsburg 490	420 W 2 <sup>nd</sup> St	Williamsburg Borough
Blair County Emergency Operations Center	615 4 <sup>th</sup> St	City of Altoona

Fire Stations				
Tyrone Blazing Arrow Fire Department	1216 Blair Ave	Tyrone	PA	16686
Northern Blair County Forest Fire Crew	1260 Lincoln Ave	Tyrone	PA	16686
Altoona Fire Department	1319 Washington Ave	Altoona	PA	16601
Claysburg Fire Department	13223 Dunning's Hwy	Claysburg	PA	16625
Bald Eagle Fire Department	13389 S Eagle Valley Rd	Tyrone	PA	16686
Freedom Township Fire Department	139 Municipal St	East Freedom	PA	16637
Greenwood Fire Department	1500 E Pleasant Valley Blvd	Altoona	PA	16602
Tyrone Neptune Fire Department	1701 Lincoln Ave	Tyrone	PA	16686
Martinsburg Fire Department	205 S Market St	Martinsburg	PA	16662
Phoenix (Hollidaysburg) Fire Department	206 Wayne St	Hollidaysburg	PA	16648
Pinecroft Fire Department	2134 Old 6th Avenue Rd	Altoona	PA	16601
Geeseytown Fire Department	215 Mary St	Hollidaysburg	PA	16648
Tipton-Antis Fire Department	269 Tipton Road	Tipton	PA	16684
Newburg Fire Department	2808 Washington Ave	Altoona	PA	16601
Williamsburg Fire Department	305 E 2nd St	Williamsburg	PA	16693
Lakemont Fire Department	312 Lotz Ave	Altoona	PA	16602
Duncansville Fire Department	313 14th St	Duncansville	PA	16635
Excelsior (Bellwood) Fire Department	399 S 1st St	Bellwood	PA	16617
Logan United Fire Department	611 Grandview Rd	Altoona	PA	16601
Allegheny Township Fire Department	651 Sugar Run Rd	Altoona	PA	16601
Sinking Valley Fire Department	710 Laurel Ln	Altoona	PA	16601
Friendship Fire Department	808 E Main St	Roaring Spring	PA	16673
Logan Township United (Kittaning Trail) Fire Department	937 Edison Ave	Altoona	PA	16601

<b>Police Stations</b>				
Martinsburg Borough Police Dept	109 S Mulberry St	Martinsburg	PA	16662
Allegheny Township Police Dept	3131 Colonial Dr	Duncansville	PA	16635
Altoona Police Dept	1106 16th St	Altoona	PA	16601
Bellwood Borough Police Dept	516 Main St	Bellwood	PA	16617
Blair Township Police Dept	375 Cedarcrest Dr	Duncansville	PA	16635
Duncansville Boro Police Dept	1146 3rd Ave	Duncansville	PA	16635
Freedom Township Police Dept	131 Municipal St	East Freedom	PA	16637
Greenfield Township Police Dept	477 Ski Gap Rd	Claysburg	PA	16625
Hollidaysburg Borough Police Dept	401 Blair St	Hollidaysburg	PA	16648
Logan Township Police Dept	100 Chief Logan Cir	Altoona	PA	16602
North Woodbury Township Police Dept	113 Cranberry Rd	Martinsburg	PA	16662
Roaring Spring Borough Police Dept	616 Spang St	Roaring Spring	PA	16673
Tyrone Police Dept	1100 Logan Ave	Tyrone	PA	16686
Williamsburg Borough Police Dept	305 E 2nd St	Williamsburg	PA	16693
Pennsylvania State Police Troop G	1510 North Juniata St	Hollidaysburg	PA	16648

<b>Hospitals</b>				
UPMC Altoona	620 Howard Avenue	Altoona	PA	16601
James E Van Zandt Va Medical Center	2907 Pleasant Valley Boulevard	Altoona	PA	16602
Healthsouth Rehabilitation Hospital Of Altoona	2005 Valley View Boulevard	Altoona	PA	16602
Tyrone Hospital	187 Hospital Drive	Tyrone	PA	16686
Nason Hospital	105 Nason Drive	Roaring Spring	PA	16673

<b>Schools</b>				
Claysburg-Kimmel El School	240 Ck Elementary Drive	Claysburg	PA	16625
Greater Altoona Ctc	1500 4th Avenue	Altoona	PA	16602
Juniata El Sch	418 N 8th Ave Juniata	Altoona	PA	16601
Logan El Sch	301 Sycamore Street Greenwood	Altoona	PA	16602
Pleasant Valley El Sch	310 Cayuga Avenue	Altoona	PA	16602
Bellwood Antis Ms	400 Martin Street	Bellwood	PA	16617
Martinsburg El Sch	415 Spring Street	Martinsburg	PA	16662
Tyrone Area Ms	1001 Clay Ave	Tyrone	PA	16686
Mowrie A Ebner El Sch	308 Hillside Avenue	Altoona	PA	16601
Spring Cove El Sch	137 Spring Cove Dr	Roaring Spring	PA	16673
Irving El Sch	110 Cherry Ave	Altoona	PA	16601
Tyrone Area El Sch	601 Clay Avenue	Tyrone	PA	16686
Altoona Area Hs	1415 6th Ave	Altoona	PA	16602
Tyrone Area Hs	1001 Clay Ave	Tyrone	PA	16686
Charles W Longer El Sch	1320 Union St	Hollidaysburg	PA	16648
Lewis M Myers El Sch	220 Martin Street	Bellwood	PA	16617
Kimmel Alternative School	900 S Jaggard Street	Altoona	PA	16602
Altoona Area Jr Hs	1400 7th Ave	Altoona	PA	16602
Juniata Gap El Sch	3365 Juniata Gap Road	Altoona	PA	16601
Foot Of Ten El Sch	450 Foot Of Ten Rd	Duncansville	PA	16635
Spring Cove Ms	185 Spring Cove Drive	Roaring Spring	PA	16673
Williamsburg Community Jshs	515 W Third St	Williamsburg	PA	16693
Frankstown El Sch	2463 Reservoir Rd	Hollidaysburg	PA	16648
Hollidaysburg Area Shs	1510 North Montgomery Street	Hollidaysburg	PA	16648
Bellwood-Antis Hs	400 Martin Street	Bellwood	PA	16617
Baker El Sch	108 W Ward Ave	Altoona	PA	16602
Hollidaysburg Area Jhs	1000 Hewit St	Hollidaysburg	PA	16648
Claysburg-Kimmel Hs	531 Bedford St	Claysburg	PA	16625
Central Hs	718 Central High Road	Martinsburg	PA	16662
Central Pa Digital Lrng Foundation Cs	721 N. Juniata St. Suite 3	Hollidaysburg	PA	16648
Penn-Lincoln El Sch	411 12th St	Altoona	PA	16602
Williamsburg Community El Sch	16 Sage Hill Dr	Williamsburg	PA	16693
Adelphoi Education At Altoona	600s. Jaggard St.	Altoona	PA	16602

Blair Resilience: Addressing Vulnerability & Exposure

Lighthouse Christian School	4200 Broad Ave	Altoona	PA	16601
Lone Pine School	133 Lone Pine Ln	Tyrone	PA	16686
Bishop Guilfoyle Catholic High School	2400 Pleasant Valley Blvd	Altoona	PA	16602
Blair County Christian School	925 Blacks Lane	Duncansville	PA	16635
Great Commission Schools	1100 6th Ave	Altoona	PA	16602
Harbor House Center Early Academics	113 Byron Ave	Altoona	PA	16602
Hollidaysburg Catholic School	321 Spruce St	Hollidaysburg	PA	16648
Penn Montessorri Academy	131 Holliday Hills Dr	Hollidaysburg	PA	16648
Shady Pond School	560 Golf Course Rd	Altoona	PA	16601
St Matthew Elementary School	1105 Cameron Ave	Tyrone	PA	16686
St Patrick School	731 Patrick Ln	Newry	PA	16665
St Rose Of Lima School	5519 6th Ave	Altoona	PA	16602
Tender Love For Children Child Care	1401 12th Ave 1st Lutheran Ch	Altoona	PA	16601
Faith Tabernacle School	439 5th Ave	Altoona	PA	16602
White Oak School	5791 Kettle Rd	Tyrone	PA	16686
St John The Evangelist School	311 Lotz Ave	Altoona	PA	16602
Altoona Central Catholic School	1400 4th Ave	Altoona	PA	16602
Living Water Christian Academy	1960 William Penn Hwy	Williamsburg	PA	16693
Northwestern Human Services Autism School	1012 8th Ave	Altoona	PA	16602
Piney Creek Parochial School	982 Piney Creek Rd	Martinsburg	PA	16662
Cove Lane Parochial School	1769 Cove Lane Rd	Martinsburg	PA	16662
Emmanuel Baptist Christian School	480 Emmanuel Dr	Claysburg	PA	16625
Greater Altoona Career & Technology Center	1500 Fourth Avenue	Altoona	PA	16602
Altoona Beauty School Inc	1528 Valley View Blvd.	Altoona	PA	16602
The Salon Professional Academy-Altoona	415 D Orchard Avenue	Altoona	PA	16601
Pennsylvania State University-Penn State Altoona	3000 Ivyside Park	Altoona	PA	16601
Yti Career Institute-Altoona	2900 Fairway Dr	Altoona	PA	16602
Yellow Springs Mennonite School	2474 William Penn Highway	Williamsburg	PA	16693

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**- APPENDIX F -**  
**HAZUS METHODOLOGY AND**  
**RESULTS REPORT**

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## Hazus: Flood Global Risk Report

**Region Name:** Blair\_County  
**Flood Scenario:** 100yr  
**Print Date:** Thursday, August 01, 2019

**Disclaimer:**

This version of Hazus utilizes 2010 Census Data.

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.



**FEMA**

**RiskMAP**  
Increasing Resilience Together



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### General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Pennsylvania

**Note:**

Appendix A contains a complete listing of the counties contained in the region .

The geographical size of the region is approximately 527 square miles and contains 5,654 census blocks. The region contains over 52 thousand households and has a total population of 127,089 people (2010 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B .

There are an estimated 53,225 buildings in the region with a total building replacement value (excluding contents) of 13,407 million dollars. Approximately 91.92% of the buildings (and 72.14% of the building value) are associated with residential housing.





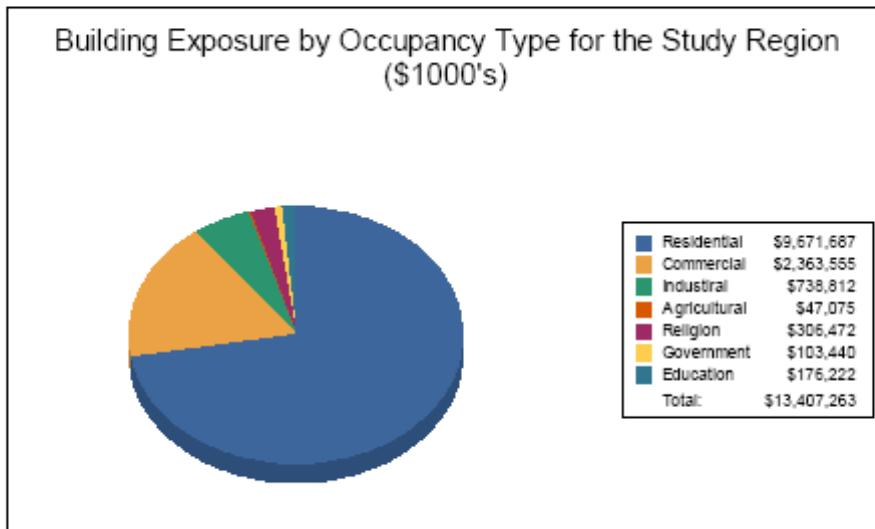
**Building Inventory**

**General Building Stock**

Hazus estimates that there are 53,225 buildings in the region which have an aggregate total replacement value of 13,407 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

**Table 1**  
**Building Exposure by Occupancy Type for the Study Region**

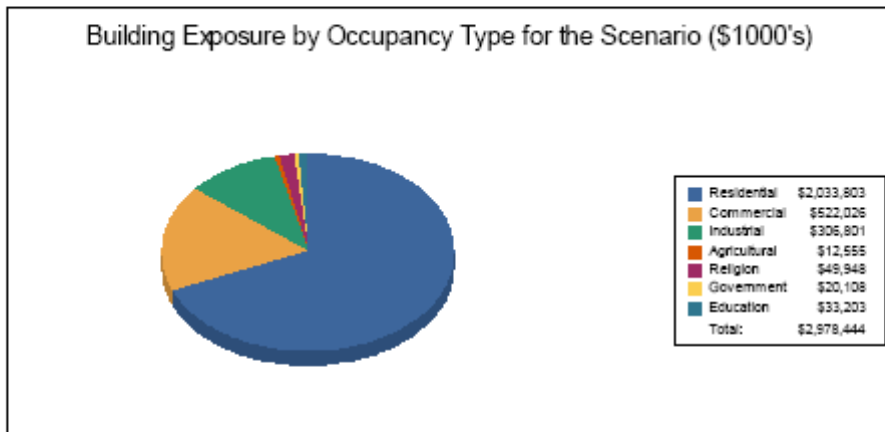
Occupancy	Exposure (\$1000)	Percent of Total
Residential	9,671,687	72.1%
Commercial	2,363,555	17.6%
Industrial	738,812	5.5%
Agricultural	47,075	0.4%
Religion	306,472	2.3%
Government	103,440	0.8%
Education	176,222	1.3%
<b>Total</b>	<b>13,407,263</b>	<b>100%</b>





**Table 2**  
**Building Exposure by Occupancy Type for the Scenario**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	2,033,803	68.3%
Commercial	522,026	17.5%
Industrial	306,801	10.3%
Agricultural	12,555	0.4%
Religion	49,948	1.7%
Government	20,108	0.7%
Education	33,203	1.1%
<b>Total</b>	<b>2,978,444</b>	<b>100%</b>



**Essential Facility Inventory**

For essential facilities, there are 6 hospitals in the region with a total bed capacity of 598 beds. There are 60 schools, 28 fire stations, 16 police stations and 1 emergency operation center.





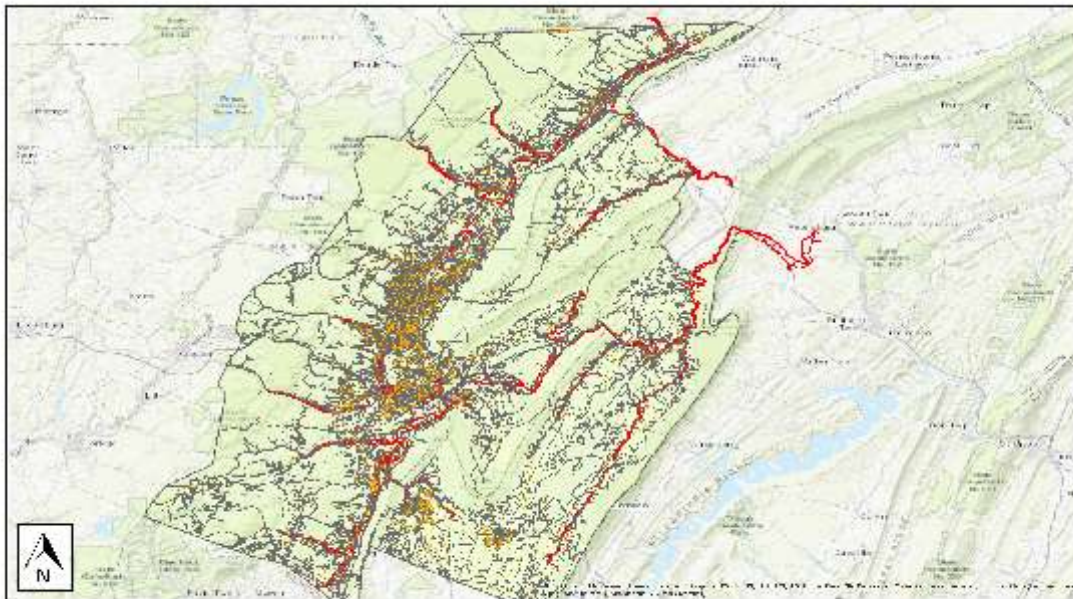
### Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Blair_County
Scenario Name:	100yr
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-ifs

### Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure





## Building Damage

### General Building Stock Damage

Hazus estimates that about 797 buildings will be at least moderately damaged. This is over 83% of the total number of buildings in the scenario. There are an estimated 25 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = \$300K) Overview Map





Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	6	75	1	13	1	13	0	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	4	67	2	33	0	0	0	0	0	0	0	0
Religion	0	0	0	0	0	0	0	0	0	0	0	0
Residential	396	33	531	45	170	14	45	4	22	2	25	2
<b>Total</b>	<b>406</b>		<b>534</b>		<b>171</b>		<b>45</b>		<b>22</b>		<b>25</b>	

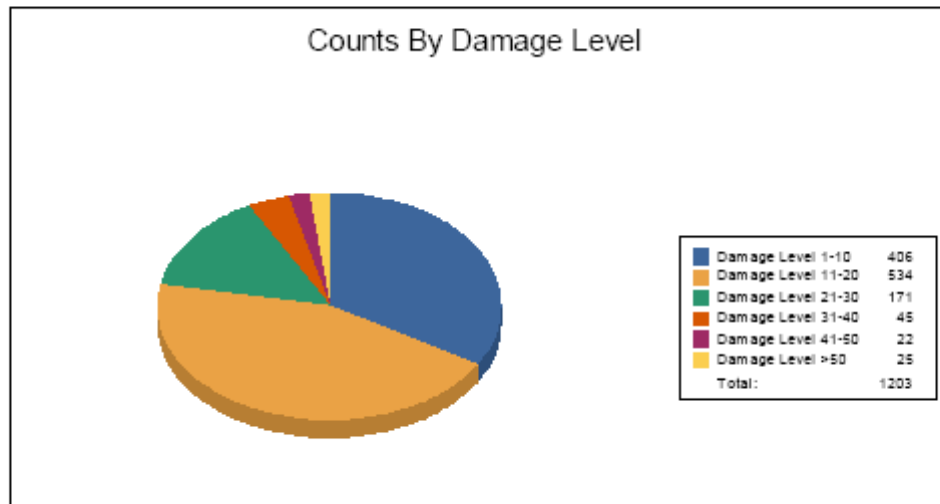




Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	1	100	0	0	0	0	0	0	0	0	0	0
Manuf/Housing	2	67	0	0	0	0	0	0	0	0	1	33
Masonry	113	35	146	45	42	13	12	4	6	2	5	2
Steel	6	75	1	13	1	13	0	0	0	0	0	0
Wood	283	33	386	45	128	15	33	4	16	2	19	2





**Essential Facility Damage**

Before the flood analyzed in this scenario, the region had 598 hospital beds available for use. On the day of the scenario flood event, the model estimates that 598 hospital beds are available in the region.

**Table 5: Expected Damage to Essential Facilities**

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	1	0	0	0
Fire Stations	28	5	0	5
Hospitals	6	0	0	0
Police Stations	16	1	0	1
Schools	60	2	0	2

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.







## Induced Flood Damage

### Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

**Analysis has not been performed for this Scenario.**





## Social Impact

### Shelter Requirements

Analysis has not been performed for this Scenario.



Flood Global Risk Report



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## Economic Loss

The total economic loss estimated for the flood is 504.01 million dollars, which represents 10.04 % of the total replacement value of the scenario buildings.

### Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

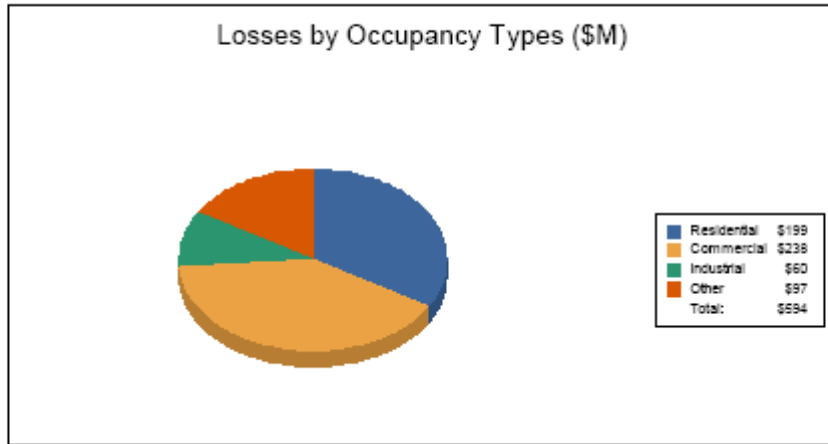
The total building-related losses were 312.51 million dollars. 47% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 33.50% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.





**Table 6: Building-Related Economic Loss Estimates**  
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<b>Building Loss</b>						
	Building	90.25	22.05	12.83	3.79	128.92
	Content	49.49	70.04	34.42	21.27	175.22
	Inventory	0.00	2.16	5.90	0.32	8.38
	<b>Subtotal</b>	<b>139.74</b>	<b>94.26</b>	<b>63.15</b>	<b>25.37</b>	<b>312.61</b>
<b>Business Interruption</b>						
	Income	2.16	51.29	1.97	8.16	63.58
	Relocation	36.79	17.95	2.00	4.78	61.53
	Rental Income	15.23	12.84	0.46	0.68	29.22
	Wage	5.10	61.25	2.47	58.35	127.18
	<b>Subtotal</b>	<b>69.28</b>	<b>143.34</b>	<b>6.90</b>	<b>71.98</b>	<b>281.60</b>
<b>ALL</b>	<b>Total</b>	<b>199.02</b>	<b>237.60</b>	<b>60.05</b>	<b>97.35</b>	<b>594.01</b>





Appendix A: County Listing for the Region

- Pennsylvania
  - Blair



Flood Global Risk Report



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**Appendix B: Regional Population and Building Value Data**

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
<b>Pennsylvania</b>				
Blair	127,089	9,671,687	3,735,576	13,407,263
<b>Total</b>	<b>127,089</b>	<b>9,671,687</b>	<b>3,735,576</b>	<b>13,407,263</b>
<b>Total Study Region</b>	<b>127,089</b>	<b>9,671,687</b>	<b>3,735,576</b>	<b>13,407,263</b>

