Clarion County

Hazard Mitigation Plan

August 2018

Certification of Annual Review Meetings

Year	Date of Meeting	Public Outreach Addressed?	Signature
2017	June 29	Yes	David L. Dunn
2017	December 5	Yes	David L. Dunn

Record of Changes

Date	Description of Chang Made, Mitigation Action Completed, or Public Outreach Preformed	Change Made by (Print Name)	Change Made by (Signature)
8/2018	Five-year plan revision	David L. Dunn	*David L. Dunn*

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1. Introduction

1.1. Background

The Clarion County Hazard Mitigation Plan is an umbrella plan that encompasses the input of the municipalities, Clarion University, schools, surrounding counties and the community. Mitigation begins at the local level, in communities, schools, boroughs, and townships where impacts of damaging events are first felt. Local mitigation planning focuses community attention on development issues prior to a disaster, ensuring participation in a more proactive sense. Through participation in the hazard mitigation planning process, local entities will possess the capability to identify, take advantage of, and implement mitigation strategies. Active hazard mitigation in a community also contributes to public safety and welfare, economic development, and environmental protection.

Natural occurring hazards, such as floods, tornadoes and winter storms, are a part of the world around us. Their occurrence is natural and inevitable, and there is little we can do to control their force and intensity. However, through hazard mitigation planning, we can control what comes afterward. By minimizing the impact of natural occurring hazards upon our built environment, we can prevent such events from resulting in disasters.

"Hazard mitigation**"** is simply a technical term for reducing risks to people and property from natural occurring and human caused hazards. It includes both structural measures, such as protecting buildings and infrastructure from the forces of wind and water, and non-structural measures, such as natural resource protection and wise floodplain management. These activities can target existing development or seek to protect future development by avoiding any new hazardous construction. It is widely accepted that the most effective mitigation measures are implemented at the local government level, where decisions on the regulation and control of development are ultimately made.

The easiest way a community can get serious about hazard mitigation is through the development and adoption of a local hazard mitigation plan. A mitigation plan will ensure that measures to reduce the present and future vulnerability of a community are thoroughly considered before, during, and after the next disaster strikes. Mitigation planning offers many benefits that include:

- saving lives and property;
- saving money;
- speeding recovery following disasters;
- reducing future vulnerability through wise development/redevelopment;
- expediting both pre-disaster and post-disaster grant funding; and
- demonstrating a firm commitment to improving community health and safety.

Both the Commonwealth of Pennsylvania and the U.S. Congress made the development of a hazard mitigation plan a specific eligibility requirement for any local government applying for mitigation grant funding. Communities with an adopted plan will therefore become "pre-positioned" and more apt to receive any available mitigation funds.

More importantly, mitigation planning has the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster loss. 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 emergency recovery, repair and reconstruction. Further, these mitigation practices will enable residents, businesses and industries to re-establish themselves in the wake of a disaster, getting the community economy back on track sooner and with less interruption.

Mitigation planning will also lead to benefits that go beyond solely reducing hazard vulnerability. Measures such as the acquisition or regulation of land in known hazard areas can help achieve multiple community goals, such as preserving open space, maintaining environmental health and natural features, and enhancing recreational opportunities.

With a land area of 607 square miles and a population of approximately 40,000, Clarion County is a rural sixth-class county in Western Pennsylvania that is particularly vulnerable to the effects of a wide range of natural occurring and human caused hazards. These hazards threaten the life and safety of County residents, and have the potential to damage or destroy both public and private property and disrupt the local economy and overall quality of life. The County government, its residents and businesses have in fact suffered disaster losses in years past that exceeded millions of dollars and resulted in the loss of life.

Beginning in the mid-1990's, Clarion County established a firm commitment to reducing the potential for future disaster losses. Following a destructive series of flooding and severe weather, Clarion County municipalities were awarded significant funding to mitigate public property against future storm events.

To sustain this local commitment to hazard mitigation, Clarion County has prepared this Hazard Mitigation Plan. At its most inner core, the Plan recommends specific actions to combat the forces of nature and protect its residents from hazard losses. These actions go beyond simply recommending structural solutions to reduce existing vulnerability, such as elevation and acquisition projects.

Local policies on community growth and development, incentives for natural resource protection, and public awareness and outreach activities are examples of other actions considered to reduce Clarion County's future vulnerability to natural occurring and human caused hazards. The Plan has been designed to be an active document with implementation and evaluation procedures included to help achieve meaningful objectives and successful outcomes.

The County Hazard Mitigation team is responsible for the development of the Hazard Mitigation Plan.

Over the course of the last five (5) years, the plan has been reviewed by Clarion County and its municipalities. Meetings were held with members of the Clarion County Hazard Mitigation Team and several officials at both the Commonwealth and local government level were contacted throughout the planning process for specific information and technical expertise.

1.2. Purpose

The Clarion County Hazard Mitigation Plan was developed in accordance with the requirements of the Federal Emergency Management Agency (FEMA) Disaster Mitigation Act of 2000 (DMA 2000), Section 322 local hazard mitigation planning regulations as well as additional guidance documents provided by FEMA. The original plan was developed and approved in 2004; the plan was revised and approved in 2008 and 2013, this plan represents an updated version of the 2013 plan. The Plan will identify hazards, institute community goals and objectives, and select mitigation strategies and opportunities that are appropriate for Clarion County, Pennsylvania.

The Disaster Mitigation Act of 2000 (DMA 2000), Section 322 requires that local governments (municipalities/counties), as a condition of receiving federal disaster mitigation funds, have a mitigation plan that describes the process for identifying hazards, creating risk assessment and vulnerability analysis, identifying and prioritizing mitigation strategies, and developing an implementation schedule for the County and each of the municipalities.

Congress authorized the establishment of a Federal grant program to provide financial assistance to States and communities for flood mitigation planning and activities. The Federal Emergency Management Agency (FEMA) has designated this Pre-Disaster Mitigation Assistance (PDM).

The main purpose of this Hazard Mitigation Plan is to implement the mitigation strategies, which Clarion County developed, to tackle the natural occurring and human caused hazards in the County.

This plan contains a list of potential hazard mitigation opportunities (projects) and explains how each opportunity relates to the overall mitigation strategy outlined in the plan.

The plan summarizes the activities outlined above to evaluate the effects of floods, severe snow events, windstorms (tornadoes, straight line, etc.) and other hazards in Clarion County and proposes mitigation activities.

The purpose of this Hazard Mitigation Plan is:

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

1.3. Scope

This All-Hazard Mitigation Plan addresses the natural occurring and human caused hazards determined to be high, moderate and low risk for Clarion County. The geographic scope for the Hazard Mitigation Plan includes all incorporated and unincorporated areas of Clarion County.

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 7101-7707
- Pennsylvania Municipalities Planning Code of 1968, Act 247 as reenacted and amended by Act 170 of 1988
- Pennsylvania Stormwater Management Act of October 4, 1978. P.L. 864, No. 167

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

- FEMA Getting Started: Building Support for Mitigation Planning
- FEMA Understanding Your Risks: Identifying Hazards and Estimating Losses
- FEMA Developing the Mitigation Plan
- FEMA Bringing the Plan to Life
- Using Benefit-Cost Review in Mitigation Planning
- Integrating Historic Property/Cultural Resource Considerations into Hazard Mitigation Planning
- Integrating Manmade Hazards into Mitigation Planning
- Multijurisdictional Mitigation Planning
- Using the Hazard Mitigation Plan to Prepare Successful Mitigation Projects
- Local Mitigation Planning Handbook
- Local Mitigation Plan Review Guide
- National Fire Incident Reporting System 5.0: Complete Reference Guide
- FEMA Hazard Mitigation Assistance Unified Guidance

The following Pennsylvania Emergency Management Agency (PEMA) 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
- PEMA: Pennsylvania's Hazard Mitigation Planning Standard Operating Guide

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 of Operations Programs

2. Community Profile

2.1. Geography and the Environment

Clarion County is a rural sixth-class county in the west-central part of Pennsylvania. It has a land area of 607 square miles and water area of 7 square miles with a population of approximately 40,000. Redbank Creek forms the southern boundary and the Allegheny River forms a large part of the western boundary.

Located about 80 miles south of Erie and 65 miles north of Pittsburgh, the County is easily accessible with Interstate 80 bisecting the County from east to west throughout six exits (exit 70 through exit 45.). There are 27.9 miles of interstate highways, 620 miles of state and federal highways and 659 miles of secondary and municipal roads in the County (see Attachment 1).

The Clarion River and Allegheny Rivers provide many recreational and scenic areas within the County. These rivers in combination with the County's forest areas, have contributed significantly to the County's economy.

Clarion County has a forest area of over 159,000 acres. The largest stand of virgin white pine east of the Mississippi River is in Cook Forest State Park of which the largest part is in the County. There are 10.03 square miles of state parks and 18,183 acres of state game lands. These areas include facilities for boating, camping, fishing, and hunting, mountain biking and swimming.

2.2. Community Facts

Clarion County, erected on March 11, 1839 from parts of Venango and Armstrong Counties, is named for the Clarion River. Clarion County was the 54th county in the Commonwealth to be formed. The history of the County has been dominated by extra active industries. Timber resources of white pine and hemlock rapidly stimulated an influx of population and thus small lumber villages developed along the major streams. The discovery of bituminous coal provided further impetus to settlement and has played an important part in shaping the recent history of the County. Oil and natural gas have, at various times, spurred short-lived economic development. Drilling for natural gas in Marcellus shale has spurred a small growth in the drilling industry and support industries. Bituminous coal, clay and stone products are important yet today.

Clarion County is composed of twelve boroughs consist of Callensburg, Clarion, East Brady, Foxburg, Hawthorn, Knox, New Bethlehem, Rimersburg, Shippenville, Sligo, St. Petersburg and Strattanville; and 22 townships consisting of Ashland, Beaver, Brady, Clarion, Elk, Farmington, Highland, Knox, Licking, Limestone, Madison, Millcreek, Monroe, Paint, Perry, Piney, Porter, Redbank, Richland, Salem, Toby and Washington (see Attachment 2).

The educational history of Clarion County is also noteworthy. In 1886, Clarion became the location for one of the State Teacher training schools, now Clarion University of Pennsylvania. Now featuring an

enrollment of approximately 4,600 students and 500 employees, Clarion University has gone through multiple enhancements since its start as Carrier Seminary. In its first year as a state school in 1886, it was Clarion Normal School, and its mission was to train teachers. It did that while it was called Clarion State Teachers College, and the education department is still its claim to academic fame. After the name change in 1963 to Clarion State College, it broadened its base of subjects greatly. Its last name changed to Clarion University of Pennsylvania occurred in 1983 and marked the establishment of a separate State System of Higher Education that linked all the state schools of higher learning. Clarion University's payroll provides cultural and recreational opportunities to Clarion that would otherwise not exist. Clarion University would be one of the largest municipality in Clarion County if designated as a municipality.

2.3. Population and Demographics

Per the 2010 census the population of Clarion County is approximately 40,000. The overall population density of the County is 66 persons per square mile. **Clarion County meets the criteria as a "Distressed Area" as defined by the census bureau.**

The population of the County is concentrated around the Borough of Clarion, which is located slightly northeast of the center of the County. The remainder of the County is sparsely populated with some concentrations of population along the southern edge and mid-western portion of the County.

The boroughs, and their populations (2010 U.S. Census), consist of: Callensburg – 207; Clarion – 5,276; East Brady – 942; Foxburg – 183; Hawthorn – 494; Knox – 1,146; New Bethlehem – 989; Rimersburg – 951; Shippenville – 480; Sligo – 720; St. Petersburg – 400; and Strattanville – 550.

The townships, and their populations (2010 U.S. Census), are: Ashland –1,114; Beaver – 1,761; Brady – 55; Clarion – 4,116; Elk – 1,490; Farmington – 1,934; Highland – 525; Knox – 1,036; Licking – 536; Limestone – 1,858; Madison – 1,207; Millcreek – 396; Monroe – 1,544; Paint – 1,699; Perry – 947; Piney – 453; Porter – 1,348; Redbank – 1,370; Richland – 494; Salem – 881; Toby – 991; Washington – 1,887.

2.4. Land Use and Development

Approximately 248 square miles (41%) of the County is forest, 158 square miles (26%) is agriculture, 477 square miles (78.6%) is considered rural and 130 square miles (21.4%) is considered urban.

There has been no new major development of land in Clarion County since last plan. Old manufacturing facilities are being torn down and land is now vacant.

Related to Building Trends

The in-progress future development on 5th Avenue in Clarion Borough for elderly apartment complex with 42 units. This project is pending with approval of State and Federal money. There are some blighted properties in 20 municipalities that need addressed. The municipalities are addressing this through the courts and obtaining money to remove and cleanup the structures. Many businesses have made improvements with additions to their existing structures and/or cosmetic updates.

Related to Employment

The County has had several other new development projects completed. Most them are for a small chain retail business that have created jobs, most of them being part-time positions. At the Trinity Point Development in Monroe Township a new Micro Hotel has been completed and the old closed one torn down. This created a few full-time positions and some being part-time positions. The recently approved adult day care facility (in the same development) will be capable of between 50-75 clients (this will take many years to reach that number) and will employ approximately 20 persons. Although this new Adult Day Care facility is opening 2 others closed.

2.5. Data Sources and Limitations

The Clarion County parcels database was used as an inventory of records throughout the County. The list of critical facilities provided in **Appendix E** was developed based on information available from the Federal Emergency Management Agency, the Pennsylvania Emergency Management Agency, the Pennsylvania Department of Environmental Protection, the Pennsylvania Department of Health, and the North Central Pennsylvania Regional Planning and Development Commission (NCPRPDC).

The countywide Preliminary Digital Flood Insurance Rate Map, effective date January 2012 (with revisions dated December 2012 effective date May 2014) were used for all flood risk analysis. The DFIRM database provides flood frequency and elevation information used in the flood hazard risk assessment. Data on 2010 land use was also provided by the Northwest Regional Planning & Development Commission (NWRPDC) and the Clarion County tax assessment database. Additional data for the base map was provided by the Pennsylvania Game Commission and the Pennsylvania Department of Conservation and Natural Resources. Population data from the 2010 Census was obtained from the U.S. Census Bureau (2011).

When applicable, PEIRS incident data spanning approximately the last 5 years (1/1/2011-12/31/2017) was used in the 2018 plan update. Although PEIRS data proved valuable, primarily in the human caused hazards section where few records of past occurrences exist, data limitations exist in that the reporting system. Thus, while PEIRS reports provide important information on the frequency of past events, the number and frequency of events may be under-reported. We also used information from our Computer Aided Dispatch System where all information from 9-1-1 calls is maintained and Knowledge Center an incident reporting/resource management computer system.

Additional information used to complete the risk assessment for this plan was taken from various government agency and non-government agency sources. Those sources are cited where appropriate throughout the plan and on each map. It should be noted that numerous GIS datasets were obtained from the Pennsylvania Spatial Data Access (PASDA) website (http://www.pasda.psu.edu/). PASDA is the official public access geospatial information clearinghouse for the Commonwealth of Pennsylvania. PASDA was developed by the Pennsylvania State University as a service to the citizens, governments, and businesses of the Commonwealth. PASDA is a cooperative project of the Governor's Office of Administration, Office for Information Technology, Geospatial Technologies Office and the Penn State Institutes of Energy and the Environment of the Pennsylvania State University.

To assess the vulnerability of different jurisdictions to the hazards, data on past occurrences of damaging hazard events was gathered. For several historic natural occurring hazard events, the National Climatic Data Center (NCDC) database was utilized. NCDC is a division of the US Department of Commerce’s National Oceanic and Atmospheric Administration (NOAA). Information on hazard events is compiled by NCDC from data gathered by the National Weather Service (NWS), another division of NOAA. NCDC then presents it on their website in various formats. The data used for this plan came the US Storm Events database, which “documents the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce” (NOAA, 2017).

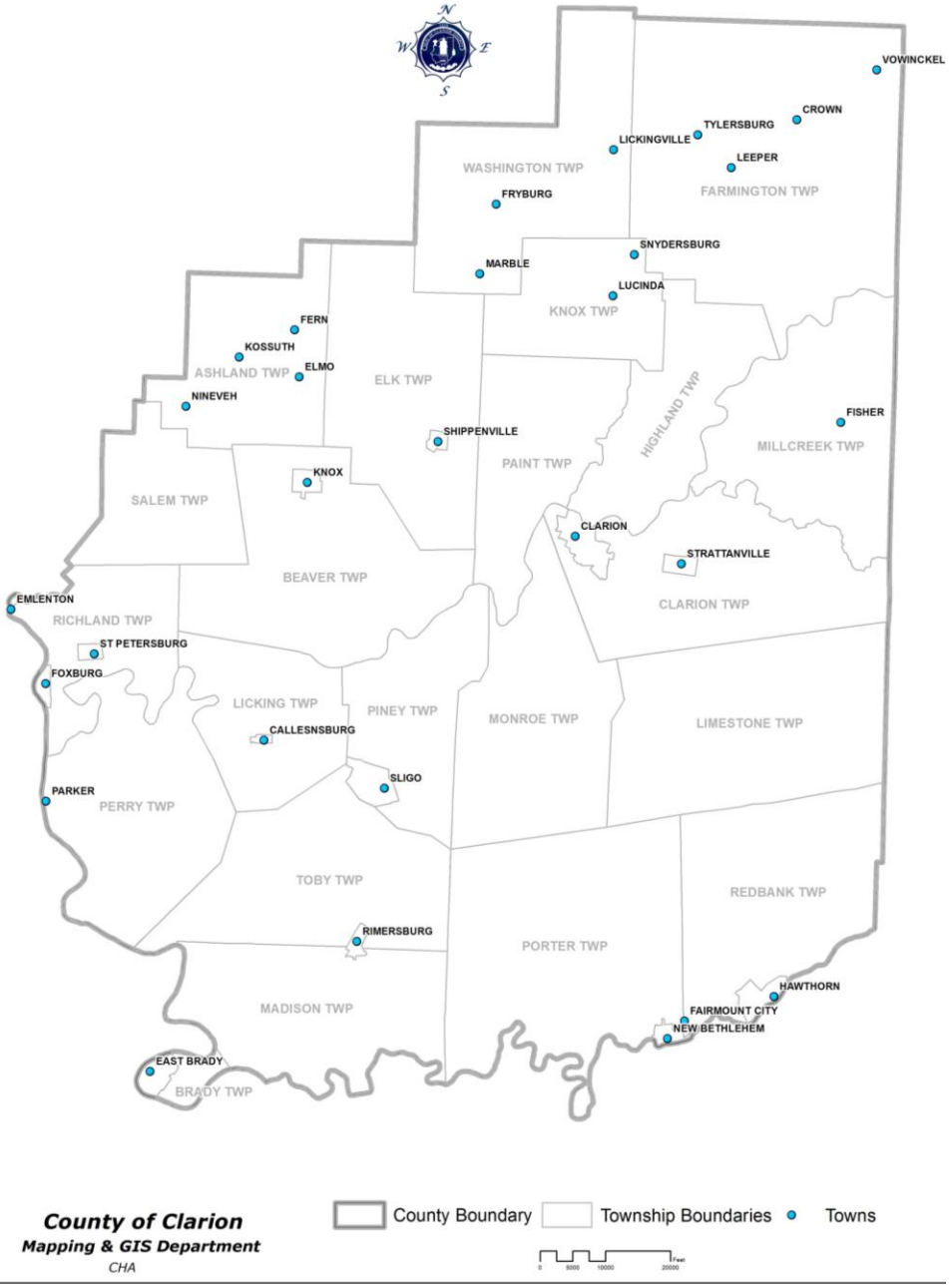
ATTACHMENT 1

Clarion County, Pennsylvania

Major Traffic Routes

ATTACHMENT 2

Clarion County, Pennsylvania
Municipalities & Towns



3. Planning Process

3.1. Update Process and Participation Summary

The plan update process started with a meeting of the Hazard Mitigation Team to determine the procedures for revising the current plan, develop a time line for plan update process and a review of the current Hazard Mitigation Plan. We then held a meeting for the municipalities to review the plan update process. Meetings were held with all municipalities to review current plan, determine hazards and risk areas, update action items and mitigation projects.

Public notice ads (residents/businesses) were placed in local newspapers requesting public comments on current plan (by mail or email) and advising that a public meeting will be held within the County to request comments on current plan. Copies of the current Clarion County Hazard Mitigation Plan were available for public review at the Commissioner's Office located in the Administration Building 330 Main Street, Clarion, the county web-site and all municipal buildings within Clarion County (no one attended the public meeting and no written comments were received).

Letters were sent to surrounding counties advising of plan update and requesting comments on current plan and revised plan (no comments were received). Contacts were made with local, Commonwealth and Federal agencies which provided information for current plan, requesting updated information. This information was reviewed and plan revisions completed.

Public notice ads (residents/businesses) were placed in local newspapers requesting public comments on draft revised plan (by mail or email) and advising that a public meeting will be held within the County to request comments on draft revised plan. Copies of the draft revised Clarion County Hazard Mitigation Plan were available for public review at the Commissioner's Office located in the Administration Building 330 Main Street, Clarion, the county web-site and all municipal buildings within Clarion County (no one attended the public meeting and no written comments were received).

Clarion County utilized the process recommended by the Pennsylvania Emergency Management Agency to develop this Hazard Mitigation Plan. In short, the process included the following steps, listed in the order in which they were undertaken:

1. Hazard Identification and Analysis
2. Community Vulnerability Assessment
3. Mitigation Capabilities Assessment
4. Community Goals
5. Mitigation Strategy

Step 1, the Hazard Vulnerability Analysis, describes and analyzes the natural occurring and human caused hazards present in Clarion County that can threaten human life and damage property. It includes historical data on past hazard occurrences, and establishes hazard profiles and a risk index based upon hazard frequency, magnitude and impact. The risk index forms the foundation for concentrating and prioritizing mitigation efforts.

Step 2, a community vulnerability assessment, was completed predominantly through investigative research along with the use of GIS technology and best available data. It includes narrative descriptions on community characteristics, such as Clarion County's geographical, economic and demographic profiles, and discusses future development trends and implications for hazard vulnerability.

Step 3, the mitigation capabilities assessment, provides a comprehensive examination of Clarion County's capacity to implement meaningful mitigation strategies, and identifies existing opportunities

for program enhancement. Capabilities addressed in this section include staff and organizational capability, technical capability, policy and program capability, fiscal capability, legal authority and political willpower. The purpose of this assessment is to identify any existing gaps, weaknesses or conflicts in local programs/activities that may hinder mitigation efforts, or to identify those local activities that can be built upon in establishing a successful community hazard mitigation program.

The conclusion of these three background studies result in the formation of community goal statements (Step 4) and set the stage for developing, adopting and implementing a meaningful Hazard Mitigation Strategy (Step 5) for Clarion County. These two steps help make the Plan strategic and functional for implementation purposes, and ultimately are the "action" components of the plan. Following the completion of Step 5, Clarion County concentrated on designing measures to ensure the Plan's ultimate implementation, and adopted evaluation and enhancement procedures to ensure the Plan is routinely updated.

3.2. The Planning Team

The Clarion County Hazard Mitigation Team (see Attachment 3) solicited input by holding individual meetings with each municipality, Clarion University and 2 public meetings. As stated above public notices and news releases were distributed requesting public comments and letters were sent to surrounding counties requesting comments. The Hazard Mitigation Planning Team meetings were led by the team leader.

3.3. Meetings and Documentation

The Hazard Mitigation Plan and supporting plans located in (Appendix A, Bibliography) were reviewed and updated by the Clarion County Hazard Mitigation Planning Team with the assistance and guidance from representatives of the Pennsylvania Emergency Management Agency (PEMA).

Meetings were held with all 34 municipalities (elected officials), Clarion University (public safety staff) and the HMT to discuss updates to the plan (see Appendix C).

During the revision process, additional contacts were made with the following agencies to determine how their programs affect or could support the County's hazard mitigation efforts:

- U. S. Army Corps of Engineers (USACE)
- U. S. Department of Agriculture
- Clarion County Conservation District
- Department of Community and Economic Development (DCED)
- Clarion County Department of Planning
- Clarion County Assessment, GIS and Mapping Department
- Clarion County Area Agency on Aging
- Clarion County Economic Development Corporation
- Clarion County Schools
- Clarion County Local Emergency Planning Committee
- West Central Pa. Chapter of the American Red Cross

Contacts were made with the following agencies for information which assisted in the development of the Clarion County Hazard Vulnerability Analysis (HVA), 2017. The information received from these agencies was also utilized throughout the development of this mitigation plan.

- Penn DoT, Bureau of Safety Programming and Analysis
- Pennsylvania State Police, Fire Marshals, Harrisburg, PA.
- National Oceanic & Atmospheric Administration (NOAA), National Weather Service (NWS)
- Department of Environmental Protection, Bureau of Oil and Gas Management

• Department of Conservation and Natural Resources, Bureau of Forestry
• Clarion County Airport in Shippenville, PA

3.4. Public and Stakeholder Participation

Copies of the current and updated draft Hazard Mitigation Plan were made available to the public for review at the Clarion County Commissioners Office, County websites (www.co.clarion.pa.us) or (www.clarioncountyoes.com) and all 34 municipalities.

Public Service Announcements were placed in The Clarion News and The Leader-Vindicator newspapers to inform the public of the process Clarion County is undergoing to update the Hazard Mitigation Plan. The County also distributed news releases to all news media outlets (newspapers and radio stations) that cover Clarion County. The public was encouraged to review the Plan at the stated locations and to submit any comments or concerns relative to the Clarion County Hazard Mitigation Plan in writing or email to the Clarion County Emergency Management Agency or to attend the public meetings (No one attended the public meetings and no written comments were received). Copies of the announcements can be found in Appendix H, Appendix 2.

3.5. Multi-Jurisdictional Planning

This HMP was developed using a multi-jurisdictional approach. Though County level departments have resources such as technical expertise and data which local jurisdictions may lack; involvement from local municipalities is critical to the collection of local knowledge related to hazard events. Local municipalities also have the legal authority to enforce compliance with land use planning and development issues. Clarion County undertook an intensive effort to involve all 34 municipalities and Clarion University in the planning process. Appendix C, Annex 2 shows jurisdictional presence at the meetings, mitigation actions, providing projects and revised plan review. All 34 municipalities in the County and Clarion University participated in the plan thus achieving 100% participation.

Lists of agencies that have adopted the Clarion County Hazard Mitigation Plan, along with copies of the signed resolutions, are found in Appendix J.

ATTACHMENT 3
Clarion County Hazard Mitigation Planning Team

NAME	POSITION	CONTRIBUTION
Ted Tharan	County Commissioner	Provide information on county issues, political issues, project ranking, review plan and adopt plan
Wayne R. Brosius	County Commissioner	Provide information on county issues, political issues, project ranking, review plan and adopt plan
Ed Heasley	County Commissioner	Provide information on county issues, political issues, project ranking, review plan and adopt plan
Carol Clinger	Chief Clerk	Provide information on county issues, political issues, project ranking, review plan and coordinate public information programs.
Jeff Smathers	Department of Public Safety, Director	Provide information on county communication issues, review current and revised plan, project ranking
Randall Stahlman	County EMA Coordinator	Provide information on county issues, review current and revised plan and project ranking.
William Louge	County EMA Deputy/Operations & Training	Review current and revised plan, provide input on revisions, project ranking and assist with collecting information from municipalities
David Dunn	County EMA Deputy/Planner HMP Team Leader	Lead team meetings, revise plan, submit plan for reviews, assist with collecting information from municipalities and public, develop public information releases and newspaper ads, project ranking and contact other agencies for plan revision information
Kristi Amato	County Planning/Development, Director	Provide information on planning/development issues, review plan and project ranking
Steve Ketner	County Planning Development, Assistant Planner	Provide information on planning/development issues, review plan and project ranking
Kevin Reichard	County Planning/Development, Engineer	Provide information on construction/building issues, review plan and project ranking
Chad Johnston	County Information Technology, Director	Provide information on cyber issues, review plan and project ranking

Cherin Abdelsamie	County GIS, Mapping and Assessment, Director	Develop maps, review plan and project ranking. Provide information on property values, review plan and project ranking
Steve Young	North Clarion School District, Superintendent	Provide information on school issues, review plan and project ranking
William Fiscus	Limestone Township Supervisor	Provide information on municipal issues, review plan and project ranking
Lisa Goth	Insurance Agent	Provide information on insurance issues, review plan and project ranking
Jason Hendershot	Clarion University	Provide information on University issues, review plan and project ranking
Don Hosey	Clarion Hospital EMS	Provide information on EMS/Hospital issues, review plan and project ranking
Trudy Alexander	Clarion County Conservation District	Provide information on conservation issues, review plan and project ranking
Representative	PEMA	Provide information on PEMA issues, review plan and project ranking
Representative	Department of Environmental Protection	Provide information on DEP issues, review plan and project ranking
Representative	Pennsylvania Dept. of Transportation	Provide information on Penn DoT issues, review plan and project ranking
Representative	Department of Health	Provide information on Health issues, review plan and project ranking

4. Risk Assessment

4.1. Update Process Summary

The process of hazard identification is to recognize each of the hazards that can occur in Clarion County. The hazard identification process was based on historical data that was gathered from a variety of sources (County archives, historical societies, Internet sites, Pennsylvania Emergency Management Agency [PEMA] publications, and the National Weather Service). Consideration was also given to Clarion County Schools and Clarion University (with an enrollment of 4,600 students). Critical facilities (hospitals, nursing homes, senior housing, etc.) were also considered (see Appendix E).

A risk assessment result for the entire county does not mean that each municipality is at the same amount of risk to each hazard. Attachment 9 shows the different municipalities in Clarion County and whether their risk is greater than (>), less than (<), or equal to (=) the risk factor assigned to the County. This table was developed by based on the findings in the hazard profiles of Section 4.3, past history and municipal input.

Clarion County has prepared, as part of their Emergency Operations Plan (EOP), a Hazard Vulnerability Analysis (HVA). The HVA and other documents were utilized to show what hazards are or are not a threat to Clarion County and its municipalities. Clarion County has prioritized the hazards that affect the County and has developed mitigation opportunities and/or strategies to deal with these hazards. The complete Clarion County HVA, as updated in April 2017, is located at the County Commissioners Office, County DPS website, County EMA, schools and municipalities.

Following hazard identification and profiling, a vulnerability assessment was conducted for each hazard to identify the impact of both natural occurring and human caused hazard events on people, buildings, infrastructure, and the community, as appropriate. Each hazard is discussed in terms of its potential impact on communities. This assessment allows all jurisdictions 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. A vulnerability analysis was performed which identifies structures, critical facilities, and/or populations that may be impacted during some hazard events.

4.2. Hazard Identification

4.2.1. Table of Presidential Disaster Declarations

Presidential Disaster and Emergency Declarations are issued when it has been determined that Commonwealth and local governments need assistance in responding to a disaster event. Table 4.2-1 identifies Presidential Disaster and Emergency Declarations issued between 1993 through 2017 that have affected Clarion County. Additional declarations can be found on the FEMA website at: http://www.fema.gov/disaster. It is important to note that for instances where hurricanes or tropical storms initiated a disaster declaration, it was largely because of the damage caused by the excessive precipitation and flooding effects of coastal storms, not the damaging wind speeds.

Table 4.2-1: Presidential Disaster and Emergency Declarations affecting Clarion County		
DECLARATION NUMBER	**DATE**	**EVENT**
3356	10/2012	Proclamation of Emergency – Hurricane Sandy
3235	9/2005	Proclamation of Emergency – Hurricane Katrina
1557	9/2004	Proclamation of Emergency – Tropical Depression Ivan
1497	9/2003	Proclamation of Emergency – Hurricane Isabel/Henri
1294	9/1999	Proclamation of Emergency – Hurricane Floyd
1130	7/1996	Presidential Declaration. Estimated damage: 75M. Widespread Heavy Rain caused extensive flooding. 1 fatality, 34 dwellings were destroyed, 32 sustained major damage & around 200 had minor damage. 10 bridges were washed out; numerous roads and businesses were damaged. Rainfall totals ranged from 4 to 6 inches.
1093	1/1996	Presidential Declaration. Heavy rains coupled with snow melt.
3105	3/1993	Presidential Emergency Declaration; Blizzard

4.2.2 Summary of Hazards

The HVA and HMT used NFPA 1600 for evaluation of hazards for the 2018 HMP. Following a review of the hazards considered in the 2013 HMP and NFPA 1600, the HMT decided that the 2018 plan should identify, profile, and analyze eighteen hazards. These eighteen hazards include all hazards profiled in the 2013 plan and the addition of Water Control (Dams), Hazardous Materials Incidents, Transportation Accidents, Terrorism, Emerging diseases humans or animals and Harassment as a hazard of concern. These additional hazards were added to become closer to hazards identified in the County HVA and because of potential damages. We also selected Transportation Accidents, Terrorism (Cyber), Emerging diseases humans or animals (Lyme disease) because of increases in reports of these hazards. Hazard profiles are included in Section 4.3 for each of these hazards.

4.3. Hazard Profiles

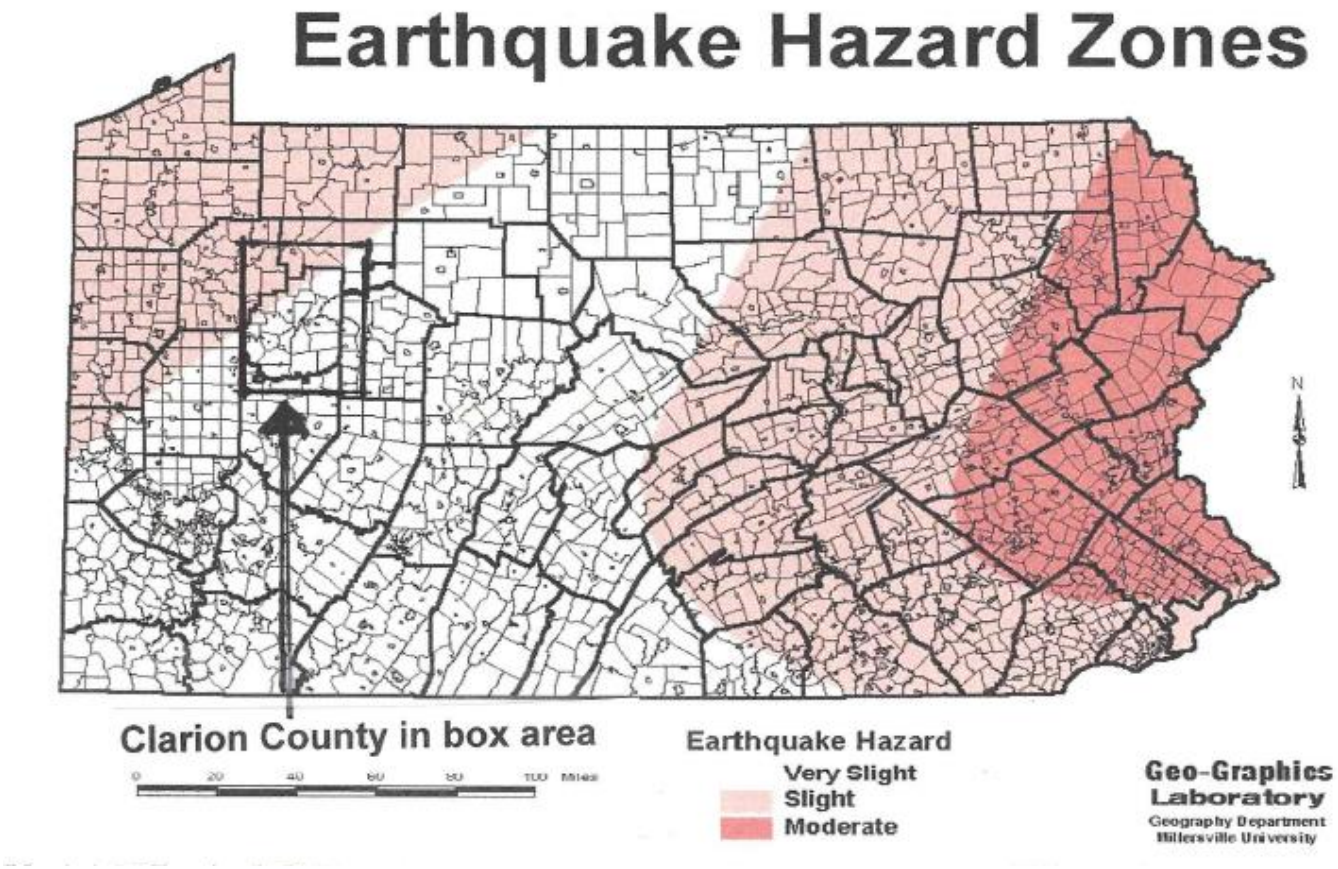
4.3.1 Earthquakes

4.3.1.1 Location and Extent

Earthquakes are geological events that involve movement or shaking of the crust of the earth. Earthquakes are measured in terms of their magnitude and intensity (instrumental – Catastrophic). Earthquakes can cause devastating destruction to the manmade environment.

Earthquakes are relatively infrequent and uncommon in Clarion County but there is existing data to indicate that earthquake activity has occurred in Clarion County but causing minimal damage, if any.

Northwestern Pennsylvania's vulnerability to earthquakes decreases from west to east (see below). The effects of earthquake (if the hazard exists) could potentially be anything from detected only on seismographs to ground water wells collapsing to destruction, trees falling, ground rises and falls in waves.



4.3.1.2 Range of Magnitude

Earthquakes are caused by a sudden slip of a fault caused by the dynamic pressure of the earth's plates pushing together on both sides of the fault over time. The strength of an earthquake is determined by the size of the slip and how close the slip occurred to the surface. The most active faults are along the Pacific Coast, although some smaller, less active, faults exist in the Eastern United States.

4.3.1.3 Past Occurrence

There have been no recorded earthquakes occurring in Clarion County, however on December 31, 2011 a 4.0 earthquake occurred around Youngstown, Ohio; August 31, 2011 a 5.9 earthquake occurred in Virginia and on January 2007, a 2.5 earthquake occurred just north of Meadville. Parts of the County experienced some of the shock waves of these minor earthquakes that have occurred around the region. Clarion County has no earthquake building codes. Therefore, should the County experience a substantial earthquake, is would be reasonable to expect that there could be extensive property and infrastructure damage and a significant loss of life.

4.3.1.4 Future Occurrence

The probability of such an event occurring is low. Clarion County does not sit on any fault lines.

4.3.1.5 Vulnerability Assessment

Due to low probability of occurrence there are currently no mitigation efforts.

Per Millersville University's seismic risk study, Clarion County has a very slight-to-slight risk of earthquakes.

Worst case scenario would be Clarion Borough including Clarion University being destroyed by an earthquake, damages could exceed 900 million dollars.

4.3.2 Landslide

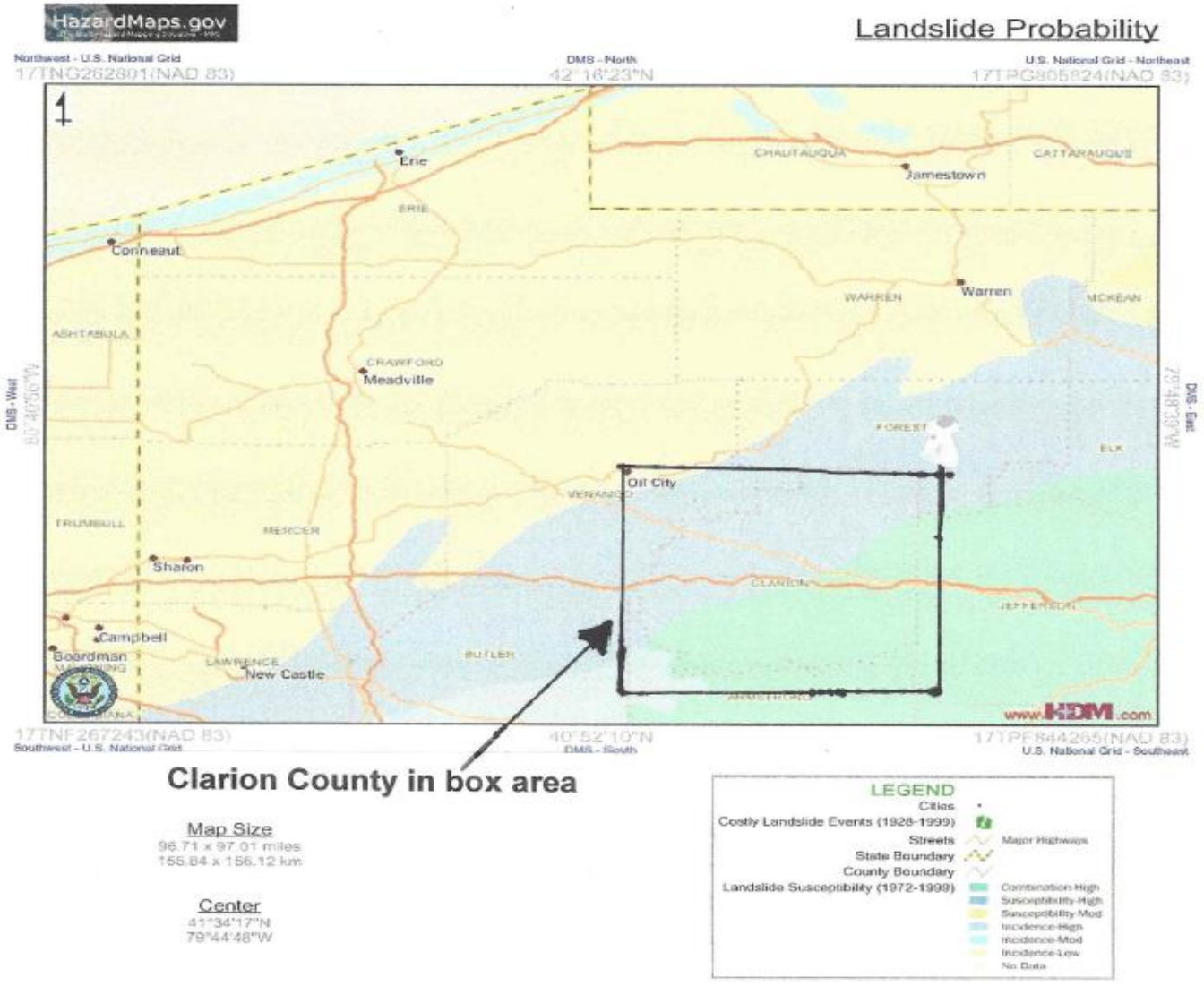
4.3.2.1 Location and Extent

Per the United States Geological Survey (USGS), landslides are major geologic hazards that occur in all 50 states, cause $1-2 billion in damages and result in an average of more than 25 fatalities each year (USGS). Landslides often occur with other natural hazards such as earthquakes and floods.

Landslides are not a serious risk in most of Clarion County but are more likely to occur due to the hill and valley areas of Clarion County. Limited areas of steep slopes associated with the banks of major watercourses in the County could collapse under heavy rainfall to produce a localized landslide. The potential of damage to lives or property from this type of natural hazard is low.

Although landslides may occur anywhere in Pennsylvania, only 15 to 18 percent of the Commonwealth's land area is naturally prone to landslides. Landslides incidences in Clarion County should remain low.

Most areas of Clarion County are susceptible to landslides. Per HazardMaps.gov, Southern Clarion County has a combination of moderate to high susceptibility and Northern Clarion County has a high susceptibility to landslides (see below and Appendix L).



4.3.2.2 Range of Magnitude

Most of Clarion County is in the HIGH susceptibility area of Pennsylvania; however, only one major landslide has been recorded up to and including 2017.

4.3.2.3 Past Occurrence

There was one major landslide recorded in 1983. This incident occurred when a slide blocked PA Route 28, north of New Bethlehem. This slide occurred May 22, 1983, and caused major problem for emergency traffic for approximately six weeks.

4.3.2.4 Future Occurrence

Because of the terrain and geological makeup of the County, such slides can occur again.

The frequency of landslides occurring in the County is expected to remain low, and the effects of these incidences will continue to pose a threat to the County. If population and development increases in Clarion County, the number of persons and properties vulnerable to the effects of landslides may increase. The probability of such an event occurring is low.

4.3.2.5 Vulnerability Assessment

Some measures do exist to lessen the dangers of landslides. These measures include the Storm Water Management Ordinance and local ordinances (zoning and subdivision, etc.) that place limitations on construction or development, monitoring construction practices; prepare studies of slide prone areas, erosion protection measures, and drainage considerations. A basic rule of thumb is to know where landslide areas exist and to avoid building on, though, or near them (leave them undisturbed). Worst case scenario would be major landslide total damages could exceed 1 million dollars.

4.3.3 Subsidence

4.3.3.1 Location and Extent

Subsidence is defined as a sinking movement of the earth's surface.

Subsidence may be natural or related to mining activities. Areas underlain by coal or other minerals which use deep mining techniques may become susceptible to subsidence. Poor engineering practices at the time of withdrawal or progressive degradation in geological stability contribute to subsidence. Areas of the Commonwealth that have underlying mines are subject to subsidence and constitute a potential threat to people living in those areas. Isolated incidents throughout the coal regions over the years have been houses, garages, and trees swallowed up by subsidence holes, usually described as a sinkhole. Lengths of local streets and highways, and countless building foundations have been damaged.

Natural subsidence results from what are considered normal geological processes to certain landforms. In Pennsylvania, water movement through carbonate terrain, i.e., limestone and dolomite may result in topographic features such as swales, sinkholes and forms of subsidence. Based on the examination of the PA Topographic & Geographical Survey Maps, Clarion County is not underlain by significant Limestone.

The County is threatened by both major types of subsidence. **ALL** Clarion County's municipalities are subject to surface and subsurface sinkhole occurrence. Many coal beds have been involved in underground mining. The few mine maps available show that generally the mining that has occurred has been very deep. Appendix L contains available maps of known underground mining in Clarion County. Maps can also be found on Department of Environmental Protection website at www.depgis.state.pa.us/msiRisk/.

4.3.3.2 Range of Magnitude

Isolated incidents throughout the coal regions over the years have been houses, garages, and trees swallowed up by subsidence holes. Lengths of local streets and highways, and countless building foundations have been damaged.

Natural subsidence results from what are considered normal geological processes to certain landforms. In Pennsylvania, water movement through carbonate strata, limestone and dolomite may result in topographic features such as swales, sinkholes and forms of subsidence.

Per Pennsylvania DEP there are 1,056 active and abandoned coal mines in Clarion County.

Department of Environmental Protection records show mining or possibly mined areas in all municipalities within Clarion County.

4.3.3.3 Past Occurrence

There are reports of subsidence in Clarion County:

In August 2003, two sinkholes measuring four feet in diameter and twenty feet deep were discovered near a residential area in Clarion Township. The Department of Environmental Protection's Bureau of Abandoned Mine Reclamation (BAMR) investigated and mitigated the holes.

In the spring of 2010 in Clarion Borough at the old Rhea Lumber Facility East Wood Street, had a hole opened that was approximately 4 feet deep and 3 feet wide. Clarion University the current owner mitigated the hole.

Currently there are at least three mine shafts subsidence's located in St. Petersburg Borough.

PA DEP has no records of any other sinkhole activity incidents.

4.3.3.4 Future Occurrence

The frequency of subsidence incidences occurring in the County is expected to remain high. However, considering mine activity that has occurred in the County, subsidence cannot be ruled out.

4.3.3.5 Vulnerability Assessment

Since all municipalities in Clarion County are vulnerable to the hazard of subsidence, local and county officials should follow some of the following hazard mitigation measures: encourage local awareness of the subsidence hazards; compliance with or enactment of building codes and regulations that consider geologic factors; preparedness to respond to and cope with a geologic hazard occurrence; and encourage local property owners to purchase subsidence insurance.

Worst case scenario would be major subsidence in Clarion Borough; total damages could exceed 270 million dollars.

4.3.4 Radon

4.3.4.1 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 guidelines of the

Environmental Protection Agency (EPA) or even the 67 pCi/L limits 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, 222Rn and 220Rn, formed in the radioactive decay series of 238U and 232Th, respectively. The isotope thoron (i.e. 220Rn) 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. 222Rn), 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. 226Ra), 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; and Radon emanating from uranium-rich building materials (e.g. concrete blocks or gypsum wallboard); this is not known to be a problem in Pennsylvania.

4.3.4.2 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 20,000 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 (USEPA, 2010). The main hazard is from the radon daughter products (218Po, 214Pb, 214Bi), which may become attached to lung tissue and induce lung cancer by their radioactive decay.

4.3.4.3 Past Occurrence

Current data on abundance and distribution of radon in Pennsylvania houses is considered incomplete and potentially biased, but some general patterns exist. Values exceeding the EPA guideline of 4 pCi/L occur in all regions of the Commonwealth. Glaciated areas in northern Pennsylvania tend to have relatively low frequencies of elevated radon, perhaps because of thin soils and incomplete weathering. The Appalachian Plateaus province in western Pennsylvania also appears to have lower than average radon, as does the Atlantic Coastal Plain near Philadelphia and other areas having a shallow water table. The highest proportion of elevated values is in a zone extending from central Pennsylvania to southeastern Pennsylvania, and in the Reading Prong. High values in the latter area are attributed to known uranium-rich granitic gneisses (Smith, 1976; Gunderson et al., 1988), accentuated by local factors such as shear zones, and include a surprising number of extremely high radon values (>200 pCi/L). Elevated radon values in the larger, northwest-southeast trending zone are not understood, but may represent some combination of black shale (Martinsburg Formation), limestone soil, and deep weathering.

4.3.4.4 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. The probability of such an event occurring is moderate.

4.3.4.5 Vulnerability Assessment

Per the EPA 1993 Pennsylvania Radon Zones, Clarion County Falls in to Zone 1 which has the highest potential for Radon exposure. Pennsylvania Hazard Mitigation Plan estimates that 20% of the buildings in the County are impacted by radon with a mitigation cost of approximating $12,371,280.

4.3.5 Flood, Flash Flood, Tidal Surge

4.3.5.1 Location and Extent

Flooding is normally the result of a larger event such as a thunderstorm, rapid snowmelt, and/or ice jam. Flooding is caused by excessive precipitation and can be generally considered in three categories: flash floods, ice jam floods, and general floods.

Flash floods can occur within several seconds to several hours, with little warning. Flash floods can be deadly because they produce rapid rises in water levels and have devastating flow velocities. Several factors can contribute to flash flooding. Among these are rainfall intensity, rainfall duration, surface conditions, and topography and slope of the receiving basin. Urban areas are susceptible to flash floods because a high percentage of the surface area is composed of impervious streets, roofs, and parking lots where runoff occurs very rapidly.

Ice-jam floods occur on rivers that are totally or partially frozen. A rise in stream stage 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.

Backwater upstream from the ice dam can rise rapidly and overflow the channel banks. Flooding moves downstream when the ice dam fails, and the water stored behind the dam is released. Now the flood takes on the characteristics of a flash flood, with the added danger of ice flows that, when driven by the energy of the flood wave, can inflict serious damage on structures. An added danger of being caught in an ice-jam flood is hypothermia, which can quickly kill.

General floods are caused by precipitation over a longer time and over a given river/stream basin.

A combination of river basin physiography, local thunderstorm movements, past soil moisture conditions, and the degree of vegetative clearing determine the severity of a flooding event. Flooding is typically most severe in areas of the floodplain immediately adjacent to major streams and rivers.

Flooding can be as frequent as the occurrence of a spring rain or summer thunderstorm. The amount of precipitation produced by storm events determines the type of flooding. Flash floods, which typically occur more frequently than general floods, occur along small streams and creeks of the type that are widely present throughout northwest Pennsylvania.

The undermining or washing out of roads is typically associated with flash floods. General flooding occurs less frequently and as the result of much larger storm events such as hurricanes. These larger storm events occur in northwest Pennsylvania most often in the late spring and summer.

Both flash flooding and longer-term general flooding can cause massive damage and destruction to the structures located in these floodplains.

Many individuals throughout northwestern Pennsylvania could potentially be left homeless and many businesses, located primarily within the incorporated municipalities, could be destroyed resulting in a reduction in economic activity, an increase in unemployment, and lower personal incomes.

Most of the municipalities (30 out of 34) in Clarion County have flood prone areas. See Appendix F for a list of addressable structures located within the 100-Year Floodplain.

The rivers/streams prone to flooding include: Allegheny River, Clarion River, Redbank Creek, Piney Creek, Deer Creek and Trout Run (see Attachments 5 and 6). The main flood season is usually December - April.

4.3.5.2 Range of Magnitude

In the County 30 of the 34 municipalities are flood prone. Allegheny River cause flooding in Brady, Madison, Perry, Richland and Toby Townships and East Brady and Foxburg Boroughs. The Clarion River causes flooding in Callensburg Borough and Beaver, Farmington, Highland, Millcreek, Monroe, Paint, Perry, Piney and Richland Townships. Piney Creek causes flooding in the Limestone-Reidsburg areas, Licking Creek floods around Sligo, Deer Creek in Elk Township and Redbank Creek at New Bethlehem and Hawthorn Boroughs and Madison, Porter and Red Bank Townships.

There is always the opportunity for more than one flood in a year in any area of the County. In addition, the County is susceptible to seasonal and flash floods because of heavy or prolonged rainfall, rapid thaw of snow and/or ice, or ice jams.

Seasonal flooding occurs in late spring/summer. This type of flooding is generally caused by storms of low to moderate rainfall intensity over a long period covering the entire area of principal watersheds. Many Commonwealth and federal flood protection projects in the area have served to reduce the average annual damages in the basin from $633,000 to $7.3 million per year.

4.3.5.3 Past Occurrence

Although floods occur in all seasons, studies of the relationships among storm intensity, duration, affected area, and seasonality suggest a tendency for flooding on principal streams to occur in winter and for floods on small streams to occur mostly in summer (see table below).

Table 4.3.5.2 Flood History

Date	Flood Type	Comments/Type of Declaration
May, 2017	Flash Flood	Flash flooding in Beaver Twp., Clarion Borough, Sligo Borough, Elk Twp., Highland Twp. and Paint Twp.
January 2017	Flash Flood	Flash flooding in Madison and Redbank Townships
June, 2016	Flash Flood	Flash flooding in Elk, Farmington and Washington Townships from heavy rain
2015		None Reported
July, 2014	Flash Flood	Flash flooding in East Brady and Rimersburg Boroughs, Madison and Porter Townships
June, 2014	Flash Flood	Flash flooding Sligo area from heavy rain
July, 2013	Flash Flood	Flash flooding in Farmington Township and Shippenville Borough from heavy rain
June, 2013	Flash Flood	Flash flooding in Red Bank Township from heavy rain
Yearly	Ice Jam	Especially along the Allegheny River between Parker and East Brady, Clarion River from Route 36 bridge to the Allegheny River and Redbank Creek upstream of the dam in New Bethlehem
Yearly	General/Flash Flooding	Late spring, early summer flooding, especially along the Redbank Creek and Allegheny River

Large area floods are caused by storms of low rainfall intensity over a long period covering the entire area of principal watersheds. Small area floods and flash flood are caused by storms of high rainfall intensity and relatively short duration. An exception to this is tropical storms which normally occur during the summer months and cause extensive flooding over large areas.

Floods are natural occurrences that cause damages and loss of life, primarily because of man's use and encroachment upon the floodplains. Because of this continued encroachment, flood damages have been increasing on a regular basis. Problems associated with storm water runoff are becoming

increasingly serious. Development actions such as the removal of vegetation, large scale resurfacing, and storm drainage systems are increasing the rate of runoff, resulting in many new localized flood problems as well as aggravating existing ones.

4.3.5.4 Future Occurrence

Although it is impossible to predict the number or severity of flood incidents that may occur in the County, it is safe to predict that if increased development occurs on presently unused land and the hilly topography of Clarion County; that the damage to crops, roads, businesses, utilities and private residences will increase in the future. Clarion County can safely assume to receive some type of flooding somewhere in the County on an annual basis with major widespread flooding expected every 4-5 years. The probability of such an event occurring is high.

During the floodplain map update process the Clarion County Commissioners sent letters to owners of property identified to be in the floodplain (2010). Another letter was sent to property owners identified as having property in the floodplain after the completion of the floodplain maps (2013).

4.3.5.5 Vulnerability Assessment

To address possible increases in flood related losses, development in floodplain areas should be regulated closely, and structural and nonstructural measures should be reviewed to determine flood damage reduction potential. Repetitive loss structures should be acquired demolished and returned to green space (see below).

Table 4.3.5.5 Repetitive Loss Structures

Municipality	Residential Buildings	Business Building	Critical Facilities	Total Dollar Damages	Potential Dollar Loss Damages
Limestone Township	1	0	0	$30,016	$250,000
New Bethlehem Borough	2	6	0	$402,277	$3,400,000
Perry Township	1	0	0	$62,213	$477,000

Note: Repetitive loss list from FEMA received and reviewed. The County Assessment Office field verified those structures on the list and determined that two structures on FEMAs list in New Bethlehem were removed and land is green space. The above list are current structures that still remain in the flood plain.

Worst case scenario would be total major flooding of all prone areas across the County total damages could exceed 100 million dollars.

4.3.6 Drought

4.3.6.1 Location and Extent

Although a severe drought could have a devastating impact on the entire community it was determined to be the least likely to occur. However, communities in Clarion County could potentially experience problems associated with drought conditions. The biggest concern in these communities is the high demand on the water supply and below average rainfall for recharge of aquifers and reservoirs.

The main type of drought that could be included in this all-hazard mitigation plan is a hydrological drought. A hydrological drought occurs when surface and subsurface water levels drop, such as in streams, rivers, lakes, and reservoirs.

Some preliminary discussion of the impact of drought and potential solutions can be found in the Comprehensive planning document titled the State Water Plan. This document was published over twenty years ago, and is dated. The Commonwealth has been authorized by the legislature to rewrite

this plan and it is expected to inventory existing and potential drought mitigation strategies and options that may avoid or lessen the consequences of prolonged hydrologic drought.

The Department of Environmental Protection's records indicate that there are 12 municipal water suppliers in Clarion County. Of those; three (3) use surface water (rivers, streams) as their source of supply. The remainder use wells and springs.

4.3.6.2 Range of Magnitude

Droughts have hit the Commonwealth seven times within the last 30 years. The Commonwealth has been most vulnerable to hydrologic and water management droughts. Hydrologic droughts generally entail a reduction of stream flows, reduction in lake/reservoir storages and the lowering of ground water levels. Water management droughts are a result of abnormally dry periods and the failure to adhere to water management practices during these times. During the summer of 1983, the worst drought in 20 years occurred, causing over $196 million in damages to the Commonwealth's crops. Severe droughts have also occurred during 2001 and 2002. Droughts can impact all the municipals.

4.3.6.3 Past Occurrence

Clarion County has most recently experienced drought emergencies and water supply deficiencies during the droughts of 1998 and 2002, which resulted in a Governor's Declaration.

Agriculture being an important element of the County's economy (market value of products sold for 2012 was 45 million dollars) could be impacted greatly by a long drought. With approximately 1,182 farms a drought could also affect the families and farm workers. The farming community is exceptionally vulnerable to drought.

There have been sporadic instances where municipal water systems have lost their entire water reservoir. The water reservoir loss has been due to system malfunctions; either pumps failure or massive supply line leaks, and have generally been corrected within 48 hours. Over the past several years, Clarion County's municipal water systems experienced system malfunctions or Department of Environmental Protection (DEP) shutdowns. These incidents are an indication of the aging of the infrastructure in Clarion County.

Currently no water suppliers have projected to experience future yield deficiencies.

From 1988 - 2016 Clarion County have had 20 drought watches, 12 drought warnings and 6 drought emergencies (per PADEP).

4.3.6.4 Future Occurrence

Future droughts and water deficiencies are likely to occur in Clarion County as demands increase for water by various industrial, residential and agricultural consumers. In addition, increased new development and the aging of the infrastructure in the County could affect water supplies.

It would be very difficult to forecast the future frequency and severity of drought emergencies in Clarion County. However, a drought situation could cause major shortages in private and public water supplies and crop damage on an extensive basis. The probability of such an event occurring is high.

4.3.6.5 Vulnerability Assessment

Although difficult to combat a drought, they may be made less threatening if all municipalities in the County utilize proper land use development controls (building restrictions on watershed areas, etc.), erosion controls, enforce irrigation regulations, plan for emergency conservation, and if possible, locate alternate sources of water.

One form of mitigation, regarding municipal water authorities in Clarion County, is the purchasing of smaller water authorities by larger water providers, or consolidation of water authorities.

Also, expansion of current municipal water service areas would provide more opportunity for spring/well reliant residents to secure a dependable water source. Upgrading the aging water system infrastructure in the County would decrease water supply issues.

Worst case scenario would be a drought across the County affecting all water resources and during growing season total damages could exceed 100 million dollars.

4.3.7 Fire (Wildland)

4.3.7.1 Location and Extent

Many fires have the potential for disaster or extensive loss of property and death. There are several factors which may influence the probability or likelihood that a fire may develop into a disaster. Based on historical record, our own experiences and an examination of the circumstances surrounding various situations, we can improve our understanding of fire hazards that may lead to disaster.

4.3.7.2 Range of Magnitude

Given the rural nature of Clarion County including Historic Forests, River Frontage with old stands of timber, vegetation growth on reclaimed mine sites and urban interface, most of the County is exposed to the probability of some type of Wildland Fire. All municipalities are at risk from Wildland fires.

4.3.7.3 Past Occurrence

Number of reported wildfires (37) and acres burned (358.4) in Clarion County from 2002-2013 (PADCNR, 2013).

A summary of fires follows:

- **2016: 89** brush fires were reported in Clarion County most were caused by debris burning. The largest was a 13.10-acres field fire caused by equipment use. Total area burned for the year was 27.5 acres. 30-day burn ban was placed in effect on July 28.
- **2015: 84** brush fires were reported in Clarion County most were caused by debris burning. The largest was a 2-acres field fire caused by equipment use. Total area burned for the year was 8.7 acres.
- **2014: 87** brush fires were reported in Clarion County most were caused by debris burning. The largest was a 5-acres field fire caused by equipment use. Total area burned for the year was 38 acres.
- **2013: 76** brush fires were reported in Clarion County most were caused by debris burning. The largest was a 4-acre field fire caused by equipment use. Total area burned for the year was 24.75 acres.
- **2012: 22** brush fires were reported in Clarion County most were caused by debris burning. The largest was a 4-acres field fire caused by equipment. Total area burned for the year was 11 acres.
- **Note: This data is based on what was reported. Most fire officials did not report acres burned and/or cause.**

4.3.7.4 Future Occurrence

It is safe to say that the number of major fires in Clarion County has remained constant. However, the number of smaller fires the last two years has remained low. It is expected that with expanded prevention programs and better fire department training, this trend will continue. The probability of such an event occurring is moderate.

4.3.7.5 Vulnerability Assessment

Man, has been responsible for well over 50 percent of all forest fires in the United States. These fires are usually the result of carelessness, failure to extinguish campfires, arson, etc. The Bureau of Forestry has been credited for the decline in the number of hazardous forest fires. Through their organization of fire observers, equipment, training, public education, and timely issued county wide burning bans; we are relatively free from major forest fires in Clarion County. Per the Pennsylvania All-Hazard Mitigation Plan, Clarion County is in the medium to high wildfire hazard assessment area.

There continues to be a decrease in the number of volunteer fire fighters in the County and fire department equipment is aging. These factures can affect the ability to fight wildland fires.

Worst case scenario would be major wildland fire in Farmington or Millcreek Townships; total damages could exceed 1 million dollars.

4.3.8 Winter Storms (Snow, Ice, Hail, Sleet, Avalanche)

4.3.8.1 Location and Extent

Severe winter weather most frequently occurs during the winter month (November-March) and can be caused by lake-effect conditions, warm air masses associated with the Gulf Stream, etc. The impact of a winter storms in Clarion County are not as devastating as some other hazards can be. Winter storms are a frequent event in Clarion County and are mitigated through the plowing, salting and spraying efforts of Penn DOT and local municipalities. During the rare occurrence of such a major event, severe winter storms could potentially produce an accumulation of snow and ice on trees and utility lines resulting in loss of electricity and blocked transportation routes. Frequently, especially in rural areas, loss of electric power means loss of heat for residential customers, which poses an immediate threat to human life.

4.3.8.2 Range of Magnitude

Winter storms occur on an average of five times a year in Pennsylvania. These storms may include snow, ice and sleet alone or in combination coupled with high winds. The predominant type of air which influences the climate of Clarion County has a polar continental source in Canada and moves in upon the region by way of tracks which vary from almost due north from the Hudson Bay region to a long westerly trajectory resulting from polar outbreaks into the Rockies which progress eastward. All municipalities are at risk from these storms.

4.3.8.3 Past Occurrence

A list of major winter storms effecting Clarion County is found below.

Table 4.3.8.3 Major Winter Storms

Date	Type	Declaration
2/15/2016	Ice Storm	None
3/3/2015	Winter Storm	None
1//7/2015	Winter Storm	None
2/4/2014	Winter Storm	None
11/23/2013	Heavy Snow	None
1/28/2013	Ice Storm	None
12/26/2012	Heavy Snow	None

Within the past ten years, winter storms in Clarion County have caused the following:

a. Power failures lasting four hours or longer.
b. Loss of communication networks lasting four hours or more.
c. Road closing for 24 hours or longer.

d. Stranded motorists requiring emergency transportation or temporary shelter, primarily from I-80.
e. Residents requiring evacuation or provision of supplies.
f. Loss of water supplies.
g. Structure collapse (**2/15** business on Rt. 322 had roof collapse from heavy snow load and building disrepair)
h. Major accident on Interstate 80, causing road closure for over 10 hours.

Clarion County is vulnerable to winter storms varying in degrees of severity. These storms can cause road closings in the County, especially on secondary and farm roads that become virtually impassable. Winter storms have left motorists stranded, often requiring emergency assistance.

Winter storms in the County may cause business losses to all commercial centers. There could be property losses to both commercial and residential areas because of snow and ice loading, falling tree limbs and frozen pipes. During a winter storm, Clarion County households may become vulnerable to interruptions in utility services for heat and electricity. During power outages, residents either use alternative heating sources or relocate to friends or relatives. During widespread power outages, comfort centers will be established to provide heated shelter areas.

Because of Clarion County's rugged terrain, all major roads are prone to being hazardous because of winter storms. Interstate 80 is the major roadway in the County, but is seldom closed, however, is the chief source of stranded motorists. Other main roads that normally remain open but are hazardous during winter storms are U.S. 322, Pennsylvania Routes 66, 68, 28, 38, 208, and others. Township roads are prone to closing, but most residents have alternative routes of travel.

4.3.8.4 Future Occurrence

The severity and frequency of major winter storms is expected to remain constant. However, due to increased dependence on various modes of transportation and use of public utilities for light, heat, and power, their disruption by these storms is far more significant today than in the past. The probability of such an event occurring is high.

4.3.8.5 Vulnerability Assessment

It is an ongoing responsibility for our county officials and municipal officials to prepare for these winter storms. Means to reduce the hazards of these storms include discouraging travel, early dismissal for public places and businesses, planned emergency measures for dealing with power loss, and emergency measures for rescuing stranded motorists.

Worst case scenario would be a major snow storm across the County completely closing the County down for 5-7 days; total damages could exceed 15 million dollars.

4.3.9 Windstorm (tropical cyclone, hurricane, tornado, water spout, dust/sand storm)

4.3.9.1 Location and Extent

Severe thunderstorms most frequently occur in the summer in northwestern Pennsylvania. These usually occur in the late afternoon or during the evening or night hours. Summer thunderstorms involve lightning, strong winds and heavy rains that can result in wildland fires or localized wind damage and flash flooding. The impact of thunderstorms could be expected to be low due to the localized nature of the storms.

Clarion County experiences thunderstorms every year and over the years' people have learned how to prepare when thunderstorms are predicted. Most County residents prepare by obtaining battery-operated radios, a non-electric phone, an emergency supply of water and non-perishable food, etc. Many times, severe storms, such as thunderstorms, can produce smaller, more localized storms. Windstorms are usually associated with hurricanes or tornadoes, but frequently occur with thunderstorms. Some Windstorms (Microbursts) often mistaken for tornadoes, can be just as

devastating as a tornado. Wind Sheers are usually found when a violent weather front is moving through and wind speeds of up to 100 mph have been recorded. Thunderstorms normally occur during all months except the midwinter ones, and have a maximum frequency in midsummer.

The destruction from these storms can be tremendous, destroying buildings, uprooting trees and injuring people. Winds associated with these storms can reach 100 mph and cause major damage, as was the case during the June 30, 1998 storms. These winds, called microburst, caused straight-line winds estimated to be more than 100 mph

Tornadoes, typically, the by-product of a larger storm, are violently rotating columns of air that encounter the ground. Tornadoes have a more localized impact and generally produce a narrow path of concentrated destruction from 0.01-mile-wide to greater than 1 mile wide. Tornadoes may also produce paths of destruction from less than 1 mile in length to greater than 100 miles in length.

4.3.9.2 Range of Magnitude

The destruction caused by tornadoes may range from light to severe depending on the path of travel. Typically, structures of light construction, such as residential homes, suffer the greatest damage from tornadoes. All municipalities are at risk from these storms.

Tornadoes are generally rated per the Enhanced Fujita Scale (EF0 - EF5 – Light (40-72 mph) to Incredible (261-318 mph) wind speeds).

4.3.9.3 Past Occurrence

Because tornadoes are typically a by-product of thunderstorms, they have a higher likelihood of occurrence. Tornadoes and thunderstorms are most likely to occur during the spring months of May and June. Tornadoes during these months have also been the strongest, resulting in the greatest amount of harm or damage.

Tornadoes are considered a countywide hazard because their path is unpredictable and can affect everyone in the County. On May 1, 2017, Clarion County had 4 confirmed tornadoes in the County, 2(EF0) and 1 (EF1) in Farmington Township and 1 (EF0) in Beaver Township. No injuries were reported, damages to homes, barn and cabins, many trees down and utility outages. On June 19, 2017, we had 1 (EF0) in Elk Township, damages to homes, barn and out buildings, many trees down and utility outages. On July 11, 2017, we had 1 (EF0) in Toby Township, no structure damage, many trees down and utility outages.

The National Weather Service has reported severe windstorms in Clarion County: 6 in 2017, 5 in 2016, 6 in 2015, 5 each in 2013 and 2014, and 3 in 2012. All the severe windstorms during these storms show wind gusts between 50 - 55 mph (see Attachment 7).

The destruction from these windstorms can be tremendous, destroying buildings, uprooting trees and injuring people. Winds associated with these storms can reach 100 mph and cause major damage. These winds, called microburst, caused straight-line winds estimated to be more than 100 mph. Fire Companies were dispatched for trees down during these storms 2017 there were 503 dispatches, 2016 there were 219 dispatches, 2015 there were 148 dispatches, 2014 there were 175 dispatches and 2013 saw 220 dispatches.

4.3.9.4 Future Occurrence

Given history, including the fact that tornadoes occurred in all counties surrounding Clarion County, the odds are heavily in favor of a tornado or downburst/microburst-type storm occurring at any time in Clarion County. The probability of such an event occurring is high.

If population increases and development continues in Clarion County, the number of persons and properties vulnerable to the effects of tornadoes and windstorms are expected to increase.

4.3.9.5 Vulnerability Assessment

Because tornadoes can strike anywhere in Clarion County, especially during the spring and summer months, it is imperative to have a good warning system and an informed public that knows what to do and where to go if a tornado strike is imminent.

To improve the warning time available, Clarion County also has direct communication capabilities with Pennsylvania Emergency Management Agency (PEMA) for information and warnings via the Commonwealth 800 radio system and the EMnet systems. Commonwealth 800 radio system connects the 911 dispatch center with PEMA's EOC, and up to date information can be relayed back and forth. EMnet is a satellite based messaging system. The EMnet System is the medium transporter for the Emergency Alert System (EAS)/Integrated Public Alert and Warning System (IPAWS) which can be utilized directly from the 911 dispatch center, to initiate emergency broadcasts of severe weather alerts issued by the National Weather Service. EMnet and the EAS/IPAWS system can also be used for notifying the public to any incidents.

In 2011, 2013, 2015 and again in 2018, the National Weather Service has conducted "Skywarn" weather observer classes in Clarion County. In 2014 and 2017 National Weather Service also conducted an "Advance Skywarn" weather observer class. These spotters are very helpful in providing the NWS vital information, which in turn, helps to increase the warning times. Clarion County has a Severe Weather Plan and we are a Storm Ready County as designated by the National Weather Service.

Worst case scenario would be Clarion Borough including Clarion University being destroyed by tornadoes damages could exceed 900 million dollars.

4.3.10 Extreme Temperatures (Heat & Cold)

Extreme events, by definition, are rare. An extreme temperature is when the temperature drops or raises to a level which occurs less than 5% of the time.

4.3.10.1 Location and Extent

There is no history of this type of event in the last ten years affecting the County per the National Weather Service.

4.3.10.2 Range of Magnitude

In the event of extreme temperatures there may be an impact to a large concentration of vulnerable citizens, because of the rural nature of most of the County.

The homeless, elderly and sick populations in the County are the most at risk.

4.3.10.3 Past Occurrence

There is no history of this type of event in the last ten years affecting the County per the National Weather Service.

4.3.10.4 Future Occurrence

While the probability for this type of event is, moderate there is a chance that it could occur in the County.

4.3.10.5 Vulnerability Assessment

Maintain and increase ways for providing information to the public. Develop and maintain policies and procedures to assist the public during extreme temperatures (i.e. Comfort Care Centers, utilities issues).

Work with human service agencies and faith based organizations to aid homeless, elderly and sick populations in the County during this type of event.

Worst case scenario would be a long extreme temperature event in the County; total damages could exceed 1 million dollars.

4.3.11 Geomagnetic Storm/ Electromagnetic pulse (Solar Weather)

4.3.11.1 Location and Extent

In solar-terrestrial terms, a worldwide disturbance of the earth's magnetic field, distinct from regular diurnal variations. A geomagnetic storm is a temporary disturbance of the Earth's magnetosphere caused by a disturbance in space weather. These types of storms could affect all or part of the communication systems, internet and utilities in the County. Geomagnetic Storms are categorized from G1 – G5. See chart from NOAA Space Weather below:

Table 4.3.11.1 Geomagnetic Storm Categories

Category		Effect
Scale	**Descriptor**	**Duration of event will influence severity of effects**
G 5	Extreme	Widespread voltage control problems and protective systems problems ca occur, some grid systems may experience complete collapse or blackouts. Transformers may experience damage.
G 4	Severe	Possible widespread voltage control problems and some protective systems will mistakenly trip out key assets from the grid.
G 3	Strong	Voltage corrections may be required, false alarms triggered on some protective devices.
G 2	Moderate	High-latitude power systems may experience voltage alarms, long duration storms may cause transformer damage.
G 1	Minor	Weak power grid fluctuations can occur.

4.3.11.2 Range of Magnitude

Worst case could cause total loss of all communication systems, internet and utilities.

4.3.11.3 Past Occurrence

There have been occurrences of G 3 storms over the last ten years and the latest on was in September of 2017. In September 2017, there was a G 4 storm with no reported damages. There has been no reportable damage with these storms but they occur with relative frequency.

4.3.11.4 Future Occurrence

While the probability for this type of event is low, there is a chance that it could occur in the County. Over the past few years there has been an increase in solar flare activity.

4.3.11.5 Vulnerability Assessment

These types of storms affect communication systems and utilities. Maintain systems for backing up radio communication for both emergency services and public information. Evaluate all county radio towers and equipment locations to determine protection needs. Work with utility companies to protect equipment.

Worst case scenario would be major loss of all communication systems, utilities and internet; total damages could exceed 500 million dollars.

4.3.12 Emerging Diseases Human or Animal

Emerging diseases humans or animals include (plague, smallpox, anthrax, West Nile/Zika viruses, Lyme disease, Powassan (POW) Virus, foot and mouth disease, SARS, pandemic disease, mad cow disease). Federal and Commonwealth agencies have the primary responsibility for identifying, monitoring and handling these types of events in the County.

4.3.12.1 Location and Extent

The type of event can occur anywhere in the County due to a rural nature and could have a large impact.

4.3.12.2 Range of Magnitude

The probability of tick diseases occurring in the County is high for Lyme disease and Powassan virus is low. The probability of mosquitoes' diseases occurring in the County for West Nile Virus is high and in humans is low and Zika Virus is low and in humans is low. The probability of influenza outbreak occurring in the County is medium.

4.3.12.3 Past Occurrence

Human Disease: Three pandemic influenza outbreaks transpired during the 20thcentury in 1918, 1957 and 1968. The population of the County would be vulnerable to a pandemic causing virus due to lack of immunity and limited vaccine stockpiles. There have not been any reported cases of naturally occurring small pox globally since the 1970's. Any small pox outbreak would be an act of terrorism. Plague is not endemic to Pennsylvania. SARS has not been reported in this area.

Lyme Disease is a bacterial infection primarily transmitted by ticks. There have been reported incidents involving humans. Clarion County ranks 3rd in the Commonwealth for Lyme disease (as per Department of Health) the following number of cases have been reported: 2010 – 18 cases, 2011 – 38 cases, 2012 – 66 cases, 2013 – 98 cases, 2014 – 101 cases, 2015 – 115 and 2016 - 206.

Zika Virus has **not** been found in mosquito in the County. There are no reported incidents involving humans.

West Nile Virus has been found in mosquitos in the County. There are no reported incidents involving humans.

Over the last few years there has been outbreaks of Pertussis and NORO Virus.

In 2009 there was a pandemic of the H1N1 virus.

4.3.12.4 Future Occurrence

The probability of tick and mosquito diseases in the County is high and a Pandemic event affecting the County is currently low.

4.3.12.5 Vulnerability Assessment

Currently the County is highly vulnerable to tick and mosquito diseases. While other types of events are less likely to have a major impact.

Worst case scenario would be a major pandemic event; total damages could exceed 10 million dollars

4.3.13 Hazardous Materials

4.3.13.1 Location and Extent

There are large amounts of chemicals, oils, radioactive materials, and other hazardous materials located in or transported through Clarion County daily. There are 16 SARA sites located in Clarion County and 4 SARA sites located in surrounding counties that have an impact on Clarion County. There are also 115 other locations in Clarion County reporting chemicals to Pennsylvania Dept. of Labor and Industry.

4.3.13.2 Range of Magnitude

There have been highway spills from truck accidents in the past; however, the potential for accidents involving fuel oils, propane gas, radioactive medical supplies, gasoline and other toxic and dangerous liquids remains high.

Natural gas incidents involving leaks, accidents, and line ruptures are common.

Clandestine Drug Manufacturing Labs are in the County.

4.3.13.3 Past Occurrence

There have been highway spills from truck accidents in the past; however, the potential for accidents involving fuel oils, propane gas, radioactive medical supplies, gasoline and other toxic and dangerous liquids remains high. The following are **reported** transportation incidents totals in the County:

2017: there were 6 incidents
2016: there were 5 incidents
2015: there were 5 incidents
2014: there were 8 incidents
2013: there were 5 incidents

Natural gas incidents involving leaks, accidents, and line ruptures are common. Transmission lines are old. In Clarion County, there are approximately 150 miles of gas pipeline. There have been 10 incidents of natural gas leaks causing explosion/fires in the last five years**.**

In November 2015 garage explosion in Redbank Township attributed to methane gas, October 2015 there was a house explosion in Clarion Township attributed to natural gas, March of 2006, there was a house explosion in Clarion Borough that was attributed to a natural gas leak. In October of 2004, there was a residence that exploded in Porter Township. This explosion was attributed to natural gas that possibly seeped into the basement. There was 1 fatality and 2 others injured in the incidents.

The following are gas incidents totals in the County:

2017: there were 53 incidents
2016: there were 31 incidents
2015: there were 39 incidents
2014: there were 38 incidents
2013: there were 34 incidents

In 2004 Clarion County Law Enforcement Agencies started to experience incidents involving clandestine drug labs. There has been clandestine drug lab bust conducted within Clarion County. Pennsylvania State Police have a team that now handles clandestine drug labs. The following are reported drug lab incidents totals in the County:

2016: there were 14 incidents
2015: there were 10 incidents
2014: there were 8 incidents

4.3.13.4 Future Occurrence

The County has over 648 miles of Commonwealth and Federal roads. The major transportation network in the County includes Interstate 80, US Route 322, and State Routes 28, 66, 68, and 208. These routes carry extremely heavy truck traffic and are a constant potential scene of a hazardous materials incident. Traffic estimates on Interstate 80 are approximately 9,000 trucks per day of which 465 of them are carrying placard hazardous materials (Clarion County 2015 Commodity Flow Study).

Currently, Clarion County has 16 SARA facilities and 4 SARA sites located in surrounding counties that have an impact on Clarion County. There are also 115 other locations in Clarion County reporting chemicals to Pennsylvania Dept. of Labor and Industry.

Clandestine Drug Manufacturing Labs are increasing in the County.

There are many oil/natural gas wells and pipelines throughout the County. There also is one reported underground natural gas storage facility. The probability of such an event occurring is moderate.

4.3.13.5 Vulnerability Assessment

The Pennsylvania Department of Transportation reports that the 5-year estimated traffic growth for Clarion County is 1.5 percent. Pennsylvania also increased the speed limit on Interstate 80 to 70 mph in Clarion County. This will increase transportation incidents.

To date, there have been no Hazardous Materials releases from fixed facilities that would require notification under SARA Title III.

Transmission lines are old, natural gas incidents involving leaks, accidents, and line ruptures will be common.

There are many oil/natural gas wells and pipelines throughout the County. There also is one underground natural gas storage facility. If deep gas drilling increase again than there would be an increase in new pipelines within the County.

We are starting to see the transportation of liquefied compressed natural gas (un-odorized).

When the cost of gasoline and fuel oil increased, some residents started making their own bio-fuel. This requires chemicals, different types of oils (cooking, vegetable, etc.) and other materials. To date these locations have been in rural areas. We had an incident in 2011 at a farm where the individual was making his own bio-fuel; there was a fire and spill of cooking oil.

Worst case scenario would be major incident that would impact Clarion Borough and surrounding municipalities; total damages could exceed 10 million dollars.

4.3.14 Transportation Accident

4.3.14.1 Location and Extent

A transportation accident is an incident involving highway, air or rail transport. A disaster may be defined as an accident resulting in death, serious injury, or extensive property loss or damage.

4.3.14.2 Range of Magnitude

Clarion County has one interstate highway, producing heavy traffic flow. Traffic estimates on Interstate 80 are approximately 20,000 vehicles per day of which 9,000 are trucks with 465 of them are carrying placard hazardous materials (Clarion County 2015 Commodity Flow Study). Numerous state routes provide intra-county and inter-county traffic flows.

Clarion County has one general aviation airport within its boundaries. However, because of the Clarion Omni, a major airway out of Greater Pittsburgh International Airport is directly over the County. This places approximately 50 commercial flights a day over the County.

4.3.14.3 Past Occurrence

Per the Clarion County Airport, the last reported aviation accident occurred on September 20, 2014, a Challenger LSA single engine aircraft crashed on takeoff. The pilot was severally injured and flown by MedeVac to hospital.

On January 16, 1995, a Cessna 310 aircraft with inoperative deicing system attempted an unscheduled landing at Clarion Airport with considerable ice on left wing. Aircraft landing gear collapsed and aircraft departed left side of runway. No fatalities were reported.

On January 7, 2015, there was a major accident on Interstate 80 westbound at mile marker 65. The accident involved 9 tractor trailer trucks and 10 other vehicles and occurred during whiteout snow conditions. This accident caused injuries to 24 people with 2 fatalities. Interstate 80 westbound was closed for over 12 hours causing congestion on alternate routes.

In 2016 there were 36 road closure incidents, caused by traffic accidents, trees down or wires across the road.

Table 4.3.14.3 Reportable Traffic Accidents

Year	Crashes	Fatalities	Injuries
2016	417	4	173
2015	432	6	204
2014	451	5	227
2013	498	12	351
2012	468	7	337
2011	462	7	239

4.3.14.4 Future Occurrence

The probability of such an event occurring is high. The Pennsylvania Department of Transportation reports that the 5-year estimated traffic growth for Clarion County is 1.5 percent.

There are 27.9 miles of interstate highway, 620 miles of federal and state highways, and 659 miles of paved municipal and secondary roads in Clarion County.

The sections of highway within Clarion County where accidents are most likely to occur are:

Interstate 80, PA Rt. 68 (South Fifth Avenue), one-half mile West of Clarion
PA Rt. 66, one-mile South of Clarion (Stone House Road)
Intersection of Exit 62 of I-80 and PA Rt. 68 due to massive traffic congestion
Intersection of Exit 64 of I-80 due to poor visibility
US Rt. 322, one and one-half miles East of Clarion (Bull Barn Turn)

With highway accidents, there is an added vulnerability that stems from the age and upkeep of bridges throughout the Commonwealth. Per the Pennsylvania Department of Transportation, the following is information on bridges in Clarion County (as of 1/10/2017):

Table 4.3.14.4 Clarion County Bridge Information		
Total Bridges	**Structurally Deficient**	**Functionally Obsolete**
208	25	8

4.3.14.5 Vulnerability Assessment

Considering the transportation growth within the County, it can be assumed that transportation accidents may increase. Airplane accidents should remain minor. As described earlier, the greatest vulnerability for an air accident is near the airport. Pennsylvania also increased the speed limit on Interstate 80 to 70mph in Clarion County. This will increase transportation incidents.

Worst case scenario would be total major bridge failure on Interstate 80; total damages could exceed 60 million dollars.

4.3.15 Water control structure/dam/levee failure

4.3.15.1 Location and Extent

Any dam has the potential for creating a major disaster. Dam failures usually occur with little or no notice, wreaking havoc on an unsuspecting community. The worst dam failure in the nation occurred in Johnstown.

Dams in Pennsylvania have been classified by hazard potential as follows:

Class 1 Dams -- These are dams with potentially high hazard capabilities, should they fail. This would include dams which store a significant quantity of water located on either small streams or main stem rivers or dams higher than 10 feet located on the main stems. Most of these dams would have the potential of causing both life and property losses if they failed.

Class 2 Dams -- These are dams which have intermediate flood hazard potential if they fail. These dams store a sufficient quantity of water to cause property damage, but probably not loss of life in the event of failure.

Class 3 Dams -- These are dams which have low flood hazard potential if they fail. Most property losses, if any, would most likely occur in the reach just below the dam.

Class 4 Dam -- These are minor structures used to impound water for irrigation, water supply intakes, recreation, etc. The flood hazard potential is essentially nonexistent.

4.3.15.2 Range of Magnitude

Class 1 and Class 2 dams would pose the greatest threat to downstream properties, should they fail.

Only 1 dam in the County falls under these classifications: Piney Dam - An Emergency Action Plan exists, and is annually updated.

There are 4 dams located outside the County, but would impact the County, that fall under these classifications:

East Branch Dam	Elk County
Kinzua Dam	Warren County
Tionesta Dam	Forest County
Two Mile Runn	Venango County

An Emergency Action Plan exists for all 4 dams, and updated annually.

There are other smaller dams that would have an impact in the County. They are:

New Bethlehem Dam	Clarion County
North Fork Dam	Jefferson County

4.3.15.3 Past Occurrence
There is no record of a dam failure occurring in or effecting Clarion County.

4.3.15.4 Future Occurrence
With continued maintenance of dams in and around Clarion County, no failure should occur in the future. The probability of such an event occurring is moderate.

4.3.15.5 Vulnerability Assessment
Ways of preventing this type of disaster from happening mainly involve the enforcement of safety standards for dam construction and maintenance and the installation of an adequate warning system. Worst case scenario would be complete failure of Piney Dam; total damages could exceed 250 million dollars.

4.3.16 Oil and Gas Wells

4.3.16.1 Location and Extent
Pennsylvania was the first place in the world where a commercially successful well was drilled for oil production. This well was just west of Clarion County in Venango County. Natural gas wells followed. Pennsylvania is a significant producer of natural gas in the northeast United States.

Since the first commercial oil well was drilled in Pennsylvania in 1859, perhaps as many as 400,000 oil and gas wells have been drilled in the Commonwealth. Per Pennsylvania DEP there are 4,166 oil and gas wells in Clarion County.

Prior 1985 gas and oil wells were not registered in Pennsylvania, leaving many old wells not properly plugged when abandoned.

4.3.16.2 Range of Magnitude
Gas and Oil wells are still operational in the County. Per Pennsylvania DEP there are 4,166 oil and gas wells in Clarion County. Recent advances in drilling technology had attracted new interest in the gas located in the Marcellus/Utica shale formation. The Marcellus/Utica Shales is a rock formation that underlies all Clarion County at a depth of 5,000 to 8,000 feet. Appendix L contains map of wells.

In Clarion County, there are approximately 191 orphaned wells, 59 abandon wells identified (as per DEP 2017) and likely many more abandoned not yet identified.

An unplugged abandoned well can be a hazard to the health and safety of people living near it, or it can cause pollution. For example, a rusted-out casing in a gas well can let natural gas flow underground and accumulate in the basement of a nearby building, with explosive consequences. Occasionally, gas leaking from an old well contaminates nearby water wells.

An old well might be a conduit for salt brine from deeper formations to pollute fresh ground water, or to discharge at the surface. In some cases, oil leaks from abandoned wells, polluting soil and water.

Near a coal mine, an old well can be a conduit for explosive gas to enter the mine -- a serious mine safety problem. Where coal mining has occurred, an old well can allow acidic mine water to discharge at the surface.

4.3.16.3 Past Occurrence
Today’s wells are drilled vertical then horizontal. All oil wells are vertical and natural gas wells are vertical or vertical then horizontal. With all Clarion County, having the Marcellus/Utica shale formation there was an increase in this type of well drilling. This type of well drilling brings with it different

hazards not seen with shallow well drilling. There have been incidents involving wells, these include the following:

- Releases from well heads being struck
- Gas migrating into water wells (there was 1 incident reported 2015 and 2016)
- Gas migrating into structures (none have been reported in Clarion County)
- There were 2 oil well incidents reported between 2014-2017
- There were 5 gas well incidents reported between 2011-2017

Orphaned/abandon wells have caused issues with gas migrating into water wells and possibly into structures.

4.3.16.4 Future Occurrence

If drilling activities increase the potential for incidents will increase. The occurrence of this event is low, however; the potential for a large-scale event is present.

Orphaned/abandon wells will continue to be an issue in Clarion County until all are plugged. These wells have caused issues with gas migrating into water wells and possibly into structures.

4.3.16.5 Vulnerability Assessment

Extracting natural gas from the Marcellus/Utica Shale formation requires both vertical and horizontal drilling, combined with a process known as 'hydraulic fracturing'. To drill these wells requires 3-4 acres of land for roads and drilling pad. There are many employees, equipment, supplies and drilling rigs are much larger than standard well drilling rigs. These sites have many hazards including confined spaces, high angle drill rigs, chemicals, radioactive materials, explosives and high-pressure equipment. After the well is drilled, cased and cemented to protect groundwater and the escape of natural gas and other fluids, drillers pump large amounts of water mixed with sand and other fluids into the shale formation under high pressure to fracture the shale around the well, which allows the natural gas to flow freely to the well bore. The amount of water typically required for hydraulic fracturing ranges from about one million gallons for a vertical well to approximately five million gallons for a vertical well with a horizontal lateral. This used water creates issues in that the water contains contaminates such as brine, radioactive materials and other chemicals. Also, Clarion County has many deep underground coal mines that are not mapped. These can lead to issues in the well drilling process.

The table 4.3.16.5 shows permits issued and wells drilled for various types of wells. While the wells drilled are lower than permits provide, this will change once the infrastructure is built to move the gas from wells to distribution.

Table 4.3.16.5 Well Information

Gas and Oil Wells

Year	Permits	Drilled
2016	2	1
2015	1	1
2014	11	5
2013	24	10
2012	51	28

Unconventional Gas Wells		
Year	**Permits**	**Drilled**
2016	3	0
2015	10	3
2014	5	0
2013	11	1
2012	22	4

The table 4.3.16.5.1 (per DEP 2107) shows the approximately 191 orphaned wells and 59 abandon wells identified (not plugged) by municipality in Clarion County.

Table 4.3.16.5.1 Orphaned/ Abandon Wells	
JURISDICTION	**ORPHANED/ ABANDON WELLS**
Ashland Township	30
Beaver Township	29
Clarion Borough	2
Clarion Township	1
Elk Township	45
Farmington Township	16
Highland Township	4
Knox Borough	1
Knox Township	6
Limestone Township	15
Madison Township	2
Millcreek Township	4
Monroe Township	6
New Bethlehem Borough	2
Paint Township	4
Perry Township	3
Piney Township	2
Porter Township	12
Redbank Township	18
Richland Township	23
Salem Township	10
St. Petersburg Borough	2
Toby Township	4
Washington Township	9

To date DEP has contracted for the plugging of 21 orphan wells in Clarion County. The average plugging cost is $10,600 per oil well and $53,700 per gas well.

Worst case scenario would be major gas well or gas pipeline explosion; total damages could exceed 10 million dollars.

4.3.17 Terrorism (explosive, chemical, biological, radiological, nuclear, cyber)

The FBI defines terrorism as “the unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives”.

Two types of terrorism identified by the FBI are Domestic Terrorism and International Terrorism.

Domestic terrorism involves group(s) or individual(s) whose terrorist activities: Involve acts dangerous to human life that violate federal or Commonwealth laws; appear intended to intimidate or coerce a civilian population; to influence the policy of a government by intimidation or coercion; to affect the conduct of a government by mass destruction, assassination or kidnapping; occur primarily within the territorial jurisdiction of the U.S and are lacking foreign sponsorship. If there is a terrorism event in Clarion County, the event would be domestic type.

Lone Wolf Extremists

Lone wolf extremists pose a potentially significant threat to both the law enforcement and the public. Lone wolfs have views that are more extreme than others. These individuals can have either international or domestic learnings and could target law enforcement, other public officials, individuals of different races, ethnicity, nationality, gender orientation or religion. Intelligence rarely exits prior to lone wolf attacks except when information is accidentally leaked, or through brazen, intentional releases, which are typically discovered after the fact.

Recent lone wolf attacks have gravitated toward simple schemes and unsophisticated weapons. Much less practice and pre-operational planning is required to carry out attacks using firearms, edged weapons or vehicles.

International terrorism involves groups of individuals whose terrorist activities are foreign-based and/or directed by countries or groups outside the United States or whose activities transcend national boundaries. Examples would be the Al Qaeda and ISIS terrorist networks. These groups have been responsible for several attacks on US interests including the terrorist attacks of September 11, 2001.

Using the acronym **'B-NICE'** we can describe 5 types of terrorist attacks.

- **Biological** – Most likely to occur and like a nuclear attack, can have the greatest impact. Especially to human life. Hardest to detect because the symptoms don't show up right away and many individuals can become infected before they are detected.

  4 Types of Biological Agents and Common Examples:
  Bacteria – Anthrax and Cholera
  Viruses – Small Pox and Ebola
  Rickettsia – Q fever
  Toxins – Botulism, SEB, and Ricin

- **Nuclear/Radiological –** Radiological dispersion is much more likely to occur than a nuclear incident. A nuclear incident can cause the most damage and have the greatest impact. Could be caused by a nuclear bomb attack or an attack on a nuclear facility.

- **Incendiary –** Fire Bombs, Liquid Fuel Bombs (Air Craft), Chemical Reactions.

- **Chemical –** Generally used by government agencies. Can be spread in the form of liquid, vapor, aerosol, solids and gases.

  5 Types of Chemical Agents:
  Riot Control Agents – Tear Gas or Pepper Spray - Affects the eyes and respiratory system.
  Choking Agents – Phosgene or Chlorine - Affects the respiratory system.
  Blood Agents – Hydrogen Cyanide. Affects the respiratory and circulatory systems.
  Nerve Agents – Tabun, Sarin, Soman, and VX - Affects the nervous system
  Blister Agents – Mustard Gas and Lewisite - Causes burns to the skin and internal organs.

- **Explosive** - Most common tool of terrorist. Weapons of choice; dynamite, pipe bombs and car/truck bombs.

- **Cyber-Terrorism** - Another form of terrorism that has emerged recently is Cyber-Terrorism. Cyber-Terrorism is best described by altering the Federal Bureau of Investigation's Definition of terrorism, to include "using computing resources" as another method of intimidation.

  Cyber-Terrorism can be anything from a "Virus"; to outside sources accessing data from any computer system via the internet; to disrupting any or all services provided to the public. Adding to the problem is that the public and private sectors are relatively ignorant of just how much their life depends on computers as well as the vulnerability of those computers.

  In recent years, cyber terrorism has become a larger threat than in years past. 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 appear to be the main goals now. 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 can effectively communicate over long distances without delay. One of the more prominent groups involved in large-scale hacking events recently is the group "Anonymous." They have been known to overtake websites, and alter the content that is presented to the public. 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.

  When considering cyber terrorism or cyber-attack, locations with publicly accessible or shared computer workstations are more vulnerable to malicious internet outages, as open access allows for easier access to shared data and system information.

4.3.17.1 Location and Extent

The Cyber Terrorism has occurred in the County. Many municipalities and organizations are not reporting this type of event. To date the known extent of damages has been low.

4.3.17.2 Range of Magnitude

It is hard to determine at this point what the actual probability of a terrorist attack occurring within the County is. However, it is safe to assume that it is much greater than it was before 09/11/2001. The most likely event in Clarion County is the from a lone wolf attack. Clarion Borough has an annual event which draws up to 250,000 attends on one day. This event is a National Homeland Security Event.

Cyber-Terrorism will continue to impact all jurisdictions and businesses in Clarion County. This type of event remains a high probability.

4.3.17.3 Past Occurrence

Note: Most incidents are not reported to the County. This the list contains information that was reported to the County.

Prior to 9/11/2001, the threat of international terrorism was unheard of in the country, but that has all changed. Surrounding counties nearly became direct targets of an international terrorist attack when high-jacked Flight 93 flew over nearby counties and crashed in Somerset County.

A second wave of terror began a few weeks later when letters, tainted with anthrax, began showing up in Florida, New York, and Washington DC. This second wave of terror hit Clarion County also, with many calls of suspicious substances being found. Clarion County's contracted HazMat Response Team responded to these incidents, but found no legitimate threats. The following is a list of some of the occurrences that have been documented in Clarion County:

2001 White Powder Incidents: In October of 2001 Clarion County had a numerous amounts of white powdery substance calls. The contracted Clarion County HazMat Team responded to incidents in New Bethlehem and Rimersburg for cleanup of the packages. All the incidents were noted to be a hoax.

Reported bomb threats or suspicious package incidents have occurred in the County at schools, health care facilities, county property, businesses and postal facilities.

Although terrorist will usually select their targets based on the impact that the event will make, the reality is that targets of terrorist can include anything, can target anyone and can occur anywhere.

In general, the following is list of potential targets that a terrorist may select:

- Government facilities
- Commercial facilities, particularly multinational or international firms
- Communications Centers (9-1-1)
- Industrial facilities, particularly those storing large quantities of hazardous materials or those involved in military development
- Abortion or Family Planning Clinics or any organization associated with a socially controversial issue
- Utility facilities including power generation plants, dams and water treatment plants
- Law enforcement facilities
- Facilities housing important political or religious figures
- Historical sites
- Transportation infrastructure
- High profile events attracting large amounts of people of VIPs
- Educational facilities, especially colleges and universities
- Storage fields

Cyber-Terrorism has come to national attention with events at major business across the United States. Everything from credit card/banking/personal information being stolen, the disruption of websites, hacking, malware, ransomware and the best know event at SONY.

Clarion County has had municipalities, residents and businesses affected by these events.
Clarion University in December 2017 was hacked by a Phishing scam, some student information was compromised.

4.3.17.4 Future Occurrence

Although the probability of Clarion County being the target of a direct Domestic Terrorist attack is greater than it being the direct target of an International Terrorist Attack, it should be equally prepared for both. It is hard to determine at this point what the actual probability of a terrorist attack occurring within the County is moderate. However, it is safe to assume that it is much greater than it was before 09/11/2001.

Bomb threats or suspicious package incidents will continue to occur in the County.

The vulnerability of Cyber-Terrorism can only be addressed by the users of every individual computer system. Cyber-Terrorism will continue to impact the County, municipalities, schools, residents and businesses in Clarion County. This type of event remains a moderate probability.

4.3.17.5 Vulnerability Assessment

Currently precautions are in place for the County, even doing so, there are always vulnerabilities to cyber-terrorism and lone wolf attacks.

Worst case scenario would be major incident in Clarion County; total damages could exceed 10 million dollars.

4.3.18 Harassment

There are varies types of harassment, bullying, psychological, racial, sexual, stalking, mobbing and hazing.

4.3.18.1 Location and Extent

The type of event can occur anywhere in the County and could have a large impact. There only a few **reported** incidents in the County.

4.3.18.2 Range of Magnitude

From the view point of law enforcement, the crime of harassment has changed dramatically over the past five years. The typical person now has access to and uses a cell phone, laptop, or notebook. These devices vary in capabilities but will generally allow multiple ways for people to interact. This interaction could be directly or indirectly depending on the person's knowledge or ability. This technology is not specific to age, gender, race, etc. It is common place for each member of a family to have one or more of these devices for their own use. With this fact, law enforcement routinely deals with the crime of harassment through the "normal" avenue (kicking, punching, etc.) but now must deal with this crime through technology. Juveniles and or students routinely will "harass" each other by what they write or post to a public or personal site.

4.3.18.3 Past Occurrence

Note: Not all incidents are reported to the County. This list contains information that was reported to the County.

During the past two years five incidents of harassment relating to the use of technology were investigated. These investigations are and will continue to be difficult to investigate and prove to make an arrest.

The school system has had these types of incidents and handles the incidents within their schools. These incidents are not normally reported to the County.

Public Safety Answering Points (9-1-1 Centers) are receiving calls from malicious actor(s) reporting fake emergency situations at a target's address, which triggers an emergency response. This is known as SWATting because the event usually requires the dispatch of a SWAT Team.

In recent years, doxing has become an issue. Doxing involves a malicious actor collecting and releasing a target's personal information, which may include the target's home address, telephone number, email address, social security number, date of birth and family information.

4.3.18.4 Future Occurrence

The probability for this type of event is moderate in the County and will continue to occur.

4.3.18.5 Vulnerability Assessment

The probability of this type of event occurring is high especially with the increased use of the internet and cell phones. Almost all events involve at least 2 people. However, there could be events involving larger groups.

The County, schools and law enforcement need to work together to better report and track these types of incidents.

Worst case scenario would be major incident at a facility; total damages would not be just financial but would include emotional as well, that is hard to put a price on. Financial could exceed millions of dollars.

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 (RF) is a tool used to measure the degree of risk for identified hazards in a planning area. The RF 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 RF system relies mainly on historical data, local knowledge, consensus from the planning team, and information collected through development of the hazard profiles included in Section 4.3. The RF approach produces numerical values that allow identified hazards to be ranked against one another; the higher the RF value, the greater the hazard risk.

RF values were obtained by assigning varying degrees of risk to five categories for each of the hazards profiled in the HMP 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. The weighting factor agreed upon by the planning team is shown in Table 4.4-1. To calculate the RF 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 RF value, as demonstrated in the following example equation:

Risk Factor Value = [(Probability x .30) + (Impact x .30) + (Spatial Extent x .20) + (Warning Time x .10) + (Duration x .10)]

Table 4.4-1 summarizes each of the five categories used for calculating a RF for each hazard. Per the weighting scheme applied, the highest possible RF value is 4.0.

Table 4.4-1: Summary of Risk Factor approach used to rank hazard risk.					
RISK ASSESSMENT CATEGORY	**DEGREE OF RISK**				**WEIGHT VALUE**
	LEVEL	**CRITERIA**		**INDEX**	
PROBABILITY *What is the likelihood of a hazard event occurring in each year?*	**UNLIKELY**	LESS THAN 1% ANNUAL PROBABILITY		**1**	**30%**
	POSSIBLE	BETWEEN 1 & 10% ANNUAL PROBABILITY		**2**	
	LIKELY	BETWEEN 10 &100% ANNUAL PROBABILITY		**3**	
	HIGHLY LIKELY	100% ANNUAL PROBABILTY		**4**	
IMPACT *In terms of injuries, damage, or death, would you anticipate impacts to be minor, limited, critical, or catastrophic when a significant hazard event occurs?*	**MINOR**	VERY FEW INJURIES, IF ANY. ONLY MINOR PROPERTY DAMAGE & 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 DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR MORE THAN ONE DAY.		**2**	
	CRITICAL	MULTIPLE DEATHS/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/INJURIES POSSIBLE. MORE THAN 50% OF PROPERTY IN AFFECTED AREA DAMAGED OR DESTROYED. COMPLETE SHUTDOWN OF CRITICAL FACILITIES FOR 30 DAYS OR MORE.		**4**	
SPATIAL EXTENT *How large of an area could be impacted by a hazard event? Are impacts localized or regional?*	**NEGLIGIBLE**	LESS THAN 1% OF AREA AFFECTED		**1**	**20%**
	SMALL	BETWEEN 1 & 10% OF AREA AFFECTED		**2**	
	MODERATE	BETWEEN 10 & 50% OF AREA AFFECTED		**3**	
	LARGE	BETWEEN 50 & 100% OF AREA AFFECTED		**4**	
WARNING TIME *Is there usually some lead time associated with the hazard event? Have warning measures been implemented?*	**MORE THAN 24 HRS**	SELF-DEFINED	*(NOTE: Levels of warning time and criteria that define them may be adjusted based on hazard addressed.)*	**1**	**10%**
	12 TO 24 HRS	SELF-DEFINED		**2**	
	6 TO 12 HRS	SELF-DEFINED		**3**	
	LESS THAN 6 HRS	SELF-DEFINED		**4**	
DURATION *How long does the hazard event usually last?*	**LESS THAN 6 HRS**	SELF-DEFINED	*(NOTE: Levels of warning time and criteria that define them may be adjusted based on hazard addressed.)*	**1**	**10%**
	LESS THAN 24 HRS	SELF-DEFINED		**2**	
	LESS THAN 1 WEEK	SELF-DEFINED		**3**	
	MORE THAN 1 WEEK	SELF-DEFINED		**4**	

4.4.2. Ranking Results

Using the methodology described in Section 4.4.1, Table 4.4-2 lists the Countywide RF calculated for each of the 18 potential hazards identified in the 2018 Hazard Mitigation Plan update. Hazards identified as high risk have risk factors greater than 2.5. Risk Factors ranging from 2.0 to 2.5 were deemed moderate risk hazards. Hazards with Risk Factors 1.9 and less are considered low risk.

Table 4.4-2: Ranking of hazard types based on RF methodology.							
HAZARD RISK	**HAZARD** Natural (N) OR Human Caused(H)	**RISK ASSESSMENT CATEGORY**					**RISK FACTOR (RF)**
		PROBABILITY	ECONOMIC IMPACT	SPATIAL EXTENT	WARNING TIME	DURATION	
HIGH	Flood, Flash Flood (N)	4	3	3	4	2	3.3
	Wind Storm (N)	4	3	3	4	1	3.2
	Winter Storms (N)	4	3	3	1	4	3.2
	Transportation Accidents (H)	4	2	3	4	1	2.9
	Drought (N)	3	3	3	1	4	2.9
	Emerging Diseases (N)	4	2	2	3	3	2.8
	Subsidence (N)	3	2	3	1	4	2.6
MODERATE	Fire (Wildland) (N)	3	2	3	1	3	2.5
	Hazardous Materials (H)	3	2	2	4	2	2.5
	Water Control (Dams) (H)	2	3	2	1	4	2.4
	Extreme Temperatures (N)	2	2	3	1	4	2.3
	Harassment (H)	4	1	1	4	1	2.2
	Terrorism (H)	3	1	1	4	3	2.1
	Radon (N)	3	1	2	1	4	2.1
LOW	Oil & Gas Wells (H)	2	2	2	1	3	2.0
	Geomagnetic Storm (N)	2	2	2	1	2	1.9
	Earthquakes (N)	2	2	2	1	1	1.8
	Landslide (N)	2	1	2	1	3	1.7

4.4.3. Potential Loss Estimates

Based on various kinds of available data, the Assessment Office using GIS information developed potential loss estimates for each hazard based on a worst case. Estimates provided in this section are based on areas identified by local municipalities, hazard maps and history. 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.

The County parcel data used in this plan was linked to the building tax assessment database for extracting building values. These values are representative of replacement value alone; content loss, functional loss, and displacement cost are not included. Loss estimates were determined by the County tax assessment office for three hazards and by municipalities (see Attachment 8).

4.4.4. Future Development and Vulnerability

Risk and vulnerability to naturally occurring and human caused hazard events are not static. Risk will increase or decrease as county and municipalities see changes in land use and development as well as changes in population. Clarion County is expected to experience a variety of factors that will, in some areas, increase vulnerability to hazards while in other areas, vulnerability may stay static or even be reduced. The main increase in vulnerability will be if well drilling increases and cyber terrorism.

An analysis of land use and development potential will be conducted as a part of the update to the Clarion County Comprehensive Plan. This analysis will include consideration of limiting factors such as environmental sensitivity, unsuitable soils, steep slopes, and state-owned land, and consideration will also be given to the location of existing infrastructure, as well as possible future infrastructure expansions. Even with the additional development in some areas, the county will most likely remain nearly all rural. Stringent floodplain ordinances and subdivision and land-use ordnances along with proper building practices can help reduce vulnerability to hazards in the future.

Table 4.4.4 Future Growth Areas	
Municipality	Location
Clarion Borough	Glass Works Business Park
Clarion Borough	Clarion University
Monroe Township	Trinity Point Development
Monroe Township	Route 68 at Interstate 80 at Exit 62
Paint Township	Route 66 at Interstate 80 at Exit 60

Clarion University Facilities Master Plan Clarion Campus

Clarion University Facilities Master Plan [FMP] of the University's Clarion campus was completed in the Spring of 2014. The FMP establishes a thorough understanding of the University's existing and projected academic, facility, community and cultural needs, and provides a flexible structure for improvements that align capital capacities with Clarion University's goals and needs. The plan includes information on structure replacement/renovation, parking assessment, infrastructure assessment (water, sanitary, storm water and utilities), landscaping needs and special needs.

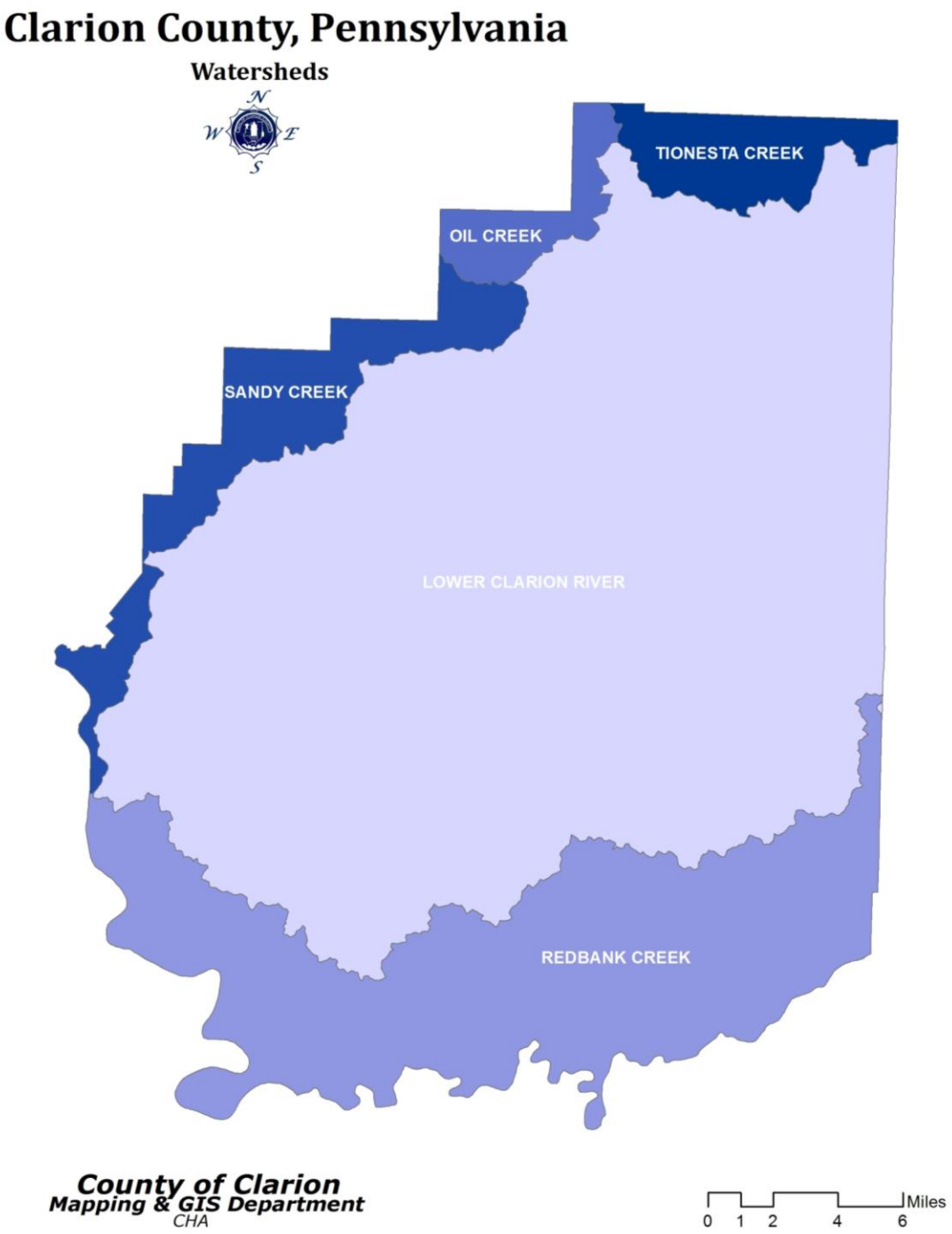
As part of master plan implementation Clarion University officials will follow the current goals/objectives below:

- Review their capital improvement plans to ensure that programmed infrastructure improvements are not in hazardous areas.
- Research possible mitigation projects to reduce flooding, reduce/eliminate sewage leakage and inflow/infiltration problems. Some projects may include reservoirs, retention pools, diversions, channel modification, increase pipe size and storm sewers.
- Protect existing natural resources and open space to improve their flood control function.
- Protect university health, safety and welfare by increasing the awareness of existing and potential hazards and by fostering responsibility in mitigating risks due to those hazards.

Since completion of the Clarion University Facilities Master Plan in the Spring of 2014 the following projects were completed/commenced:

- 2 new student housing units were built in 2015 that accommodate 728 students
- 2 existing dormitories were torn down in 2016 that accommodated 681 students
- Becht Hall & the former Admissions buildings were renovated in 2015 & 2016.
- In 2018 Tippin Gym is being renovated as a Department of General Services Project.

Any future revisions to the Clarion University Master Plan will be forwarded to the Clarion County for review to determine if a potential hazard exists or if it could create a conflict with Clarion Counties current hazard mitigation efforts.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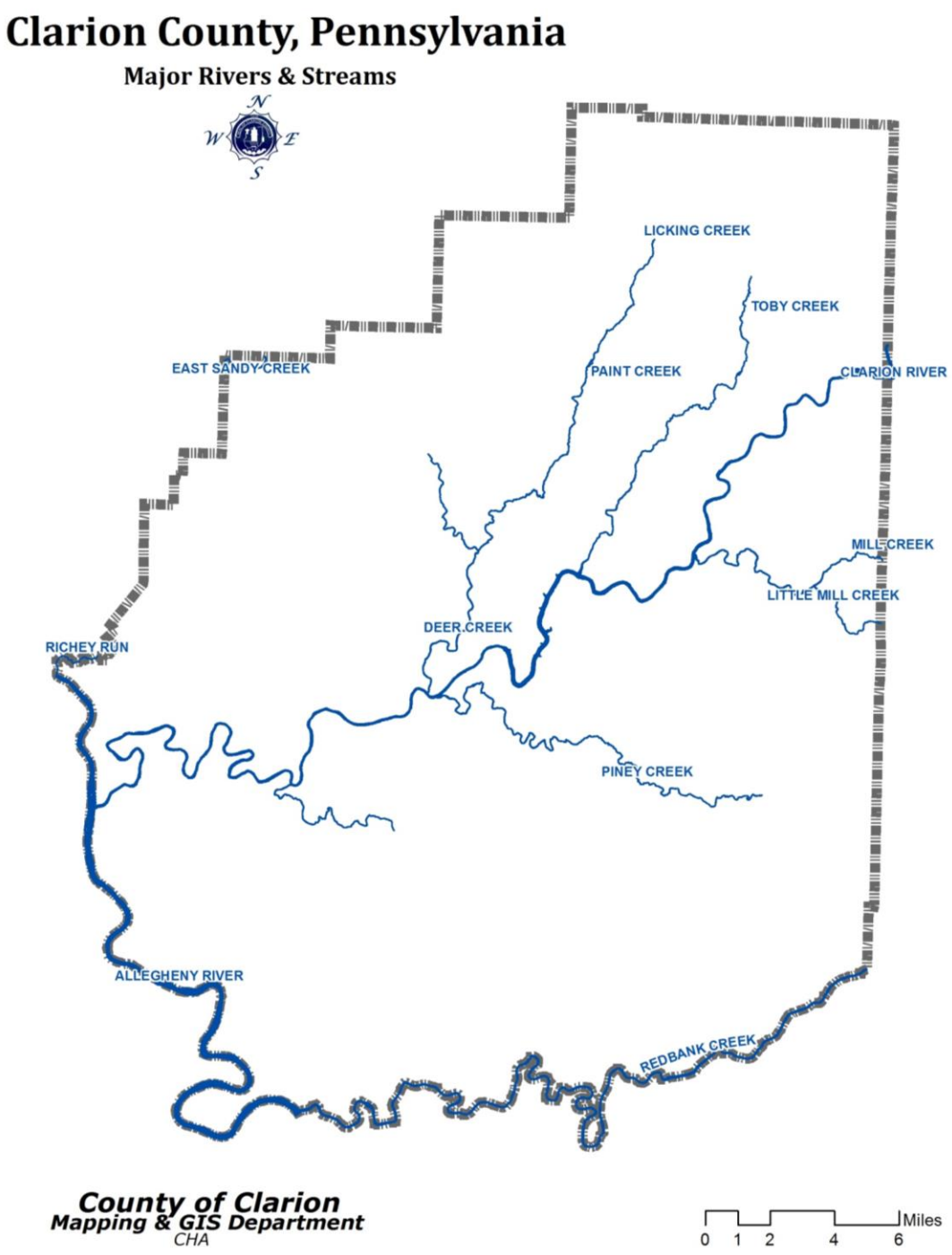
Clarion County, Pennsylvania
Major Rivers & Streams
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PINEY CREEK
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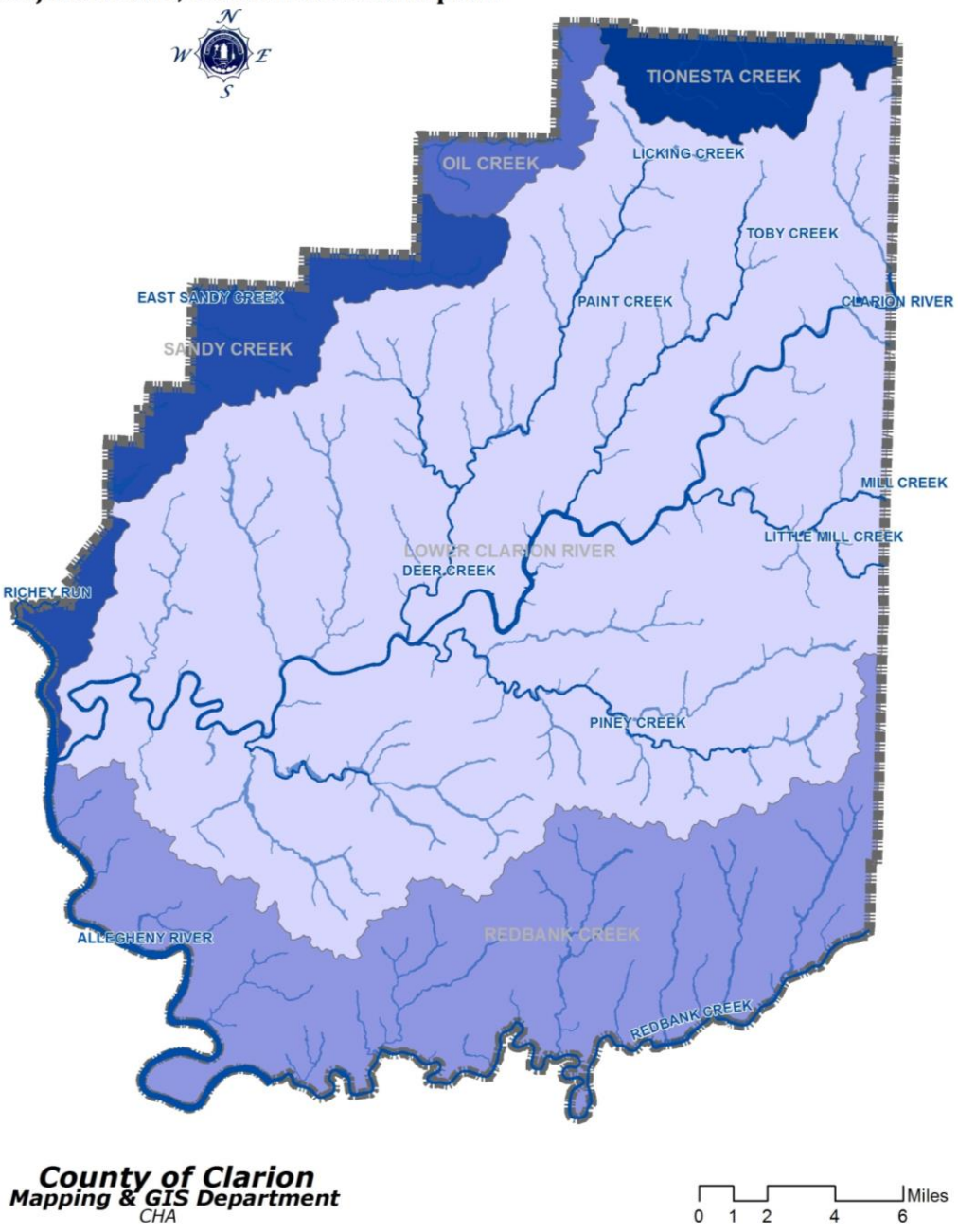
Clarion County, Pennsylvania

Major Streams, Watersheds & Floodplain



Attachment 7
Tornadoes and Windstorms

Year	Type	Comments/Type of Declaration
5/4/2018	Windstorm	Trees down, power outages and property damage.
7/11/17	Tornado EF 0	Trees down and power outages. Damages $10,000
6/19/17	Tornado EF 0	Trees down, power outages and property damage. Damages $35,000
5/1/17	4 Tornados 1(EF1) & 3(EF0) Windstorm	Trees down, power outages and property damage. Damages $60,000
1/12/17	Windstorm	Trees down, power outages and some property damage. Damages $1,500
9/8/16	Windstorm	Trees down, power outages and some property damage. Damages $10,500
8/2516	Windstorm	Trees down, power outages and some property damage. Damages $2,000
7/24/16	Windstorm	Trees down, power outages and some property damage. Damages $5,000
7/3/16	Windstorm	Trees down, power outages and some property damage. Damages $2,500
6/16/16	Windstorm	Trees down, power outages and some property damage. Damages $5,000
9/4/15	Windstorm	Trees down, power outages and some property damage. Damages $3,500
7/19/15	Windstorm	Trees down, power outages and some property damage. Damages $1,000
6/30/15	Windstorm	Trees down, power outages and some property damage. Damages $10,000
6/12/15	Windstorm	Trees down, power outages and some property damage. Damages $25,000
5/31/15	Windstorm	Trees down, power outages and some property damage. Damages $1,000
5/11/15	Windstorm	Trees down, power outages and some property damage. Damages $1,000
7/27/14	Windstorm	Trees down, power outages and some property damage. Damages $25,000
7/7/14	Windstorm	Trees down, power outages and some property damage. Damages $5,000
6/24/14	Windstorm	Trees down, power outages and some property damage. Damages $5,000
6/18/14	Tornado EF 0	Trees down, power outages and some property damage. Damages $25,000
6/18/14	Windstorm	Trees down, power outages and some property damage. Damages $10,000
6/17/14	Windstorm	Trees down, power outages and some property damage. Damages $20,000

Attachment 8
Potential Loss Estimates

Tab 1 - Flooding
Tab 2 - Landslides
Tab 3 – Subsidence

Attachment 8 Tab 1
Potential Loss Estimates Flooding

Jurisdiction	Residential	Commercial	Total
Ashland Township	0	0	0
Beaver Township	$371,582	$6,258	$377,840
Brady Township	0	0	0
Callensburg Borough	0	0	0
Clarion Borough	$330,922	0	$330,922
Clarion Township	$626,844	$192,572	$819,416
East Brady Borough	$27,279	0	$27,279
Elk Township	$54,697	$39,266	$93,945
Farmington Township	$190,604	$579,496	$770,100
Foxburg Borough	$5,823	$1,898,803	$1,904,626
Hawthorn Borough	$102,106	$22,210	$124,316
Highland Township	$993,615	0	$993,615
Knox Borough	0	0	0
Knox Township	$32,023	$1,814	$33,837
Licking Township	$28,893	0	$28,893
Limestone Township	$1,015,655	$397,898	$1,413,553
Madison Township	$300,774	0	$300,774
Millcreek Township	$176,623	0	$176,623
Monroe Township	$378,718	$122,218	$500,936
New Bethlehem Borough	$1,979,657	$25,005,397	$26,985,054
Paint Township	$1,017,122	0	$1,017,122
Perry Township	$1,086,445	0	$1,086,445
Piney Township	$221,847	$11,172,557	$11,394,404
Porter Township	$34,477	$477,993	$512,470
Redbank Township	$801,502	$952,261	$1,753,763
Richland Township	$45,279	0	$45,279
Rimersburg Borough	0	0	0
Salem Township	0	0	0
Shippenville Borough	0	0	0
Sligo Borough	$578,670	0	$578,670
St. Petersburg Borough	0	0	0
Strattanville Borough	0	0	0
Toby Township	$59,025	$1,243,537	$1,302,562
Washington Township	$69,557	0	$69,557
TOTALS	$10,529,739	$42,112,280	$52,642,019

Note: These Attachments are based on values of the structures in 2017. Does not include structure contents.

Attachment 8 Tab 2
Potential Loss Estimates Landslides

Jurisdiction	Residential	Commercial	Total
Ashland Township	0	0	0
Beaver Township	0	0	0
Brady Township	0	0	0
Callensburg Borough	0	0	0
Clarion Borough	$467,906	0	$467,906
Clarion Township	0	0	0
East Brady Borough	0	0	0
Elk Township	0	0	0
Farmington Township	0	0	0
Foxburg Borough	$82,985	$33,156	$116,141
Hawthorn Borough	0	0	0
Highland Township	0	0	0
Knox Borough	0	0	0
Knox Township	0	0	0
Licking Township	0	0	0
Limestone Township	0	0	0
Madison Township	0	0	0
Millcreek Township	0	0	0
Monroe Township	0	0	0
New Bethlehem Borough	0	0	0
Paint Township	0	0	0
Perry Township	$350,219	$33,729	$383,948
Piney Township	0	0	0
Porter Township	0	0	0
Redbank Township	0	0	0
Richland Township	0	0	0
Rimersburg Borough	0	0	0
Salem Township	0	0	0
Shippenville Borough	0	0	0
Sligo Borough	0	0	0
St. Petersburg Borough	0	0	0
Strattanville Borough	0	0	0
Toby Township	0	0	0
Washington Township	0	0	0
TOTALS	**$901,110**	**$66,885**	**$967,995**

Note: These Attachments are based on values of the structures in 2017. Does not include structure contents.

Attachment 8 Tab 3
Potential Loss Estimates Subsidence
Information below is based on known deep mine maps.

Jurisdiction	Residential	Commercial	Total
Ashland Township	0	8,492,796	8,492,796
Beaver Township	2,374,637	0	2,374,637
Brady Township	0	0	0
Callensburg Borough	0	0	0
Clarion Borough	4,996,851	291,665,528	296,662,379
Clarion Township	4,077,714	2,283,491	6,361,205
East Brady Borough	0	0	0
Elk Township	0	0	0
Farmington Township	0	0	0
Foxburg Borough	0	0	0
Hawthorn Borough	0	0	0
Highland Township	0	0	0
Knox Borough	0	0	0
Knox Township	0	0	0
Licking Township	52,708	10,077	62,785
Limestone Township	0	0	0
Madison Township	10,463,135	5,958,524	16,421,659
Millcreek Township	0	0	0
Monroe Township	237,922	0	237,922
New Bethlehem Borough	0	0	0
Paint Township	0	0	0
Perry Township	0	0	0
Piney Township	564,981	146,106	711,087
Porter Township	140,003	5,658	145,661
Redbank Township	152,888	315,229	468,117
Richland Township	0	0	0
Rimersburg Borough	10,763,633	8,361,310	19,124,943
Salem Township	0	0	0
Shippenville Borough	0	0	0
Sligo Borough	0	0	0
St. Petersburg Borough	1,925,612	167,692	2,093,304
Strattanville Borough	424,113	4,022,261	4,446,374
Toby Township	2,865,996	519,405	3,385,401
Washington Township	29,354,012	321,949,016	351,303,028
TOTALS	**68,394,175**	**643,897,093**	**712,291,268**

Note: These Attachments are based on values of the structures in 2017. Does not include structure contents.

Attachment 9
Hazards by Jurisdiction

Greater than (>), less than (<), equal to (=), or not applicably (n/a) to the county risk factor

Jurisdiction	Flood Flash Flood, Ice Jam	Tornado, Wind Storm	Winter Storm	Transportation Accidents	Drought	Biological Hazards	Subsidence Sinkhole	Fires Wildland	Hazardous Materials Incidents	Dams	Extreme Temperatures	Harassment	Terrorism	Radon	Oil & Gas Wells	Solar Weather	Earthquake	Landslide
Ashland Twp.	<	=	=	=	=	=	=	=	<	n/a	=	=	=	=	=	=	=	<
Beaver Twp.	=	=	=	=	=	=	>	=	>	n/a	=	=	=	=	=	=	=	=
Brady Twp.	<	=	=	<	=	=	=	=	<	=	=	=	=	=	<	=	=	=
Callensburg Boro	<	=	=	<	=	=	<	<	<	=	=	=	=	=	<	=	=	<
Clarion Boro	=	=	=	=	<	=	>	<	>	=	=	=	=	=	<	=	=	=
Clarion Twp.	=	=	=	=	=	=	>	=	>	=	=	=	=	=	=	=	=	<
East Brady Boro	=	=	=	=	<	=	=	<	>	>	=	=	=	=	<	=	=	<
Elk Twp.	<	=	=	=	=	=	<	=	=	n/a	=	=	=	=	=	=	=	=
Farmington Twp.	<	=	=	=	=	=	<	=	>	=	=	=	=	=	=	=	=	<
Foxburg Boro	=	=	=	<	=	=	<	<	=	>	=	=	=	=	<	=	=	=
Hawthorn Boro	=	=	=	=	=	=	<	<	=	n/a	=	=	=	=	<	=	=	<
Highland Twp.	=	=	=	<	=	=	=	=	<	=	=	=	=	=	=	=	=	<
Knox Boro	<	=	=	=	<	=	<	<	=	n/a	=	=	=	=	<	=	=	<
Knox Twp.	=	=	=	=	=	=	=	=	=	n/a	=	=	=	=	=	=	=	<
Licking Twp.	=	=	=	<	=	=	=	=	<	=	=	=	=	=	=	=	=	<
Limestone Twp.	=	=	=	=	=	=	=	=	=	n/a	=	=	=	=	>	=	=	<
Madison Twp.	=	=	=	<	=	=	=	=	<	=	=	=	=	=	=	=	=	=
Millcreek Twp.	=	=	=	<	=	=	<	=	<	=	=	=	=	=	=	=	=	=
Monroe Twp.	<	=	=	>	=	=	=	=	>	=	=	=	=	=	=	=	=	<
New Bethlehem Boro	=	=	=	=	<	=	<	<	>	n/a	=	=	=	=	<	=	=	<

Jurisdiction	Flood Flash Flood, Ice Jam	Tornado, Wind Storm	Winter Storm	Transportation Accidents	Drought	Biological Hazards	Subsidence Sinkhole	Fires Wildland	Hazardous Materials Incidents	Dams	Extreme Temperatures	Harassment	Terrorism	Radon	Oil & Gas Wells	Solar Weather	Earthquake	Landslide
Paint Twp.	<	=	=	=	=	=	<	=	=	<	=	=	=	=	=	=	=	<
Perry Twp.	=	=	=	<	=	=	=	=	<	=	=	=	=	=	=	=	=	=
Piney Twp.	<	=	=	=	=	=	=	=	<	=	=	=	=	=	=	=	=	=
Porter Twp.	=	=	=	=	=	=	=	=	<	n/a	=	=	=	=	=	=	=	=
Redbank Twp.	=	=	=	=	=	=	=	=	<	n/a	=	=	=	=	=	=	=	=
Richland Twp.	<	=	=	=	=	=	=	=	<	=	=	=	=	=	=	=	=	<
Rimersburg Boro	<	=	=	<	=	=	=	<	<	n/a	=	=	=	=	<	=	=	<
Salem Twp.	=	=	=	=	=	=	<	=	<	n/a	=	=	=	=	=	=	=	<
Shippenville Boro	<	=	=	=	<	=	<	<	=	n/a	=	=	=	=	<	=	=	<
Sligo Boro	=	=	=	=	<	=	<	<	=	n/a	=	=	=	=	<	=	=	<
St. Petersburg Boro	<	=	=	<	<	=	>	<	<	n/a	=	=	=	=	<	=	=	<
Strattanville Boro	<	=	=	=	<	=	>	<	=	n/a	=	=	=	=	<	=	=	<
Toby Twp.	=	=	=	<	=	=	>	=	<	n/a	=	=	=	=	>	=	=	=
Washington Twp.	<	=	=	=	=	=	>	=	=	n/a	=	=	=	=	>	=	=	<

5. Capability Assessment

5.1. Update Process Summary

In this section, Clarion County has identified the resources and capabilities that are currently in place to reduce the risk from their identified hazards. A capability assessment, put simply, means looking at what you are doing, what you are not doing, what you can do, and even what you are doing wrong to reduce your communities' risks from hazards. Capability assessment looks at government programs and policies, regulations and ordinances, existing emergency plans, personnel and equipment, and the like. Capability assessment also looks at the resources available to local communities to reduce disaster risks. Resources can be divided into five categories:

Clarion County's Resources

1. Human Resources – police, fire, EMS, emergency management, utility providers, medical assistance personnel, teachers, clergy, human service workers, etc.

2. Physical Resources – equipment, vehicles, public lands, facilities and buildings, etc.

3. Technological Resources – Early warning systems, weather alert radios, stream-level monitoring, etc. Use of Geographic Information System (GIS) can produce sophisticated map images. When coupled with other information databases, GIS provides a wealth of visual and factual information for disaster planning, response and recovery. The Internet is home to hundreds of web pages and home sites related to all types of disaster, emergency management and hazard mitigation as well as PEMA (www.pema.state.pa.us) and FEMA (www.fema.gov).

4. Informational Resources – Public awareness and education efforts
   - National Weather Services – Storm ready programs
   - American Red Cross – Disaster Education
   - Salvation Army
   - VOAD groups
   - Business groups e.g. Chamber of Business & Industry
   - Existing public outreach of EMA's
   - LEPC
   - Regional Groups
   - School District Plans
   - Brochures on hazards to be distributed at various locations throughout the County
   - U.S. Department of Agriculture

5.2. Capability Assessment Findings

A capability assessment involves an evaluation of the County regarding its governmental structure, political framework, legal jurisdiction, fiscal status, policies and programs, regulations and ordinances, and resource availability. These factors are evaluated with respect to their strengths and weaknesses in preparing for, responding to, and mitigating the effects of the profiled natural hazards. By doing so, the reasonable conclusions as to the relative appropriateness of various hazard mitigation action items that may be identified as part of the hazard mitigation strategy. As such, the capability assessment plays an important role in the hazard mitigation planning process.

Within Pennsylvania, no county-level capability assessment would be complete without considering the constituent municipalities. Local municipalities have their own governing body, enforce their own rules and regulations, purchase their own equipment, maintain their own infrastructure, and manage their own resources. In many ways, the County is only as good as the capabilities of its constituent municipalities. As such, this capability assessment does not consider Clarion County as a lone entity,

but evaluates it considering the various characteristics and differences of and between its 34 constituent municipalities and Clarion University.

5.2.1. Planning and Regulatory Capability

There are numerous existing regulatory and planning mechanisms in place at the Commonwealth, county, regional, and municipal level of government that support hazard mitigation planning efforts. These tools include the Commonwealth of Pennsylvania Standard All-Hazard Mitigation Plan, local floodplain management ordinances, the Clarion County Comprehensive Plan, the Clarion County Stormwater Management Plan, County Emergency Operation Plans, local zoning ordinances, and local subdivision and land development ordinances. These mechanisms were discussed at HMT meetings, municipal meetings and public meetings held on specific documents.

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. The subsections below provide details about how these tools are implemented in Clarion County.

Some of the most important planning and regulatory capabilities that can be utilized for hazard mitigation include comprehensive plans, transportation plans, building codes, floodplain ordinances, subdivision and land development ordinances, and zoning ordinances. These tools provide mechanisms for the implementation of adopted mitigation strategies.

Citizens Guide to Disaster Preparedness Brochures

The Clarion County Planning Commission has created brochures that deal with disaster preparedness. The brochures cover a variety of topics (winter driving, landslides, terrorism, family disaster supply kit, house and building fires, etc.) that list what to do and how to prepare if impacted by a hazard or disaster. Clarion County plans to make these brochures available on the County DPS website and at municipal buildings, libraries, festivals, township conventions, schools, miscellaneous outreach programs, etc.

Emergency Operations Plan (EOP)

An Emergency Operations Plan is an all-hazard plan developed for use by county government departments and agencies to ensure a coordinated and effective response to natural occurring or human caused disasters that may occur in Clarion County. The plan is organized to correspond to the four phases of emergency management; mitigation, preparedness, response, and recovery. Clarion County Emergency Operations Plan was last adopted in February 2018. All 34 municipalities have adopted the County plan however all must have a Notification/Resource Manual and implementing procedures.

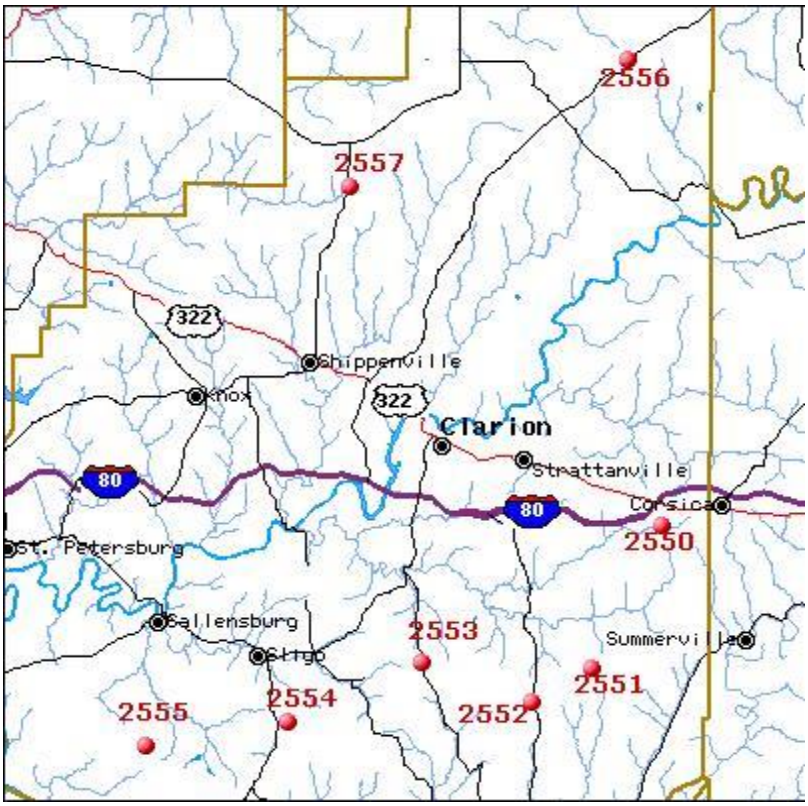
Special Hazards Plans

Clarion County has developed specific plans for many hazards that could impact the County. These plans work in conjunction with the County Emergency Operations Plan. Plans include Continuity of Government/Operations, Dam, Debris Management, Extreme Temperature, Hazardous Materials, Severe Weather, Unconventional Wells and Special Events.

Integrated Flood Observing and Warning System (IFLOWS)

Clarion County has 8 Integrated Flood Observing and Warning System (IFLOWS) Rain Gauge locations that monitor precipitation throughout the County. This data can be used to analyze rain and flood events.

The below is a list of IFLOWS Rain Gauges within Clarion County and a map showing each gauge location within the County.



GAUGE NAME	ID#
Corsica 1sw	2550
Crates	2551
Snug Harbor	2552
Curllsville	2553
Meyers Hill	2554
Toby Twp.	2555
Crown	2556
Fryburg-Marble	2557

Building Codes

The adoption of various construction, property maintenance and fire prevention codes are critical for quality construction and safety reasons. Therefore, the building code is increasingly recognized as an indispensable tool to promote the public health, safety and welfare through the establishment of minimum building/construction standards.

The building code is the basic regulation for new construction in a community. It also regulates the expansion, alteration and repair of existing structures. It includes requirements for the various special facilities and equipment, which may be placed in buildings, such as air conditioning, electrical, plumbing, heating, and other facilities, and elevators. Even though the building code appears to be complex, its adoption, implementation and enforcement enhance solid community development.

When properly adopted, administered and enforced, the building code can increase the quality of housing and can also promote the improvement and rehabilitation of older sections of a community.

The Uniform Construction Code (UCC) Administration and Enforcement Regulation was approved by the Attorney General and was published in the January 10, 2004 Pennsylvania Bulletin. Publication of the administrative and enforcement regulation means that the municipal election period for enforcement, also known as the opt in/opt out period was set. All Clarion County municipalities opted in for total enforcement.

Zoning Ordinance & Subdivision Ordinance

Clarion County has an Airport Zoning Ordinance and a Subdivision and Land Development Ordinance (SALDO). The Airport Zoning Ordinance is not a traditional zoning ordinance. Instead it controls the height of structures in the flight path to the runways at the Clarion County Airport. It also restricts the location of landfills in immediate vicinity of the Airport (elimination of bird strikes). The SALDO speaks more to the way in which raw land is physically prepared for development. How these ordinances function and how well they perform are vital to any overall land use recommendations, which are contained in the Clarion County Comprehensive Plan. Four out of 34 municipalities in Clarion County have their own zoning ordinance.

The SALDO is effective in achieving well planned new residential and commercial developments to insure the provision of adequate community facilities, public utilities, and streets plus an acceptable level of subdivision layout and design. Two out of 34 municipalities in Clarion County have their own subdivision ordinance the remaining fall under the County ordinance.

Clarion County Comprehensive Plan, 2004

Clarion County will be going out to bid to update the current plan in 2018. As part of that plan update the current Hazard Mitigation Plan will be reviewed to ensure to incorporate mitigation actions.

Clarion County currently has a Comprehensive Plan, which is simply a formal documented policy guide for the physical development of the County. It is an expression of how a county sees itself in the future, and a blueprint of how the County will achieve the future. Clarion County's Comprehensive Plan includes a variety of topics such as land use planning (subdivision and zoning ordinances), housing statistics, sanitary sewer project priorities, community facilities, recreation, libraries, museums schools, health and safety (fire protection, hospitals), physical environment description, energy conservation, transportation, and much more that can be used to help Clarion County prosper and grow.

Comprehensive plans and land use plans define how a community should be developed (and where development should not occur). Use of the land can be designed per the land's hazards, such as reserving flood prone areas for parks, ball fields, golf courses, wildlife reservation areas, or similar uses.

The Clarion County Comprehensive Plan has been adopted to help define these issues. Sixteen of thirty-four municipalities within Clarion County have adopted their own, or joint plans, including Clarion Borough; Callensburg Borough and Licking Township (jointly); Foxburg Borough, Richland Township and St. Petersburg Borough (jointly); Sligo and Rimersburg Boroughs, Toby, Madison and Piney Townships (jointly); Limestone Township; Monroe Township; New Bethlehem Borough; and Paint Township.

A plan generally has limited authority. It reflects what the community would like to see happen. Its function is that it guides other local measures, such as capital improvement programs, zoning ordinances, and subdivision ordinances.

Among the community objectives listed in the plan are three related to prevention and control of development within area subject to hazards, including floods. These objectives are listed below:

1. Encourage the extension of public utilities where economically possible and employ utility extensions as a means of guiding and controlling future development patterns.
2. Remove and prevent dilapidated housing, buildings and associated environmental characteristics.
3. Coordinate local and county planning efforts and expenditures with the goal being the controlled and orderly growth and development of Clarion County and its municipalities.

The plan recommends that the municipalities that use floodplain zoning (instead of zoning) to prohibit or regulate building within the FEMA 100-year floodplain (or at least within the floodway).

PA CleanWays

PA CleanWays' mission is to empower people to eliminate illegal dumping and littering in Pennsylvania.

Types of projects include: stream bank restoration, habitat improvements, education for watershed group, education for public, education for other audiences, fundraising, grant writing, public and media relations, partnership development, mapping, watershed or non-point pollution assessment.

PA Organization for Watersheds and Rivers

POWR is dedicated to the protection, sound management and enhancement of the Commonwealth's rivers and watersheds and to the empowerment of local organizations with the same commitment.

Types of projects include: education for watershed group, education for public, education for other audiences, public and media relations, and partnership development.

PA Rivers Resource Advisory Council

Types of projects include: stream bank restoration, stream channel restoration, habitat improvement, riparian buffer restoration, riparian buffer conservation, stream bank fencing, agricultural BMP's, abandoned mine drainage passive and active treatment, storm drain stenciling, education for watershed group, education for general public, education for other audiences, fundraising, grant writing, public and media relations, partnership development, keep your group going, watershed planning, community visioning, mapping, GIS development, GIS use, watershed or non-point pollution assessment, water monitoring (chemical and physical), water monitoring (biological), data analysis, land use decision making, storm water management, lake management and BMP design and selection.

Pennsylvania Biodiversity Partnership

The Pennsylvania Biodiversity Partnership works to conserve biodiversity statewide by promoting communication and cooperation among a broad spectrum of stakeholders, both public and private. Types of projects include education for public.

Rivers, Bays, and Oceans

Types of projects include: stream bank restoration, stream channel restoration, habitat improvement, riparian buffer restoration, riparian buffer conservation, stream bank fencing, agricultural BMP's, abandoned mine drainage passive and active treatment, storm drain stenciling, education for watershed group, education for general public, education for other audiences, fundraising, grant writing, public and media relations, partnership development, keep your group going, watershed planning, community visioning, mapping, GIS development, GIS use, watershed or non-point pollution assessment, water monitoring (chemical and physical), water monitoring (biological), data analysis, land use decision making, storm water management, lake management and BMP design and selection.

Watershed Assistance Center Western Pennsylvania Conservancy

Types of projects include: stream bank restoration, stream channel restoration, habitat improvement, riparian buffer restoration, riparian buffer conservation, stream bank fencing, agricultural BMP's, abandoned mine drainage passive and active treatment, storm drain stenciling, education for watershed group, education for general public, education for other audiences, fundraising, grant writing, public and media relations, partnership development, keep your group going, watershed planning, community visioning, mapping, GIS development, GIS use, watershed or non-point pollution assessment, water monitoring (chemical and physical), water monitoring (biological), data analysis, land use decision making, storm water management, lake management and BMP design and selection.

Department of Environmental Protection (DEP) Growing Greener Grants

The state's Growing Greener Program includes initiatives to preserve farmland and protect open space; eliminate the maintenance backlog in State Parks; clean up abandoned mines and restore

watershed; and provide new and upgraded water and sewer systems. PA DEP is involved in Growing Greener projects that involve watershed restoration, which include bank stabilization and stream restoration projects.

Voluntary Organizations Active in Disaster (VOAD)

The mission of the Northwestern Pennsylvania Regional VOAD is to be a consortium of the organizations, which will foster more effective service to those imperiled, or impacted, by disaster through cooperation in the mitigation (encouraging governmental actions for disaster prevention and/or limitation) and response (aid to disaster effected persons). This organization is to coordinate and educate agencies and facilitate communications between them in reaching the common goal. This organization takes no role in providing direct services to anyone. Direct services are provided by the member organizations.

School Emergency Plans

We currently have received plans for all 7 districts, 3 private schools and Clarion County Career Center.

Volunteer Organizations

Clarion County currently has 16 volunteer fire departments and 5 EMS Companies that assist during and after a disaster. The County human service agencies and religious organizations in Clarion County will also assist after a disaster.

Clarion County Airport Zoning Ordinance

Ours is not a typical zoning ordinance. It is meant to protect the area around the airport, the flight paths and runways. Basically, it controls the height of buildings and communications towers in the flight paths. It also regulates landfills (bird strikes).

Open Space Preservation

Pennsylvania's natural resources are significant factors in our environmental health, economic vitality and quality of life for Clarion County residents. Greenways, waterways, wetlands and other types of natural areas function as valuable resources for open space, wildlife habitat, water protection, recreation and tourism.

Open space preservation is designed to keep the flood plain free from development which could contribute to flooding. Land use and capital improvement plans should identify area to be preserved by acquisition and other means, such as purchasing an easement. Easements allow the owner to develop and use private property, but property taxes are reduced or a payment is made to the owner if the owner agrees to not build on the flood prone part or the part set aside in the easement.

Floodplain Development Regulations

The NFIP sets minimum requirements for subdivision regulations and building codes for communities participating in the NFIP (see Attachment 10). These are usually spelled out in a separate ordinance. In addition to the minimum federal requirements, the Pennsylvania Flood Plain Management Act (Act 166) of 1978 sets some more restrictive standards. Construction of hospitals, nursing homes, jails and mobile home parks in the floodplain are discouraged and require municipal approval.

Act 166 prohibits development that "may endanger human life" from the floodway. Such development includes the production or storage of hazardous and radioactive materials. Such development can be permitted in the floodplain outside of the floodway provided it is protected to a level 1.5 foot above the BFE. Act 166 also provides financial assistance to communities for preparation, administration and enforcement of local floodplain management provisions and ordinances.

Building Codes and Enforcement

The adoption of various construction, property maintenance and fire prevention codes are critical for quality construction and safety reasons. Therefore, the building code is increasingly recognized as an indispensable tool to promote the public health, safety and welfare through the establishment of minimum building/construction standards.

The building code is the basic regulation for new construction in a community. It also regulates the expansion, alteration and repair of existing structures. It includes requirements for the various special facilities and equipment, which may be placed in buildings, such as air conditioning, electrical, plumbing, heating, and other facilities, and elevators. Even though the building code appears to be complex, its adoption, implementation and enforcement enhance solid community development. When properly adopted, administered and enforced, the building code can increase the quality of housing and can also promote the improvement and rehabilitation of older sections of a community. The Uniform Construction Code (UCC) Administration and Enforcement Regulation was approved by the Attorney General and was published in the January 10, 2004 Pennsylvania Bulletin. Publication of the administrative and enforcement regulation means that the municipal election period for enforcement, also known as the opt in/opt out period is set. All Clarion County municipalities opted in for total enforcement (see Attachment 11). Currently all 34 municipalities use a contractor to do inspections.

Preventive measures are designed to keep problems from beginning or getting worse. The use of known hazard areas, like floodplains for example, can be limited through planning, land acquisition, or regulation. These activities are usually administered by building, zoning, planning, and/or code enforcement officials. Some of these activities include Planning and Zoning, Subdivision and Land Development Regulations, Open Space Preservation, Building Codes and Enforcement, Storm Water Management, and Drainage System Maintenance.

Community Rating System

In addition to the National Flood Insurance Program (NFIP) municipalities are eligible to participate in the NFIP's Community Rating System (CRS). Under the CRS, policyholders can receive premium discounts of 5 to 45 percent as their cities and towns adopt more comprehensive flood mitigation measures. Currently there are no municipalities participating in this program.

5.2.2. Administrative and Technical Capability

Administrative capability is described by an adequacy of departmental and personnel resources for the implementation of mitigation-related activities. Technical capability relates to an adequacy of knowledge and technical expertise of local government employees or the ability to contract outside resources for this expertise to effectively execute mitigation activities. Common examples of skill sets and technical personnel needed for hazard mitigation include: planners with knowledge of land development/management practices, engineers or professionals trained in construction practices related to buildings and/or infrastructure (e.g. building inspectors), planners or engineers with an understanding of naturally occurring and/or human caused hazards, emergency managers, floodplain managers, land surveyors, scientists familiar with hazards in the community, staff with the education or expertise to assess community vulnerability to hazards, personnel skilled in geographic information system, resource development staff or grant writers, fiscal staff to handle complex grant application processes (see Attachment 12).

Based on assessment results, municipalities in Clarion County have low-to-moderate administrative and technical staff needed to conduct hazard mitigation-activities. There seems to be sufficient emergency management staff across the County and most municipalities have engineering capabilities via contractors. All municipalities in Clarion County have an identified emergency

management coordinator (EMC), though seven (7) EMCs share duties between two or more municipalities.

County Agencies:

Board of Commissioners - The Board of County Commissioners constitutes the chief governing body of the county. Statutory authority of the commissioners is primarily of an administrative nature with legislative or policy-making powers. The County Commissioners are vested with selective policy-making authority to provide certain local services and facilities on a county-wide basis. Administrative powers and duties of the County Commissioners encompass registration and elections, assessment of persons and property, human services, veterans' affairs, appointment of county personnel and fiscal management. The board is responsible for the creation and management of the annual budget that includes the determination of how monies are to be spent and how monies are to be raised. The Commissioners must work with row officers and other officials to ensure that all county operations function smoothly and that the citizens of the county receive needed services.

Emergency Management Agency - Coordinate Countywide emergency response functions; collect/share/analyze/disseminate information; track resources; develop emergency plans and coordinate and provide training programs.

GIS Department - GIS Department is responsible for developing, implementing and editing the County's GIS data layers; it is also responsible for all deed transfers for land surfaces, placement of subdivisions on maps for taxing purposes, creating and maintaining the 9-1-1 address database, and managing data workflow as well as quality control and quality assurance of County's data.

Planning Department - The Clarion County Department of Planning is responsible for land development, commercial development and land subdivision plan review and approval. Assist local communities and emergency services with preparation of grant applications. Over sight of the Community Development Block Grant (CDBG) programs and county recycling program.

Other local organizations that could act as partners include the Clarion County Conservation District, the Penn State Cooperative Extension and County Economic Development staffs.

Commonwealth agencies which can provide technical assistance for mitigation activities include, but are not limited to:

- Pennsylvania Department of Community and Economic Development
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Department of Environmental Protection
- Pennsylvania Department of Transportation
- Pennsylvania Department of Health
- Pennsylvania State Police

Federal agencies which can provide technical assistance for mitigation activities include, but are not limited to:

- Army Corp of Engineers
- Department of Housing and Urban Development
- Department of Agriculture
- Economic Development Administration
- Emergency Management Institute
- Environmental Protection Agency
- FEMA
- FAA

- Small Business Administration

5.2.3. Financial Capability

The decision and capacity to implement mitigation-related activities is often strongly dependent on the presence of local financial resources. While some mitigation actions are less costly than others, it is important that money is available locally to implement policies and projects. Financial resources are particularly important if communities are trying to take advantage of Commonwealth or federal mitigation grant funding opportunities that require local-match contributions. **Based on survey results, most municipalities within Clarion County perceive fiscal capability to be limited.**

The Pennsylvania Municipalities Financial Recovery Act (Act 47 of 1987) identified fiscally distressed municipalities based on established criteria, and authorized the PA DCED to assist in developing financial recovery plans in these areas. Analysis of the Act 47 fiscally distressed municipality list indicated that none of Clarion County's municipalities were identified as being fiscally distressed according to the established rating criteria.

Though the smaller, less populous municipalities do not have sufficient budgets to do costly mitigation projects without financial assistance, this does not preclude these municipalities from participating in hazard mitigation activities. Cooperative arrangements, coordinated efforts, and resource efficiency may serve as effective avenues for overcoming fiscal constraints and accomplishing hazard mitigation objectives at the local level.

Financial status is not the only factor in determining hazard mitigation capability. There are also numerous partnering opportunities and grant programs available to assist in offsetting the expenses of local hazard mitigation efforts. Under the Pennsylvania Department of Environmental Protection (PA DEP) Growing Greener grant program there are other agencies and associations available for municipalities to partner with to accomplish hazard mitigation activities.

Commonwealth programs which may provide financial support for mitigation activities include, but are not limited to:

- 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 (LWCF)
- 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 (PIB) Loan,
- Pennsylvania Infrastructure Investment Authority (PENNVEST), and
- Pennsylvania Redevelopment Assistance Capital Program (RACP).

Federal programs which may provide financial support for mitigation activities include, but are not limited to:

- Department of Commerce (DOC)/Economic Development Authority (EDA) Construction Grant Program
- Department of Energy Weatherization Assistance Program
- Department of Homeland Security Grant Program (HSGP)
- Department of Transportation/Federal Highway Administration Emergency Relief Program
- DOC/EDA Planning Grants
- DOC/EDA Revolving Loan Fund
- DOC/EDA Technical Assistance Grants
- FEMA Community Assistance Program – State Support Services Element (CAP-SSSE)
- FEMA Community Disaster Loan Program
- FEMA Community Rating System
- FEMA Emergency Management Performance Grants (EMPG)
- FEMA Environmental Planning and Historic Preservation Program (EHP)
- FEMA Flood Mitigation Assistance Program
- FEMA Hazard Mitigation Grant Program (HMGP)
- FEMA Individuals and Households Program (IHAP)
- FEMA National Dam Safety Program
- FEMA National Flood Insurance Program
- FEMA Pre-Disaster Mitigation Program
- FEMA Public Assistance Program (PA)
- FEMA Regional Catastrophic Preparedness Grant Program
- FEMA Repetitive Flood Claims Program (RFC)
- FEMA Severe Repetitive Loss Grant Program
- Housing and Urban Development (HUD) 5-H Homeownership Program
- HUD Community Development Block Grants (CDBG)
- HUD Community Development Block Grant Disaster Recovery Program (CDBG-DR)
- HUD Disaster Housing Assistance Program
- HUD/Federal Housing Administration (FHA) Title 1 Home Repair Loan Program
- HUD/FHA Section 203(h) Mortgage Insurance for Disaster Victims
- HUD/FHA Section 203(k) Rehabilitation Mortgage Insurance Program
- HUD Partnership for Advancing Technology in Housing
- HUD Section 108 Loan Guarantee Programs
- Internal Revenue Service Casualty Loss-Special Disaster Provisions
- National Oceanic and Atmosphere Administration (NOAA) Storm-Ready Program
- Natural Resources Conservation Service (NRCS) easement programs
- Small Business Administration Disaster Loan Programs
- United States Army Corps of Engineers (USACE) General Investigation (GI)
- USACE Continuing Authorities Program
- USACE Flood Plain Management Services Program (FPMS)
- USACE Inspection of Completed Works Program (ICW)
- USACE National Levee Safety Program
- USACE Planning Assistance to States
- USACE Rehabilitation and Inspection Program (RIP)
- United States Department of Agriculture (USDA)/Farm Service Agency (FSA) Emergency Conservation Program
- USDA Emergency Conservation Program
- USDA/FSA Emergency Farm Loans
- USDA Non-insured Crop Disaster Assistance Program (NAP)
- USDA/NRCS Emergency Watershed Protection Program
- USDA Repair and Rehabilitation Loan

- USDA/Rural Housing Service (RHS) Community Facilities Loans and Grants
- USDA/RHS Rural Rental Loans
- USDA/RHS Section 502 Single-Family Housing Direct and Guaranteed Loans
- USDA/RHS Section 504 Repair Loans and Grants
- USDA/RHS Self-Help Housing Loans
- USDA/Risk Management Agency Federal Multi-Peril Crop Insurance
- SDA/Rural Business Service Business and Industrial Loans
- USDA Watershed Protection and Flood Prevention Program

5.2.4. Education and Outreach

Education and outreach programs and methods are used to implement mitigation activities and communicate hazard-related information. Examples include fire safety programs that fire departments deliver to students at local schools; participation in community programs, such as Fire-wise Communities Certification or Storm-Ready Certification, and activities conducted as part of hazard awareness campaigns, such as Tornado or Flood Awareness Month. Overall, programs not relating to certification are not common within the County.

Storm-Ready Certification is an education and outreach program that helps arm communities with the communication and safety skills needed to save lives and property before, during, and after an event. The program is administered by the National Weather Service of the National Oceanic and Atmosphere Administration (NOAA). Clarion County is certified as a Storm-Ready County.

The County DPS also has website that can educate residents about hazard mitigation and risk and communicate information in the event of a disaster.

5.2.5. Plan Integration

Plan integration recognizes that hazard mitigation is most effective when it works in efficient coordination with other plans, regulations, and programs. Plan integration promotes safe, resilient growth, effective emergency management, and an overall reduction of risk by ensuring that the goals and actions established in the HMP are included in comprehensive planning efforts so they can affect future land use and development. Some of the most important areas of planning and regulatory capabilities to integrate hazard mitigation goals and actions into include comprehensive plans, the hazard mitigation plans from all surrounding or encompassing areas, emergency operations plans, building codes, floodplain ordinances, subdivision and land development ordinances, stormwater management plans and ordinances, and zoning ordinances. These tools provide mechanisms for the implementation of adopted mitigation strategies. Section 5.2.1 provides an overview of these types of regulations and tools, and details the work done by Clarion County and its municipalities in these areas.

Clarion County's Comprehensive Plan, which was last updated in 2004, establishes countywide goals and objectives, describes environmental and demographic characteristics, identifies potential capital improvement projects, and inventories existing planning initiatives (as stated in section 5.2.1) and tools in the County.

The Clarion County Comprehensive Plan should be updated in the next couple of years. As part of this update process, the goals and objectives in this plan will be reviewed to ensure that they are supported in the update Comprehensive Plan. The Clarion County Comprehensive Plan should be updated in the next couple of years. As part of this update process, the goals and objectives in this HMP will be reviewed to determine their inclusion in the update to the Comprehensive Plan.

As discussed, many of the goals and objectives outlined in the Clarion County Comprehensive Plan and other plans/ordinances are related to the hazard mitigation risks and goals established in the HMP. When these plans/ordinances are revised, we will include updated information from this HMP. For example, the goal to “discourage development in high hazard locations such as floodplains, subsidence, or landslide prone areas” could be revised to mention all-natural occurring and human caused hazards listed in this plan. Additionally, the plans/ordinances can identify the places of higher vulnerability that are identified in this plan for all of the high-risk hazards, and include objectives aimed at reducing the risk to these vulnerable areas. For example, and an objective of the plans/ordinances could be to encourage elevation and flood proofing of structures in the SFHA by seeking Flood Mitigation Assistance (FMA) grants and strictly enforcing floodplain management ordinances in effected municipalities. Also, another objective could be to educate property owners about mine subsidence, associated risks, and actions to take in the event of an emergency. These types of objectives could also be created for medium-risk hazards when appropriate.

When the Hazard Mitigation Plan is updated, all County and municipal plans/ordinances will be reviewed to ensure their goals and objectives are integrated into the update.

Attachment 10
NFIP – Community Status Book

Municipality	CID	Current Effective Map
Ashland Township	422361#	12/02/11(M)
Beaver Township	422362#	12/02/11(M)
Brady Township	422363#	12/09/14
Callensburg Borough	422364#	12/02/11(M)
Clarion Borough	421500#	12/02/11(M)
Clarion Township	421507#	12/02/11(M)
East Brady Borough	421501#	12/09/14
Elk Township	422365#	12/02/11(M)
Farmington Township	422366#	12/02/11(M)
Foxburg Borough	421502#	12/09/14
Hawthorn Borough	421503#	12/09/14 (M)
Highland Township	421508#	12/02/11(M)
Knox Borough	421504#	(NSFHA)
Knox Township	422367#	12/02/11(M)
Licking Township	422368#	12/02/11(M)
Limestone Township	422369#	12/02/11(M)
Madison Township	422370#	12/09/14
Millcreek Township	422371#	12/02/11(M)
Monroe Township	422372#	12/02/11(M)
New Bethlehem Borough	420296#	12/09/14
Paint Township	422373#	12/02/11(M)
Perry Township	421509#	12/09/14
Piney Township	422374#	12/02/11(M)
Porter Township	421510#	12/09/14
Redbank Township	421511#	12/09/14
Richland Township	422375#	12/09/14
Rimersburg Borough	N/A	
Salem Township	422376#	12/02/11(M)
Shippenville Borough	N/A	
Sligo Borough	421506#	12/02/11
St. Petersburg Borough	N/A	
Strattanville Borough	N/A	
Toby Township	422377#	12/02/11
Washington Township	422378#	12/02/11(M)

(M) - No Elevation Determined - All Zone A, C and X

- This community has a map with a 10-digit ID number. Each map with such a number will be published as one or more Z-fold panels (like road maps). Each map having more than one panel also has an index showing which panels apply to the various sections of a community. Since the 10-digit system permits the revision of individual panels rather than the entire map, the index also shows the correct suffix of the most current panel for a location in the community. Each time a panel is revised and published, the map index is also revised and republished with a new effective date to reflect the panel revision. For community maps with 10-digit ID numbers, the Status Book gives data relating to the index only. The index must be consulted for information on individual panels.

Attachment 11
Municipal Building Code Enforcement

MUNICIPALITY	OPT-IN/OPT-OUT	DATE	AMENDMENTS
ASHLAND TOWNSHIP	OPT-IN	05/13/2004	NO
BEAVER TOWNSHIP	OPT-IN	07/05/2004	NO
BRADY TOWNSHIP	OPT-IN	06/23/2004	NO
CALLENSBURG BOROUGH	OPT-IN	07/03/2004	NO
CLARION BOROUGH	OPT-IN	07/06/2004	YES
CLARION TOWNSHIP	OPT-IN	07/08/2004	YES
EAST BRADY BOROUGH	OPT-IN	06/27/2004	YES
ELK TOWNSHIP	OPT-IN	07/03/2004	NO
FARMINGTON TOWNSHIP	OPT-IN	11/02/2016	NO
FOXBURG BOROUGH	OPT-IN	06/12/2004	YES
HAWTHORN BOROUGH	OPT-IN	06/19/2006	NO
HIGHLAND TOWNSHIP	OPT-IN	07/06/2004	NO
KNOX BOROUGH	OPT-IN	06/07/2004	NO
KNOX TOWNSHIP	OPT-IN	07/08/2004	NO
LICKING TOWNSHIP	OPT-IN	07/08/2004	NO
LIMESTONE TOWNSHIP	OPT-IN	07/08/2004	NO
MADISON TOWNSHIP	OPT-IN	07/06/2004	NO
MILLCREEK TOWNSHIP	OPT-IN	07/07/2004	YES
MONROE TOWNSHIP	OPT-IN	07/08/2004	NO
NEW BETHLEHEM BOROUGH	OPT-IN	06/24/2004	NO
PAINT TOWNSHIP	OPT-IN	09/18/2006	NO
PERRY TOWNSHIP	OPT-IN	07/08/2004	YES
PINEY TOWNSHIP	OPT-IN	07/08/2004	NO
PORTER TOWNSHIP	OPT-IN	07/08/2004	NO
REDBANK TOWNSHIP	OPT-IN	04/07/2008	NO
RICHLAND TOWNSHIP	OPT-IN	06/13/2004	NO
RIMERSBURG BOROUGH	OPT-IN	03/08/2005	NO
SALEM TOWNSHIP	OPT-IN	07/06/2004	NO
SHIPPENVILLE BOROUGH	OPT-IN	07/05/2004	NO
SLIGO BOROUGH	OPT-IN	07/01/2004	NO
St. PETERSBURG BOROUGH	OPT-IN	07/05/2004	NO
STRATTANVILLE BOROUGH	OPT-IN	06/14/2004	YES
TOBY TOWNSHIP	OPT-IN	07/07/2004	YES
WASHINGTON TOWNSHIP	OPT-IN	07/08/2004	NO

OPT-IN Municipality will enforce building codes

OPT-OUT Municipality will have Department of Labor and Industry enforces commercial construction and ensures a certified third party enforces residential construction

Attachment 12
County and Municipal Capabilities

JURISDICTION	Elected Officials	Planning	GIS	Emergency Management	Law Enforcemen	Public Works
Clarion County	X	X	X	X	X	X
Ashland Township	X			X		
Beaver Township	X			X		
Brady Township	X			X		
Callensburg Borough	X			X		
Clarion Borough	X			X	X	X
Clarion Township	X			X		X
East Brady Borough	X			X	X*	X
Elk Township	X			X		
Farmington Township	X			X		X
Foxburg Borough	X			X		
Hawthorn Borough	X			X	X*	
Highland Township	X			X		
Knox Borough	X			X	X	X
Knox Township	X			X		
Licking Township	X			X		
Limestone Township	X			X		
Madison Township	X			X		X
Millcreek Township	X			X		
Monroe Township	X			X		
New Bethlehem Boro	X			X	X*	
Paint Township	X			X		
Perry Township	X			X		
Piney Township	X			X		
Porter Township	X			X		
Redbank Township	X			X	X*	
Richland Township	X			X		
Rimersburg Borough	X			X	X*	
Salem Township	X			X		
Shippenville Borough	X			X		
Sligo Borough	X			X	X*	
St. Petersburg Boro	X			X		
Strattanville Borough	X			X		
Toby Township	X			X		
Washington Township	X			X		X
Clarion University		X	X	X	X	X

X* New Bethlehem Borough Police cover all part time

6. Mitigation Strategy

6.1. Update Process Summary

The HMT, municipalities and university reviewed the goals, objectives, and actions identified in the 2013 HMP to determine how relevant they were with the current risk assessment and the progress made in implementing the Mitigation Strategy in the last five years. This process included a full review of the goals and objectives, as well as the actions, and the identification of where the municipalities, university and county had experienced success in mitigating their risks and hazards. After completing the review of the Mitigation Strategy, the municipalities, university and Planning Team identified additional mitigation actions to meet the current goals and objectives. It was determined to remain with the current 6 goals and update objectives.

6.2. Mitigation Goals and Objectives

Mitigation is any cost-effective action taken to eliminate or reduce the long-term risk to life and property from natural occurring and human caused hazards.

This portion of the Plan identifies the six (6) goal statements established by Clarion County, the municipalities, schools and Clarion University for purposes of this Hazard Mitigation Plan. Each Goal is meant to be general and broad in nature, and can only be achieved through the long-term implementation of more specific objectives. The goals below were determined to be those that would have the greatest benefit in hazard reduction to the County. Each Goal listed below will be more specifically addressed and realized through the implementation of short-term mitigation objectives and actions established and maintained in this plan.

Table 6.2 Goals and Objectives	
Goal 1	**Attempt to reduce the current and future risk of damage from natural occurring and human caused hazards in Clarion County**
Objective 1.1	**All jurisdictions will attempt to reduce the current and future risk of damage in Clarion County by directing new development away from hazardous areas, by review existing regulations to ensure adequacy in reducing the amount of future development in identified hazardous areas and maintaining compliances with Commonwealth and Federal regulations.**
	Action 1.1.1: Municipal officials will identify hazardous areas within their municipality and review regulations pertaining to their jurisdiction to ensure that adequate regulations are in place to reduce future development in hazardous areas in their jurisdiction.
	Action 1.1.2: Maintain repetitive loss information from PA DCED to use for mitigation projects.
	Action 1.1.3: Municipalities will be compliant with NFIP and maintain compliance.
	Action 1.1.4: All jurisdictions will collect data on all future incidents to help determine the impact of hazards on each jurisdiction and for use in updating plans.
Objective 1.2	**Review all comprehensive plans to ensure that designated growth areas are not in hazard areas.**
	Action 1.2.1: Planning Department and applicable municipal officials to review their comprehensive plans to ensure that designated growth areas are not in hazardous areas.
Objective 1.3	**Review and enforcement of the building codes.**
	Action 1.3.1: Municipal officials or their third-party inspectors will review the statewide Uniform Construction Code to ensure the enforcement of these codes as a minimum standard.
Objective 1.4	**Review all capital improvement plans to ensure that infrastructure improvements are not directed towards hazardous areas.**
	Action 1.4.1: Municipal officials will review their capital improvement plans to ensure that programmed infrastructure improvements are not in hazardous areas.
Objective 1.5	**Evaluate and update existing floodplain ordinances to meet or exceed the NFIP standards.**
	Action 1.5.1: Applicable municipalities will review and update their floodplain ordinances to be sure that they are in full compliance with the NFIP, as required (see Appendix O).

Objective 1.6	**Improve the enforcement of existing floodplain regulations.**
	Action 1.6.1: Clarion County EMA to arrange with PEMA/FEMA/DCED to hold training sessions (upon request) with the County and the municipalities on the National Flood Insurance Program (NFIP) requirements.
	Action 1.6.2: Municipalities will encourage residents living in or wanting to build in the flood plain to acquire a map from Clarion County Assessment Department.
Objective 1.7	**Municipalities to become part of the Community Rating System (CRS).**
	Action 1.7.1: County EMA to arrange with PEMA/FEMA/DCED to conduct training on the Community Rating System (CRS) to municipalities.
Objective 1.8	**Evaluate existing shelters to determine adequacy for current and future populations.**
	Action 1.8.1: County to work with the American Red Cross to ensure that all shelters within Clarion County meet shelter requirements.
	Action 1.8.2: CART team will maintain adequate emergency shelter and evacuation plans for animals (domestic pets and livestock).
Objective 1.9	**All jurisdictions, agencies and businesses should ensure safety of their computer systems:**
	Action 1.9.1: Maintain security updates, software and antivirus on all computer systems and servers
	Action 1.9.2: Ensure all computers are only used on secured systems
	Action 1.9.3: Develop policy for backing up all data
	Action 1.9.4: Maintain copy of backup data off site
	Action 1.9.5: Keep Network Firewall in place and current configuration
	Action 1.9.6: Keep all network switches and wireless networks secured and current configuration
	Action 1.9.7: **Report all incidents to Clarion County EMA.**
Objective 1.10	**Standardize dam incident emergency classification terminology used for incidents:**
	Action 1.10.1: Standardize terminology, currently there are three different sets of terms for dam incidents in Clarion County. Using different terminology makes it difficult for first responders and when notifying the public.
	Action 1.10.2: Federal and Commonwealth agencies should work on trying to standardize dam incident terminology.
Objective 1.11	**All jurisdictions to identify orphaned/abandoned oil or gas wells and open mine shafts.**
	Action 1.11.1: All jurisdictions to work with DEP and county residents to identify open mine shafts and orphaned/abandoned wells.
	Action 1.11.2: County and DEP to provide press releases requesting residents to report open mine shafts and orphaned/abandoned oil or gas wells to DEP. Also request residents and/or agencies that have old maps showing deep mines or oil/gas wells to provide information to DEP.
GOAL #2	**Reduce the potential impact of natural occurring or human caused disasters on public and private property.**
Objective 2.1	**Municipalities will participate in the National Flood Insurance Program and encourage property owners to purchase flood insurance.**
	Action 2.1.1: County Planning and DCED to conduct outreach efforts to educate municipalities about the NFIP and its requirements.
	Action 2.1.2: County to obtain updated information on the number of NFIP policyholders in Clarion County and its municipalities from PEMA and FEMA.
Objective 2.2	**Protect Clarion County's most vulnerable populations, buildings and critical facilities through the implementation of cost-effective and technically feasible mitigation projects.**
	Action 2.2.1: EMA to work with municipalities and the GIS Department to maintain information on the number, location and assessed value of all repetitive loss properties and structures within the 100-year floodplain throughout the County to plan future mitigation activities.
	Action 2.2.2: When funds become available for hazard mitigation projects, the municipalities will hold public meeting with the owners of repetitive loss properties in high risk areas. These meetings will also be used to identify high-risk properties in the County and to determine

	potential participation in future acquisition and relocation projects.
	Action 2.2.3: Identify county residents with special needs.
GOAL #3	**Improve upon the protection of the citizens of Clarion County from all-natural occurring and human caused hazards.**
Objective 3.1	**Ensure adequate training and resources for emergency organizations and personnel.**
	Action 3.1.1: Clarion County CERT Trainers to teach Community Emergency Response Team (CERT) classes to interested citizens in Clarion County to assist first responders at specified emergencies throughout the County, as requested.
	Action 3.1.2: Clarion Fire departments, EMS agencies and the Human Service agencies to increase the number of trained responders by meeting with groups of potential volunteers to attempt to increase the number of trained responders for all County Fire Departments, Emergency Medical Services, Human Service agencies, etc. All areas of Clarion County will benefit.
	Action 3.1.3: EMA to conduct tabletop exercises with local fire, EMS, law enforcement, emergency managers, county and local officials, etc. and other response agencies. Type of exercises may include: Weather, Hazardous Materials Spill, etc.
	Action 3.1.4: EMA to provide information about local, regional, Commonwealth, and federal training opportunities to fire departments, law enforcement agencies, EMS companies, and other emergency responders. Training opportunities that are available will be emailed and post on Clarion County DPS website for all local emergency responders. Training should include preparedness to respond to natural occurring, human caused and technological hazards.
	Action 3.1.5: Continue to conduct National Weather Service Storm Spotter classes (Basics and Advanced) by partnering with the National Weather Service to provide training to people throughout Clarion County.
	Action 3.1.6: Clarion County fire, EMS, law enforcement, municipalities, schools, health care and public works agencies to increase the number of responders trained in the National Incident Management System and identify individual responders that need to be trained in Incident Management courses including ICS 100, 200, 300, and 700.
	Action 3.1.7: Municipal officials will ensure adequate training for emergency services (EMA, EMS, Fire and Law enforcement). This includes officers and other personnel.
	Action 3.1.8: Regular training to keep users current on Cyber threats and proper computer safety.
	Action 3.1.9: Ensure the DCORT (Disaster/Crisis Outreach and Referral Team) and CISM (Critical Incident Stress Management) teams have adequate trained staff for large scale events. Provide initial and annual training programs.
	Action 3.1.10: Work with Clarion Hospital, Clarion County Schools, Clarion Career Center and Clarion University to establish EMT and Paramedic training programs in the County. Encourage residents to participant in these programs.
Objective 3.2	**Improve emergency preparedness in Clarion County.**
	Action 3.2.1: Maintain the Clarion County Emergency Operations Plan (EOP) and update bi-annually or when necessary based on the recommendations of the PEMA and FEMA. Include participation from all jurisdictions in the update process by ensuring that they adopt the EOP.
	Action 3.2.2: All jurisdictions will collect data from all incidents and use this information for mitigation efforts and plan updates.
	Action 3.2.3: All county, municipalities, schools, health care, fire, EMS, law enforcement, human services agencies and public works will become NIMS compliant and maintain compliance.
	Action3.2.4: Ensure all required organizations complete the annual NIMS compliant report, which is required by FEMA and PEMA.
Objective 3.3	**Improve coordination and communication among disaster response organizations, local, and county governments.**
	Action 3.3.1: Clarion County will use the County DPS web site, Facebook, other social media sites and Knowledge Center as resources and incident management programs to improve coordination/communications.

Objective 3.4	**Evaluate cost-effective ways to disseminate appropriate warnings and to augment existing broadcast/communication systems for monitor warning information continuously.**
	Action 3.4.1: Research the possibility of installing Emergency Alert Warning Systems and equipment to reach all populated areas throughout the County. Work with all jurisdictions and utilities for the possibility of using their notification systems during emergencies.
	Action 3.4.2: Evaluate the possibility of combining notification systems from all jurisdictions and utilities in to one county system.
Objective 3.5	**All jurisdictions, human service agencies, businesses and industries will ensure continuity of operations.**
	Action 3.5.1: All the above should develop and maintain a continuity of operations plan.
Objective 3.6	**Clarion County Schools should continue to participate or start participating in the following programs:**
	Action 3.6.1: The **Pennsylvania Youth Survey** is done every two years and taken voluntarily by students in 6, 8, 10 & 12th grades in participating school districts. Students take the survey on the condition of it being completely anonymous. The survey identifies issues facing students (some areas include drugs, alcohol and bullying). This information is then used to identify programs to help the students to deal with these issues.
	Action 3.6.2: The **Clarion County Youth Council** is a county wide program open to selected students from 8th-12th grade. **All seven county school districts are participating in the 17-18 school year.** Each school has a small group of students who attend each of the three meetings held during the school year. These students learn valuable problem-solving skills as well as leadership and working together. Students use information provided to them at the meetings, through their administration or the PA Youth Survey to choose topics that are relevant to them and work towards bringing awareness or prevention to problem topics in their schools or communities. These topics range from bullying, hunger issues, drug and alcohol topics, safe driving, cancer and community fundraising. Research has shown the students often listen quicker to their peers than to adults. Ultimately, this program seeks to teach students the valuable of positive leadership and making a positive difference in their school and community. Schools should continue to support student projects.
	Action 3.6.3: The **Promoting Alternative THinking Strategies (PATHS)** Curriculum is a program for educators and school staff designed to facilitate the development of self-control, positive self-esteem, emotional awareness and interpersonal problem-solving skills. PATHS have been used, researched, and found effective with classrooms of students as a prevention program or with a specific target population such as special needs students as an intervention program. The purposes of the PATHS Curriculum are to enhance social and emotional competence and understanding in children, as well as develop a caring, prosocial context that facilitates educational processes in the classroom. The PATHS program has been shown to reduce students exhibiting aggressive behavior and depression/sadness among special-needs students. Reports also have shown increases in the following areas, students exhibiting self-control, pro-social peer relations, students' scores on cognitive skills tests, students' vocabulary for emotions, ability to use effective conflict resolution strategies. **Currently 2 school districts are presenting the PATHS program.**
	Action 3.6.4: **Olweus Bullying Prevention Program is a universal intervention for the reduction and prevention of bully/victim problems.** The universal program targets students in elementary, middle, and junior high school and school staff has the primary responsibility for the introduction and implementation of the program. Core components of the program are implemented on three levels: • **School-wide components** include the administration of an anonymous questionnaire to assess the nature and prevalence of bullying at each school, a school conference day to discuss bullying at school and plan interventions, formation of a Bullying Prevention Coordinating Committee to coordinate all aspects of school's program, and increased supervision of students at "hot spots" for bullying. • **Classroom components** include the establishment and enforcement of class rules against bullying, and holding regular class meetings with students. • **Individual components** include interventions with children identified as bullies and

	victims, and discussions with parents of involved students. Teachers may be assisted in these efforts by counselors and school-based mental health professionals. The Olweus Bullying Prevention Program has been shown to result in reductions in bullying, victimization, and antisocial behavior such as vandalism, fighting, theft and truancy. It has also been proven to improve the "social climate" of classrooms, as reflected in students' reports of improved order and discipline, more positive social relationships, and a more positive attitude toward schoolwork and school. **The Olweus Bullying program is being used in 2 county school districts**.
GOAL #4	**Reduce or redirect the impact of natural occurring and human caused disasters (especially floods) away from at risk population areas**
Objective 4.1	**Research possible mitigation projects to reduce flooding, reduce/eliminate sewage leakage and inflow/infiltration problems. Some projects may include reservoirs, retention pools, diversions, channel modification, increase pipe size and storm sewers.**
	Action 4.1.1: Continue to review post-disaster reviews submitted by the municipalities.
	Action 4.1.2: Continue to produce and submit Hazard Mitigation Project Opportunity Forms for high-risk structures/areas (especially post-disaster).
	Action 4.1.3: Municipal officials will attempt to acquire or encourage residents to elevate the homes that are in flood prone areas. Especially those with repetitive losses.
GOAL #5	**Protect existing natural resources and open space, including parks and wetlands, within the floodplain and watershed to improve their flood control function.**
Objective 5.1	**Protect Clarion County's natural resources through the implementation of cost-effective and technically feasible mitigation projects.**
	Action 5.1.1: When funds become available for mitigation projects, the municipalities should plan to hold meetings to identify high-risk properties and to determine potential participation in future acquisition and relocation projects.
	Action 5.1.2: County to work with DEP, conservation agencies, etc., to research avenues for restoring degraded natural resources and open space to improve their flood control functions.
GOAL #6	**Protect public health, safety and welfare by increasing the public awareness of existing and potential hazards and by fostering both individual and public responsibility in mitigating risks due to those hazards.**
Objective 6.1	**All jurisdictions, emergency service agencies, and human services agencies) should maintain and distribute public awareness materials about hazard risks, preparedness, and mitigation.**
	Action 6.1.1: Maintain public information materials for residents, businesses and visitors on the County DPS website. Site should contain information on mitigation, preparedness, response recovery and continuity of operations.
	Action 6.1.2: Work with the Clarion Cooperative Extension to maintain Animals in Disaster Displays that will be used at 4-H Clubs, Agricultural Fair, in Veterinarians Offices and other places that animal owners may gather. The display will have information about preparing animals for disasters by making a disaster plan and a disaster supply kit for each animal. The display will encourage animal owners to decide ahead of time where animals will be sheltered.
	Action 6.1.3: Schools to maintain displays for children's programs that teach preparedness and safety.
	Action 6.1.4: Continue to utilize the media for the distribution and publication of hazard information by sending news releases and public service series to local newspapers, radio stations about pre-disaster information (County and municipalities). Orient residents (via print and radio) to the meaning of the County fire siren system for emergencies.
	Action 6.1.5: All jurisdictions to continue to work with non-governmental organizations to promote mitigation education and awareness by creating public speaking series on hazard related topics such as types of natural disasters and risks, how to develop a family disaster plan and disaster supply kit, sheltering in place, how to develop a business continuity plan, simple types of mitigation projects for homeowners and businesses, etc.
	Action 6.1.6: Continue to work with the Clarion County school districts and the Clarion

	University to promote emergency preparedness and hazard mitigation education and awareness. Provide information on hazardous, emergency alert systems and discuss ways to better integrate mitigation into the curriculum such as science, math and other subjects
	Action 6.1.7: County to develop a social media network to provide pre/post emergency information
	Action 6.1.8: Work with Pa. Department of Health on providing public information programs and materials on Lyme Disease and other health related issues for residents and visitors.
	Action 6.1.9: Human Service agencies to coordinate with Clarion County EMA to provide public information materials on preparedness and safety to clients.
Objective 6.2	**Target owners of properties within identified hazard areas for additional outreach regarding mitigation and disaster preparedness.**
	Action 6.2.1: If requested, work with representatives from NFIP to hold local course on the National Flood Insurance Program (NFIP) for property owners.
	Action 6.2.2: Municipalities should provide information to property owners or renters within the 100-year floodplain regarding potential flood hazards. The content of the letters should include the following information: the local flood hazard, flood safety, flood insurance information, property protection measures, the natural and beneficial functions of the local floodplain, where to obtain a map of the local flood hazard area, information about NOAA Weather radios used for local weather warnings, floodplain development permit requirements and substantial improvement/damage requirements.
	Action 6.2.3: GIS and Assessment Offices to maintain information for structures within the 100-year floodplain and structures that are not in the floodplain, but are prone to flooding. This information will include map number, assessed value and structure type. **This information is maintained at the GIS/Assessment Office.**
	Action 6.2.4: Provide annual news releases to encourage county residents to investigate the need to purchase subsidence insurance from the Commonwealth.

6.3. Identification and Analysis of Mitigation Techniques

The mitigation strategy in the updated HMP should include analysis of a comprehensive range of specific techniques or actions. FEMA, through the March 2013 Local Mitigation Handbook, and PEMA, through the October 2013 Standard Operating Guide (SOG), identify four categories of hazard mitigation techniques.

- **Local plans and regulations**: 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 NFIP and CRS.
- **Structure and infrastructure**: Modifying existing structures and infrastructure or constructing new structures to reduce hazard vulnerability. Examples include, but are not limited to: acquisition and elevation of structures in flood prone areas, utility undergrounding, structural retrofits, floodwalls and retaining walls, detention and retention structures, and culverts.
- **Natural systems protection**: Actions that minimize damage and losses and 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.
- **Education and 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, NFIP outreach, StormReady, and Firewise Communities.

Table 6.3.1 provides a matrix identifying the mitigation techniques used for the hazards identified in the risk assessment.

Table 6.3.1: Mitigation techniques used for identified hazards				
HAZARD (in order of risk factor ranking) Natural (N) OR Human Caused(H)	**MITIGATION TECHNIQUE**			
	PLANS AND REGULATIONS	STRUCTURE AND INFRASTRUCTURE	NUTURAL SYSTEMS PROTECTION	EDUCATION AND AWARENESS
Flood, Flash Flood (N)	X	X	X	X
Wind Storm (N)	X	X	X	X
Winter Storms (N)	X	X	X	X
Transportation Accidents (H)	X	X		X
Drought (N)	X	X		X
Emerging Diseases (N)	X	X		X
Subsidence (N)	X	X		X
Fire (Wildland) (N)	X	X		X
Hazardous Materials (H)	X	X		X
Water Control (Dams) (H)	X	X		X
Extreme Temperatures (N)	X	X		X
Harassment (H)	X	X		X
Terrorism (H)	X	X		X
Radon (N)	X	X		X
Oil & Gas Wells (H)	X	X	X	X
Geomagnetic Storm (N)	X	X	X	X
Earthquakes (N)	X	X		X
Landslide (N)	X	X		X

6.4. Mitigation Action Plan

The final list of 186 mitigation action projects in **Appendix G** is made up of projects submitted by municipalities and County at individual meetings. In addition, the list includes 57 projects carried over from the 2013 plan, of these 10 are partly completed, 2 more are scheduled for 2018 and 2 have grant money from non-mitigation grants coming to complete them. The carried over projects were identified as still viable and not yet complete. Every participating jurisdiction has at least one mitigation action project.

Of the 103 projects in the 2013 plan 36 were completed without mitigation grants. Other monies allowed 10 projects to be partly completed and 1 project was removed because it was no longer needed.

The Hazard Mitigation Planning Team reviewed mitigation projects and made plan revisions to include this information. The Team reviewed and ranked all submitted projects. Community Ranking Scores were determined by using STAPLE + E Criteria.

The municipalities reviewed the project rankings applied by the HMT during their draft plan review and no comments were received on rankings. Some municipalities updated carryover project status.

7. Plan Maintenance

7.1. Update Process Summary

Monitoring, evaluating and updating this plan, is critical to maintaining its value and success in Clarion 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 HMP maintenance also defines the municipalities' role in updating and evaluating the plan. Finally, the 2018 HMP elaborates upon continued public involvement and how this plan may be integrated into other planning mechanisms in the County.

7.2. Monitoring, Evaluating, and Updating the Plan

Maintenance

Per the Disaster Mitigation Act of 2000, local plans are required to develop a method and schedule of monitoring, evaluating, and updating the hazard mitigation plan within a five-year cycle. The current plan will be maintained at the County, municipalities, Clarion University, schools and on the County DPS website.

Monitoring

Using the implementation schedule developed for the mitigation projects, the Clarion County Hazard Mitigation Team shall meet yearly to track the progress of the mitigation plan to develop status reports which detail efforts to date and any challenges they are experiencing in implementing the mitigation projects. The County Hazard Mitigation Team will be responsible for tracking the progress of the implementing agencies and ensuring that the plan time line is adhered to.

Evaluation

On an annual basis, the County Hazard Mitigation Team will coordinate with the municipalities, schools and Clarion University to develop an end-of year report. The report should detail mitigation activities undertaken over the course of the year as well as any mitigation projects that have been completed. Any mitigation success stories should be highlighted. The evaluation process would also incorporate opportunities for public involvement by inviting the public to attend the end of year mitigation plan meeting and review and provide comments to the current plan. Press releases will be distributed to notify the public of meeting and opportunity for comments. The report should also address the following points:

- Evaluate the goals and objectives to ensure they address current and expected conditions
- Determine if the nature or magnitude of risk has changed
- Evaluate whether the current resources are adequate for implementing the plan
- Document any implementation problems such as technical, political, legal, or coordination issues with other agencies
- Discuss whether the outcomes have occurred as expected
- Document agency and other partner participation

Copies of the annual report were distributed to each of the implementing agencies, municipalities, citizens, PEMA and FEMA. The report was also posted on the County website. News releases were distributed to all Clarion County media outlets regarding the annual report. Copies of annual reports for years 2013 - 2017 can be found in Appendix C, Annex 3.

Update

This plan will be updated, approved and adopted before the five-year anniversary of approval date of FEMA. In the event of a significant disaster or any substantial changes in land use planning or regulations that would impact the recommended mitigation projects, more frequent updates will be considered. The Hazard Mitigation Team would be responsible for overseeing the update of the hazard mitigation plan. The update process would be like the one used to develop the original plan and would incorporate opportunities for public involvement by inviting the public to review and provide comments to the current plan and draft copies of the revised plan.

7.3. Continued Public Involvement

As was done during the development of the 2018 HMP this plan involved the public during the evaluation and update of the plan through public meetings, County DPS website and press releases requesting public comments. The public has access to an electronic copy of the current HMP through their local municipal office, Clarion County Emergency Management Agency (EMA), the Clarion County Commissioners Office or the County DPS website. The DPS website will allow the public to

provide direct comments via an email link to DPS. The Clarion County Commissioners Office also has a paper copy of the plan should a citizen not have ready electronic access. Information on upcoming events related to the HMP or solicitation for comments were announced via newspapers, press releases, and on the County DPS website.

For plan updates and annual reviews press releases are sent out requesting public comments relative to the Clarion County Hazard Mitigation Plan. All comments can be emailed to or mailed to the Department of Public Safety.

The Department of Public Safety has an informational table at the Clarion Autumn Leaf Festival held every fall. This festival draws approximately 250,000 people on Crafter Day. We will provide information on hazard mitigation and the plan to seek public comments.

8. Plan Adoption

The Plan was submitted to the Pennsylvania State Hazard Mitigation Officer on January 17, 2018**.** It was forwarded to FEMA for final review and approval-pending-adoption on January 29, 2018, FEMA granted approval-pending-adoption on May 11, 2018**.** Full approval from FEMA was received on June 12, 2018**.**

This All-Hazard Mitigation Plan has been adopted by the Clarion County Board of Commissioners on June 12, 2018 during a regularly scheduled public meeting. All 34 Clarion County municipalities and Clarion University have also adopted the Clarion County All-Hazard Mitigation Plan as their own. Copies of the local adoption resolutions passed by Clarion County, Clarion University and its municipal governments can be found in Appendix J.

The completed Local Mitigation Plan Review Crosswalk can be found in Appendix B.

9. Appendices

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B. Local Mitigation Plan Review Tool
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Appendix A
Bibliography

Clarion County Hazard Vulnerability Analysis – April 2017

Data collected for use in developing the HVA was based on historical data that was gathered from a variety of sources (County archives, historical societies, Internet sites, Pennsylvania Emergency Management Agency [PEMA] publications, the National Weather Service and other Commonwealth/federal agencies).

Information integrated into this plan includes:

History: a record of past events is particularly helpful in evaluating natural occurring and human caused hazards. Both the frequency and severity of past events are useful in predicting the future.

Vulnerability: the susceptibility of a community to destruction, injury, or death. The degree of vulnerability may be related to geographic location as with floodplains, or to the type of facility or structure.

Maximum threat or worst-case disaster should be considered for each hazard. The maximum threat provides an upper boundary for the level of preparedness that may be necessary.

Probability of an occurrence in the future is another important factor to be considered when deciding on priorities, the level of preparedness and planning appropriate for a hazard.

Clarion County Comprehensive Plan – November 2004

The Clarion County Comprehensive Plan is a land use and growth management tool, prepared for and adopted by the County Commissioners, which establishes broad goals and criteria for development within the County limits. Based on the findings in the Plan, the following Key Policies and Actions were established:

- Land Use Plan
- Housing Plan
- Economic Development Plan
- Community Facilities and Public Utilities Plan
- Conservation of Natural and Historic Resources Plan
- Transportation Plan
- Interrelationships Plan

The Clarion County Commissioners and the Clarion County Planning Commission use these policies and action plans as guidance for public projects. While this list is not all-inclusive, it gives a broad example of uses of the Comprehensive Plan.

- Support every size economic development sector.
- Support efforts to retain or expand existing businesses (of all sizes) and assist in the development of new businesses owned by county residents.
- Make recommendations on the expansion of public water and sewer systems.
- Support efforts to improve road infrastructure.
- Supports efforts to expand sewer and/or water to areas of dense pre-existing residential development with either failed septic systems endangering public health or insufficient quantity or quality of public water.
- Recommend a Congested Corridor Study for Route 68 between Route 322 and Interstate 80

- ❖ Support improvements to the Clarion County Airport Runway and improved precision instrument approaches.

Through implementation of the Clarion County Subdivision and Land Development Ordinance (SALDO), the Planning Staff notifies developers if their project is potentially in a flood plain. Staff also looks at lot size, access to development lots (both residential and commercial), evaluates access to public infrastructure, etc. While the SALDO is not actually part of the Comprehensive Plan, it is an important land use tool.

Appendix B
Local Mitigation Plan Review Tool

Jurisdiction:	Title of Plan:	Date of Plan:
Clarion County, Pennsylvania	Hazard Mitigation Plan	August, 2018

Local Point of Contact: David L Dunn	**Address:** 421 Madison Road Clarion, Pa. 16214
Title: EMA Deputy/Planner Hazard Mitigation Officer	
Agency: Clarion County Emergency Management Agency	
Phone Number: 814-771-2827	**E-Mail:** ddunn@oes.clarion.pa.us

Commonwealth Reviewer:	Title:	Date:
Ernest Szabo	State Hazard Mitigation Planner	Nov. 6, 2017; January 19,2018

FEMA Reviewer:	Title:	Date:
Joseph A. Bucovetsky	Community Planner	March 19,2018
Date Received in FEMA Region ***(insert #)***	**2/2/18**	
Plan Not Approved		
Plan Approvable Pending Adoption	**5/11/18**	
Plan Approved		

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.

1. REGULATION CHECKLIST **Regulation** (44 CFR 201.6 Local Mitigation Plans)	**Location in Plan** **(section and/or**	**Met**	**Not Met**
ELEMENT A. PLANNING PROCESS			
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))	Section 3 Pages 16-18 Appendix C - Annexes 1, 2 &3		
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))	Sections 3.1 & 3.3 Pages 16 & 17		
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Sections 3.1 & 3.4 Pages 16 & 18 Appendix C- Annex 1&3 Appendix H - Annex 1&2		
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	Sections 5.1, 5.2.1 & 5.2.5 Pages 64, 65 & 74		
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Sections 7.2 & 7.3 Page 86		
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))	Section 7 Pages 85 & 86		
ELEMENT A: REQUIRED REVISIONS			
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT			
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))	Section 4.1 Page 21 Attachment 9 Pages 62 & 63		
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))	Section 4.3 Pages 22-50 Attachments 7 Page 57 Attachment 9 Pages 62 & 63		
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))	Section 4.3 Pages 22-50 Attachment 9 Pages 62 & 63		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))	Section 4.3.5.5 Page 30		
ELEMENT B: REQUIRED REVISIONS			

ELEMENT C. MITIGATION STRATEGY			
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))	Section 5 Pages 64 – 74 Attachment 12, page 78		
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))	Section 5.2.1 Page 65 Attachment 10 Page 76 Section 6.2 Goal 1, Objectives 1.1, 1.5&1.6 Pages 79-80 Goal 2 Objective 2.1 Page 80 and Appendix O		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))	Section 6 Pages 79 – 85		
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))	Section 6.2 Pages 79 - 84 Appendix G		
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))	Appendix G		
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))	Section 5.2.5 Page 74		
ELEMENT C: REQUIRED REVISIONS			

ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)			
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	Section 2.4 pages 12 & 13 Section 4.4.4 pages 52 & 53		
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Section 7.2 Page 86		
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	Section 4.2.2 Page 22		
ELEMENT D: REQUIRED REVISIONS			

ELEMENT E. PLAN ADOPTION			
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))	Appendix J		
E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Appendix J		
ELEMENT E: REQUIRED REVISIONS			

ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)			
F1.			
F2.			
ELEMENT F: REQUIRED REVISIONS			

Appendix C
Meeting and Other Participation Documentation

Annexes

1 – Meeting/Correspondence Chart
2 – Participation Chart
3 – Meeting/Correspondence Documentation

Appendix C, Annex 1
Meeting/Correspondence Chart

DATE	MEETING, INFORMATION or CORRESPONDENCES
9/4/14	Letter to municipalities for annual plan review
9/23/14	Press release for public comments for annual plan review
11/14/14	Hazard Mitigation Team meeting for yearend report
1/5/15	Letter to PEMA with 2014 annual report
1/14/15	Press release for annual plan review report
9/4/15	Letter to municipalities for annual plan review
9/22/15	Press release for public comments for annual plan review
11/18/15	Hazard Mitigation Team meeting for yearend report
1/5/16	Letter to PEMA with 2015 annual report
1/14/16	Press release for annual plan review report
9/6/16	Letter to municipalities for annual plan review
9/27/16	Press release for public comments for annual plan review
11/9/16	Hazard Mitigation Team meeting for yearend report
1/3/17	Letter to PEMA with 2016 annual report
1/11/17	Press release for annual plan review report
4/3/17	Letter to Municipal elected officials for plan update kick off meeting
5/29/17	Letter to surrounding counties for plan review
6/6/17	Hazard mitigation team meeting
6/13/17	Municipal elected officials meeting
6/14/17	Letter to municipalities that missed meeting
6/29/17	Public Meeting for comments on current plan.
7/5/17	Meeting with Clarion Borough officials current plan review, actions and projects
7/5/17	Meeting with Callensburg Borough officials current plan review, actions and projects
7/5/17	Meeting with Licking Twp. officials current plan review, actions and projects
7/6/17	Meeting with East Brady Borough officials current plan review, actions and projects
7/6/17	Meeting with Brady Twp. officials current plan review, actions and projects
7/6/17	Meeting with Clarion Twp. officials current plan review, actions and projects
7/7/17	Meeting with Clarion University officials current plan review, actions and projects
7/10/17	Meeting with Elk Twp. officials current plan review, actions and projects
7/11/17	Meeting with Salem Twp. officials current plan review, actions and projects
7/12/17	Meeting with Limestone Twp. officials current plan review, actions and projects
7/12/17	Meeting with Clarion County officials current plan review, actions and projects
7/12/17	Meeting with Strattanville Borough officials current plan review, actions and projects
7/13/17	Meeting with Perry Twp. officials current plan review, actions and projects
7/13/17	Meeting with St. Petersburg Borough officials current plan review, actions and projects
7/17/17	Meeting with Highland Twp. officials current plan review, actions and projects
7/17/17	Meeting with Rimersburg Borough officials current plan review, actions and projects
7/18/17	Meeting with Sligo Borough officials current plan review, actions and projects
7/18/17	Meeting with Millcreek Twp. officials current plan review, actions and projects
7/19/17	Meeting with Paint Twp. officials current plan review, actions and projects
7/19/17	Meeting with Knox Borough officials current plan review, actions and projects
7/19/17	Meeting with Piney Twp. officials current plan review, actions and projects
7/20/17	Meeting with Knox Twp. officials current plan review, actions and projects
7/24/17	Meeting with Foxburg Borough officials current plan review, actions and projects

7/26/17	Meeting with Beaver Twp. officials current plan review, actions and projects
7/27/17	Meeting with Washington Twp. officials current plan review, actions and projects
7/27/17	Meeting with Monroe Twp. officials current plan review, actions and projects
7/31/17	Meeting with Redbank Twp. officials current plan review, actions and projects
8/2/17	Meeting with Porter Twp. officials current plan review, actions and projects
8/7/17	Meeting with Madison Twp. officials current plan review, actions and projects
8/7/17	Meeting with Toby Twp. officials current plan review, actions and projects
8/8/17	Meeting with New Bethlehem Borough officials current plan review, actions and projects
8/8/17	Meeting with Richland Twp. officials current plan review, actions and projects
8/14/17	Meeting with Shippenville Borough officials current plan review, actions and projects
8/21/17	Meeting with Ashland Twp. officials current plan review, actions and projects
9/20/17	Hazard mitigation team meeting
9/28/17	Spoke with township officials at Township Official Convention. Discussed plan status and up-coming dates.
10/23/17	Letter to municipalities for revised draft plan review
10/24/17	Letter to surrounding counties for revised draft plan review
11/9/17	Conduct a workshop for municipal officials including information on HMP.
12/5/17	Public Meeting for comments on draft revised plan.
1/2/18	Letter to Municipalities for end of year 2017 report and reminder for draft plan comments.
5/14/18	Letter from FEMA approving plan pending adoption
6/12/18	Letter to municipalities and Clarion University for plan adoption
8/28/18	Letter to FEMA formal plan approval
9/4/18	Letters to municipalities, school districts, Commonwealth and Clarion University for final plan distribution

Appendix C, Annex 2
Participation Chart

Jurisdiction	Meeting and Actions	Projects	Draft Plan Letter
Clarion County	July 12	July 13	N/A
Ashland Township	Aug. 21	Aug. 21	1/11
Beaver Township	July 26	Aug. 2	12/20
Brady Township	July 6	July 6	1/10
Callensburg Borough	July 5	July 27	11/15
Clarion Borough	July 5	Aug. 8	12/5
Clarion Township	July 6	Sept. 6	1/8
East Brady Borough	July 6	Aug. 18	11/28
Elk Township	July 10	Sept. 13	1/8
Farmington Township	Aug. 2	Aug. 2	1/9
Foxburg Borough	July 24	Sept. 29	1/8
Hawthorn Borough	Aug. 2	Sept. 15	11/7
Highland Township	July 17	Aug. 3	11/14
Knox Borough	July 19	Sept. 25	11/7
Knox Township	July 20	Sept. 6	10/31
Licking Township	July 5	Sept. 27	1/5
Limestone Township	July 12	July 12	11/14
Madison Township	Aug. 7	Sept. 29	1/1
Millcreek Township	July 18	Sept. 9	1/8
Monroe Township	July 27	Sept. 22	10/31
New Bethlehem Borough	Aug. 8	Aug. 8	11/13
Paint Township	July 19	Sept. 6	10/31
Perry Township	July 13	Aug. 16	1/11
Piney Township	July 19	Sept. 28	1/5
Porter Township	Aug. 2	Aug. 2	1/8
Redbank Township	July 31	July 31	1/10
Richland Township	Aug. 8	Sept. 7	1/10
Rimersburg Borough	July 17	Sept. 28	12/15
Salem Township	July 11	Sept. 7	1/10
Shippenville Borough	Aug 14	Oct. 2	10/31
Sligo Borough	July 18	July 18	1/10
St. Petersburg Borough	July 13	July 14	11/1
Strattanville Borough	July 12	Aug. 21	1/10
Toby Township	Aug. 7	Sept. 29	1/1
Washington Township	July 27	Sept. 6	10/31
Clarion University	July 7	July 7	1/9

Appendix C, Annex 3
Meeting/Correspondence Documentation

See Attached File

Appendix D
Clarion County Flood Vulnerability Maps

See Attached File

Appendix E
Critical Facilities

Type of Facility	Number of Facilities	Number with losses in previous disasters
Power facilities	1 Hydro-electric Dam	0
Water Treatment Plants Community	16	1
Water Treatment Plants Transient	36	0
Wastewater Treatment Plants Community	13	0
Wastewater Treatment Plants Transient	4	0
Communications	16	0
Education	38 School Buildings 64 Clarion University Buildings	2 0
Health Care Facilities	2 Hospitals 6 Nursing/Personnel Care	0 0
Elderly Apartment Buildings	6	1
Fire Protection/Emergency Services	6 EMS Stations 2 Medical Helicopters 16 Fire Stations 6 Law Enforcements Stations	1 0 0 0

Appendix F
Clarion County Addressable Structures within the Floodplain

Jurisdiction	Residential	Commercial	Total	*Active Flood Insurance Policy
Ashland Township	0	0	0	**3**
Beaver Township	8	1	9	**1**
Brady Township	0	0	0	**0**
Callensburg Borough	0	0	0	**0**
Clarion Borough	10	0	10	**0**
Clarion Township	22	1	23	**3**
East Brady Borough	6	0	6	**2**
Elk Township	2	1	3	**0**
Farmington Township	9	1	10	**1**
Foxburg Borough	1	1	2	**3**
Hawthorn Borough	3	1	4	**1**
Highland Township	27	0	27	**2**
Knox Borough	0	0	0	**0**
Knox Township	2	1	3	**0**
Licking Township	2	0	2	**1**
Limestone Township	34	3	37	**10**
Madison Township	16	0	16	**2**
Millcreek Township	5	0	5	**3**
Monroe Township	9	1	10	**4**
New Bethlehem	22	45	67	**39**
Paint Township	24	0	24	**0**
Perry Township	16	0	16	**6**
Piney Township	6	1	7	**1**
Porter Township	2	2	4	**0**
Redbank Township	29	9	38	**17**
Richland Township	1	0	1	**0**
Rimersburg Borough	0	0	0	**0**
Salem Township	0	0	0	**1**
Shippenville Borough	0	0	0	**0**
Sligo Borough	20	0	20	**2**
St. Petersburg Borough	0	0	0	**0**
Strattanville Borough	0	0	0	**0**
Toby Township	4	1	5	**0**
Washington Township	5	0	5	**1**
TOTALS	285	69	354	**103**

***Per FEMA as of 10/2017**

Appendix G
Hazard Mitigation Project Status Chart

The HMT reviewed and ranked all submitted projects.
Community Ranking was determined by using STAPLE + E Criteria.

Project Number	Responsible Jurisdiction	Type (acquisition, relocation, elevation, retrofitting, safe rooms, utility protection, water/sewer, roads/bridges, storm water mgmt., localized flood control for critical facilities, etc.)	Description of Problem and Project	Est. Cost	Rank	Status
16-00-01	County EMA and Municipal Elected Officials	Miscellaneous	Identifying residents with special needs as defined by FEMA in case of emergency. Develop a program to identify residents within the County that have special needs. This would include developing the form, processes used to collect information, maintaining information and implementing information during times of emergencies.	$10,000	High	Working on funding
16-00-02	County EMA and Municipal Elected Officials	Miscellaneous	Assist residents with completion of Flood Plain Elevation Certificates.	$40,000	Low	Working on funding
16-00-03	County EMA and Municipal Elected Officials	Miscellaneous	Current county warning system is only setup for county wide tornado warnings. Change the current tornado warning system to an all hazard system with individual fire company activation.	$12,000	Med	
16-01-01	Ashland Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$900,000	Low	
16-01-02	Ashland Twp. Supervisors	Storm Water Management	Spook Hollow Road washes out every time there is a hard rain. Replace small culvert pipe with larger pipe and grade and resurface the road.	$80,000	Low	
16-01-03	Ashland Twp. Supervisors	Miscellaneous	Bridge removal over old railroad tracks.	$1 – 2.5 M	Low	
16-01-04	Ashland Twp. Supervisors	Bridge	Replace bridge on Route 322 over tributary to Canoe Creek	$1 – 2.5 M	Low	
16-02-01	Beaver Twp. Supervisors	Storm Water Management	Eagle Furnace Road washes out every time there is a hard rain. Grade and resurface 3,000 feet of the road.	$70,000	Low	

16-02-02	Beaver Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$900,000	Low	
16-02-03	Beaver Twp. Supervisors	Storm Water Management	Blair's Corners culvert pipe failing. Repair or replace culvert pipe.	$30,000	Low	
16-02-04	Beaver Twp. Supervisors	Bridge Project	Deck failing on Burnt Mills Road bridge over Beaver Creek. Replace deck.	$30,000	Low	
16-03-01	Brady Twp. Supervisors	Miscellaneous	Identifying residents within the Township that have special needs in case of emergency. Complete a survey of all Township residents to identify those with special needs in case of emergency.	$100	Med	
16-04-01	Callensburg Boro. Council	Miscellaneous	No backup power for emergency shelter in the Borough. Install emergency generator at shelter.	$35,000	Low	Working on funding
16-04-02	Callensburg Boro. Council	Miscellaneous	Identifying residents within the Borough that have special needs in case of emergency. Complete a survey of all Borough residents to identify those with special needs in case of emergency.	$500	High	
16-05-01	Clarion Borough Council	Miscellaneous	Unable to provide emergency warnings to public (approximately 150,000) during special events. Project would entail installing amplifiers, system controls, outdoor speakers, and several thousand feet of wire, all necessary connections and weather proofing fittings plus significant installation and labor costs. Project completion would require permits, as well as cooperation of local utilities and municipal authorities to use existing street lights and utility poles for mounting speakers.	$55,000	High	Working on funding
16-05-02	Clarion Borough Council	Storm Water Management	The storm water infrastructure located in the Center Place corridor (from South Street to the outfall point in Clarion Township – approximately 2,200 feet) is malfunctioning during moderate to severe rain events. The malfunctions include water backups, local road and property flooding, road edge erosion, surface/ditch erosion and the formation of severe voids underneath the roadway itself. Essentially, these malfunctions are being caused by aged, undersized and deteriorated piping and inlets. The problems will certainly continue and likely worsen over time if no action is taken. This project proposes to completely replace and upgrade the existing storm water piping with larger-bore HDPE smooth-bore pipe (up to 60-inch), replace all inlets and install additional inlets (approximately 12 additional inlets) as needed. The outfall points and area in Clarion Township will be rehabilitated and upgraded as part of this project. Upon installation of the new system, Center Place will be completely restored, graded for effective storm water drainage to its inlets, and re-paved.	$1,500,000	High	Working on funding
16-05-03	Clarion Borough Council	Storm Water Management	Deteriorated inlets/piping along Greenville Avenue, causing backups during severe rain events. This project would replace deteriorated 18-24-inch corrugated metal storm sewer piping (CMP) along both sides of Greenville Avenue from Payne Street to Corbett	$1,000,000	High	Working on funding

			Street, approximately 1,000 feet. The replacement piping would be 18-24-inch HDPE storm sewer piping (smooth bore). Approximately nine concrete inlets and tops would also be replaced. Project restoration would require road base re-installation and top-coat asphalt paving, replacement concrete curbing, and re-installation of affected sidewalks.			
16-05-04	Clarion Borough Council	Storm Water Management	Collapsed metal piping and deteriorated inlets are a recurring event in Clarion Borough due to the age of the infrastructure. These malfunctions cause localized flooding and road damage. Typically, the repairs involve 150 feet or less of replacement piping and an inlet or two. Concrete curbing, sidewalks and pavement restoration are often needed for these projects.	$75,000 Annually	High	15% Complete Working on additional funding
16-05-05	Clarion Borough Council	Storm Water Management	Storm flooding around the Borough. Storm Sewer System Study and Evaluation Project, completion of this project would give the Borough a solid, accurate, base of information from which to plan and prioritize future storm sewer system projects. The important data to be gathered includes: exact location, size (bore), and depth of all storm sewer piping, the material from which it is made (metal, plastic, concrete, etc.), and its current physical condition. The location, material, and condition of all inlets would also be determined. Real-time functioning data of the system would be gathered to help answer capacity and possible improvement questions.	$750,000	High	Working on funding
16-05-06	Clarion Borough Council	Storm Water Management	Storm water overflow from the inlet structure on North 5th Avenue above the Clarion River bridge has heavily damaged the gabion basket erosion control system installed on the bank above Fireman's Road and Firemans Road itself. This project would stabilize/repair the eroded bank and replace the damaged gabion baskets or install an entirely new system of erosion control plus repair the damaged portions of Fireman's Road.	$300,000	High	
16-05-07	Clarion Borough Council	Storm Water Management	Excessive water runoff and related erosion in the wooded, steep slope area between North 5th Avenue/Fireman's Road/Clarion River and US 322/First Avenue is overloading the inlet structure on North 5th Avenue (see 16-05-06). This project would determine the source of excessive runoff and/or uncontrolled runoff and construct a conveyance system which would effectively convey this water to the Clarion River in a controlled manner.	$2.5 Million	High	
16-05-08	Clarion Borough Council	Storm Water Management	Trout Run is a major receiver of Clarion Borough's storm water drainage. The stream needs physical improvements to continue safely conveying this water. This project would provide bank and channel stabilization, removal of in-stream and other obstructions, and channel re-alignment as needed.	$1.5 Million	High	
16-06-01	Clarion Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$30,000	Low	

16-06-02	Clarion Twp. Supervisors	Miscellaneous	Replace Bridge on Route 66 over Brush Run	$1.4 M	Med	
16-06-03	Clarion Twp. Supervisors	Storm Water Management	4th Ave. flooding of roadways (and properties) exists during rainfall which washes a great deal of debris onto the streets. Install pipes and catch basins.	$184,400	Low	
16-06-04	Clarion Twp. Supervisors	Storm Water Management	Boundary Street flooding this is a joint project with Clarion Borough to address the water running toward the Comet Food Warehouse. Obtain right of way, install pipes and catch basins.	$127,571	Med	
16-06-05	Clarion Twp. Supervisors	Storm Water Management	Flooding exists along Trout Run allowing water to enter the Dollar General and Comet Food. Install pipes and grade pavement.	$50,190	Med	
16-06-06	Clarion Twp. and Millcreek Twp. Supervisors	Bridge Replacement	Asbury Bridge this is a joint project with Millcreek Township to replace the temporary, “jump bridge” with a permanent structure	$225,000	Med	
16-06-07	Clarion Twp. and Millcreek Twp. Supervisors	Bridge Replacement	Replace Fleming Springs Road bridge this is a joint project with Millcreek Twp. Poor Water Conditions have caused the need for at least a temporary bridge to be installed at this location.	$200,000	Low	
16-06-08	Clarion Twp. Supervisors	Storm Water Management	Deer Run Road replacement of a culvert pipe/ possible hydraulic study needed	$52,000	Low	
16-06-09	Clarion Twp. Supervisors	Storm Water Management	Staab Road due to poor water conditions, the wing walls have collapsed causing the road to sink. Insert pipe.	$6,262	Low	
16-07-01	East Brady Boro. Council	Storm Water Management	Brady St. & Route 68 end wall of 48” culvert, located under a house on Kellys Way, is failing. Failure would lead to loss of the house and closure of Route 68. Route 68 closure will affect travel between Armstrong and Clarion Counties, also causing issues with emergency response. The proposed project will remove and replace the end wall and portions of the culvert.	$1,486,200	Med	Working on funding
16-07-02	East Brady Boro. Council	Storm Water Management	1st, 2nd and 3rd Avenues have no drainage to river. Flooding and icing of this area including electrical transfer station and Borough recreation areas. The proposed project will install 11 inlets to capture runoff, improved road curb and ditches, up to 1,000 feet of pipe to control and direct the flow of stormwater and improvements to an existing stormwater detention pond.	$284,500	Med	Working on funding
16-07-03	East Brady Boro. Council	Storm Water Management	3rd through 6th Streets has no infrastructure or unconstructed path to river. Results in flooding of Prudum St. and surrounding homes. The proposed project will install inlets and pipe and improve curbing to capture, control and convey stormwater to the river for disposal	$370,000	Med	Working on funding
16-07-04	East Brady Boro. Council	Storm Water Management	1st through 3rd Streets has no infrastructure or unconstructed path to river. Results in flooding of various streets and surrounding homes. The proposed project will install inlets and pipes and improve curbing to capture, control and convey stormwater to the river.	$610,000	Med	Working on funding

16-07-05	East Brady Boro. Council	Storm Water Management	Streets surrounding Clarion Street have no infrastructure or unconstructed path to river. Results in flooding of various streets and surrounding homes. The proposed project will install inlets and pipe and improve curbing to capture, control and convey stormwater to the river.	$333,000	Med	Working on funding
16-07-06	East Brady Boro. Council	Storm Water Management	Ferry St. and Maple Terrace the stormwater from this area is not adequately controlled or captured. This results in washout of road shoulders and localized flooding and icing of roads. The proposed project will replace and install inlets and pipe, and improve curbing and swales to capture, control and convey stormwater to a nearby creek.	$93,600	Med	
16-07-07	East Brady Boro. Council	Storm Water Management	Wallce St. from 1st to 2nd the stormwater from this area is not adequately controlled or captured. This results in washout of road shoulders and localized flooding and icing of roads. The proposed project will install inlets and pipe, and improve curbing and swales to capture, control and convey stormwater to the Borough stormwater collection system.	$61,200	Med	
16-07-08	East Brady Boro. Council	Storm Water Management	An unnamed tributary to the Allegheny River is channeled in to a piped collection system at the south end of Brady Street. During heavy rains and snowmelt events the stream overflows the pipe entrance and causes localized flooding and significant damage to the road and shoulders. The proposed project will install a larger culvert at the piped system entrance and a trash rach to prevent rocks and other debris from entering the pipe. The unimproved road ditch line will be reconstructed and damaged pavement replaced.	$70,100	Med	
16-07-09	East Brady Boro. Council	Miscellaneous	The Borough system is served by a single water storage tank located on the east side of town. Water mains on the west side of town are small diameter and do not have the flow or head capacity to provide fire protection to portions of the west side of town. The proposed project will install an interconnect between the east and west sides of the water distribution system improving the overall system hydraulics, water system quality, and fire protection capabilities to residents and businesses on the west side of the town.	$260,000	High	
16-07-10	East Brady Boro. Council	Storm Water Management	Bridge Street from East 2nd Avenue to McClaine St. the stormwater from this area is not adequately controlled or captured. This results in washout of road shoulders and localized flooding and icing of roads. The proposed project will replace and install inlets and pipe, and improve curbing and swales to capture, control and convey stormwater to the Borough stormwater collection system.	$37,500	Med	
16-07-11	East Brady Boro. Council	Storm Water Management	4th and Purdum Street stormwater from this area is not adequately controlled or captured. This results in localized flooding of streets. Winter conditions result in ice buildup on the roadways causing unsafe conditions for pedestrians and vehicles. In addition, the	$22,900	Med	

			sidewalk ramps are not ADA compliant and result in hazards for safe travel by those in wheelchairs and those with walking difficulties. The proposed project will install inlets and improve curbing to capture, control and convey stormwater to the Borough stormwater collection system. It will also install ADA compliance sidewalk ramps and improve sidewalk approaches at the intersection.			
16-08-01	Elk Twp. Supervisors	Miscellaneous	Install Natural Gas Generator at EOC	$10,000	Med	Working on funding
16-08-02	Elk Twp. Supervisors	Land Acquisition / Relocation of Trailers	Land acquisition of entire Brownie Trailer Court property and relocation of trailers to another court not in flood plain. One death has already occurred due to a flood in 1996.	$1,000,000	High	Working on funding
16-08-03	Elk Twp. Supervisors	Acquisition	Acquisition of both structures (Tarp Shop & Shippen Inn). Both are business; however, Shippen Inn is also a residential structure.	$600,000	Med	Working on funding
16-08-04	Elk Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$1,000,000	Low	
16-09-01	Farmington Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$320,000	Low	
16-10-01	Foxburg Boro. Council	Demolition	North Palmer Ave. - House is condemned. Demolish house to prevent injuries and protect the community.	$20,000	Low	Waiting for grant approval
16-10-02	Foxburg Boro. Council	Demolition	North Palmer Ave. - House is condemned. Demolish house to prevent injuries and protect the community.	$20,000	Low	Waiting for grant approval
16-10-03	Foxburg Boro. Council	Miscellaneous	North Palmer Ave. roadway collapsing dead end road. Currently no access for emergency vehicles. Clear area, shore up with gabion basket and rebuild roadway.	$78,000	Med	
16-10-04	Foxburg Boro. Council	Storm Water Management	Summit Ave. dead end road roadway failing poor access for emergency vehicles. Repair and extend drainage pipes. Widen and rebuild road.	$62,000	Med	
16-10-05	Foxburg Boro. Council	Storm Water Management	S. Palmer and Main Street flooding in rain storm causing sink hole. Fix drains and sink hole.	$5,000	Med	
16-10-06	Foxburg Boro. Council	Miscellaneous	No backup to water plant. Establish interconnectivity line with St. Petersburg Water	$250,000	High	
16-11-01	Hawthorn Boro. Council	Storm Water Management	Flooding issues on Yost St. to Brookville St. and Center St. Maple St. during heavy rain. Install larger pipe and culverts	$1,000,000	Low	
16-11-02	Hawthorn Boro. Council	Storm Water Management	Flooding issues on Center St. to Brookville St. and 2nd East St. to Maple St. during heavy rain. Install larger pipe and culverts	$1,000,000	Low	
16-11-03	Hawthorn Boro. Council	Storm Water Management	Flooding issues on Wiants Ln. to Brookville St. and Yost St. to Maple St. during heavy rain. Install larger pipe and culverts	$1,000,000	Low	

16-12-01	Highland Twp. Supervisors	Miscellaneous	Identifying residents within the Township that have special needs in case of emergency. Complete a survey of all Township residents to identify those with special needs in case of emergency.	$400	High	Working on funding
16-12-02	Highland Twp. Supervisors	Storm Water Management	Double Sealcoat approximately 700ft of very steep Kinbahe Road that is now dirt and install drainage pipe. This road constantly washes out taking the road surface into Little Toby Creek resulting in constant expense to the Township.	$12,000	Med	Working on funding
16-12-03	Highland Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$120,000	Low	
16-12-04	Highland Twp. Supervisors	Storm Water Management	Flooding issues on Highland Drive during heavy rain. Install inlet pipe and boxes as well as 660' of drainage pipe	$70,000	Low	
16-12-05	Highland Twp. Supervisors	Storm Water Management	Flooding and erosion of McCleary Road Bridge. Replace hand cut stone causeway with arch style or pipe suitable for water flows. This a major artery and school bus route in the Township.	$300,000	High	
16-12-06	Highland Twp. Supervisors	Storm Water Management	Flooding issues on various township roads during heavy rain. Replace failing small pipes with larger pipes.	$10,000	Low	
16-13-01	Knox Boro. Council	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Borough	$30,000	Low	
16-13-02	Knox Boro. Council	Storm Water Management	Huston Ave storm drains are to small causing flooding during heavy rains impacting High and Elementary schools. Replace small pipes with larger pipes and add additional drains and pipes.	$500,000	High	Working on funding
16-13-03	Knox Boro. Council	Miscellaneous	Retaining wall on Route 208 is structurally unsound. Could fail and fall on roadway and houses. Grade hill and replace wall.	$2,000,000	High	
16-14-01	Knox Twp. Supervisors	Storm Water Management	Hearst Road - flood waters scour around bridge when debris collects on bridge at Washington Road. Clean upstream channel	$27,000	Low	Working on funding
16-14-02	Knox Twp. Supervisors	Storm Water Management	Fairview Drive - roadway collects sheet flow that channels downhill flooding areas at base of hill. Install cross drains, clear exit ditches, re-crown road and re-grade ditch line	$174,000	Low	
16-14-03	Knox Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$180,000	Low	
16-15-01	Licking Twp. Supervisors	Bridge replacement	Route 58 bridge replacement over the Clarion River.	$5.1 M	High	Completed
16-15-02	Licking Twp. Supervisors	Bridge replacement	Route 58 bridge replacement over McMichael Run	$1 M	High	
16-15-03	Licking Twp. Supervisors	Bridge Project	Replace Bridge on Route 58 over Hodil Run	$1 M	High	
16-15-04	Licking Twp. Supervisors	Storm Water Management	Mt. Zion Road flooding due to culvert pipes that are too small. Replace with larger pipes.	$5,000	Low	

16-15-05	Licking Twp. Supervisors	Storm Water Management	Pine Hollow Road flooding due to culvert pipes that are too small. Replace with larger pipes.	$5,000	Low	
16-15-06	Licking Twp. Supervisors	Storm Water Management	Pryor Road floods (in floodplain) needs built up extensively to prevent flooding	$50,000	Med	
16-15-07	Licking Twp. Supervisors	Storm Water Management	Whitmore Road has water oozing from middle of road. Install underdrains.	$5,000	Low	
16-15-08	Licking Twp. Supervisors	Storm Water Management	Pine Hollow Road flooding due to culvert pipe erosion. Repair outflow.	$5,000	Low	
16-15-09	Licking Twp. Supervisors	Storm Water Management	Shirey Road flooding due to culvert pipe erosion. Repair outflow.	$5,000	Low	
16-15-10	Licking Twp. Supervisors	Storm Water Management	Larkin Road hill is to steep and erodes roadway during heavy rain. Fix hill and surface road.	$15,000	Low	
16-16-01	Limestone Twp. Supervisors	Acquisition or Elevation	Village of Kingsville - repetitive flooding Acquisition or elevation of structure	$100,000 - $250,000	High	Working on funding
16-16-02	Limestone Twp. Supervisors	Retrofitting	Village of Kingsville - repetitive flooded (basements) purchase sumps for structures	$500	Low	Working on funding
16-16-03	Limestone Twp. Supervisors	Retrofitting	Houses in water shed - Repetitive flooded (basements) purchase sumps for structures	$2,000	Low	Working on funding
16-16-04	Limestone Twp. Supervisors	Road Project	Thompson Road - flooding do to undersized pipe Replace existing under drain with 36” pipe and raise the road surface 24”	$10,000	Low	80% Completed
16-16-05	Limestone Twp. Supervisors	Road Project	Curtinbottom Road - flooding due to undersized pipe Replace existing under drain with 2-4' pipes and raise the road surface 24” for 100' on each side of the pipes	$10,000	Low	80% Completed
16-16-06	Limestone Twp. Supervisors	Bridge Project	Curll Road - bridge damaged by flooding Replace bridge	$1,500,000	Med	Working on funding
16-16-07	Limestone Twp. Supervisors	Road Project	Deer Hollow Road - flooding due to undersized pipes Remove current under drain pipes and replace with an Arch pipe or a box culvert	$500,000	Med	Working on funding
16-16-08	Limestone Twp. Supervisors	Road Project	Spring Road - flooding do to undersized pipe Replace existing under drain with 6' pipe and raise the road surface 36”	$14,000	Low	70% Completed
16-16-09	Limestone Twp. Supervisors	Road Project	Lenwood Road - flooding do to undersized pipe Replace existing under drain with larger pipe and raise the road surface 36”	$14,000	Low	80% Completed
16-16-10	Limestone Twp. Supervisors	Miscellaneous	No backup power for emergency shelter in the Township. Install emergency generator at shelter including building.	$32,000	High	Working on funding
16-16-11	Limestone Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$500,000	Low	
16-16-12	Limestone Twp. Supervisors	Miscellaneous	Bridge removal Forest Drive	$1 - $2.5 M	High	

16-16-13	Limestone Twp. Supervisors	Acquisition or Elevation	Repetitive lose structure, acquisition or elevation of structure	$50,000 - $ 250,000	High	
16-17-01	Madison Twp. Supervisors	Storm Water Management	Buildup of debris in Wildcat Creek. Clear debris, remove vegetation and dredge at outflow into Redbank Creek in Lawsonham.	unknown	Low	Working on funding
16-17-02	Madison Twp. Supervisors	Storm Water Management	Clear debris along Friar Point Road tributary stream. Debris buildup causes flooding of a home located nearby.	$2,500	High	Working on funding
16-17-03	Madison Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$60,000	Low	
16-17-04	Madison Twp. Supervisors	Miscellaneous	Bridge replacement Sarah Furnace Road over Catfish Run	$1 - $2.5 M	High	
16-17-05	Madison Twp. Supervisors	Bridge Project	Bridge on Wildcat School Road is failing. Repair bridge.	$50,000	Med	
16-17-06	Madison Twp. Supervisors	Storm Water Management	Storm pipes collapsing on Rider Road. Replace pipes.	$600	Low	
16-17-07	Madison Twp. Supervisors	Storm Water Management	Flooding on Traister Road. Install large drain pipes at 2 locations.	$9,000	Low	
16-17-08	Madison Twp. Supervisors	Storm Water Management	Storm pipes collapsing on Sarah Furnace Road. Replace pipes.	$5,000	Low	
16-17-09	Madison Twp. Supervisors	Bridge Project	Kissinger Mills Bridge failing. Replace bridge.	$906,000	Med	
16-18-01	Millcreek Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$120,000	Low	
16-18-02	Millcreek Twp. and Clarion Twp. Supervisors	Bridge Project	Asbury bridge failed on Asbury Rd., replace bridge.	$225,000	Med	
16-18-03	Millcreek Twp. and Clarion Twp.	Bridge Project	Winklink bridge failed at Old State and Fleming Spring Roads, replace bridge.	$200,000	Low	
16-19-01	Monroe Twp. Supervisors	Storm Water Management	Pennsy Road - culverts are too small and become obstructed with debris easily, this cause flooding and road damage. Replace two small culverts with one arched culvert.	$50,000	Med	Working on funding
16-19-02	Monroe Twp. Supervisors	Bridge, drainage and road project	Replace bridge, upgrade drainage, intersection improvements and widen road on Route 68	$10-$12.5 M	Med	Part Planned for 2018-19
16-19-03	Monroe Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$180,000	Low	
16-19-04	Monroe Twp. Supervisors	Miscellaneous	Reidsburg Bridge Curve replace 1 bridge, remove 1 bridge, repair 1 bridge	$2.5 - $5 M	High	
16-19-05	Monroe Twp. Supervisors	Miscellaneous	Bridge replacement on Curllsville Road over Licking Creek	$1 - $2.5 M	High	

16-19-06	Monroe Twp. Supervisors	Acquisition or Elevation	Flood plain structures, acquisition or elevation of structures	$1.5 to $3.2 M	High	
16-19-07	Monroe Twp. Supervisors	Storm Water Management	Craggs Run under Pennsy Road roadway & property floods during heavy rainfall; washing debris into pipes & onto property. Remove two small pipes, install long box culvert with headwalls & corner wing walls, backfill & raise roadway, clean banks & debris, seed & mulch stream banks	$125,500	Med	
16-19-08	Monroe Twp. Supervisors	Storm Water Management	Reids Run under Curll Road water goes over pipe & floods roadway during heavy rainfall & debris goes into pipe. Excavate & remove old small cement pipe, install larger plastic pipe, install headwalls & endwalls, clean stream banks of debris, seed & mulch	$15,000	Low	
16-19-09	Monroe Twp. Supervisors	Storm Water Management	Unknown tributary under Moggey Road roadway & property floods during heavy rainfall & washes out around pipe Excavate & remove small pipe, install larger pipe & backfill, install headwalls & endwalls, clean stream banks, seed, & mulch	$15,000	Low	
16-19-10	Monroe Twp. Supervisors	Bridge	Replace Bridge on Route 68 over Craggs Run	$1- 2.5 M	Low	
16-20-01	New Bethlehem Boro. Council	Storm Water Management	Replace deteriorating small storm drains on Wood and Penn Streets with larger drains.	$50,000	Low	
16-20-02	New Bethlehem Boro. Council	Miscellaneous	Repair retaining wall along Wood street. Retaining wall is failing. Work in conjunction with PENNDOT on this project.	$500,000 to $1,000,000	Med	Planned for 2018
16-20-03	New Bethlehem Boro. Council	Miscellaneous	No backup power for emergency shelter in the Borough. Install emergency generator at shelter including building.	$32,000	High	Working on funding
16-20-04	New Bethlehem Boro. Council	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Borough	$60,000	Low	
16-20-05	New Bethlehem Boro. Council	Acquisition or Elevation	Repetitive lose structures, acquisition or elevation of structures	$1,500,000 - $3,400,000	High	
16-20-06	New Bethlehem Boro. Council	Demolition	Two structures on Broad Street are vacant and deteriorating. Purchase properties and demolish.	$70,000	Low	
16-20-07	New Bethlehem Boro. Council	Miscellaneous	Fire siren is old and failing also used for emergency notifications. Replace and relocate siren for better coverage.	$25,000	Low	
16-20-08	New Bethlehem Boro. Council	Miscellaneous	Identifying residents within the Borough that have special needs in case of emergency. Complete a survey of all Borough residents to identify those with special needs in case of emergency.	$1,000	High	20% complete Working on funding
16-20-09	New Bethlehem Boro. Council	Miscellaneous	Tree debris in Redbank Creek at various locations that may lead to additional flooding and stress on dam. Clear debris from Redbank Creek at locations	$5,000	Low	

16-20-10	New Bethlehem Boro. Council	Miscellaneous	Debris buildup in Leasure Run and Redbank Creek is directing water to the side of Penn Street Bridge, this is deteriorating the bridge. This bridge is the only access to the Smucker Plant. Remove debris from both waterways.	$10,000	High	
16-21-01	Paint Twp. Supervisors	Bridge / Miscellaneous	Doe Run Bridge - bridge catches debris scours at wing walls. Clean channel up and down stream, repair scour holes, regrade and stabilize tail ditches to bridge.	$35,000	Low	Working on funding
16-21-02	Paint Twp. Supervisors	Bridge / Miscellaneous	Hearst Road - bridge catches debris, backs up water on road. Install new bridge with greater clear span opening.	$35,000	Low	Working on funding
16-21-03	Paint Twp. Supervisors	Storm Water Management	Poor drainage leading to sheet flow and erosion damage to roads. Replace undersized and damaged culvert pipes, add new locations where needed, reshape and stabilize ditches throughout the township.	$200,000	Low	Working on funding
16-21-04	Paint Twp. Supervisors	Storm Water Management	Marianne Estates - flooding during heavy rains. Install adequate drainage to Marianne Estates in form of storm water system.	$2,500,000	Med	Working on funding
16-21-05	Paint Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$120,000	Low	
16-21-06	Paint Twp. Supervisors	Storm Water Management	Amsler Road flooding from undersized and lack of culverts. Obtain right of way and install culverts.	$176,000	Low	
16-21-07	Paint Twp. Supervisors	Storm Water Management	Kiser-Wagner Road bridge catches debris scours at wing walls. Install new bridge with greater clear span opening.	$700,000	Med	
16-22-01	Perry Twp. Supervisors	Storm Water Management	Flooding of Stevens Road. Elevate Road above Stream Grade.	$100,000	Low	20% Complete Working on funding
16-22-02	Perry Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$90,000	Low	
16-22-03	Perry Twp. Supervisors	Acquisition or Elevation	Repetitive lose structure, acquisition or elevation of structure	$50,000 - $ 500,000	High	
16-22-04	Perry Twp. Supervisors	Storm Water Management	Flooding on Foust Road. Install large drain pipes.	$1,200	Low	
16-22-05	Perry Twp. Supervisors	Storm Water Management	Flooding on Pickard Valley Road. Install large drain pipes cut bleeders.	$2,500	Low	
16-22-06	Perry Twp. Supervisors	Storm Water Management	Flooding on Bartow Road. Install large drain pipes.	$3,000	Low	
16-22-07	Perry Twp. Supervisors	Storm Water Management	Flooding on Sportman Road. Install more drain pipes.	$2,500	Low	
16-22-08	Perry Twp. Supervisors	Storm Water Management	Flooding on Monterey Road. Install more drain pipes.	$3,500	Low	
16-22-09	Perry Twp. Supervisors	Storm Water Management	Flooding on Pollack Lane. Install more drain pipes.	$2,500	Low	

16-23-01	Piney Twp. Supervisors	Storm Water Management	Flooding of Campbell Road caused by debris in Little Licking Creek between Campbell Road and Logue Road Clean creek channel from Campbell Road to Logue Road	$30,000	Low	Working on funding
16-23-02	Piney Twp. Supervisors	Miscellaneous	Install backup generator at the Township EOC.	$10,000	Med	Working on funding
16-23-03	Piney Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$60,000	Low	
16-23-04	Piney Twp. Supervisors	Storm Water Management	Campbell Road flooding issues culvert pipe failing. Replace culvert pipe with larger pipe.	$12,500	Low	
16-23-05	Piney Twp. Supervisors	Miscellaneous	Anti-skid/salt building to small and crumbing. Replace with larger building.	$70,000	Low	
16-23-06	Piney Twp. Supervisors	Miscellaneous	On site systems are too small. Extend sewage line to nursing facilities.	$150,000	Med	
16-23-07	Piney Twp. Supervisors	Miscellaneous	Building are condemned. Purchase and demolish structures to prevent injuries and protect the community.	$50,000	Low	
16-23-08	Piney Twp. Supervisors	Miscellaneous	Lack of notification capabilities. Establish means of reaching residents, i.e. website, text message/call chains, other means of communications. Newsletter/mailings	$1,500	Low	
16-24-01	Porter Twp. Supervisors	Miscellaneous	No backup power for Township Building which is used for EOC. Install a generator to provide backup power.	$4,000	High	Working on funding
16-24-02	Porter Twp. Supervisors	Road Project	Stewart Road - flooding caused by excessive water runoff over flowing current drains. Replace current piping with either larger or more pipes.	$5,000	Low	Working on funding
16-24-03	Porter Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$360,000	Low	
16-24-04	Porter Twp. Supervisors	Miscellaneous	Replace bridge on Route 861 over Leatherwood Creek	$1.5-$2.5 M	High	
16-24-05	Porter Twp. Supervisors	Miscellaneous	Replace bridge on Olean Trail over Jack Run	$1 M	High	
16-24-06	Porter Twp. Supervisors	Miscellaneous	Replace bridge on Reidsburg Road over Jack Run	$1 M	High	
16-25-01	Redbank Twp. Supervisors	Storm Water Management	Piney Creek - flooding during heavy rains Clear vegetation from approximately 3 miles of Pine Creek	$100,000	Low	Working on funding
16-25-02	Redbank Twp. Supervisors	Bridge Project	Replace bridge over Piney Creek on Shannondale Road	Unknown	Low	Working on funding
16-25-03	Redbank Twp. Supervisors	Miscellaneous	Abandoned deep mine water run-off into small streams. Reclamation of abandoned mine to include removal of underground storage tank, removal/disposal of mine structure, piping of direct water runoff to alkaline area then into small streams and seal 2 mine entries.	$300,000 - $500,000	Med	

16-25-04	Redbank Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$540,000	Low	
16-26-01	Richland Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$700,000	Low	
16-26-02	Richland Twp. Supervisors	Storm Water Management	Smokey Road floods from heavy rain. Replace small drainage pipes with larger pipes.	$35,000	Low	
16-26-03	Richland Twp. Supervisors	Miscellaneous	Identifying residents within the Township that have special needs in case of emergency. Complete a survey of all Township residents to identify those with special needs in case of emergency.	$500	High	Ongoing
16-26-04	Richland Twp. Supervisors	Storm Water Management	Roads flood from heavy rain. Replace small drainage pipes with larger pipes.	$40,000	Low	
16-26-05	Richland Twp. Supervisors	Storm Water Management	Heeter Road floods from heavy rain. Replace small drainage pipes with larger pipes.	$50,000	Low	
16-26-06	Richland Twp. Supervisors	Bridge	Master Road Bridge failure over Interstate 80. Replace bridge	$3.4 million	Med	
16-27-01	Rimersburg Boro. Council	Miscellaneous	Install backup generator (50KW) at the water pump station along Route 68 near East Brady Borough. The water plant provides water for 4 municipalities.	$50,000	High	Working on funding
16-27-02	Rimersburg Boro. Council	Miscellaneous	Waste water plant and infrastructure at end of life. Upgrade and replacement of plant and infrastructure.	$6 Million	High	
16-28-01	Salem Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$300,000	Low	
16-28-02	Salem Twp. Supervisors	Miscellaneous	Identifying residents within the Township that have special needs in case of emergency. Complete a survey of all Township residents to identify those with special needs in case of emergency.	$500	High	Ongoing
16-28-03	Salem Twp. Supervisors	Miscellaneous	Install backup generator at the Township EOC.	$35,000	Low	
16-28-04	Salem Twp. Supervisors	Storm Water Management	Roads flood from heavy rain. Replace small drainage pipes with larger pipes.	$60,000	Low	
16-28-05	Salem Twp. Supervisors	Storm Water Management	Lakeview Road flood from heavy rain. Replace small drainage pipes with larger pipes	$20,000	Low	
16-29-01	Shippenville Boro. Council	Storm Water Management	2nd Street washes out in heavy rain. Replace small drainage pipes with large pipes.	$10,000	Low	
16-29-02	Shippenville Boro. Council	Storm Water Management	South School Street washes out in heavy rain. Replace small drainage pipes with large pipes.	$10,000	Low	

16-29-03	Shippenville Boro Council	Storm Water Management	Upgrade and repair exiting storm water facilities and pipes in various locations in the Borough. Locations currently prone to flooding during heavy rain events. The project would also map and inventory the assets to identify additional areas that contribute to hazardous conditions.	1 million	High	Working on funding
16-29-04	Shippenville Boro Council	Miscellaneous	Vegetation control would identify and evaluate hazardous trees within the Borough limits, remove or trim trees within right of ways to correct the hazard. Possible extension of the project would be to work with private owners to correct hazards to private structures.	$90,00	High	Working on funding
16-30-01	Sligo Boro. Council	Storm Water Management	Licking Creek - exceeding banks during heavy rains. Remove debris and dredge Licking & Little Licking Creeks	Unknown	High	Working on funding
16-31-01	St. Petersburg Boro. Council	Water Plant	Upgrade current water treatment plant to add two filter systems as per DEP requirements.	$2,000,000	High	
16-31-02	St. Petersburg Boro. Council	Miscellaneous	Work with DEP to close open deep mine shafts	Unknown	High	Working on funding
16-31-03	St. Petersburg Boro. Council	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Borough	$60,000	Low	
16-32-01	Strattanville Boro. Council	Miscellaneous	No backup power for emergency shelter in the Borough. Install emergency generator at shelter.	$10,000	High	Working on funding
16-32-02	Strattanville Boro. Council	Miscellaneous	Sludge buildup at sewage plant. Remove sludge in compliance with DEP regulations.	$70,000	High	
16-32-03	Strattanville Boro. Council	Storm Water Management	Water runoff from rain storms is causing ponding on 1st Street. Place storm drains and piping to drain water.	$15,000	Low	
16-32-04	Strattanville Boro. Council	Storm Water Management	Water runoff from rain storms is causing ponding on North Pine Street. Place storm drains and piping to drain water.	$27,000	Low	
16-32-05	Strattanville Boro. Council	Storm Water Management	Water runoff from rain storms is causing ponding on South Pine Street. Place storm drains and piping to drain water.	$28,600	Low	
16-33-01	Toby Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$120,000	Low	
16-33-02	Toby Twp. Supervisors	Storm Water Management	Roads flood from heavy rain. Replace small drainage pipes with larger pipes.	$10,000	Low	
16-33-03	Toby Twp. Supervisors	Bridge Project	Deck and wing walls failing on Henry Road bridge. Replace bridge.	$50,000	Med	
16-34-01	Washington Twp. Supervisors	Bridge Project	Dempsytown Road - Bridge to small, road and bridge floods, enlarge bridge	$715,000	Low	Working on funding
16-34-02	Washington Twp. Supervisor.	Bridge Project	Eisenman Road - 2 Bridges are too small, roads and bridges flood, Enlarge both bridges	$260,000 each	Low	Working on funding
16-34-03	Washington Twp. Supervisors	Miscellaneous	Work with DEP to plug Orphaned/Abandon wells within the Township	$270,000	Low	

16-34-04	Washington Twp. Supervisors	Bridge Project	Gowdy Bridge - bridge to small, road and bridge floods, enlarge bridge	$460,000	Low	
16-34-05	Washington Twp. Supervisors	Storm Water Management	Licking Rd. lack of cross culverts causes road washouts. Install 9 additional culverts.	$54,000	Low	
16-34-06	Washington Twp. Supervisors	Storm Water Management	Dempsytown Road – roads floods during heavy rain, washes out ditches and floods basements. Install storm water system, replace undersized pipes and create sediment traps.	$415,000	Med	
	Clarion University		Have projects in their Hazard Mitigation Plan.			

Appendix H
Public Service Announcements/News Releases Documentation

Annexes

1 – Public Service Announcements/News Releases Chart
2 – Public Service Announcements/News Releases Documents

Appendix H, Annex 1
Public Service Announcements/News Release Chart

DATE	Item
9/23/2014	News release for public comment for 2014 end of year report
1/14/2015	News release for 2014 End of Year Report
9/22/2015	News release for public comment for 2015 end of year report
1/14/2016	News release for 2015 End of Year Report
9/27/2016	News release for public comment for 2016 end of year report
1/17/2017	News release for 2016 End of Year Report
5/8/2017	Public notices for public input on current plan and public meeting announcement
5/23/2017	News release for public input on current plan and public meeting announcement
11/1/2017	Public notice for public input on draft revised plan and public meeting announcement
11/14/17	News release for public input on draft revised plan and public meeting announcement
1/9/18	News release for 2017 End of Year Report

Appendix H, Annex 2
Public Service Announcements/News Release Documents

See Attached File

Appendix I
Public and Municipal Comments

There were no Public or Municipal comments regarding the current plan except for the municipalities that added or updated the progress of current projects.

There were no Public or Municipal comments regarding the revised draft plan except for the municipalities that added or updated the progress of projects.

Appendix J
County and Municipality Plan Adoption

Annexes

1- Adoption Chart
2 - Plan Adoption Resolutions

Appendix J, Annex 1
Adoption Chart

JURISDICTION	DATE OF ADOPTION
Clarion County	6/12/18
Ashland Township	7/12/18
Beaver Township	7/2/18
Brady Township	6/13/18
Callensburg Borough	8/7/18
Clarion Borough	7/10/18
Clarion Township	7/9/18
East Brady Borough	7/17/18
Elk Township	8/27/18
Farmington Township	7/5/18
Foxburg Borough	7/9/18
Hawthorn Borough	7/3/18
Highland Township	6/12/18
Knox Borough	7/2/18
Knox Township	7/9/18
Licking Township	6/13/18
Limestone Township	6/12/18
Madison Township	7/3/18
Millcreek Township	6/13/18
Monroe Township	7/3/18
New Bethlehem Borough	6/19/18
Paint Township	6/20/18
Perry Township	8/8/18
Piney Township	6/13/18
Porter Township	7/9/18
Redbank Township	7/10/18
Richland Township	7/10/18
Rimersburg Borough	7/2/18
Salem Township	7/2/18
Shippenville Borough	6/27/18
Sligo Borough	7/3/18
St. Petersburg Borough	7/3/18
Strattanville Borough	7/11/18
Toby Township	7/11/18
Washington Township	7/23/18
Clarion University	8/22/18

Appendix J, Annex 2
Plan Adoption Resolutions

See Attached File

Appendix K
Plan Distribution

Copy	Agency	Distributed By	Date	Receipt Form
1	Clarion County Commissioners	D.L. Dunn		
2	Clarion County EMA	D.L. Dunn		
3	PEMA Harrisburg Office	D.L. Dunn		
4	PEMA Western Area Office	D.L. Dunn		
5	Ashland Township	D.L. Dunn		
6	Beaver Township	D.L. Dunn		
7	Brady Township	D.L. Dunn		
8	Callensburg Borough	D.L. Dunn		
9	Clarion Borough	D.L. Dunn		
10	Clarion Township	D.L. Dunn		
11	East Brady Borough	D.L. Dunn		
12	Elk Township	D.L. Dunn		
13	Farmington Township	D.L. Dunn		
14	Foxburg Borough	D.L. Dunn		
15	Hawthorn Borough	D.L. Dunn		
16	Highland Township	D.L. Dunn		
17	Knox Borough	D.L. Dunn		
18	Knox Township	D.L. Dunn		
19	Licking Township	D.L. Dunn		
20	Limestone Township	D.L. Dunn		
21	Madison Township	D.L. Dunn		
22	Millcreek Township	D.L. Dunn		
23	Monroe Township	D.L. Dunn		
24	New Bethlehem Borough	D.L. Dunn		
25	Paint Township	D.L. Dunn		
26	Perry Township	D.L. Dunn		
27	Piney Township	D.L. Dunn		
28	Porter Township	D.L. Dunn		
29	Redbank Township	D.L. Dunn		
30	Richland Township	D.L. Dunn		
31	Rimersburg Borough	D.L. Dunn		
32	Salem Township	D.L. Dunn		
33	Shippenville Borough	D.L. Dunn		
34	Sligo Borough	D.L. Dunn		
35	St. Petersburg Borough	D.L. Dunn		
36	Strattanville Borough	D.L. Dunn		
37	Toby Township	D.L. Dunn		
38	Washington Township	D.L. Dunn		
39	Clarion University	D.L. Dunn		
40	Allegheny-Clarion Valley SD	D.L. Dunn		
41	Clarion Area SD	D.L. Dunn		
42	Clarion-Limestone Area SD	D.L. Dunn		
43	Keystone SD	D.L. Dunn		
44	North Clarion County SD	D.L. Dunn		
45	Redbank Valley SD	D.L. Dunn		
46	Union SD	D.L. Dunn		
47	Clarion County Career Center	D.L. Dunn		

Appendix L
Additional Hazard Maps

Annexes

1 – Landslides
2 – Subsidence
3 – Well Sites

See Attached Files

Appendix M
Public Information Brochures

The following brochures are available on the Clarion County DPS website (www.clarioncountyoes.pa.us).

After a Disaster Hiring a Contractor
DEP Mine Information Pamphlet
Family Disaster Supply Kit
Fire Safety During and After a Flood
Floods and Flash Floods
Hazardous Materials
House and Building Fires
Know How to Use the Phone You Own
Landslides and Mudflows
Lyme Disease Factsheet for Hikers/Campers
Lyme Disease Factsheet for Golfers
Lyme Disease Factsheet for Outdoor Workers
Lyme Disease Factsheet for Parents
Lyme Disease Factsheet for Pregnant Woman
Mine Consumer Brochure
Pets and Disasters
Preparedness for People with Disabilities
Protect Yourself from H1N1
Protecting Your Property – Fire
Protecting Your Property – Flooding
Safe Computing Tips
Terrorism
Thunderstorms and Lightning
Tornadoes
Wildland Fires
Winter Driving
Winter Storms

Appendix N
Stormwater Management Ordinance Municipal Participation

MUNICIPALITY	COUNTY ORDINANCE	DATE RESOLUTION PASSED	MUNICIPAL ORDINANCE	DATE MUNICIPAL ORDINANCE ADOPTED
Ashland Township	Yes	03/07/13		
Beaver Township	Yes	03/04/13		
Brady Township	Yes	03/13/13		
Callensburg Borough	Yes	05/02/13		
Clarion Borough	Yes	04/03/13		
Clarion Township	Yes	04/08/13		
East Brady Borough	Yes	04/16/13		
Elk Township	Yes	03/11/13		
Farmington Township	Yes	03/06/13		
Foxburg Borough	Yes	05/06/13		
Hawthorn Borough	Yes	03/05/13		
Highland Township	Yes	03/19/13		
Knox Borough	Yes	04/01/13		
Knox Township	Yes	03/04/13		
Licking Township			Yes	08/08/12
Limestone Township	Yes	03/12/13		
Madison Township	Yes	04/02/13		
Millcreek Township	Yes	04/02/13		
Monroe Township	Yes	03/07/13		
New Bethlehem Borough	Yes	02/19/13		
Paint Township	Yes	03/11/13		
Perry Township	Yes	03/11/13		
Piney Township	Yes	04/10/13		
Porter Township	Yes	03/11/13		
Redbank Township	Yes	06/11/13		
Richland Township	Yes	03/12/13		
Rimersburg Borough	Yes	03/12/13		
Salem Township	Yes	03/04/13		
Shippenville Borough	Yes	03/13/13		
Sligo Borough	Yes	03/05/13		
St. Petersburg Borough	Yes	02/28/13		
Strattanville Borough	Yes	03/13/13		
Toby Township	Yes	04/10/13		
Washington Township	Yes	03/14/13		

Appendix O
Floodplain Ordinances Adopted by Municipalities

Jurisdiction	Adopted	Date
Ashland Township	Yes	9/8/2011
Beaver Township	Yes	11/7/2011
Brady Township	Yes	12/3/2014
Callensburg Borough	Yes	2/4/2015
Clarion Borough	Yes	11/2/2011
Clarion Township	Yes	7/11/2011
East Brady Borough	Yes	11/18/2014
Elk Township	Yes	7/11/2011
Farmington Township	Yes	11/2/2011
Foxburg Borough	Yes	11/3/2014
Hawthorn Borough	Yes	10/7/2014
Highland Township	Yes	11/15/2011
Knox Borough	Yes	8/1/2011
Knox Township	Yes	12/2/2011
Licking Township	Yes	11/9/2011
Limestone Township	Yes	11/8/2011
Madison Township	Yes	12/2/2014
Millcreek Township	Yes	10/26/2011
Monroe Township	Yes	9/12/2011
New Bethlehem	Yes	10/21/2014
Paint Township	Yes	11/21/2011
Perry Township	Yes	11/19/2014
Piney Township	Yes	11/16/2011
Porter Township	Yes	11/10/2014
Redbank Township	Yes	12/9/2014
Richland Township	Yes	12/9/2014
Rimersburg Borough	**Not Required**	
Salem Township	Yes	11/7/2011
Shippenville Borough	**Not Required**	
Sligo Borough	Yes	9/6/2011
St. Petersburg Borough	**Not Required**	
Strattanville Borough	**Not Required**	
Toby Township	Yes	11/4/2011
Washington Township	Yes	11/10/2011