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Executive Summary

Introduction

The goal of Huntingdon County's pre-disaster hazard mitigation planning project is to make residents, businesses, property owners, operators of critical infrastructure, and municipalities less susceptible to the effects of future disasters by increasing the disaster resistance of the County and its municipalities. After suffering the effects of floods, severe winter weather, severe storms, and other natural and manmade hazards, the Huntingdon County Board of Commissioners initiated a multi-jurisdictional hazard mitigation planning effort to update the County's current Hazard Mitigation Plan, approved by the Federal Emergency Management Agency (FEMA) in 2004. This process reviewed the hazards identified in the previous plan, included emphasis on new hazards, expanded the research on the hazards that affect Huntingdon County, and prioritized mitigation strategies to reduce potential loss of life and property damage from those hazards.

This Multi-Jurisdictional Hazard Mitigation Plan (HMP) serves as a framework for saving lives, protecting assets, and preserving the economic viability of the County's 48 municipalities. This planning initiative resulted in a comprehensive HMP that meets all the Federal Emergency Management Agency (FEMA) and Pennsylvania Emergency Management Agency (PEMA) requirements established in the Disaster Mitigation Act of 2000 (DMA 2000). The updated HMP will help the County and its municipalities maintain their eligibility for certain future federal funding, especially the Hazard Mitigation Grant Program (HMGP). A FEMA-approved HMP is also required to participate in the Emergency Management Performance Grant programs (EMPG) and in projects under the Pre-Disaster Mitigation Grant Program (PDM).

The Planning Process

The planning process for the update of this HMP involved a variety of key decision makers and stakeholders within Huntingdon County as early as March 2006. These stakeholders included the Huntingdon County Emergency Management Agency, the Huntingdon County Planning and Development Department, the municipalities within Huntingdon County, and the local emergency management coordinators. The planners were able to customize the process to meet the needs of the municipalities as well as the County. The process was developed around the requirements laid out in FEMA's Local Hazard Mitigation Crosswalk, referenced throughout this Plan, as well as numerous other guidance documents including, but not limited to: FEMA's State and Local Mitigation Planning How-to Guide series of documents (FEMA 386-series) and the National Fire Protection Association (NFPA) 1600 Standard on Disaster/Emergency Management and Business Continuity Programs.

Appendix B contains the planning process from Huntingdon County's 2004 FEMA-approved Hazard Mitigation Plan, which was used as a basis for this update. From the beginning of this process, the Huntingdon County Commissioners were proactive in the HMP update development process. The Commissioners applied for, and received, a FEMA Pre-Disaster Mitigation (PDM) Grant. Several public meetings with local elected officials were held, as well

as work sessions and in-progress-review meetings with the County Commissioners, the County Planning Director, and the Acting Director of the County Emergency Management Agency and staff. At each of the public meetings, respecting the importance of local knowledge, municipal officials were strongly encouraged to submit hazard mitigation project opportunity forms, complete their respective portions of the capability assessment, and to review and eventually adopt the updated Multi-Jurisdictional HMP. Huntingdon County will continue to work with all local municipalities to collect local hazard mitigation projects and add them to the plan during the scheduled reviews.

The involvement of both public and private entities within Huntingdon County offered valuable input which was used to create a detailed and viable HMP. Local knowledge pertaining to hazards and possible mitigation projects further enhanced the value of this Hazard Mitigation Plan to the County and its municipalities.

The HMP planning process consisted of:

- applying and receiving a PDM grant to fund the planning project;
- announcing the initiative via press releases and postings on the County's Web site;
- involving elected and appointed County and municipal officials in a series of meetings, training sessions, and workshops (see Appendix B);
- inviting input from businesses through the Huntingdon County Chamber of Commerce (see Section 1);
- inviting the input of Juniata College;
- reviewing the hazards listed in the 2004 FEMA-approved HMP and identifying additional hazards that affect Huntingdon County;
- assessing risk and analyzing vulnerabilities;
- identifying mitigation strategies, goals, and objectives;
- developing an implementation plan;
- announcing completion via press releases and postings on the County's Web site;
- plan adoption at a public meeting of the Huntingdon County Board of Commissioners; and
- plan submission to FEMA and PEMA.

The Plan

The HMP outlines actions designed to address and reduce the impact of a full range of natural hazards facing Huntingdon County, including flooding, severe winter weather, and other severe weather. Human-caused hazards were also addressed. These include transportation accidents, hazardous materials spills, and civil disorders. A multi-jurisdictional planning approach was utilized to complete this update of the Huntingdon County HMP, thereby eliminating the need for each municipality to craft its own approach to hazard mitigation and its

own planning document. Further, this type of planning effort results in a common understanding of the hazard vulnerabilities throughout the County, a comprehensive list of mitigation projects, common mitigation goals and objectives, and an evaluation of a broad capability assessment examining policies and regulations throughout the County and its municipalities. Each municipality that elected to be part of the multi-jurisdictional planning effort adopted the HMP by resolution.

Hazard Vulnerability Analysis

A key component to reducing future losses is to first have a clear understanding of what the current risks are and what steps may be taken to lessen their threat. The development of the Hazard Vulnerability Analysis (HVA) is the critical first step in the entire mitigation process, as it presents an organized and coordinated way of assessing potential hazards and risks. The HVA describes each hazard in terms of its frequency, severity, County impact, and identifies the effects of both natural and manmade hazards. Numerous hazards were identified as part of the HVA process. The HVA is composed of two primary components — hazard identification and risk assessment.

Hazard Identification

A comprehensive, "all-hazards" list of disasters that have occurred or could occur in Huntingdon County was developed for the HVA. The hazard identification section presents profiles and data on natural and human-caused hazards. The HMP planning team utilized national and state as well as historical data for listings of hazard events. The top three hazards identified in Huntingdon County are: flooding, severe winter weather, and other severe weather. Flooding is the most common natural hazard in Huntingdon County and presents the greatest potential for significant social and economic impact.

Risk Assessment

The risk associated with each hazard was calculated using a comprehensive Risk Assessment matrix. The HMP planning team provided the matrix to County officials at an HMP planning meeting for review and comment. The matrix provides a systematic method for assigning a risk factor to a hazard event, based on the impact and frequency of the event, and its effect on the population, critical facilities, the economy, and the environment. This task also collected and integrated data, including an inventory of certain assets that may be affected by natural hazards, such as housing units, critical infrastructure, and Superfund Amendments and Reauthorization Act (SARA) facilities. The HMP planning team assessed the potential impacts for the top three hazards using Huntingdon County tax parcel and repetitive loss structure data. This was accomplished by conducting extensive Geographic Information Systems (GIS) mapping. The resulting information provides local jurisdictions with information that outlines the hazards they face and potential social impacts, damages, and economic losses.

Capability Assessment

A Capability Assessment matrix/questionnaire was provided to the municipalities during the planning process at meetings with County officials. These meetings were designed to seek input from key County and municipal stakeholders on legal, fiscal, technical, and administrative capabilities of all jurisdictions. As such, the Capability Assessment helps guide the implementation of mitigation projects and will help evaluate the effectiveness of existing mitigation measures, policies, plans, practices, and programs. Throughout the life of the Plan, attention will be given to state, county, or local plans, regulations, and development requirements. These may include, but are not limited to, local plans, zoning ordinances, sub-division and site-specific regulations, building codes, flood insurance programs, natural resources, and conservation statutes. While some of these areas were identified for improvement, none were found to preclude any municipality from minimizing or mitigating future hazards.

Mitigation Strategy Development

The HMP planning team developed a mitigation strategy for the County and identified and prioritized project planning goals following the completion of the Hazard Vulnerability Analysis. The identification and prioritization of project planning goals were based on the findings of the HVA and were specifically focused on the County's vulnerability to the profiled hazards and the potential severity (i.e., frequency and magnitude) of those hazards. These project planning goals represent the County's vision for minimizing damages caused by flooding and other likely hazards. Mitigation measures and options were developed in terms of preventative measures, property protection, emergency services measures, structural projects, natural resource protection, and public education. They are provided to help the County and local jurisdictions identify appropriate community projects. Critical project information, such as responsibility assignment, guides the implementation of these actions. A process to maintain the Plan and update it at least every five years is also included as outlined in Section 5: Plan Maintenance. The Huntingdon County Emergency Management Agency (HCEMA) is the agency directly responsible to the County Board of Commissioners for implementation and maintenance of this HMP.

Hazard Mitigation Plan Goals

The following goal statements denote long-term objectives to reduce or avoid vulnerabilities to flooding and other natural, man-made, and technological hazards profiled.

- Strengthen County and local capabilities to reduce the potential impacts of flooding on existing and future public/private assets, including structures, critical facilities, and infrastructure.

- Increase intergovernmental cooperation and build public/private partnerships to implement activities that will reduce the impact of natural, manmade, and technological hazards.
- Enhance planning and emergency response efforts among state, county, and local emergency management personnel to protect public health and safety.
- Continue to build Huntingdon County's spatial information resources to strengthen public and private hazard mitigation planning and decision-support capabilities.
- Increase public awareness of both the potential impacts of natural hazards and activities to reduce those impacts.

Plan Review and Adoption

In accordance with federal and state requirements, the governing bodies of each participating jurisdiction must review and adopt by resolution, the Huntingdon County Multi-Jurisdictional Hazard Mitigation Plan. Copies of the adopting resolutions are included in this Plan. The entire Plan was submitted to PEMA and FEMA Region III in Philadelphia for review and approval.

Section 1: Overview

Requirement §201.6(c)(5): [The local hazard mitigation plan shall include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the Plan (e.g. City Council, County Commissioners, Tribal Council).[1]

Introduction

The Huntingdon County Board of Commissioners, in response to the Disaster Mitigation Act of 2000 (DMA 2000)[2], spearheaded a county-wide hazard mitigation planning effort to prepare, adopt, and implement an update to the 2004 FEMA-approved multi-jurisdictional HMP for the County and all of its 48 municipalities.

The Huntingdon County Emergency Management Agency (HCEMA) was charged by the County Board of Commissioners to prepare this Plan. Technical assistance from a Pennsylvania-based consulting firm was also used to prepare the Plan. A Federal Emergency Management Agency Mitigation Planning Grant was secured and coupled with project funds budgeted by the County Board of Commissioners to pay for the Plan's preparation.

A comprehensive update of the 2004 FEMA-approved HMP was completed. This update focuses on identifying additional hazards affecting Huntingdon County, expanding data sources for analyzing hazards, creating a more scientific approach to analyzing the County's vulnerability to the hazards, streamlining the planning process for future HMP updates, and identifying more concrete hazard mitigation measures to deal with the impacts of hazards on the municipalities and the County as a whole.

Hazard Mitigation Planning and the Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 (DMA 2000) amended the Robert T. Stafford Disaster Relief Emergency Assistance Act by repealing the previous mitigation planning provisions (Section 409) and replacing them with a new set of requirements (Section 322). Through this amendment, Section 322 prescribes new and revitalized approaches to hazard mitigation planning and emphasizes the need for state, tribal, and local entities to closely coordinate mitigation planning and implementation efforts. Of note to Huntingdon County and its municipal governments is the requirement for state and local governments to have an approved HMP as a prerequisite to receiving post-disaster Hazard Mitigation Grant Program funds after November 1, 2004.

[1] Federal Emergency Management Agency, *Plan Review Crosswalk*, Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000, (March 2004).

[2] Disaster Mitigation Act, Public Law 106-390 of October 10, 2000.

DMA 2000 – Section 322, Mitigation Planning

"(a) Requirement of Mitigation Plan – As a condition of receipt of an increased Federal share for hazard mitigation measures under subsection (e), a state, local, or tribal government shall develop and submit for approval to the President a mitigation plan that outlines processes for identifying the natural hazards, risks, and vulnerabilities of the area under the jurisdiction of the government."

"(b) Local and Tribal Plans – Each mitigation plan developed by a local or tribal government shall (1) describe actions to mitigate hazards, risks, and vulnerabilities identified under the plan; and (2) establish a strategy to implement those actions."

To implement the new DMA 2000 hazard mitigation planning criteria, the Federal Emergency Management Agency published an Interim Final Rule (the Rule) in the ***Federal Register*** at 44 CFR Part 201. The Rule clearly establishes the hazard mitigation planning criteria for state and local plans. According to Section 201.1(b) of the Rule, the purpose of hazard mitigation planning is for state, local, and Indian tribal governments to:

- identify the natural hazards that impact them;
- identify actions and activities to reduce any losses from those hazards; and
- establish a coordinated process to implement the plan, taking advantage of a wide range of resources.

The Rule describes three general types of hazard mitigation plans: standard state mitigation plans, enhanced state mitigation plans, and local mitigation plans. Regardless of the type, the hazard mitigation planning process must be open to the public and provide an opportunity for comment during the drafting stage and prior to plan approval. Public involvement is important to provide a more comprehensive approach to hazard mitigation planning and to increase the opportunity for successful implementation.

Flood Mitigation Assistance Program[3]

The Flood Mitigation Assistance Program (FMA) was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the National Flood Insurance Program (NFIP). Although the NFIRA created FMA, the regulations governing this program are found in 44 CFR Part 78. The overall goal of FMA is to fund cost-effective measures that reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other NFIP-insurable structures.

[3] http://www.tnema.org/Mitigation/FloodMitAsst.htm

The program's objectives are to:

- reduce the number of repetitively or substantially damaged structures and the associated claims on the National Flood Insurance Fund;
- encourage long-term, comprehensive mitigation planning;
- respond to the needs of communities participating in the NFIP to expand their mitigation activities beyond floodplain development review and permitting; and
- complement other Federal and State mitigation programs with similar, long-term mitigation goals.

FMA provides grants to communities for projects that reduce the risk of flood damage to structures that have flood insurance coverage. This funding is available for mitigation planning and implementation of mitigation measures only. The Pennsylvania Emergency Management Agency (PEMA) is the State Administration Agency (SAA) of the FMA program and is responsible for selecting projects for funding from the applicants submitted by all communities within the Commonwealth. PEMA then forwards selected applications to FEMA for an eligibility determination. Individuals cannot apply directly for FMA funds; however, their local government may submit an application on their behalf.

Local Hazard Mitigation Plan Requirements[4]

Local Mitigation Plan requirements in Section 201.6 of the Rule apply to both local jurisdictions and tribal governments that elect to participate in FEMA mitigation grant programs as a sub-applicant or sub-grantee (henceforth referred to as local jurisdictions). The local mitigation planning requirements in this section encourage agencies at all levels, local residents, businesses, and the non-profit sector to participate in the mitigation planning and implementation process. This broad public participation enables the development of mitigation actions supported by these various stakeholders and reflects the needs of the community. Private sector participation, in particular, may lead to identifying local funding that otherwise would not have been considered for mitigation activities.

As with state plans, the DMA 2000 requires that local mitigation plans need only address natural hazards. FEMA recommends, however, that local plans address manmade and technological hazards, if possible. In many instances, natural disasters have secondary effects, such as dams breaking due to floods, or hazardous material releases due to tornados. Multi-hazard plans will better serve communities in the event of such disasters.

States are required to coordinate with local governments in the formation of hazard mitigation strategies. Local strategies combined with initiatives at the state level form the basis for the state mitigation plan. With the information contained in local mitigation plans, states are better able to identify technical assistance needs and prioritize project funding. Furthermore, as

[4] Multi-Hazard Mitigation Planning Guidance under the Disaster Mitigation Act of 2000.

communities prepare their plans, states can continually improve the level of detail and comprehensiveness of statewide risk assessments.

For the Pre-Disaster Mitigation (PDM) Program, local jurisdictions must have an approved mitigation plan to receive a project grant. Local jurisdictions must have approved plans by November 1, 2004, to be eligible for Hazard Mitigation Grant Program (HMGP) funding for presidential-declared disasters after this date. Plans approved after November 1, 2004, will enable communities eligible to receive PDM and HMGP project grants.

FEMA's Local Hazard Mitigation Plan Review Crosswalk (Plan Review Crosswalk) provides a checklist of HMP requirements and was used by the HCEMA to ensure this document met the requirements for a Local Hazard Mitigation Plan. The Plan Review Crosswalk is based on the Multi-Hazard Mitigation Planning Guidance under the Disaster Mitigation Act of 2000, published by FEMA in March 2004. This Plan Review Crosswalk is consistent with the Disaster Mitigation Act of 2000 (P.L. 106-390), enacted October 30, 2000, and 44 CFR Part 201 – Mitigation Planning, Interim Final Rule (the Rule), published February 26, 2002.

Multi-Jurisdictional Plan Adoption

Requirement §201.6(c)(5): For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.[5]

A governing body's formal adoption of an HMP is a prerequisite to receiving FEMA's final approval. As such, the Huntingdon County Board of Commissioners and the governing bodies of each participating municipality executed resolutions proclaiming their approval and acceptance of this Multi-Jurisdictional Hazard Mitigation Plan. Copies of these resolutions are provided in Appendix A.

Adoption of this Plan by Huntingdon County and its municipalities will not only allow each municipality to be eligible for disaster mitigation grant funds, but also provides each municipality with a thorough understanding of its vulnerability to various hazards and a blueprint for mitigating damaging effects.

Multi-Jurisdictional Planning Participation

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process…Statewide plans will not be accepted as multi-jurisdictional plans.[6]

Huntingdon County used an open, public process to prepare this HMP. Meetings with municipal officials, including municipal emergency management coordinators, were conducted to inform

[5] Federal Emergency Management Agency, *Plan Review Crosswalk*, Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000, (March 2004).

[6] Ibid.

and educate them about DMA 2000 and its requirements for Local Hazard Mitigation Plans. In turn, municipal officials provided information related to existing codes and ordinances, the risks and impacts of known hazards on local infrastructure and critical facilities, and recommendations for related mitigation opportunities. The pinnacle to the municipal involvement process was the adoption of the final Plan.

During the development of the previously FEMA-approved HMP and this update, the Huntingdon County Emergency Management Agency encouraged citizens and public officials to visit the Emergency Management office and provide any feedback and insight into the hazard vulnerabilities and mitigation objectives throughout the County.

The Planning Process

Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

1. *An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;*
2. *An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private non-profit interests to be involved in the planning process; and*
3. *Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

Requirement §201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.[7]

The planning process undertaken to develop the hazard mitigation plan involved a variety of key decision makers and stakeholders within Huntingdon County. The initiation of the planning process, which dates back to the development of the previous FEMA-approved HMP of 2004, enabled the planners to prepare and customize the process to meet the needs of the participating municipalities, as well as the County, when updating the HMP. A copy of the 2004 FEMA-approved HMP planning process is included in Appendix B along with meeting agendas and surveys for the 2004 FEMA-approved HMP. The process for this update was developed around the requirements laid out in FEMA's Local Hazard Mitigation Crosswalk referenced throughout this Plan.

From the beginning of the process, the Huntingdon County Commissioners were proactive in the HMP's development. The Commissioners applied for and received a FEMA Pre-disaster Mitigation (PDM) Grant. Hazard mitigation planning began in earnest after receipt of grant

[7] Ibid.

funding. The Huntingdon County Emergency Management Agency (HCEMA) was appointed by the Commissioners to lead the project and has played a vital leadership role throughout the crafting of the Plan.

Several public meetings with local elected officials were held, as well as work sessions and in-progress review meetings with the County Commissioners, and members of the County Emergency Management Agency and the County Planning Commission. At each one of the public meetings, municipal officials were strongly encouraged to submit hazard mitigation project opportunity forms, complete their respective portions of the Capabilities Assessment, and review and eventually adopt the Multi-Jurisdictional HMP. The public meetings held during the development of the HMP update are outlined in Table 1-1.

Table 1-1

Huntingdon County HMP Process - Timeline			
Date	**Meeting**	**Attendees**	**Description**
12/07/05	Meeting with Huntingdon County	Adam Miller, Huntingdon County Emergency Management Agency Richard Stahl, Huntingdon County Planning Department Delta Development Group	Discussed updating the Huntingdon County HMP and Delta's hazard mitigation planning methodology.
03/09/06	Huntingdon County Hazard Mitigation Plan (HMP) Kick-Off Meeting	County Commissioners Huntingdon County Emergency Management Agency Huntingdon County Planning Department Delta Development Group	Identified challenges and opportunities as they relate to fulfilling the DMA 2000 requirements. Identified existing studies and information sources relevant to the hazard mitigation plan. Identified stakeholders, including the need to involve local officials.
04/26/06	Huntingdon County Hazard Mitigation Plan (HMP) Meeting with Municipal Officials	Adam Miller, Huntingdon County Emergency Management Agency Justin Edling, Huntingdon County Emergency Management Agency Richard Stahl, Huntingdon County Planning Department Delta Development Group Local Officials: Gary Sprankle, Eleanor Sprankle, Denise Dunlap, Harold Cobbert, Terry Hess, Peggy Hoover, Karen Flasher, Robert Stallard, Gary Frehn, Gary Beck Sr., Cloyd Norris, David Speer, James Baker, Dan Reed, Mary Gates, Aden Russell, Paul Brown, Harry Haines, Myrtle Plummer, Raynelle McCoughey, Samuel Heath, Duane Black, Cinnamon Blair, Darrell Blair, Roy McCabe, Scott Price, Charles States	Educated county and local officials, members of the Huntingdon County Council of Government, and the public on the hazard mitigation planning process. Presented the early findings of the hazard vulnerability analysis. Sought input for mitigation projects throughout the County. Distributed Hazard Mitigation Project Opportunity Forms, as well as the Capability Assessment survey.
05/18/06	Meeting with Huntingdon County	Adam Miller, Huntingdon County Emergency Management Agency Richard Stahl, Huntingdon County Planning Department Delta Development Group	An update of the hazard mitigation planning process was delivered. Discussed major components of the hazard mitigation plan including: the risk assessment matrix; the hazard mitigation project opportunity matrix; and the GIS Mapping.
12/05/06	Meeting with Huntingdon County	Adam Miller, Huntingdon County Emergency Management Agency Justin Edling, Huntingdon County Emergency Management Agency Richard Stahl, Huntingdon County Planning Department Delta Development Group	An update of the hazard mitigation planning process was delivered. Reviewed draft hazard mitigation plan, the risk assessment matrix, the hazard mitigation project opportunity matrix, hazard profiles, and the capability assessment.

Huntingdon County HMP Process – Timeline cont.			
Date	**Meeting**	**Attendees**	**Description**
07/27/07	Meeting with Huntingdon County	Adam Miller, Huntingdon County Emergency Management Agency Richard Stahl, Huntingdon County Planning Department Delta Development Group	An update of the hazard mitigation planning process was delivered. Reviewed the completed draft plan and discussed necessary edits before posting the HMP for public comment.

Once the HMP was completed, the Huntingdon County Emergency Management Agency (HCEMA) and the County Planning Department prepared draft resolutions and coordinated the adoption process with the County's municipalities.

The planners, respecting the importance of local knowledge, sought contributions from residents, officials, and businesses throughout the County. Extensive efforts were made to involve local elected officials and solicit their input to identify and prioritize hazards, assess their impacts on community assets, and develop sound and feasible mitigation strategies. Along with the public meetings discussed above, information regarding the Huntingdon County Hazard Mitigation Plan was distributed to each municipality and posted on the County Web site (www.huntingdoncounty.net). A news release regarding the project was developed and issued to the local media contacts and distributed to each municipality. Appendix B contains copies of the various meeting notices and communications distributed by the County to solicit public participation in the planning process.

Huntingdon County's successful public involvement process also included discussions with the Huntingdon County Chamber of Commerce, Juniata College, National Weather Service, the Pennsylvania Emergency Management Agency (PEMA) and the Federal Emergency Management Agency (FEMA).

External contributors were also given an opportunity to gauge and contribute to the hazard mitigation planning process through public meetings. Other organizations were also notified to attend and provide feedback and insight into the planning process.

Section 2: Hazard Identification and Risk Assessment

Hazard Vulnerability Analysis Methodology

Purpose and Scope

A Hazard Vulnerability Analysis (HVA) evaluates risk associated with a specific hazard and is defined by probability and frequency of occurrence, magnitude, severity, exposure, and consequences. The Huntingdon County HVA provides in-depth knowledge of the hazards and vulnerabilities that affect the County and its municipalities. This analysis uses an all-hazards approach when evaluating the hazards that affect the County, and the associated risks and impacts each hazard presents. It builds upon Huntingdon County's previously FEMA-approved Hazard Mitigation Plan, completed in 2004.

This HVA provides the basic information necessary to develop effective hazard mitigation and prevention strategies. Moreover, this document provides the foundation for the Huntingdon County Emergency Operations Plan (EOP), local EOPs, and other public and private emergency management plans.

The Huntingdon County HVA is not a static document, but rather, is a biannual review requiring periodic updates. Potential future hazards include changing technology, new facilities and infrastructure improvements, dynamic development patterns, and demographic and socioeconomic changes into or out of hazard areas. By contrast, old isolated hazards, such as contaminated brownfields or landfills, may pose new threats as the County develops and evolves.

Working cooperatively with its municipal partners and using the best information available, Geographic Information Systems (GIS) technologies, the County can objectively analyze its hazards and vulnerabilities. Assessing past events is limited by the number of occurrences, scope, and changing circumstances. For example, ever-changing development patterns can have a dynamic impact on traffic patterns, population density and distribution, storm water runoff, and other related factors. Therefore, limiting the HVA to past events is shortsighted and inadequate.

Methods of Analysis

Disaster frequency and its effects or severity are an important basis for planning emergency response and mitigation. Natural hazards tend to reoccur on a predictable seasonal basis, whereas manmade or technological events tend to change over time with advancements in technology and methods of operation.

Five criteria were selected to assure a systematic and comprehensive approach to hazard analysis:

- **History:** A record of past events is particularly helpful to evaluate hazards in Huntingdon County. Both frequency and severity of past events are useful to predict future occurrences. Past records of the County's hazards also offer valuable information when tempered with the knowledge of preventative efforts, changes in preventative efforts, and advancements in technology that may reduce the frequency or severity of such an event. Other hazards, such as terrorism, must be analyzed based on existing threat elements within and in proximity to Huntingdon County.
- **Vulnerability:** The susceptibility of a community to destruction, injury, or death resulting from a hazard event defines the degree of vulnerability. The degree of vulnerability may be related to geographic location as with floodplains, the type of facilities or structure, or the socio-economics of a given area. Additionally, certain population groups may be more vulnerable to some hazards because of immobility or their inability to take protective action.
- **Probability:** The probability of an occurrence in the future is another important factor to consider when preparing for an all-hazards response. An event that occurs annually with relatively minor impact may deserve more emphasis than a major event that occurs once every 50 to 100 years.

  The County relied heavily on existing data sources (see Section 6: Authorities and References) developed by Huntingdon County departments, including the Economic Development Plan, the County Comprehensive Plan, the existing FEMA-approved County Hazard Mitigation Plan, County Subdivision and Land Development Ordinances, and municipal ordinances obtained through the County Planning Commission. In addition, digital tax assessment data and Geographic Information Systems (GIS) data was critical in analysis. Potential losses to flooding were analyzed with existing Huntingdon County tax assessment data overlaid with the 100-year floodplain.

  Information was gathered from a variety of sources to develop hazard profiles. State agency sources included: The PA Department of Environmental Protection, the PA Department of Conservation of Natural Resources, and the PA Emergency Management Agency. Federal agency sources included: the Bureau of Transportation Statistics, the Environmental Protection Agency, the National Climatic Data Center, and the Federal Emergency Management Agency.
- **Maximum Threat:** The maximum threat or worst-case disaster should be considered for each hazard. The maximum treat provides an upper boundary for the level of preparedness that may be necessary.
- **Secondary Effects:** Each individual hazard poses certain threats to the County and its municipalities. However, there are also secondary effects of many hazards that can be just as devastating. These secondary effects cause many hazards to be regional hazards affecting many areas with differing impacts.

County Profile

Location and Description

Huntingdon County is located in central Pennsylvania within the Appalachian Mountains. The County was established in September 1787, apportioned from land that was once a part of Bedford County, which in turn had been part of Cumberland County. Later, more land would be taken from Huntingdon County to form parts of Centre County, Cambria County, and Blair County, creating the present boundaries of Huntingdon County by 1846. Today, Huntingdon County is bordered by Blair County to the west, Centre County to the north, Mifflin County and Juniata County to the east, and Franklin, Fulton, and Bedford Counties to the south. Huntingdon County takes pride in its scenic beauty and natural resources. The County is home to Raystown Lake, a 29,000-acre Army Corps of Engineers project. It offers 12 public access areas, an 8,000-acre lake, picnic areas, beaches, boat launches, campgrounds, trails, hunting, fishing, and marina concession stands. The Corps operates and maintains it.

Climate and Weather

The Koppen-Geiger Climate Areas map classifies Huntingdon County (and the rest of Pennsylvania) as Humid Continental. While the state shares many weather similarities, there are a few characteristics unique to certain regions of the Commonwealth. The Central Climate Region of Pennsylvania is unique, as the ridge tops and mountainous areas witness more intense winter weather of which Huntingdon County is a part, than the low-lying valley areas. On average, mountaintop areas have much lower temperatures, more wind, and more precipitation than the adjacent valleys. The weather summary shown in Table 2-1 provides the most applicable weather data for Huntingdon County.

Table 2-1

Huntingdon County Averages and Records						
Month	**Average High**	**Average Low**	**Mean Temperature**	**Average Precipitation**	**Record High**	**Record Low**
Jan	35°F	18°F	26°F	2.54 in.	66°F (1998)	-15°F (1994)
Feb	39°F	19°F	29°F	2.23 in.	79°F (1985)	-12°F (1979)
Mar	48°F	27°F	37°F	3.24 in.	84°F (1977)	0°F (1978)
Apr	60°F	36°F	48°F	3.24 in.	91°F (1985)	15°F (1982)
May	71°F	46°F	58°F	4.08 in.	93°F (1996)	25°F (1978)
Jun	79°F	54°F	67°F	3.91 in.	94°F (1988)	33°F (1978)
Jul	83°F	59°F	71°F	3.36 in.	104°F (1988)	42°F (1988)
Aug	82°F	58°F	70°F	3.19 in.	99°F (1988)	37°F (1982)
Sep	75°F	51°F	63°F	3.29 in.	96°F (1983)	29°F (1980)
Oct	63°F	40°F	52°F	3.26 in.	89°F (1986)	20°F (1988)
Nov	51°F	32°F	41°F	3.29 in.	82°F (2003)	10°F (1976)
Dec	40°F	24°F	32°F	2.62 in.	74°F (2001)	-7°F (1983)

Source: The Weather Channel

Weather patterns and climatic conditions in Huntingdon County present a risk factor. The County's weather extremes are a primary contributor to many of the County's natural hazard events, such as winter storms, flooding, high winds, and severe temperatures. According to the National Climatic Data Center, weather-related events recorded from 1950 to April 2006 have caused 11 deaths, 390 injuries, more than $68 million in property damage, and approximately $500 million in crop damage. Some of these events were regional disasters; the damage amount listed reflects the regional total.

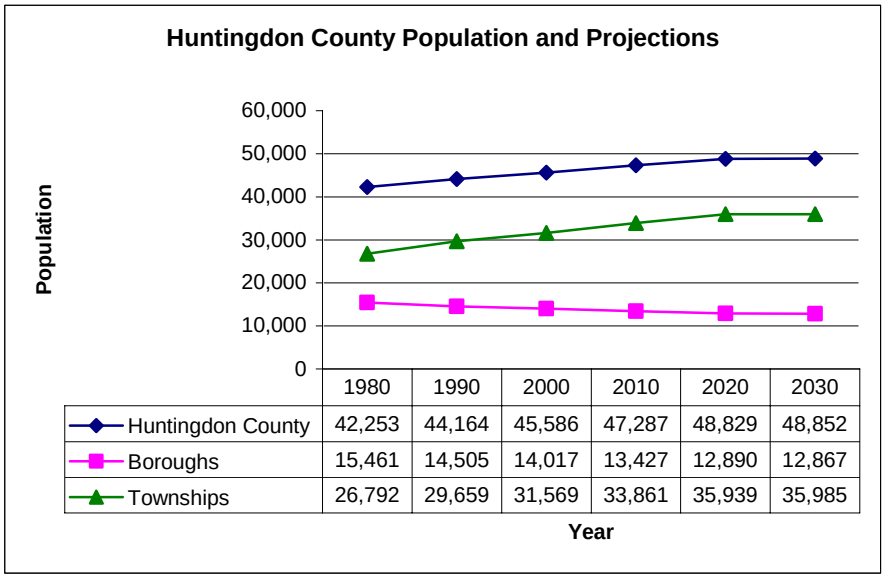
In addition to monetary damage and loss of life or injury, weather can impede emergency response to disasters, thus worsening the damage caused by a natural disaster. Because of this impact on mobility, the County can be most vulnerable to the effects of severe winter weather and flooding. Regardless of the event, weather will always play a large part in any disaster response, requiring emergency planning to account for all possible weather variations.

Population

Huntingdon County's population remained relatively stable between 1990 and 2000. During that 10-year period, the County witnessed a population increase of 3.2 percent. Most of the growth during this time occurred in the townships, as they experienced a population increase of 6.4 percent, while the boroughs in Huntingdon County saw a population decrease of 3.4 percent. The greatest growth within the County occurred in Coalmont Borough, Walker Township, and Warriors Mark Township, all of which had population increases greater than 20 percent.

The population of Huntingdon County and its municipalities is projected to remain stable through the year 2030. Huntingdon County is projected to see a population increase of 7.2 percent between 2000 and 2030. Most of the growth will occur within the townships. Figure 2-1 presents the population trends for Huntingdon County from 1980 to 2030.

Figure 2-1



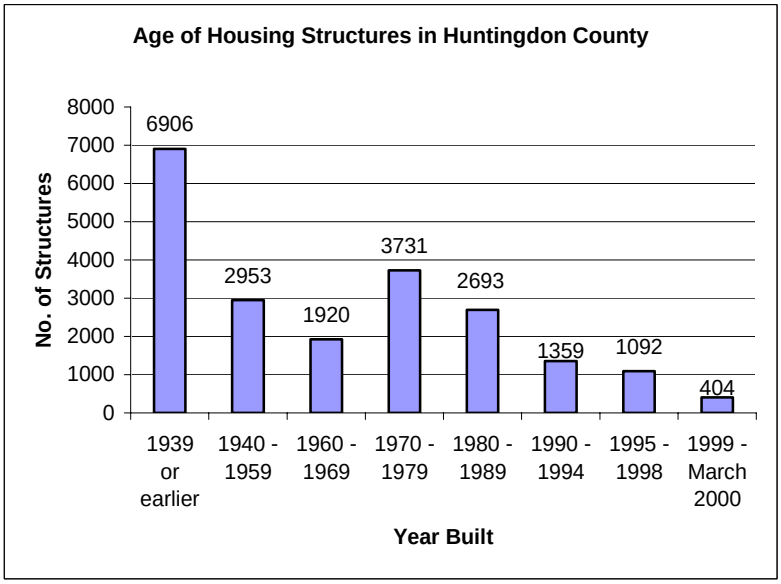
	1980	1990	2000	2010	2020	2030
Huntingdon County	42,253	44,164	45,586	47,287	48,829	48,852
Boroughs	15,461	14,505	14,017	13,427	12,890	12,867
Townships	26,792	29,659	31,569	33,861	35,939	35,985

Source: U.S. Census Bureau / Pennsylvania Department of Environmental Protection

Housing

The housing stock in Huntingdon County is relatively old, as a majority of the structures were built prior to 1940. Figure 2-2 presents the age of housing structures in Huntingdon County. The number of housing units built per year has steadily decreased from 1970 to 2000. The number of housing units in Huntingdon County is projected to grow only slightly through the year 2030.

Figure 2-2

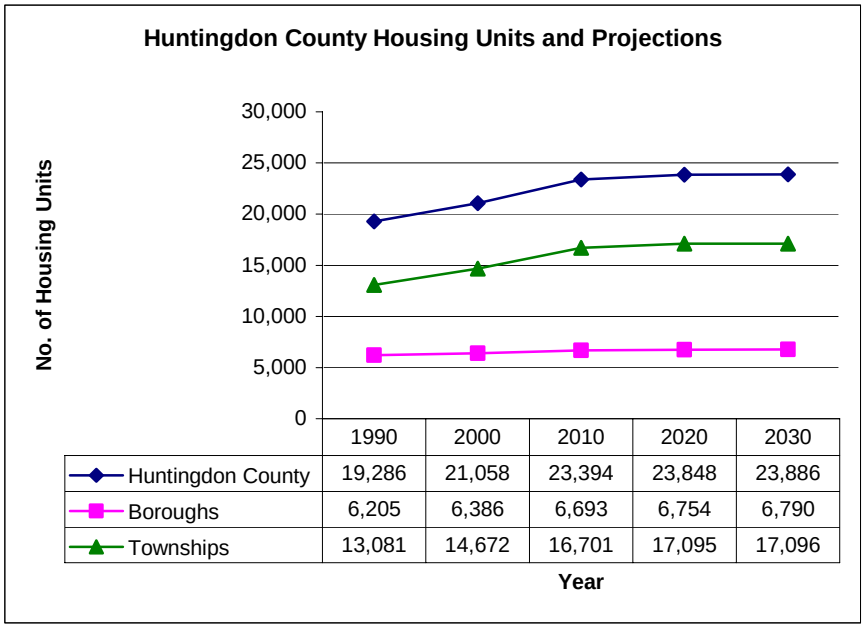


Source: U.S. Census Bureau

The number of housing units in Huntingdon County increased by 9.2 percent between the years 1990 and 2000. During that time period, the increase in housing units was driven by the townships, which witnessed an increase of 12.2 percent. By the year 2030, Huntingdon County is projected to have more than 23,886 housing units, with an annual growth rate of 3.2 percent.

Figure 2-3 presents the housing development trends for Huntingdon County from 1990 through 2030.

Figure 2-3



	1990	2000	2010	2020	2030
Huntingdon County	19,286	21,058	23,394	23,848	23,886
Boroughs	6,205	6,386	6,693	6,754	6,790
Townships	13,081	14,672	16,701	17,095	17,096

Source: U.S. Census Bureau / Pennsylvania Department of Environmental Protection

However, Huntingdon County has a significant amount of seasonal housing, which complements its traditional housing. Approximately 15 percent of all housing in Huntingdon County is seasonal (3,180). According to Planning and Development data, each year approximately 25 percent of all new housing starts are seasonal homes. Jackson Township has both the highest percentage of seasonal housing and the highest aggregate number, at 45 percent and 304 respectively. Seasonal housing presents a unique opportunity for the County to absorb thousands of people during an emergency, when owners flee to the County for safety. It would also pose a challenge to the municipalities to deal with thousands of people not familiar with local government or community resources in the time of an emergency. Table 2-2 illustrates the percentage of seasonal housing in each municipality in Huntingdon County.

Table 2-2

Huntingdon County Seasonal Housing, 2000							
Municipality	**Total Housing Units - 2000**	**Seasonal Housing**	**Percent of Total Housing**	**Municipality**	**Total Housing Units - 2000**	**Seasonal Housing**	**Percent of Total Housing**
Huntingdon County	21,058	3,180	15.10%	Mill Creek Borough	139	2	1.44%
Alexandria Borough	160	1	0.63%	Miller Township	239	34	14.23%
Barree Township	247	53	21.46%	Morris Township	158	11	6.96%
Birmingham Borough	44	2	4.55%	Mount Union Borough	1,288	10	0.78%
Brady Township	440	50	11.36%	Oneida Township	511	27	5.28%
Broad Top City Borough	178	2	1.12%	Orbisonia Borough	217	6	2.76%
Carbon Township	201	23	11.44%	Penn Township	666	251	37.69%
Cass Township	622	197	31.67%	Petersburg Borough	193	2	1.04%
Cassville Borough	69	2	2.90%	Porter Township	870	56	6.44%
Clay Township	494	99	20.04%	Rockhill Furnace Borough	186	2	1.08%
Coalmont Borough	55	2	3.64%	Saltillo Borough	152	7	4.61%
Cromwell Township	873	259	29.67%	Shade Gap Borough	43	1	2.33%
Dublin Township	607	88	14.50%	Shirley Township	1,272	194	15.25%
Dudley Borough	89	3	3.37%	Shirleysburg Borough	64	1	1.56%
Franklin Township	238	35	14.71%	Smithfield Township	637	7	1.10%
Henderson Township	562	150	26.69%	Springfield Township	413	148	35.84%
Hopewell Township	384	115	29.95%	Spruce Creek Township	146	25	17.12%
Huntingdon Borough	2,817	15	0.53%	Tell Township	343	87	25.36%
Jackson Township	675	304	45.04%	Three Springs Borough	217	7	3.23%
Juniata Township	351	113	32.19%	Todd Township	572	206	36.01%
Lincoln Township	265	111	41.89%	Union Township	638	212	33.23%
Logan Township	315	35	11.11%	Walker Township	735	21	2.86%
Mapleton Borough	201	1	0.50%	Warriors Mark Township	664	13	1.96%
Marklesburg Borough	138	41	29.71%	West Township	287	69	24.04%
				Wood Township	383	80	20.89%

Source: Huntingdon County Planning Department

Land Use

Table 2-3 presents the change in Huntingdon County land cover between 1992 and 2000. During that period, Huntingdon County witnessed a 27.7 percent increase in its urban or built-up land, which includes areas of intensive use covered by structures or other impervious surfaces.

Agricultural land and open space has also increased in Huntingdon County by 17.7 percent. Agricultural land and open space areas are broadly defined as land used primarily for the cultivation or production of agricultural products. These landscapes are discerned on high-altitude imagery by their distinct geometric field, road patterns, and through other indicators, such as buildings, machinery, livestock, and open grassland areas.

Barren land increased significantly in Huntingdon County between 1992 and 2000. This land cover category includes lands that have less than one-third of their defined area covered by vegetation or other cover, and areas that are in transition from one land use activity to another. Specific uses include: mines and quarries; borrow pits; beaches; sandy areas; bare exposed rock; and land areas in the process of being converted to another use or altered, including sanitary landfills.

Forest land in Huntingdon County decreased by 9.2 percent from 1992 to 2000. This category includes areas having a significant tree-crown density (10% or more) as remotely sensed from high-altitude imagery.

Table 2-3

Huntingdon County Land Cover, 1992 - 2000			
Land Cover Type	**1992 (acres)**	**2000 (acres)**	**Change (%)**
Urban or Built-Up Land	3,189	4,072	27.7%
Agriculture Land and Open Space	117,500	138,266	17.7%
Barren Land	4,251	21,919	415.6%
Forest Land	432,151	392,465	-9.2%
Water or Wetlands	12,730	13,099	2.9%

Source: 1992 Data from USGS NL CD
2000 Data from Penn State University

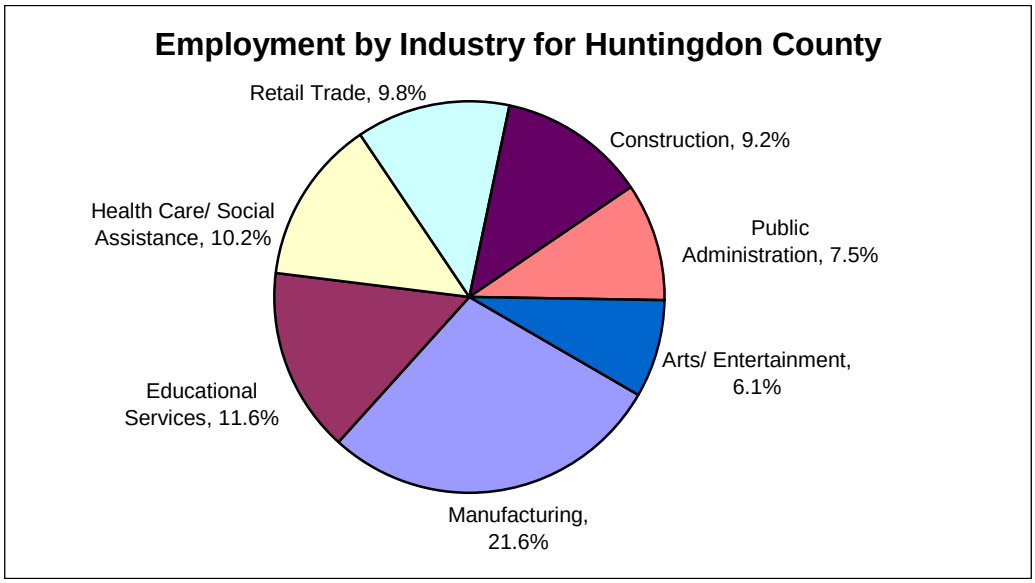
Economy

Huntingdon County, like much of Pennsylvania, has an economy with a rich manufacturing past. However, Huntingdon County has also capitalized on its ability to attract tourists to the area. During the 1970s, the Army Corps of Engineers constructed the current dam at Lake Raystown, creating the largest inland dam in the Commonwealth. Lake Raystown's draw has fostered an expansion in the tourism and seasonal housing markets in Huntingdon County.

According to 2000 Census data, the manufacturing sector of Huntingdon County represents 21.6 percent of the workforce, while educational services make up 11.6 percent, and healthcare and social assistance make up 10.2 percent. The industrial sectors illustrated in Figure 2-4 represent over 75 percent of the employment in Huntingdon County.

Table 2-4 presents the top employers in Huntingdon County, as listed by the Pennsylvania Department of Labor and Industry for the third quarter of 2005. Each of the 10 major employers falls within the top three employment-by-industry categories. Of the 10 major employers, four are manufacturing, four are educational services, and two are health care and social services.

Figure 2-4



Source: U.S. Census Bureau

Table 2-4

Huntingdon County Major Employers	
Major Employers	**Industry**
JC Blair Memorial Hospital	Health Care and Social Services
Meadwestvaco Corporation	Manufacturing
F C I USA Inc	Manufacturing
AGY	Manufacturing
Juniata College	Educational Services
Huntingdon Area School District	Educational Services
Bonney Forge Co.	Manufacturing
Presbyterian Homes in the Presbytery	Health Care and Social Services
Mount Union Area School District	Educational Services
Southern Huntingdon County School District	Educational Services

Source: Pennsylvania Department of Labor and Industry

Geology

Huntingdon County is located in the western edge of the Ridge and Valley Region of Pennsylvania. This geologic region is characterized by large amounts of sandstone, shale, and limestone. Layers of the rock are generally in folds. Landforms in this region are most often parallel ridges and valleys eroded from the folded rock.

Geographic formations can restrict the nature and extent of surface development. They can also affect the quality and quantity of groundwater. Huntingdon County primarily consists of Ordovician bedrock, which consists of shale, limestone, dolomite, and sandstone-based geographic formations. Limestone formations are highly soluble. They can create caverns and cause subsidence and sinkholes (also known as karst topography). Karst topography is sensitive to environmental degradation. The most severe form is the depletion and contamination of groundwater supplies. Only one geologic emergency was reported in Huntingdon County between November 2000 and November 2006, according to the Pennsylvania Emergency Incident Reporting System (PEIRS) (see Appendix C: Geologic Hazard Profile for more detail).

Risk Assessment

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the type…of all natural hazards that can affect the jurisdiction.[8]

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the…location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.[9]

A comprehensive, all-hazards list of events that have occurred or could occur in Huntingdon County was developed for this HVA. Appendix C provides a detailed profile of each hazard that describes and analyzes vulnerabilities and risks each hazard creates for Huntingdon County.

Hazards considered were:

- civil disorder
- dam failure
- drought
- fire (urban & wildfire)
- flood
- geologic hazards (earthquakes, landslides, radon, sinkholes)
- hazardous materials spill
- nuclear power plant disaster
- public health emergency
- severe weather
- terrorism
- tornados
- transportation accident (air, highway, rail, pipelines)
- utilities failure (electric, water, gas, communications)

Table 2-5 presents a comprehensive list of all natural disasters that have occurred in Huntingdon County from 1963 to date, according to the Pennsylvania Emergency Management Agency.

[8] Ibid.
[9] Ibid.

Table 2-5

Huntingdon County Natural Disaster History		
Date	**Hazard Event**	**Action**
Jun-06	Proclamation of Emergency - Flooding	Governor's Proclamation & President's Declaration of Major Disaster (Individual Assistance, Public Assistance, and Hazard Mitigation)
Sep-04	Tropical Depression Ivan	President's Declaration of Major Disaster (Individual Assistance)
Sep-04	Tropical Depression Frances	Governor's Proclamation & President's Declaration of Major Disaster (Individual Assistance to Individuals and Households)
Sep-03	Hurricane Isabel/Henri	Governor's Proclamation of Disaster Emergency
Feb-03	Severe Winter Storm	Governor's Proclamation of Disaster Emergency
Feb-02	Drought & Water Shortage	Governor's Proclamation
Sep-99	Hurricane Floyd	Governor's Proclamation & President's Declaration of Major Disaster
Jul-99	Drought	Governor's Proclamation (Individual Assistance, Hazard Mitigation Grant Program - Amended to include all 67 counties for an agricultural disaster)
Sep-96	Flooding	Governor's Proclamation & President's Declaration of Major Disaster
Jun-96	Flooding	Governor's Proclamation & President's Declaration of Major Disaster
Jan-96	Severe Winter Storms	Governor's Proclamation & President's Declaration of Major Disaster
Jan-96	Flooding	Governor's Proclamation & President's Declaration of Major Disaster
Jan-94	Severe Winter Storms	Governor's Proclamation & President's Declaration of Major Disaster
Mar-93	Blizzard	Governor's Proclamation & President's Declaration of Emergency
Jul-91	Drought	Governor's Proclamation
Nov-80	Drought Emergency	Governor's Proclamation
Feb-78	Blizzard	Governor's Proclamation
Jan-78	Heavy Snow	Governor's Proclamation
Apr-75	High Winds	None
Feb-74	Truckers Strike	Governor's Proclamation
Jun-72	Flood (Agnes)	Governor's Proclamation & President's Declaration of Major Disaster
Feb-72	Heavy Snow	Governor's Proclamation
Jan-66	Heavy Snow	Governor's Proclamation
Mar-63	Ice Jam	Governor's Proclamation

Source: PEMA Web site

The Huntingdon County Hazard Risk Assessment Matrix, illustrated in Table 2-6, provides a systematic method for assigning a risk factor to a hazard event, based on the impact and frequency of the event. Values ranging from 1-5 (1 representing a low impact, 5 representing a catastrophic impact) were first assigned to four different vulnerability areas, based on estimated impact: critical facility, social, economic, and environmental.

These numbers were then weighted by significance. For instance, a high amount of damage to the population (social vulnerability) is more devastating than a high amount of damage to the economy (economic vulnerability). Therefore, the social vulnerability is weighted at 40 percent, while the economic vulnerability is weighted at 25 percent. Based on its frequency of occurrence, each hazard is also assigned a value ranging from 1-5 (1 representing an event that occurs once every 31 years or more; 5 representing an annual event). The range of the risk factor score is 0-25. The example below illustrates how a hazard's risk factor is calculated.

Risk Factor =

Frequency x [(.25 x Critical Facilities) + (.40 x Social) + (.25 x Economic) + (.10 x Environmental)]

An example of this equation in use for a flood can be seen below:

5 x [(.25 x 3) + (.40 x 3) + (.25 x 3) + (.10 x 2)] = 14.5

Table 2-6

Huntingdon County Hazard Risk Assessment Matrix					
Frequency		Impact	Risk Factor = Frequency x (.25 x (Critical Facilities) + .40 x (Social) + .25 x (Economic) + .10 x (Environmental))	Risk Factor Index	
Annual Event	5	Catastrophic		.2500 - 6.00	Acceptable without review
Every 5 Years or less	4	Extensive		6.10 - 12.00	Acceptable with review
Every 10 Years or less	3	High		12.10 - 18.00	Undesirable
Every 30 Years or less	2	Moderate		18.10 - 25.00	Unacceptable
Greater than 30 Years	1	Low			

Hazard	Frequency of Occurrence and Location		Impact					Vulnerability						
			Critical Facilities (25% Vulnerability Factor)	Social (40% Vulnerability Factor)	Economic (25% Vulnerability Factor)	Environmental (10% Vulnerability Factor)	Risk Factor	(a) Health and Safety of Persons in the Affected Area at the Time of the Incident (Injury and Death)	(b) Health and Safety of Essential Personnel	(c) Continuity of Government	(d) Property, Facilities, and Infrastructure	(e) Delivery of Services	(f) The Environment	(g) Economic and Financial Condition
Civil Disorder - Vulnerabilities and impacts are contingent upon numerous factors including issues, politics and method of response. Some type of civil disorder occurs every day with minimal impact.	4	Small events occur frequently, however larger events are not as common.	1	2	2	1	6.600	Nominal impact to the health and safety of people in the affected area.	Nominal impact to first responders. Minor injury from missiles and physical confrontations.	Nominal and short-term impact on continuity of county government operations.	Impact on property, facilities and infrastructure will likely result from acts of vandalism and will be nominal in scope.	Nominal impact on the delivery of services resulting from work stoppages.	Limited environmental impact unless acts of sabotage are performed.	Economic and financial impact to the community will be nominal.
Dam Failure - Vulnerabilities and impacts are dependent on the type of release (whether gradual or catastrophic), volume released, its impact to the environment, and meteorology.	1	Huntingdon County has 9 registered dams, 3 of which are high hazard. High hazard dams are required to have Emergency Action Plans.	5	5	4	1	4.350	Generally low impact on health and safety. However, the catastrophic, unannounced breach of a high hazard dam could result in a substantial number of deaths and injuries.	Low impact to first responders. Primary threat comes from debris and possible hazardous materials contamination.	Low impact on continuity of government operations unless located in the inundation curve.	Vital lifelines (roads, gas and water pipelines) may be damaged as a result of released waters.	Moderate impact on the delivery of services to the affected area.	Limited environmental impact that is contingent upon the nature of the inundation area. Urban environments will have higher potential to release hazardous materials.	Impact is contingent upon the nature of the event.
Drought - Vulnerability and impacts are contingent upon the duration of the drought period and area of impact.	4	According to the National Climatic Data Center, 6 drought events were reported in Huntingdon County between 1995 and 2005. A drought watch was also in effect during April 2006.	1	2	3	2	8.000	Limited impact. Severe drought conditions may require water rationing and distribution to affected communities.	N/A	Low impact to government. Prolonged drought periods may require the suspension of services such as public schools.	Low impact to property, facilities and infrastructure. Water utilities may lose pressure. Hydroelectric power generation could suffer.	Low impact to the delivery of services. Hospitals may be required to make use of alternate water supplies.	Low impact. A reduction to ground water supplies creates situations conducive to sinkholes. Non-domestic animals may be impacted.	Long-term water shortages will have a high impact on agribusiness, public utilities and other industries reliant upon water for production (i.e., plastics) or services (i.e., landscaping).

Hazard	Frequency of Occurrence and Location		Impact					Vulnerability						
			Critical Facilities (25% Vulnerability Factor)	Social (40% Vulnerability Factor)	Economic (25% Vulnerability Factor)	Environmental (10% Vulnerability Factor)	Risk Factor	(a) Health and Safety of Persons in the Affected Area at the Time of the Incident (Injury and Death)	(b) Health and Safety of Essential Personnel	(c) Continuity of Government	(d) Property, Facilities, and Infrastructure	(e) Delivery of Services	(f) The Environment	(g) Economic and Financial Condition
Earthquake - Vulnerabilities and impacts are contingent upon numerous factors including geographic location, magnitude and method of response. The earth is dynamic and some earthquake events occur every day with minimal impact.	1	According to the Geography Department at the University of Millersville, Huntingdon County has a low vulnerability to earthquakes.	1	1	1	1	1.000	Low impact exists for fatalities and injuries. Area of impact generally small.	Moderate impact. Protective actions required to protect responders from fire hazards and environmental concerns.	Low impact, unlikely to cause re-location of government operations.	Low impact to the transportation infrastructure, structures burned and displaced populations.	Low impact to the delivery of services. Services likely to be temporarily interrupted in the area of impact.	Low impact to area of operations, including animal life due to limited extent of hazards.	Low impact to the economic and financial community. Primary impact will be to the repair or replacement of structures in the area of operations.
Flooding - Vulnerabilities and impacts are dependent upon the type and location of flooding	5	Huntingdon County has witnessed 55 flooding events between 1993 and 2005, according to the National Climatic Data Center.	3	3	3	2	14.500	High impact. Potential for loss of life and injuries, especially in urbanized areas prone to flash flooding.	Potentially high impact to first responders involved in swift water rescue activities. Protective actions required to protect responders from hazards and environmental concerns.	Low impact, unlikely to cause re-location of government operations.	Moderate impact. Utility outages, transportation infrastructure closures and isolated populations. Varying levels of damage to structures, particularly mobile homes.	Moderate disruption of basic life support systems, typically of short duration.	Environmental impact should be limited to the release of hazardous substances.	Depending on the scope and magnitude of flooding, long-term economic disruption is possible, especially among small businesses.
Hazardous Materials - Vulnerabilities and impacts is dependent on the type of chemical, volume released, its impact to the environment, and meteorology.	5	According to the National Response Center, 28 HAZMAT incidents have been reported in Huntingdon County between 1992 and 2005.	2	2	1	4	9.750	High impact to the health and safety of people living in the impact area.	Protective actions required to protect responders from hazardous materials exposure.	Low impact to continuity of operations.	Moderate impact to property, facilities, and infrastructure.	Low impact to the delivery of services.	Moderate impact to the areas of highest concentration.	Low impact to the economic and financial community of the impacted area.
Hurricane/Tropical Storms - Vulnerability and impacts are a factor of storm strength and area of impact.	3	According to the National Climatic Data Center, Huntingdon County experienced a Hurricane/Tropical Storm in 2004, witnessing the effects of Hurricane Francis.	2	3	3	1	7.650	High impact. Potential for large numbers of injuries and loss of life.	Protective actions required to protect responders from hazards and environmental concerns.	Moderate impact. Impacted local government operations required to activate their COG Plans.	High impact. Numerous failures in electrical and other critical infrastructure	High impact on affected area. Wide- spread disruptions in basic life support services	Some hazardous material releases will occur.	Moderate impact. Short and long-term disruption of local economy; Statewide impacts on government services unlikely.
Landslides - Vulnerabilities and impacts are contingent upon numerous factors including geographic location, and nature of the slope failure	2	According to the U.S. Geological Survey, Huntingdon County has a high susceptibility to landslides, but a moderate to low amount of incidents	1	1	1	1	2.000	Nominal impact to the health and safety of people in the affected area unless the landslide is both sudden and catastrophic.	Nominal impact to first responders.	Little or no impact on continuity of government operations.	Vital lifelines (roads, gas and water pipelines) may be cut as a result of landslides.	Limited impact on the delivery of services	Limited environmental impact unless the landslide shears pipelines or damages hazardous material storage facilities (above or below ground tanks, etc).	Limited economic and financial impact to the community unless road networks are extensively damaged.

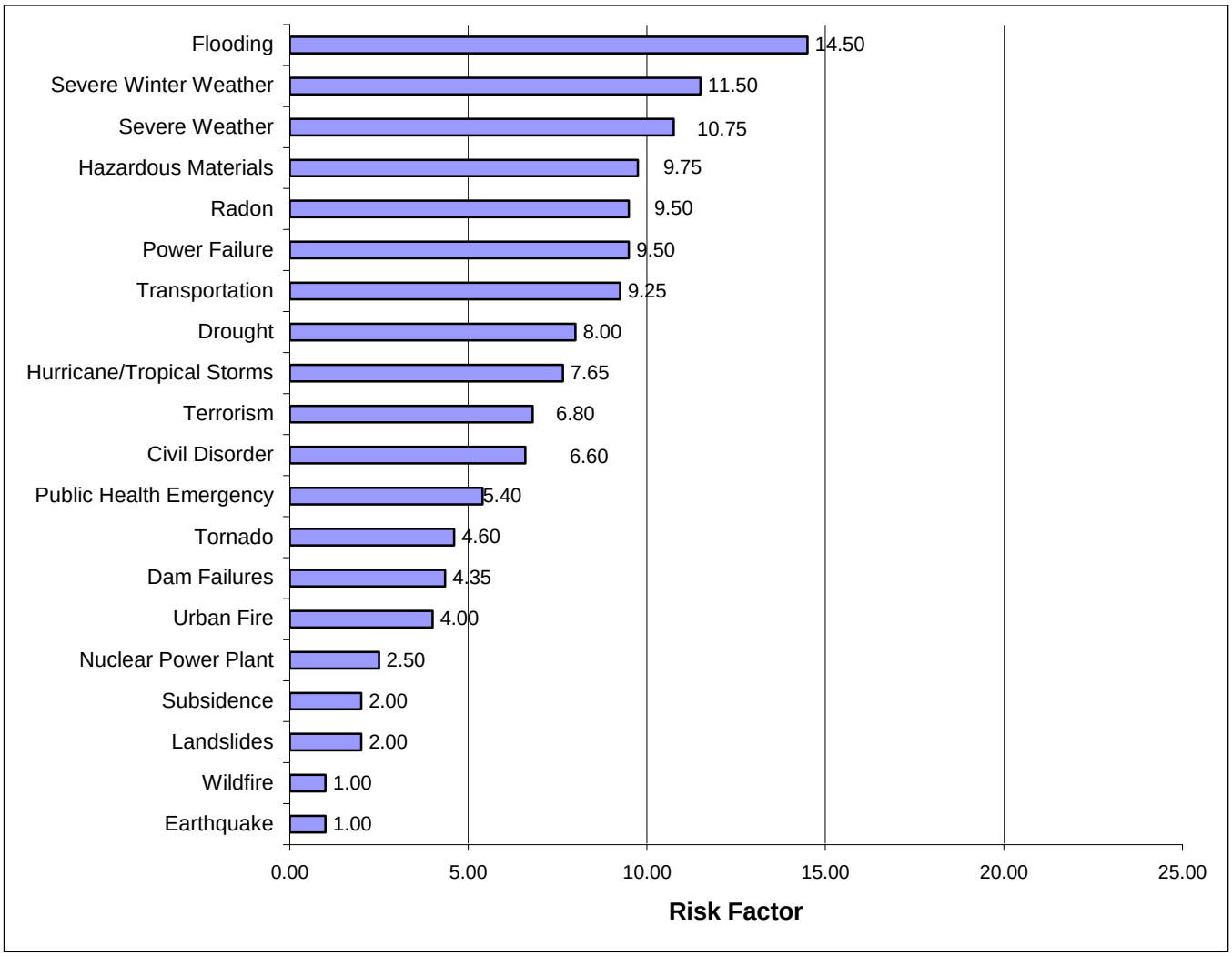
Hazard	Frequency of Occurrence and Location		Impact					Vulnerability						
			Critical Facilities (25% Vulnerability Factor)	Social (40% Vulnerability Factor)	Economic (25% Vulnerability Factor)	Environmental (10% Vulnerability Factor)	Risk Factor	(a) Health and Safety of Persons in the Affected Area at the Time of the Incident (Injury and Death)	(b) Health and Safety of Essential Personnel	(c) Continuity of Government	(d) Property, Facilities, and Infrastructure	(e) Delivery of Services	(f) The Environment	(g) Economic and Financial Condition
Nuclear Power Plant - Vulnerabilities and impacts are contingent upon the type of radiation released, duration of release, direction and speed of winds, and volume of release.	1	Pennsylvania is home to Three Mile Island, a Nuclear Power Plant located outside of Harrisburg, PA.	2	3	2	3	2.500	Potential for significant impact to the health and safety of residing in the 10 mile emergency planning zone or 50 ingestion pathway zone.	Potential for significant impact. Protective actions and special equipment required to protect responders from radiation exposure.	Low impact to continuity of operations depending upon the location of the incident. A design basis accident at TMI would have a catastrophic impact on state government operations.	Potentially catastrophic impact to property, facilities, and infrastructure resulting from radionuclide contamination	Potentially high impact on the delivery of services in and to the affected.	High impact to the areas of highest concentration of radiological particulate.	High impact to the economic and financial community of the impacted area. Potentially catastrophic impact on agribusiness resulting from radionuclide ingestion and product embargoing.
Power Failure - Vulnerabilities and impacts are contingent upon numerous factors including time of year, population density, scope of outage area and duration of the event.	5	Power failures occur every year although generally with minimal impact. Wide spread Power failures associated with unusual weather events occur once every 5 years.	2	2	2	1	9.500	Generally low impact on health and safety. However, long-term outages during extremely hot or cold weather can have secondary health consequences.	Nominal impact to first responders.	Low impact on continuity of government operations if emergency backup power sources are available.	Limited impact on property or infrastructure.	Prolonged outages may result in disruption of water/sewage treatment operations.	Environmental impact should be limited to the release of hazardous substances.	Protracted outages could result in substantial disruption of commerce and financial activities, as well as loss of revenue.
Public Health Emergency - Communable diseases and noncommunable diseases	2	Avian Bird Flu - A 1986 outbreak in Schuylkill, Northumberland, and Snyder counties led to the killing of around 307,000 chickens and turkeys costing the Commonwealth an estimated $650,000.	1	4	3	1	5.400	Potential for significant impact on the general population.	Potential for significant impact on essential personnel. However, with precaution, low impact is expected.	Low impact on continuity of government.	Potential for high impact on property, facilities, and infrastructure, including points of dispensing for Strategic National Stockpile pharmaceuticals	Low impact on the delivery of services.	Low impact on the environment, unless outbreak of public health emergency would reach animal population and requires culling.	A large outbreak could have high impact on the economy of the County.
Radon - Huntingdon County is located in Pennsylvania's highest risk area for Radon and Radon product emissions.	5	No home is considered safe from radon until tested. In the first two years of Radon testing in Pennsylvania, approximately 59 percent of all homes tested were found to be contaminated by Radon and Radon products.	1	3	1	2	9.500	Over time, impact can be severe. Excessive exposure to Radon is a known cause of lung cancer.	Low impact to first responders. Primary threat comes exposure over an extended period of time.	Low impact on continuity of government.	Low physical impact on property and facilities. However, untreated high Radon levels can greatly lessen property value.	Low impact on delivery of services.	Radon can have a high impact on the environment if untreated.	Low impact unless high levels of Radon are detected and go untreated, which can severely decrease property value.
Severe Weather - Vulnerability and impacts are a factor of the type of event, strength of event, and area of impact.	5	Pennsylvania is vulnerable to severe weather, including heavy fog, hail, heavy precipitation (rain), high winds, unseasonable temperature extremes, and severe thunderstorms.	2	2	3	1	10.750	Minimal local impact. Minimal potential for loss of life and injuries.	Protective actions require to protect responders from hazards, particularly downed power lines.	Limited impact, unlikely to cause re-location of government operations.	Moderate impact. Utility outages, transportation infrastructure closures and isolated populations. Varying levels of damage to structures, particularly mobile homes.	Low impact. Local disruption of basic life support systems, typically of short duration.	Low impact on ecosystems	Limited impact on financial and commercial systems.

Hazard	Frequency of Occurrence and Location		Impact				Risk Factor	Vulnerability						
			Critical Facilities (25% Vulnerability Factor)	Social (40% Vulnerability Factor)	Economic (25% Vulnerability Factor)	Environmental (10% Vulnerability Factor)		(a) Health and Safety of Persons in the Affected Area at the Time of the Incident (Injury and Death)	(b) Health and Safety of Essential Personnel	(c) Continuity of Government	(d) Property, Facilities, and Infrastructure	(e) Delivery of Services	(f) The Environment	(g) Economic and Financial Condition
Severe Winter Weather - Vulnerability and impacts are dependent upon the time and intensity of the event.	5	Many parts of Pennsylvania are vulnerable to an array of winter weather. This weather has the ability to close businesses, cancel classes, and disrupt roadways.	1	3	3	1	11.500	Severe winter weather and freezing temperatures can result in hypothermia and other cold-related injuries, especially among the elderly. Snow removal activities can lead to an increase in mortality caused by coronary failure.	Low impact to emergency workers. Primarily from prolonged exposure to cold temperatures. Secondary danger from vehicular accidents.	Low impact to government. Prolonged severe cold weather periods may require the suspension of services such as public schools. This situation occurred during the winter of 1995-1996.	Low impact. The primary consequence of prolonged severe cold weather is loss of power related to excessive demand and downed power lines resulting from ice storms.	Limited Impact. The impact to the service delivery would be to medical facilities, nursing homes, assisted living facilities. Some government offices may be required to shut down.	Moderate impact. There would be limited overall impact to the electric grid.	Prolonged periods of extreme cold weather could have a major impact on business-related heating costs and could lead to short-term fuel shortages and inflation of heating oil and natural gas prices.
Subsidence - Vulnerabilities and impacts are contingent upon numerous factors including geographic location, whether it is gradual or catastrophic and method of response.	2	Subsidence related events occur several times each year, usually with minimal impact.	1	1	1	1	2.000	Nominal impact to the health and safety of people in the affected area as most events are not catastrophic in nature.	Nominal impact to first responders.	Little or no impact on continuity of government operations.	Vital lifelines (roads, gas and water pipelines) may be damaged as a result of subsidence.	Limited impact on the delivery of services.	Limited environmental impact unless the subsidence shears pipelines or damages hazardous material storage facilities (above or below ground tanks, etc).	Limited economic and financial impact to the community unless road networks are extensively damaged.
Terrorism - Vulnerabilities and impacts are contingent upon the method of the attack, the amount of force applied, and the population density of attack location.	2	On September 11, 2001 the United States was attacked by foreign terrorists. Flight 93 was a casualty of this attack. Pennsylvania has many targets of opportunity for terrorists - political, industrial, historical, and military.	3	4	3	3	6.800	Moderate impact to the health and safety of people in the affected area.	Protective actions required to protect responders from chemical, nuclear and biological hazard exposure.	Impact on continuity of operations can range from nominal to catastrophic and will be contingent upon the type and location of the terrorism event.	Impact on property, facilities and infrastructure can range from nominal to catastrophic and will be contingent upon the type and location of the terrorism event.	Impact on the delivery of services can range from nominal to catastrophic and will be contingent upon the type and location of the terrorism event.	Environmental impact can range from nominal to catastrophic and will be contingent upon the type and location of the terrorism event.	Economic and financial impact to the community can range from nominal to catastrophic and will be contingent upon the type and location of the terrorism event.

Hazard	Frequency of Occurrence and Location		Impact					Vulnerability						
			Critical Facilities (25% Vulnerability Factor)	Social (40% Vulnerability Factor)	Economic (25% Vulnerability Factor)	Environmental (10% Vulnerability Factor)	Risk Factor	(a) Health and Safety of Persons in the Affected Area at the Time of the Incident (Injury and Death)	(b) Health and Safety of Essential Personnel	(c) Continuity of Government	(d) Property, Facilities, and Infrastructure	(e) Delivery of Services	(f) The Environment	(g) Economic and Financial Condition
Tornado - Vulnerability and impacts are contingent upon the strength of the tornado, time of day, time on the ground, and area of impact.	2	According to the National Climatic Data Center, Huntingdon County has witnessed 6 tornados since 1978.	2	3	2	1	4.600	Extensive impact in the affected area. Potential for mass fatalities and large number of injured.	Moderate impact. Personal protective equipment is required for emergency worker safety from downed utility lines, hazardous materials, and debris.	Low/limited impact because of the de-centralized nature of Pennsylvania state government. However, some locally affected government agencies may be forced to relocate some mission critical operations.	Extensive local impact. Massive failures in electrical, communications and other critical Infrastructure.	Extensive impact. In the area of Impact Wide-spread, short-term disruptions in basic life support services in affected areas. 911 systems temporarily overwhelmed.	Low impact on ecosystems	Limited impact on financial and commercial systems.
Transportation - Vulnerabilities and impacts are contingent upon numerous factors including location, timing and method of response. Some type of transportation event occurs every day with minimal impact.	5	Transportation accidents occur every day with minimal individual impact. The worst accidents will involve multiple vehicles or hazardous materials. These accidents are not as common. Also, airline, railway, and pipeline accidents can occur but are not frequent.	2	2	1	3	9.250	Fatal accidents occur on a daily basis.	Nominal risk to first responders	Low impact on continuity of government operations.	Moderate impact on property or infrastructure.	Nominal impact on the delivery of services	Environmental impact should be limited to the release of hazardous substances.	Nominal impact.
Urban Fire - Vulnerabilities and impacts are contingent upon numerous factors including geographic location, whether it is gradual or catastrophic, and method of response. Urban fire may occur often with minimal impact.	4	Urban Fires that involve one structure occur often with minimal impact. Major fires that involve more than one structure occur several times a year.	1	1	1	1	4.000	Urban structure fire related deaths occur monthly.	Moderate risk to emergency responders as a result of training and personal protective equipment.	Low impact on continuity of government operations.	Moderate impact on property or infrastructure.	Nominal impact on the delivery of services.	Environmental impact should be limited to the release of hazardous substances.	Nominal impact.
Wildfire - Vulnerabilities and impacts are dependent on the location and climatological / meteorological conditions.	1	Rural sections of the County are prone to wildfires. The size and impact of a wildfire depends on its location, climate conditions, and the response of firefighters. If the right conditions exist, these factors can usually mitigate the effects of wildfires.	1	1	1	1	1.000	Low potential exists for fatalities and injuries.	Moderate impact. Protective actions required to protect responders from fire hazards.	Low impact, unlikely to cause re-location of Government operations.	Low impact to the transportation infrastructure, structures burned and displaced populations.	Low impact to the delivery of services. Services likely to be temporarily interrupted in the area of impact.	Low impact to area of operations, including animal life due to limited extent of fires.	Low impact to the economic and financial community. Primary impact will be to the replacement of structures in the area of operations.

As illustrated in Figure 2-5, each hazard level is associated with a risk factor. Risk factors help risk management team members differentiate credible high-hazard threats that may result in loss of life and property from less probable risks.

Figure 2-5
All-Hazards Risk Factor Ranking



According to Huntingdon County's 2004 FEMA-approved HMP, the top three hazards affecting the County were flooding, winter storms, and tornados, hurricanes, and windstorms. The updated research and analysis for this update supports those findings as the top three hazards in Huntingdon County for this update are flooding, severe winter weather, and severe weather, respectively. Further, the 2000 Commonwealth of Pennsylvania Multi-Hazard and Risk Assessment Report in which all Huntingdon County municipalities reported, supports the rankings of the hazards.

All Huntingdon County municipalities stated that winter storms could affect their area. Similarly, 98 percent of all municipalities listed flooding as a significant threat. Overall, flooding, severe winter storms, droughts, tornados, and hazardous material spills were most frequently chosen as having future mitigation potential.

While the HVA focuses on the top three hazards, the analysis illustrates how often these hazards are inter-related, causing or being caused by other hazards. The vulnerability of critical facilities, social, economic, and environmental factors is analyzed by the threat each hazard proposes. A detailed description of all hazards is found at Appendix C, Hazard Profiles.

Vulnerability Assessment: Identifying Assets

Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.[10]

Critical Facilities Vulnerability Assessment

Location identification of critical facilities in the County is crucial to assessing their vulnerability to hazards. Table 2-7 lists the locations of the critical facilities in Huntingdon County that are located within the 100-year floodplain. This knowledge is invaluable at the occurrence of a hazard. Data regarding facilities and critical infrastructure that lie in the floodplain is maintained by the Huntingdon County GIS Office of the County Planning Department. GIS provides an in-depth illustration of all critical County infrastructure in the floodplain. More information on critical infrastructure located in Huntingdon County can be found in the Critical Infrastructure Database, printed in Appendix G. The projected growth of Huntingdon County is not substantial enough to indicate a need for a significant increase in the number of critical facilities and infrastructure serving the County. Huntingdon County is projected to see a population increase of approximately 7.2 percent between 2000 and 2030. Business and commercial development is expected to continue to occur along the U.S. Route 22 corridor.

Table 2-7

Huntingdon County Critical Facilities within the 100-year Floodplain		
Name	**Facility Type**	**Municipality**
Stone Creek Valley Company 19	Fire Station	Jackson Township
Calvary Christian Academy	School	Huntingdon Borough
Huntingdon Wastewater Treatment Facility	Treatment Facility	Huntingdon Borough
Rockhill Elementary	School	Rockhill Furnace Borough
Southern Huntingdon Medical Center	Hospital	Cromwell Township
Juniata Valley Ambulance Company	Ambulance Company	Porter Township

Source: Huntingdon County EMA, Critical Infrastructure Database

Note: While the Huntingdon Water Treatment Facility and the Petersburg Fire Department do not appear in the 100-year floodplain mapping, both structures have experienced recent and repetitive flooding.

[10] Ibid.

Flooding

Critical facilities consist of municipal buildings, pumping stations, electricity transmitters, and first responder facilities. Their vulnerability to flooding is low, because such facilities should not be located in the floodplain. However, secondary flooding effects can have a great and deleterious affect on critical facilities. Flooding can also lead to further hazards, such as power failures, hazardous materials spills, and transportation infrastructure closures. These secondary effects can have significant impacts on the vulnerability of critical facilities.

The National Flood Insurance Program (NFIP) establishes minimum floodplain management criteria. Property owners in the floodplain should comply with land use floodplain regulations for their communities. The NFIP's Community Rating System (CRS) discounts flood insurance premiums in communities that establish floodplain management programs that go beyond NFIP minimum requirements. Under the CRS, communities receive credit for more restrictive regulations, acquisition, relocation, or flood proofing of flood-prone buildings, preservation of open space, and other measures that reduce flood damages or protect the natural resources and functions of floodplains.

The structures in a floodplain include those based on a point within a two-dimensional (longitude and latitude) plane. This data, however, does not include attribute information for first-floor flood elevations; this information is essential to assess the base flood elevation's impact on the County's infrastructure. As a result of this limitation, the estimates are likely overstated, but to what degree the potential losses are overstated cannot be determined. However, new construction must be issued an elevation certification by floodplain ordinance.

Refer to Appendix C: Flooding Hazard Profile for more detail.

Severe Winter Weather

Severe winter weather poses a low impact on critical facilities in Huntingdon County, largely due to the potential for power outages and closings of transportation infrastructure. Prolonged periods of cold weather can lead to widespread closings of some public facilities, such as schools. Power outages are an important secondary effect to consider when assessing vulnerability to severe winter weather. The loss of power for extended periods of time can cause a loss in communications and hinder essential needs, such as home and business heating.

Refer to Appendix C: Severe Weather Profile for more detail.

Severe Weather

Huntingdon County's critical facilities are moderately impacted by severe weather. This strong weather can cause great physical damage to property and can make it difficult for County personnel to travel to these critical facilities, if necessary.

Secondary effects, such as power outages, flooding, and disruptions or closings of transportation infrastructure can also affect critical facilities operations, as previously discussed.

Refer to Appendix C: Severe Weather Profile for more detail.

Social Vulnerability Assessment

A Social Vulnerability Assessment identifies areas of special needs populations, which consist of citizens with disabilities, people over age 65, persons living alone, and others. This population must be identified and targeted in successful hazard mitigation planning to prepare the County to safely evacuate these citizens or bring them the special supplies they may need to survive during a hazardous event. Table 2-8 presents an overview of the special needs populations in Huntingdon County. The size of the elderly population has increased 14.5 percent, and renter-occupied dwellings have increased slightly by 2.1 percent from 1990 to 2000. However, non-English speaking residents have decreased by 22.1 percent and the population living in poverty has decreased by 13.3 percent. With the size of the special needs population growing in Huntingdon County, especially among the elderly, it is vital that planning considers the needs of these population segments.

Table 2-8

Huntingdon County Special Needs Population			
	1990	**2000**	**% Change**
Total Population	44,164	45,586	3.2%
Urban Population	9,721	14,011	44.1%
Rural Population	34,443	31,575	-8.3%
Elderly (65+)	5,920	6,778	14.5%
Householder Living Alone	3,787	4,326	14.2%
Renter Occupied Dwellings	3,682	3,760	2.1%
Non-English Speaking Population	258	201	-22.1%
Population Living in Poverty	5,339	4,631	-13.3%
Institutionalized Population	3,205	3,626	13.1%
Disabilities (age 5+)	–	13,740	–
Sensory Disability	–	1891	–
Physical Disability	–	3,565	–
Mental Disability	–	2,139	–
Self-Care Disability	–	1012	–
Go-Outside-Home Disability	–	2,342	–
Employment Disability	–	2,791	–

Source: U.S. Census Bureau

Flooding

Flooding presents a high social vulnerability to Huntingdon County because it puts a significant amount of the population at risk. High floodwaters can devastate homeowners with both property damage and loss. Secondary effects of flooding also present vulnerability hazards. Power loss can leave homes without heat for extended periods of time. Transportation infrastructure can also be disrupted, often leaving citizens and businesses without essential goods and services.

Refer to Appendix C: Flooding Profile for more detail.

Severe Winter Weather

Huntingdon County is susceptible to an array of winter weather. Social vulnerability associated with severe winter weather is high and can cause business and school closures, aggravated by dangerous travel. Human exposure to prolonged storms can result in hypothermia and other illnesses, especially among the elderly and young children. Secondary effects include flooding, power outages, and roadway accidents.

Refer to Appendix C: Severe Weather Profile for more detail.

Severe Weather

The County's social vulnerability to severe weather is moderate. However, these storms, along with secondary flooding, can cause significant property damage. Power outages and disruption of basic services all can have lasting effects.

Refer to Appendix C: Severe Weather Profile for more detail.

Economic Vulnerability Assessment

A community's economic vulnerability is an important factor to consider when assessing the effects of certain hazards in Huntingdon County. Loss of income or loss of jobs through business interruption or closures can devastate a community. The economic vulnerability of Huntingdon County when facing the top three hazards (flooding, severe winter weather, and severe weather) is analyzed in this section. Each hazard presents certain risks to the economy of the County.

This analysis determines the hazard vulnerabilities of economic centers. It is essential to identify the potential negative impacts the greatest hazards may have on the County economy. This enables the prioritization of potential hazard mitigation strategies to eliminate or reduce the risks these hazards present.

Flooding

The Huntingdon County economy has a high vulnerability to flooding. The potential impacts caused by this hazard can lead to long-term economic disruption, especially for small businesses. Flooding can ruin the structure of the business, along with the merchandise or equipment in the building.

Secondary affects of flooding can also have devastating effects on the Huntingdon County economy. Power outages and disrupted transportation infrastructure can paralyze business operations and have a long-lasting effect on the local economy.

Refer to Appendix C: Flooding Profile for more detail.

Severe Winter Weather

The economic vulnerability to severe winter weather in Huntingdon County is also high. Prolonged periods of snow and extreme temperatures can hinder travel to and from economic centers in the County. Secondary effects also play a crucial role in the severity of this hazard. Power loss can shut down businesses for lengthy periods of time. Extended periods of cold temperatures expand businesses' operating expenses with increased heating and snow removal costs. When warmer weather arrives, accumulating mounds of snow can melt, resulting in flood hazards.

Refer to Appendix C: Severe Weather Profile for more detail.

Severe Weather

Huntingdon County has a high economic vulnerability to severe weather. This severe weather can halt business temporarily, primarily through secondary effects, such as flooding and power loss.

Refer to Appendix C: Severe Weather Profile for more detail.

Environmental Vulnerability Assessment

An Environmental Vulnerability Assessment identifies environmental resources that may be impacted by hazards and their secondary effects, such as toxic releases or hazardous spills.

The location, identification of hazardous materials, and associated dangers with each of the Huntingdon County SARA facilities is essential to knowing the potential impact these facilities may have on the County.

Table 2-9 lists the SARA facilities located in Huntingdon County and tells whether or not they are located in the floodplain. Of the 13 SARA facilities in Huntingdon County, only one is located within the 100-year floodplain. This Verizon facility is located in Alexandria Borough.

Table 2-9

Huntingdon County SARA Facilities		
Name	**Municipality**	**Located within Floodplain**
Dean D. Strickler and Sons Inc	Smithfield Township	Yes
FCI Berg USA	Shirley Township	No
Helena Chemical	Warriors Mark Township	No
Huntingdon Area Middle School	Huntingdon Borough	No
Huntingdon Borough Water Dept*	Huntingdon Borough	No
Huntingdon Wastewater Treatment Plant	Smithfield Township	Yes
Mount Union Borough Water	Mount Union Borough	No
SCI Huntingdon / Smithfield	Smithfield Township	No
Spring Creek Wastewater Treatment Plant	Clay Township	No
Three Springs Community Swimming Pool	Three Springs Township	Yes
Verizon Alexandria	Alexandria Borough	Yes
Verizon Huntingdon	Huntingdon Borough	No
Verizon Mount Union	Mount Union Borough	No

Source: Huntingdon County EMA Critical Infrastructure Database

****While the Huntingdon Water Borough Water Department does not appear in the 100-year floodplain mapping, the structure has experienced recent and repetitive flooding.***

Flooding

Most minor flooding events present moderate environmental vulnerability to Huntingdon County. However, the possibility of large amounts of environmental pollutants such as oil, gas, and human waste in floodwaters, as a secondary effect of the flooding, can increase this vulnerability. For example, flooding can result in contamination when raw sewage, animal carcasses, chemicals, pesticides, or other hazardous materials are suspended and transported through sensitive habitats, neighborhoods, or business settings. Events such as these require major clean up and remediation efforts.

Refer to Appendix C: Flooding Profile for more detail.

Severe Winter Weather

The environmental vulnerability of Huntingdon County is low in relation to severe winter weather. Huntingdon County's location in central Pennsylvania makes it susceptible to blizzards, heavy snowfall, heavy fog, hail, heavy rain, high winds, ice storms, and temperature extremes. However, most of these natural hazards do not pose a direct threat to the environment.

Secondary effects of severe winter weather can cause environmental hazards. Most notably, flooding after the spring thaw can contaminate ground water via hazardous material spills. Similarly, severe winter weather can lead to traffic accidents and hazardous material spills from transportation vehicles carrying these materials.

Refer to Appendix C: Severe Weather Profile for more detail.

Severe Weather

Huntingdon County also faces low environmental vulnerability from severe weather. With high winds and heavy rain produced by these storms, some level hazardous materials spills are likely to occur as a result of traffic accidents or from secondary effects such as flooding. The severity of the environmental damage largely depends on a storm's strength and duration.

Refer to Appendix C: Severe Weather Profile for more detail.

Vulnerability Assessment: Estimating Potential Property Loss

Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area.[11]

Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.[12]

Flooding is the most significant hazard in Huntingdon County, both as a direct and secondary hazard. The estimation of potential loss in this assessment focuses on the monetary damage that could result from flooding. The estimated potential loss in property from flood damage was determined for each municipality and the entire County. The following primary datasets are included in the floodplain analysis: Pennsylvania Department of Environmental Protection Floodplain (PASDA, 1996); Huntingdon County Tax Parcel Boundaries; Huntingdon County Tax Assessment Database; and Huntingdon County Structures Database.

Estimated potential losses were calculated by first determining the number of structures completely situated in the floodplain. The structures had no assessed value or size attribute information, so a new layer was created that includes all tax parcels with structures contained in the floodplain. The new layer allowed assessed property values to be calculated for parcels with structures completely in a floodplain.

The assessed value was then calculated from the Huntingdon County Tax Assessment Database for each of its 48 municipalities. In order to bring the assessed value to current market value rates, each assessed improvement value was multiplied by 7.46, the multiplier used by Huntingdon County to equate current market value. The data was further divided by property class, allowing the total market value for each type of class in each of the municipalities to be analyzed.

[11] Ibid.

[12] Ibid.

The end result of the analysis will allow reasonable determinations of the estimated potential loss for each type of property class in each of the 48 municipalities. The results are presented in Table 2-10. The estimated losses can only be presented as potential, based on the random occurrence of flood conditions and limited data. The structures in a floodplain include those based on a point within a two-dimensional (longitude and latitude) plane. This data, however, does not include attribute information for first-floor flood elevations, which is essential to assess the base flood elevation's impact on the County's infrastructure. As a result of this limitation, the estimates are likely overstated, but to what degree the potential losses are overstated cannot be determined.

It is estimated that Huntingdon County's potential loss during a flooding event could be approximately $86.7 million. This represents approximately 5.3 percent of the total structure market value in Huntingdon County. More than $24.5 million in market value of commercial structures throughout the County are located within the floodplain, while approximately $49.3 million in market value of residential structures are located within the floodplain.

Of the Huntingdon County municipalities, Huntingdon Borough and Smithfield Township have the greatest structure market value located in the floodplain. Approximately $17.6 million worth of structure market value in Huntingdon Borough lies within the floodplain. Smithfield Township contains approximately $14.9 million in structure market value within the floodplain.

When analyzing agricultural land, Franklin Township has the greatest structure value located in the floodplain, approximately $2.5 million. Smithfield Township has the greatest commercial and vacant land structure value in the floodplain at more than $11.1 million and $181,000 respectively. Approximately $938,000 in government market structure value is located in the floodplain in Logan Township, the most of all municipalities. Finally, throughout the County, 14 municipalities have residential structure market value of $1 million or more located within the floodplain. Huntingdon Borough has the greatest amount at approximately $10.9 million.

Repetitive Loss Structures

FEMA defines a repetitive loss property as any insurable building that has experienced two losses in a ten year period where each loss is $1,000.00 or more. A repetitive loss property may or may not be currently insured by the National Flood Insurance Program (NFIP).

The Huntingdon County HMP endeavors to reduce the loss of life and property caused by natural and manmade disasters and serves as an essential component of the County's overall emergency management planning program. After natural disasters, repairs and reconstruction are often completed in such a way as to simply restore damaged property to pre-disaster conditions. Replication of pre-disaster conditions results in a repetitive loss cycle of damage, reconstruction, and repeated damage. Hazard mitigation is needed to ensure that such cycles are broken, that post-disaster repairs and reconstruction take place after damages are analyzed, and that sounder, less vulnerable conditions are produced. Additionally, other mitigation actions such as (voluntary) buy-out programs are considered.

Thirteen municipalities in Huntingdon County have properties which experience repetitive loss. Table 2-11 shows that 27 of the 63 repetitive loss properties in the County do not carry insurance, while the status of three was unavailable. The combined property value of all repetitive loss properties in Huntingdon County is more than $22.1 million. The potential losses of these properties could greatly impact Huntingdon County. Due to privacy concerns, detailed information on repetitive loss structures is retained by the Huntingdon County Planning Department.

Potentially, there could be even more repetitive loss properties in Huntingdon County. While the floodplain has expanded, the repetitive loss program and flood insurance claims are based on the outdated floodplain mapping.

Table 2-10

Huntingdon County Potential Loss due to Flooding				
Municipality	**Structure Designation**	**Market Value of Structures**	**Market Value of Structures Located in the Floodplain**	**Percent of Market Value of Structures in the Floodplain**
Huntingdon County	Agricultural	$210,005,564.80	$10,879,067.20	5.2%
	Commercial	$294,693,872.00	$24,505,204.80	8.3%
	Government	$91,321,291.60	$1,743,849.60	1.9%
	Residential	$1,028,415,756.40	$49,255,992.80	4.8%
	Vacant Land	$13,129,600.00	$293,028.80	2.2%
	Total	$1,637,566,084.80	$86,677,143.20	5.3%
Alexandria Borough	Agricultural	$0.00	$0.00	-
	Commercial	$2,392,869.60	$99,367.20	4.2%
	Government	$16,113.60	$0.00	0.0%
	Residential	$7,136,832.80	$288,851.20	4.0%
	Vacant Land	$0.00	$0.00	-
	Total	$9,545,816.00	$388,218.40	4.1%
Barree Township	Agricultural	$3,334,023.20	$57,292.80	1.7%
	Commercial	$249,462.40	$0.00	0.0%
	Government	$2,105,510.40	$0.00	0.0%
	Residential	$12,051,033.20	$37,300.00	0.3%
	Vacant Land	$122,642.40	$0.00	0.0%
	Total	$17,862,671.60	$94,592.80	0.5%
Birmingham Borough	Agricultural	$0.00	$0.00	-
	Commercial	$148,603.20	$0.00	0.0%
	Government	$2,978,032.00	$51,921.60	1.7%
	Residential	$1,355,332.80	$0.00	0.0%
	Vacant Land	$0.00	$0.00	-
	Total	$4,481,968.00	$51,921.60	1.2%
Brady Township	Agricultural	$8,124,536.80	$438,349.60	5.4%
	Commercial	$1,614,642.40	$83,253.60	5.2%
	Government	$3,250,471.20	$3,282.40	0.1%
	Residential	$22,020,726.40	$1,148,840.00	5.2%
	Vacant Land	$477,738.40	$0.00	0.0%
	Total	$35,488,115.20	$1,673,725.60	4.7%
Broad Top City Borough	Agricultural	$0.00	$0.00	-
	Commercial	$1,366,373.60	$0.00	0.0%
	Government	$0.00	$0.00	-
	Residential	$9,752,308.80	$0.00	0.0%
	Vacant Land	$32,227.20	$0.00	0.0%
	Total	$11,150,909.60	$0.00	0.0%

Huntingdon County Potential Loss due to Flooding, *cont.*				
Municipality	**Structure Designation**	**Market Value of Structures**	**Market Value of Structures Located in the Floodplain**	**Percent of Market Value of Structures in the Floodplain**
Carbon Township	Agricultural	$276,915.20	$0.00	0.0%
	Commercial	$616,792.80	$0.00	0.0%
	Government	$0.00	$0.00	-
	Residential	$9,867,491.20	$265,874.40	2.7%
	Vacant Land	$74,003.20	$0.00	0.0%
	Total	$10,835,202.40	$265,874.40	2.5%
Cass Township	Agricultural	$9,344,992.80	$0.00	0.0%
	Commercial	$973,082.40	$0.00	0.0%
	Government	$101,456.00	$0.00	0.0%
	Residential	$30,133,327.20	$431,188.00	1.4%
	Vacant Land	$824,180.80	$0.00	0.0%
	Total	$41,377,039.20	$431,188.00	1.0%
Cassville Borough	Agricultural	$240,212.00	$0.00	0.0%
	Commercial	$1,170,623.20	$0.00	0.0%
	Government	$30,436.80	$0.00	0.0%
	Residential	$2,952,071.20	$0.00	0.0%
	Vacant Land	$0.00	$0.00	-
	Total	$4,393,343.20	$0.00	0.0%
Clay Township	Agricultural	$5,670,793.60	$8,355.20	0.1%
	Commercial	$2,358,255.20	$0.00	0.0%
	Government	$981,736.00	$0.00	0.0%
	Residential	$21,268,758.40	$500,416.80	2.4%
	Vacant Land	$207,686.40	$39,985.60	19.3%
	Total	$30,487,229.60	$548,757.60	1.8%
Coalmont Borough	Agricultural	$0.00	$0.00	-
	Commercial	$392,097.60	$176,652.80	45.1%
	Government	$19,396.00	$0.00	0.0%
	Residential	$1,509,008.80	$307,352.00	20.4%
	Vacant Land	$141,441.60	$0.00	0.0%
	Total	$2,061,944.00	$484,004.80	23.5%
Cromwell Township	Agricultural	$12,431,045.60	$242,002.40	1.9%
	Commercial	$10,566,940.80	$256,027.20	2.4%
	Government	$3,114,400.80	$0.00	0.0%
	Residential	$37,387,132.80	$791,356.80	2.1%
	Vacant Land	$749,580.80	$0.00	0.0%
	Total	$64,249,100.80	$1,289,386.40	2.0%

Huntingdon County Potential Loss due to Flooding, *cont.*				
Municipality	**Structure Designation**	**Market Value of Structures**	**Market Value of Structures Located in the Floodplain**	**Percent of Market Value of Structures in the Floodplain**
Dublin Township	Agricultural	$10,565,448.80	$52,220.00	0.5%
	Commercial	$9,910,013.20	$157,256.80	1.6%
	Government	$402,840.00	$0.00	0.0%
	Residential	$30,055,146.40	$360,467.20	1.2%
	Vacant Land	$521,304.80	$0.00	0.0%
	Total	$51,454,753.20	$569,944.00	1.1%
Dudley Borough	Agricultural	$0.00	$0.00	-
	Commercial	$581,880.00	$31,332.00	5.4%
	Government	$14,920.00	$14,920.00	100.0%
	Residential	$4,056,151.20	$140,844.80	3.5%
	Vacant Land	$0.00	$0.00	-
	Total	$4,652,951.20	$187,096.80	4.0%
Franklin Township	Agricultural	$11,363,967.20	$2,508,052.00	22.1%
	Commercial	$825,672.80	$68,333.60	8.3%
	Government	$0.00	$0.00	-
	Residential	$13,615,096.80	$1,734,002.40	12.7%
	Vacant Land	$384,637.60	$2,387.20	0.6%
	Total	$26,189,374.40	$4,312,775.20	16.5%
Henderson Township	Agricultural	$6,450,214.40	$0.00	0.0%
	Commercial	$5,728,086.40	$67,438.40	1.2%
	Government	$0.00	$0.00	-
	Residential	$23,372,180.00	$1,753,696.80	7.5%
	Vacant Land	$75,793.60	$11,040.80	14.6%
	Total	$35,626,274.40	$1,832,176.00	5.1%
Hopewell Township	Agricultural	$2,347,214.40	$0.00	0.0%
	Commercial	$1,792,488.80	$210,968.80	11.8%
	Government	$0.00	$0.00	-
	Residential	$20,802,657.60	$413,880.80	2.0%
	Vacant Land	$403,138.40	$0.00	0.0%
	Total	$25,345,499.20	$624,849.60	2.5%
Huntingdon Borough	Agricultural	$432,680.00	$0.00	0.0%
	Commercial	$92,353,755.60	$6,747,122.40	7.3%
	Government	$53,451,198.40	$0.00	0.0%
	Residential	$138,623,510.40	$10,850,122.40	7.8%
	Vacant Land	$1,697,299.20	$0.00	0.0%
	Total	$286,558,443.60	$17,597,244.80	6.1%

Huntingdon County Potential Loss due to Flooding, *cont.*				
Municipality	**Structure Designation**	**Market Value of Structures**	**Market Value of Structures Located in the Floodplain**	**Percent of Market Value of Structures in the Floodplain**
Jackson Township	Agricultural	$14,156,692.80	$566,064.80	4.0%
	Commercial	$1,385,769.60	$227,977.60	16.5%
	Government	$752,564.80	$0.00	0.0%
	Residential	$26,463,007.20	$1,273,571.20	4.8%
	Vacant Land	$2,984.00	$0.00	0.0%
	Total	$42,761,018.40	$2,067,613.60	4.8%
Juniata Township	Agricultural	$3,292,247.20	$68,035.20	2.1%
	Commercial	$1,653,136.00	$0.00	0.0%
	Government	$71,616.00	$0.00	0.0%
	Residential	$20,211,527.20	$433,276.80	2.1%
	Vacant Land	$34,912.80	$0.00	0.0%
	Total	$25,263,439.20	$501,312.00	2.0%
Lincoln Township	Agricultural	$3,393,703.20	$0.00	0.0%
	Commercial	$2,718,722.40	$0.00	0.0%
	Government	$0.00	$0.00	-
	Residential	$11,509,288.00	$0.00	0.0%
	Vacant Land	$289,746.40	$0.00	0.0%
	Total	$17,911,460.00	$0.00	0.0%
Logan Township	Agricultural	$6,858,425.60	$506,683.20	7.4%
	Commercial	$1,541,236.00	$100,560.80	6.5%
	Government	$1,284,462.80	$937,572.80	73.0%
	Residential	$15,109,633.20	$469,383.20	3.1%
	Vacant Land	$0.00	$0.00	-
	Total	$24,793,757.60	$2,014,200.00	8.1%
Mapleton Borough	Agricultural	$0.00	$0.00	-
	Commercial	$1,236,868.00	$51,921.60	4.2%
	Government	$126,820.00	$0.00	0.0%
	Residential	$6,692,515.20	$771,364.00	11.5%
	Vacant Land	$75,196.80	$0.00	0.0%
	Total	$8,131,400.00	$823,285.60	10.1%
Marklesburg Borough	Agricultural	$107,722.40	$0.00	0.0%
	Commercial	$381,355.20	$0.00	0.0%
	Government	$37,896.80	$0.00	0.0%
	Residential	$9,244,730.40	$0.00	0.0%
	Vacant Land	$132,788.00	$0.00	0.0%
	Total	$9,904,492.80	$0.00	0.0%

Huntingdon County Potential Loss due to Flooding, *cont.*				
Municipality	**Structure Designation**	**Market Value of Structures**	**Market Value of Structures Located in the Floodplain**	**Percent of Market Value of Structures in the Floodplain**
Mill Creek Borough	Agricultural	$0.00	$0.00	-
	Commercial	$668,714.40	$108,916.00	16.3%
	Government	$0.00	$0.00	-
	Residential	$4,396,327.20	$620,373.60	14.1%
	Vacant Land	$8,952.00	$0.00	0.0%
	Total	$5,073,993.60	$729,289.60	14.4%
Miller Township	Agricultural	$5,666,317.60	$461,326.40	8.1%
	Commercial	$909,821.60	$37,896.80	4.2%
	Government	$0.00	$0.00	-
	Residential	$10,327,027.20	$631,414.40	6.1%
	Vacant Land	$95,189.60	$0.00	0.0%
	Total	$16,998,356.00	$1,130,637.60	6.7%
Morris Township	Agricultural	$4,048,989.60	$0.00	0.0%
	Commercial	$904,152.00	$0.00	0.0%
	Government	$0.00	$0.00	-
	Residential	$8,371,015.20	$0.00	0.0%
	Vacant Land	$0.00	$0.00	-
	Total	$13,324,156.80	$0.00	0.0%
Mount Union Borough	Agricultural	$0.00	$0.00	-
	Commercial	$21,222,208.00	$0.00	0.0%
	Government	$8,359,974.40	$0.00	0.0%
	Residential	$39,391,784.00	$665,730.40	1.7%
	Vacant Land	$244,986.40	$0.00	0.0%
	Total	$69,218,952.80	$665,730.40	1.0%
Oneida Township	Agricultural	$5,446,396.80	$268,560.00	4.9%
	Commercial	$2,238,298.40	$3,879.20	0.2%
	Government	$185,306.40	$0.00	0.0%
	Residential	$34,152,029.20	$1,179,873.60	3.5%
	Vacant Land	$128,610.40	$0.00	0.0%
	Total	$42,150,641.20	$1,452,312.80	3.4%
Orbisonia Borough	Agricultural	$0.00	$0.00	-
	Commercial	$4,064,804.80	$615,300.80	15.1%
	Government	$175,757.60	$0.00	0.0%
	Residential	$8,860,689.60	$1,321,315.20	14.9%
	Vacant Land	$6,564.80	$0.00	0.0%
	Total	$13,107,816.80	$1,936,616.00	14.8%

Huntingdon County Potential Loss due to Flooding, *cont.*				
Municipality	**Structure Designation**	**Market Value of Structures**	**Market Value of Structures Located in the Floodplain**	**Percent of Market Value of Structures in the Floodplain**
Penn Township	Agricultural	$5,607,234.40	$0.00	0.0%
	Commercial	$1,440,078.40	$0.00	0.0%
	Government	$0.00	$0.00	-
	Residential	$29,540,704.80	$0.00	0.0%
	Vacant Land	$355,991.20	$0.00	0.0%
	Total	$36,944,008.80	$0.00	0.0%
Petersburg Borough	Agricultural	$0.00	$0.00	-
	Commercial	$3,532,757.60	$0.00	0.0%
	Government	$122,642.40	$21,783.20	17.8%
	Residential	$6,471,102.40	$535,926.40	8.3%
	Vacant Land	$0.00	$0.00	-
	Total	$10,126,502.40	$557,709.60	5.5%
Porter Township	Agricultural	$10,954,264.00	$1,591,665.60	14.5%
	Commercial	$19,276,341.60	$1,494,387.20	7.8%
	Government	$6,845,892.80	$134,578.40	2.0%
	Residential	$50,238,325.60	$4,201,173.60	8.4%
	Vacant Land	$217,235.20	$23,275.20	10.7%
	Total	$87,532,059.20	$7,445,080.00	8.5%
Rockhill Furnace Borough	Agricultural	$0.00	$0.00	-
	Commercial	$1,756,382.40	$426,413.60	24.3%
	Government	$478,036.80	$474,456.00	99.3%
	Residential	$8,028,452.00	$3,630,632.80	45.2%
	Vacant Land	$140,844.80	$8,952.00	6.4%
	Total	$10,403,716.00	$4,540,454.40	43.6%
Saltillo Borough	Agricultural	$133,086.40	$0.00	0.0%
	Commercial	$354,200.80	$0.00	0.0%
	Government	$105,932.00	$57,292.80	54.1%
	Residential	$6,630,448.00	$342,563.20	5.2%
	Vacant Land	$120,553.60	$0.00	0.0%
	Total	$7,344,220.80	$399,856.00	5.4%
Shade Gap Borough	Agricultural	$0.00	$0.00	-
	Commercial	$31,332.00	$0.00	0.0%
	Government	$25,662.40	$0.00	0.0%
	Residential	$1,714,009.60	$0.00	0.0%
	Vacant Land	$99,068.80	$0.00	0.0%
	Total	$1,870,072.80	$0.00	0.0%

Huntingdon County Potential Loss due to Flooding, *cont.*				
Municipality	**Structure Designation**	**Market Value of Structures**	**Market Value of Structures Located in the Floodplain**	**Percent of Market Value of Structures in the Floodplain**
Shirley Township	Agricultural	$13,197,635.20	$528,466.40	4.0%
	Commercial	$15,426,981.60	$1,036,940.00	6.7%
	Government	$2,089,993.60	$0.00	0.0%
	Residential	$54,675,832.00	$1,858,136.80	3.4%
	Vacant Land	$851,633.60	$24,767.20	2.9%
	Total	$86,242,076.00	$3,448,310.40	4.0%
Shirleysburg Borough	Agricultural	$0.00	$0.00	-
	Commercial	$577,105.60	$0.00	0.0%
	Government	$13,428.00	$0.00	0.0%
	Residential	$2,003,756.00	$0.00	0.0%
	Vacant Land	$0.00	$0.00	-
	Total	$2,594,289.60	$0.00	0.0%
Smithfield Township	Agricultural	$1,754,592.00	$0.00	0.0%
	Commercial	$60,427,193.60	$11,182,838.40	18.5%
	Government	$1,682,976.00	$48,042.40	2.9%
	Residential	$34,932,792.80	$3,464,424.00	9.9%
	Vacant Land	$227,977.60	$181,427.20	79.6%
	Total	$99,025,532.00	$14,876,732.00	15.0%
Springfield Township	Agricultural	$7,772,424.80	$269,753.60	3.5%
	Commercial	$270,648.80	$0.00	0.0%
	Government	$0.00	$0.00	-
	Residential	$17,376,428.80	$107,722.40	0.6%
	Vacant Land	$227,977.60	$0.00	0.0%
	Total	$25,647,480.00	$377,476.00	1.5%
Spruce Creek Township	Agricultural	$3,236,446.40	$429,099.20	13.3%
	Commercial	$617,986.40	$205,000.80	33.2%
	Government	$0.00	$0.00	-
	Residential	$7,915,656.80	$2,340,351.20	29.6%
	Vacant Land	$139,949.60	$0.00	0.0%
	Total	$11,910,039.20	$2,974,451.20	25.0%
Tell Township	Agricultural	$11,522,417.60	$137,562.40	1.2%
	Commercial	$877,296.00	$36,404.80	4.1%
	Government	$0.00	$0.00	-
	Residential	$12,938,624.00	$651,705.60	5.0%
	Vacant Land	$0.00	$0.00	-
	Total	$25,338,337.60	$825,672.80	3.3%

Huntingdon County Potential Loss due to Flooding, *cont.*				
Municipality	**Structure Designation**	**Market Value of Structures**	**Market Value of Structures Located in the Floodplain**	**Percent of Market Value of Structures in the Floodplain**
Three Springs Borough	Agricultural	$208,880.00	$53,712.00	25.7%
	Commercial	$2,266,646.40	$74,301.60	3.3%
	Government	$0.00	$0.00	-
	Residential	$10,105,614.40	$175,757.60	1.7%
	Vacant Land	$444,317.60	$0.00	0.0%
	Total	$13,025,458.40	$303,771.20	2.3%
Todd Township	Agricultural	$8,220,920.00	$87,431.20	1.1%
	Commercial	$1,138,992.80	$0.00	0.0%
	Government	$535,031.20	$0.00	0.0%
	Residential	$31,472,546.40	$338,684.00	1.1%
	Vacant Land	$1,221,351.20	$0.00	0.0%
	Total	$42,588,841.60	$426,115.20	1.0%
Union Township	Agricultural	$6,389,937.60	$120,255.20	1.9%
	Commercial	$943,839.20	$0.00	0.0%
	Government	$559,201.60	$0.00	0.0%
	Residential	$34,151,581.60	$115,779.20	0.3%
	Vacant Land	$725,112.00	$0.00	0.0%
	Total	$42,769,672.00	$236,034.40	0.6%
Walker Township	Agricultural	$5,884,746.40	$1,424,263.20	24.2%
	Commercial	$8,725,812.80	$640,963.20	7.3%
	Government	$793,744.00	$0.00	0.0%
	Residential	$66,128,722.40	$2,632,186.40	4.0%
	Vacant Land	$651,407.20	$1,193.60	0.2%
	Total	$82,184,432.80	$4,698,606.40	5.7%
Warriors Mark Township	Agricultural	$12,699,307.20	$792,550.40	6.2%
	Commercial	$3,066,656.80	$363,749.60	11.9%
	Government	$133,683.20	$0.00	0.0%
	Residential	$51,254,974.40	$1,667,757.60	3.3%
	Vacant Land	$945,629.60	$0.00	0.0%
	Total	$68,100,251.20	$2,824,057.60	4.1%
West Township	Agricultural	$7,826,435.20	$171,281.60	2.2%
	Commercial	$1,308,484.00	$0.00	0.0%
	Government	$46,252.00	$0.00	0.0%
	Residential	$10,059,064.00	$712,579.20	7.1%
	Vacant Land	$0.00	$0.00	-
	Total	$19,240,235.20	$883,860.80	4.6%

Huntingdon County Potential Loss due to Flooding, *cont.*				
Municipality	**Structure Designation**	**Market Value of Structures**	**Market Value of Structures Located in the Floodplain**	**Percent of Market Value of Structures in the Floodplain**
Wood Township	Agricultural	$1,044,698.40	$96,084.80	9.2%
	Commercial	$688,408.80	$0.00	0.0%
	Government	$427,905.60	$0.00	0.0%
	Residential	$12,088,780.80	$90,116.80	0.7%
	Vacant Land	$28,944.80	$0.00	0.0%
	Total	$14,278,738.40	$186,201.60	1.3%

Table 2-11

Huntingdon County Repetitive Loss Communities								
Municipality	**Number of Repetitive Loss Properties within the Municipality**	**Insurance Status**			**Combined Property Value**	**Non-Residential**	**Single Family**	**Multi-Family**
		Insured	**Not Insured**	**Unavailable**				
Alexandria Borough*	13	8	5	-	$2,042,986	1	10	2
Cromwell Township	1	-	1	-	$55,000	-	1	-
Henderson Township	5	5	-	-	$294,135	-	5	-
Huntingdon Borough	12	5	7	-	$8,382,275	6	6	-
Juniata Township	1	1	-	-	$61,999	-	1	-
Mapleton Borough	1	1	-	-	$141,960	-	1	-
Mill Creek Borough	1	1	-	-	$101,520	1	-	-
Oneida Township	3	-	2	1	$255,101	-	3	-
Petersburg Borough	6	3	3	-	$527,025	-	6	-
Porter Township	9	4	4	1	$756,048	-	9	-
Shirley Township	5	2	3	-	$387,332	-	5	-
Smithfield Township*	5	2	2	1	$8,867,930	2	2	1
Walker Township	1	1	-	-	$230,000	-	1	-

Source: Federal Emergency Management Agency (FEMA)

****An outlier in the property value was purposely omitted from the combined property value total***

Vulnerability Assessment: Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of the land uses and development trends within the community so that mitigation options can be considered in future land use decisions.[13]

Overview

An examination of recent development trends should help to identify and anticipate future vulnerabilities to hazards which may affect the County's growth and development.

Impervious Surface Coverage

Impervious surface coverage data from 1985 and 2000 was analyzed to determine static development trends and developing areas in relation to floodplain proximity. This combined information produces a more accurate depiction of the County's historical growth trends.

A comparison of impervious surface coverage data[14] provides another method of detecting change in Huntingdon County's growth and development patterns. Impervious surface data estimated from Thematic Mapper data using algorithms developed by Dr. Toby Carlson at University Park, Pennsylvania, was originally generated to support hydrologic investigations. This data is also useful for assessing urbanization and development patterns over time. Impervious surfaces primarily reflect the urban and built environments and include rooftops, sidewalks, roads, and parking lots.

By examining impervious surface coverage data, recent development trends in relation to flood plain proximity can be ascertained. This may generate recommendations to examine certain areas in more detail to better mitigate specific hazardous threats, such as flooding or transportation accidents, or hazardous material spills.

Figures 2-6 and 2-7 illustrate the change in impervious surface coverage from 1985 to 2000 across Huntingdon County. According to the graphics, Huntingdon County did not witness excessive development between 1985 and 2000. However, some municipalities did see increases in land coverage. Warriors Mark Township, Franklin Township, Spruce Creek Township, and Morris Township all saw noticeable increases in land coverage. Development is also noticeable along U.S. Route 22 between Huntingdon Borough and Mill Creek Borough.

Development can often change the hazard threat level of an area by placing additional critical facilities, businesses, transportation networks, and populations within vulnerable areas. Alexandria Borough and Petersburg Borough have both seen a noticeable change in land coverage and are prone to flooding. Alexandria Borough is affected by flooding from a segment

[13] Ibid.

[14] Pennsylvania State University, 1985 and 2000.

of the Frankstown Branch Juniata River adjacent to the community. Similarly, Petersburg Borough is primarily affected by Shaver's Creek, which is influenced by the Juniata River.

Also, Rockhill Borough and Orbisonia Borough have both seen noticeable increases in land coverage. Both of these municipalities are prone to some level of flooding. Rockhill Borough is affected by Blacklog Creek and Jordan Run. Major floods cause localized inundation of structures along Blacklog Creek and Jordan Run. Orbisonia Borough is primarily affected by Blacklog Creek. See the flooding profile in Appendix C for a more detailed discussion of this hazard.

Any development along transportation routes can increase the vulnerability to transportation incidents and hazardous material spills. Most often, development occurs along these transportation networks because of access and increased demand for travel and access to services. Therefore, the impact of these hazards can increase along with their frequency. As previously stated, the graphics that follow illustrate an increase in land coverage along the U.S. Route 22 corridor between Huntingdon Borough and Mill Creek Borough. See the transportation and hazardous material spill profile in Appendix C for a more detailed discussion of this hazard.

While it can be difficult to curb development, it is to the municipality's advantage to be aware of development trends in order to successfully mitigate future hazards as risks increase.

Figure 2-6

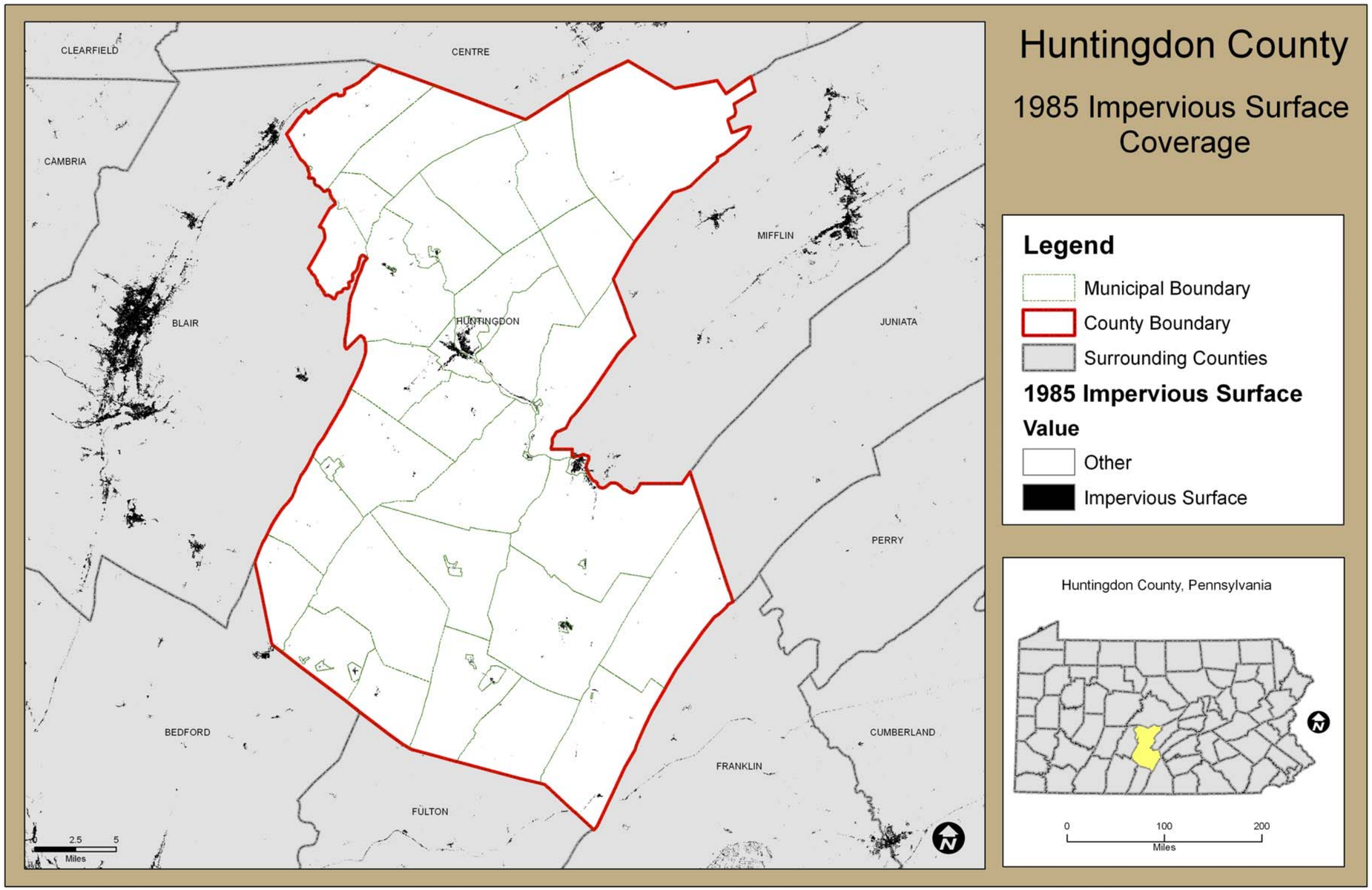
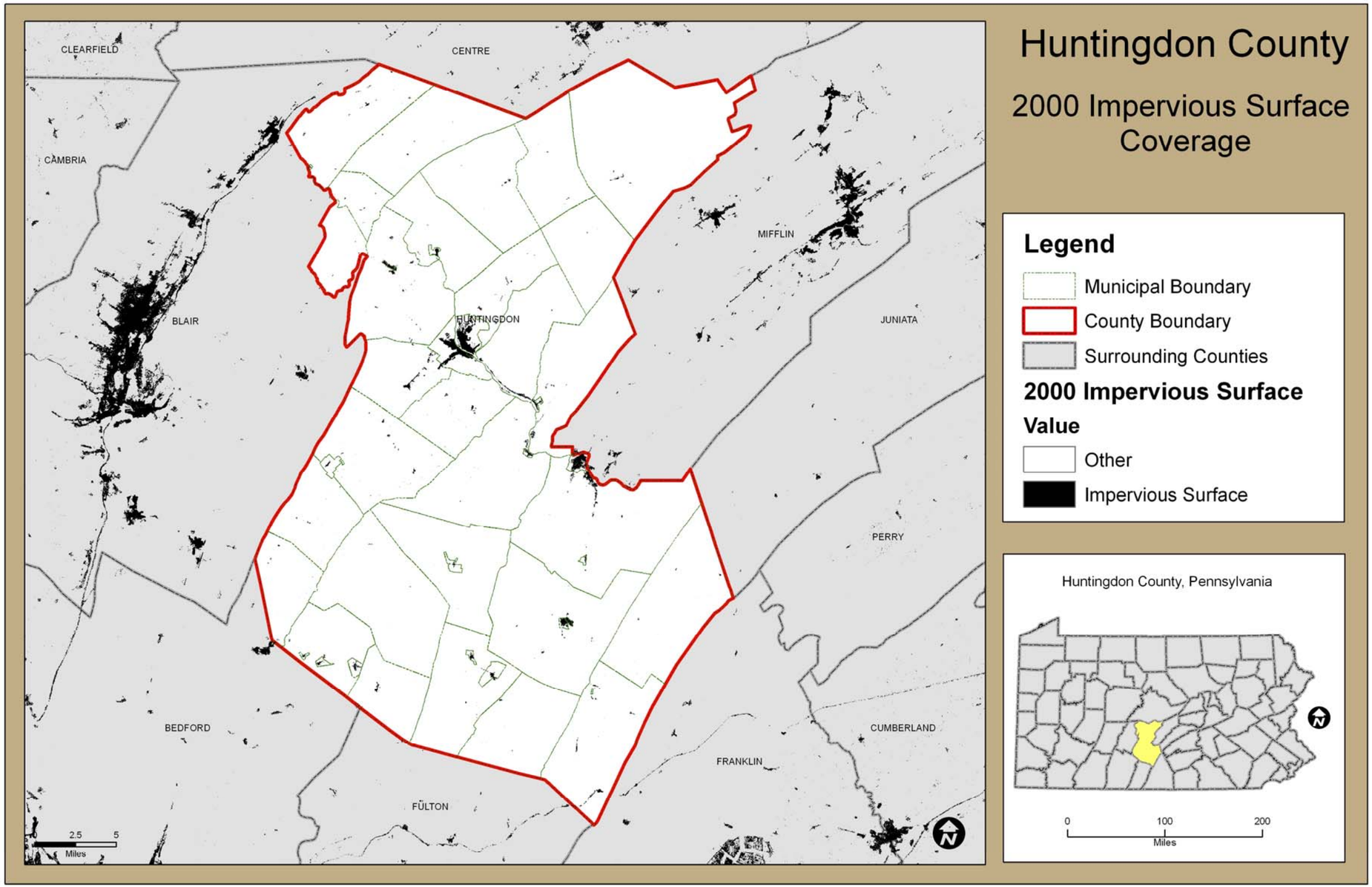

Huntingdon County
1985 Impervious Surface Coverage
Legend
Municipal Boundary
County Boundary
Surrounding Counties
1985 Impervious Surface
Value
Other
Impervious Surface
CLEARFIELD
CENTRE
CAMBRIA
BLAIR
HUNTINGDON
MIFFLIN
JUNIATA
PERRY
BEDFORD
FULTON
FRANKLIN
CUMBERLAND
0 2.5 5
Miles
Huntingdon County, Pennsylvania
0 100 200
Miles

Figure 2-7


Huntingdon County
2000 Impervious Surface Coverage
Legend
Municipal Boundary
County Boundary
Surrounding Counties
2000 Impervious Surface Value
Other
Impervious Surface
Huntingdon County, Pennsylvania
0
100
200
Miles
CLEARFIELD
CENTRE
CAMBRIA
BLAIR
HUNTINGDON
MIFFLIN
JUNIATA
PERRY
BEDFORD
FULTON
FRANKLIN
CUMBERLAND
2.5
5
Miles

Multi-jurisdictional Risk Assessment

Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.[15]

The top three hazards identified for Huntingdon County are flooding, severe winter weather, and severe weather. Of these, only flooding affects individual locations. The others, like the majority of the identified hazards, are regional and affect more than one jurisdiction simultaneously.

Of the other hazards identified, hazardous material spills are often a centralized hazard occurring along major transportation routes. Hazardous material spills mostly occur along major transportation routes. Within Huntingdon County, Interstate I-76 and U.S. Highways 22 and 522 are at most risk for hazardous materials incidents.

Similarly, dam failures are likely to occur where high-hazard dams are located. The municipalities that contain these high-hazard dams face the maximum threat of a significant dam failure. Raystown Dam, Huntingdon Smithfield Lily Creek, and Shaver Creek Dams are all high-hazard dams requiring emergency action plans.

[15] Federal Emergency Management Agency, *Plan Review Crosswalk*, Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000, (March 2004).

Section 3: Capability Assessment

Summary

A Capability Assessment is an evaluation of the County's governmental structure, political framework, legal jurisdiction, fiscal status, policies and programs, regulations and ordinances, and resource availability. Each category is evaluated for its strengths and weaknesses in responding to, preparing for, and mitigating the effects of identified hazards. The Capability Assessment has two components: an inventory of the County's and municipalities' mission, programs, and policies; and an analysis of their capacity to execute them. The Capability Assessment is an integral part of the hazard mitigation planning process. Here, the County and municipalities identify, review, and analyze what they are currently doing to reduce losses and to identify the framework necessary to implement new mitigation actions. This information will help the County and municipalities evaluate alternative mitigation actions and address shortfalls in the mitigation plan.

The evaluation of the categories listed above (political framework, legal jurisdiction, fiscal status, policies and programs, and regulations and ordinances) allows the mitigation planning team to determine the viability of certain mitigation actions. The Capability Assessment for Huntingdon County and its municipalities analyzes the capacity of each, and provides an understanding of the changes required to mitigate loss.

Throughout the planning process, the mitigation planning team considered each of the County's 48 individual municipalities. Each Pennsylvania municipality has its own governing bodies, passes and enforces its own ordinances and regulations, purchases equipment, and manages its own resources, including critical infrastructure. Therefore, this capability assessment must consider the various characteristics and capabilities of each municipality under study. Additionally, NFPA 1600 recommends a corrective action program be established to address shortfalls and provide mechanisms to manage the capabilities improvement process.[16]

Legal and Regulatory Capability

Pennsylvania municipalities have the authority to govern more restrictively than the state and county minimum requirements, assuming they are in compliance with all criteria established in the Pennsylvania Municipalities Planning Code (MPC) and their respective municipal codes. Municipalities can develop their own policies and programs, and implement their own rules and regulations to protect and serve their local residents. Local policies and programs are typically identified in a comprehensive plan, implemented via a local ordinance, and enforced through the governmental body or its appointee.

[16] National Fire Protection Association – *NFPA 1600 Standard on Disaster/Emergency Management and Business Continuity Programs*, 2004 Edition.

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

Building Codes

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

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

The initial election period, during which all of Pennsylvania's 2,565 municipalities were allowed to decide whether the UCC would be administered and enforced locally, officially closed on August 7, 2004.[17] The codes currently in use under the UCC are the 2006 International Codes issued by the International Code Council. No supplements to the 2006 codes will be adopted for use. The next code changes will occur in 2009 (when the next triennial versions of the I-Codes are adopted by regulation).

If a municipality has "opted in," all UCC enforcement is local, except where municipal (or third party) code officials lack the certification necessary to approve plans and inspect commercial

[17] Pennsylvania Department of Labor and Industry, *Building Codes: Uniform Construction Code*, http://www.dli.state.pa.us/landi/cwp/view.asp?a=310&q=21089, Accessed 06/2006.

construction for compliance with UCC accessibility requirements.[18] If a municipality has "opted out," the Department of Labor and Industry is responsible for all commercial code enforcement in that municipality. The Department of Labor and Industry also has sole jurisdiction for all state-owned buildings no matter where they are located.[19]

With the exception of Birmingham Borough, all of Huntingdon County's municipalities have "opted in" to the standards of the Pennsylvania Uniform Construction Code (Act 45) (see Table 3-1).

Zoning Ordinances

Article VI of the MPC authorizes municipalities to prepare, enact, and enforce zoning to regulate land use. Zoning regulations can apply to:

- permitted use of land
- height and bulk of structures
- percentage of impervious surface area
- yard setbacks
- density of development
- height and size of signs

Zoning ordinances contain both a map that delineates zoning districts and text documenting the regulations that apply in each zoning district. There is no county zoning ordinance in place but 10 municipalities have adopted local zoning ordinances (see Table 3-1).

Subdivision and Land Development Ordinance

Article V of the MPC authorizes municipalities to prepare, enact, and enforce subdivision and land development ordinances. Subdivision and land development ordinances include regulations to control the layout of streets, minimum lot sizes, and the provisions for utilities. The objectives of subdivision and land development ordinances are to:

- coordinate street patterns;
- assure adequate utilities and other improvements are provided in a manner that will not pollute streams, wells and/or soils;
- reduce traffic congestion;
- provide design standards to developers, elected officials, planning commissions, and other municipal officials;
- control the size of lots;

[18] Pennsylvania Department of Labor and Industry, *Building Codes: Uniform Construction Code*, http://www.dli.state.pa.us/landi/cwp/view.asp?a=310&q=21089, Accessed 06/2006.

[19] Pennsylvania Department of Labor and Industry, *Building Codes: Uniform Construction Code*, http://www.dli.state.pa.us/landi/cwp/view.asp?a=310&q=21089, Accessed 06/2006.

- provide minimum design criteria for streets;
- provide minimum design criteria for utilities;
- define permitted improvements to land;
- define role of planning commission; and
- define responsibilities of developers.

Huntingdon County and 30 municipalities have adopted subdivision and land development ordinances ranging in date from 1968 to 2005 (see Table 3-1).

Floodplain Ordinance / NFIP

Floodplain management is the operation of programs or activities that may consist of both corrective and preventive measures to reduce flood damage, including but not limited to such things as emergency preparedness plans, flood control works, and floodplain management regulations. The Pennsylvania Floodplain Management Act (Act 166) requires every municipality identified by the Federal Emergency Management Agency (FEMA) to participate in the National Flood Insurance Program (NFIP), and permits all municipalities to adopt floodplain management regulations.[20] It is in the interest of all property owners in the floodplain to keep development and land usage within the scope of the floodplain regulations for their community. This helps keep insurance rates low and makes sure that the risk of flood damage is not increased by property development.

The NFIP's Community Rating System (CRS) provides discounts on flood insurance premiums in those communities that establish floodplain management programs that go beyond NFIP minimum requirements. Under the CRS, communities receive credit for more restrictive regulations, acquisition, relocation, or flood proofing of flood-prone buildings, preservation of open space, and other measures that reduce flood damages or protect the natural resources and functions of floodplains.[21]

The CRS was implemented in 1990 to recognize and encourage community floodplain management activities that exceed the minimum NFIP standards. Section 541 of the 1994 Act amends Section 1315 of the 1968 Act to codify the Community Rating System in the NFIP, and expands the CRS goals to specifically include incentives to reduce the risk of flood-related erosion and to encourage measures that protect natural and beneficial floodplain functions. These goals have been incorporated into the CRS and communities now receive credit toward premium reductions for activities that contribute to them.[22]

[20] The U.S. Congress established the National Flood Insurance Program with the passage of the National Flood Insurance Act of 1968.

[21] Federal Emergency Management Agency, Federal Insurance and Mitigation Administration *National Flood Insurance Program: Program description*, (August 2002), http://www.fema.gov/doc/library/nfipdescrip.doc.

[22] Ibid.

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

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

There are 10 CRS classes that provide varied reduction in insurance premiums. Class 1 requires the most credit points and gives the largest premium reduction; Class 10 receives no premium reduction. CRS premium discounts on flood insurance range from five percent for Class 9 communities up to 45 percent for Class 1 communities. The CRS recognizes 18 creditable activities that are organized under four categories: Public Information, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness.[23]

All municipalities within Huntingdon County — with the exception of Birmingham Borough, Cassville Borough, Lincoln Township, Marklesburg Borough, and Shade Gap Borough[24] — participate in the NFIP (see Table 3-1).

The Digital Flood Insurance Rate Map (DFIRM) became available for review by Huntingdon County and the local municipalities in the fall 2007.

Stormwater Management Plan/Stormwater Ordinance

The proper management of stormwater runoff can improve conditions and decrease the chance of flooding. Act 167 confers on counties the responsibility for development of watershed plans. The Act specifies that counties must complete their watershed stormwater plans within two years following the promulgation of these guidelines by the DEP, which may grant an extension of time to any county for the preparation and adoption of plans. Counties must prepare the watershed plans in consultation with municipalities and residents. This is to be accomplished through the establishment of a Watershed Plan Advisory Committee. The county must also establish a mechanism to periodically review and revise watershed plans so they are current. Plan revisions must be done every five years or sooner, if necessary.

[23] Federal Emergency Management Agency. Federal Insurance and Mitigation Administration. *National Flood Insurance Program*: *Program description* (August 2002), http://www.fema.gov/doc/library/nfipdescrip.doc.

[24] National Flood Insurance Program Community Status Book, *Communities Participating in the National Flood Insurance Program: Pennsylvania*. http://www.fema.gov/crs/PA.pdf

Municipalities have an obligation to implement the criteria and standards developed in each watershed stormwater management plan by amending or adopting laws and regulations for land use and development. The implementation of stormwater management criteria and standards at the local level is necessary, since municipalities are responsible for local land use decisions and planning. The degree of detail in the ordinances depends on the extent of existing and projected development. Municipalities within rapidly developing watersheds will benefit from the watershed stormwater management plans and will use the information for sound land use considerations. The watershed stormwater management plan is designed to aid the municipality in setting standards for the land uses it has proposed. A major goal of the watershed plan and the attendant municipal regulations is to prevent future drainage problems and avoid the aggravation of existing problems. This stability then contributes to confrontation on the solution of existing problems.

Only two municipalities, Huntingdon Borough and Oneida Township, have local stormwater management ordinances in compliance with Act 167.[25] According to the Pennsylvania Department of Environmental Protection, Huntingdon County is a high-priority county. High-priority counties have a high percentage or a large number of municipalities not enacting ordinances for Act 167 stormwater management plans[26] (see Tables 3-1 and 3-1-B).

Comprehensive Plan

A Comprehensive Plan is a policy document that states objectives and guides the future growth and physical development of a municipality. The Comprehensive Plan is a blueprint for housing, transportation, community facilities, utilities, and land use. It examines how the past led to the present and charts the community's future path. The Pennsylvania Municipalities Planning Code (MPC Act 247 of 1968, as reauthorized and amended) requires counties to prepare and maintain a county comprehensive plan. In addition, the MPC requires counties to update the comprehensive plan every 10 years.

With regard to hazard mitigation planning, Section 301a.(2) of the MPC requires comprehensive plans to include a plan for land use, which, among other provisions, suggests that the plan give consideration to floodplains and other areas of special hazards and other similar uses. The MPC also requires comprehensive plans to include a plan for community facilities and services, and recommends giving consideration to storm drainage and floodplain management. The Huntingdon County Planning and Development Department is in the process of updating the key elements of the comprehensive plan. The update is focused on updating the land use plan, developing an infrastructure investment strategy, developing a model zoning ordinance, and developing an updated zoning ordinance for Huntingdon Borough.

[25] Pennsylvania Department of Environmental Protection, *Act 167 Stormwater Management Plan Status by DEP Region* (11/07/06): 40-41. http://www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/StormwaterManagement/TechnicalInformation/167RegionReport.pdf. Accessed 11/14/06.

[26] Ibid.

Article III of the MPC enables municipalities to prepare a comprehensive plan; however, development of a comprehensive plan is voluntary. Fourteen municipalities within Huntingdon County have developed comprehensive plans; however a majority of the comprehensive plans have not been updated since their inception. Rockhill Borough has developed a comprehensive plan, but failed to adopt it.

Articles III and XI of the MPC authorize municipalities and counties to participate in intergovernmental cooperative planning and implementation efforts. Multi-municipal planning efforts, permitted in Acts 67 and 68 of 2000, are increasingly popular. Huntingdon County and 14 of its municipalities have a comprehensive plan. The County's comprehensive plan completed in 2000 is currently being updated. The update, *Continuity Through Conservation II,* was adopted by the County Commissioners on November 30, 2007 (see Table 3-2).

Keystone Principles & Criteria for Growth, Investment & Resource Conservation

Pennsylvania's Economic Development Cabinet adopted the Keystone Principles & Criteria for Growth, Investment & Resource Conservation (Principles & Criteria) on May 31, 2005. They were developed by the Interagency Team on Land Use, which is comprised of representatives from each state agency that impacts land use – including the PEMA – under the Governor's direction.

The Principles & Criteria are designed as a coordinated interagency approach to fostering sustainable economic development and conservation of resources through the state's investments in its diverse communities.

The Principles lay out general goals and objectives for economic development and resource conservation agreed upon among the agencies and programs that participated in their development. The Criteria are designed to help measure the extent to which particular projects accomplish these goals. A core criterion stipulates that a community or economic development project should avoid or mitigate high hazard locations (e.g., floodplain, subsidence or landslide prone areas).

Capital Improvements Plan

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

Neither Huntingdon County nor any of its municipalities has a Capital Improvements Plan (see Table 3-2). Huntingdon County is currently developing a County Infrastructure Investment Strategy in order to guide future development, stormwater management, and water distribution.

Emergency Operations Plan

The Pennsylvania Emergency Management Services Code, Title 35, requires all political jurisdictions in the Commonwealth to have an Emergency Operations Plan (EOP), an Emergency Management Coordinator (EMC), and an Emergency Operations Center (EOC).

Requirement § 7503.1: Prepare, maintain and keep current a disaster emergency management plan for the prevention and minimization of injury and damage caused by disaster, prompt and effective response to disaster and disaster emergency relief and recovery of consonance with the Pennsylvania Emergency Management Plan.

Huntingdon County's EOP was completed in November of 2003. Forty-three of Huntingdon County's municipalities adopted the County EOP. Of those, 35 adopted the County EOP through an intergovernmental cooperation agreement. The intergovernmental cooperation agreement declares "the creation of a Regional Emergency Management Agency" as well as the adoption by the municipalities of the "Emergency Operations Plan of the County to be the emergency operation plan of each of their municipalities"[27] (see Table 3-2).

Post Disaster Recovery Plan / Post Disaster Recovery Ordinance

A Disaster Recovery Plan (DRP) is a comprehensive set of measures and procedures that ensure essential, mission-critical resources and infrastructures are maintained or backed up by alternatives during various stages of a disaster. The DRP is another step to ensure the preparedness and ability to respond quickly and effectively to restore the community's essential services. The DRP addresses the public sector's responsibilities, including: temporary shelter, refuse disposal, overall damage assessment, restoration of utility services, reconstruction priorities, financial assistance, and dealing with demands.

Those municipalities which have adopted the County EOP through an Intergovernmental Cooperation Agreement have a DRP through the Emergency Support Function (ESF) #19 – Disaster Recovery and Assessment. "The purpose of the Disaster Recovery and Assessment ESF is to establish the procedures and responsibilities for providing assistance to affected individuals, families, businesses, private non-profit organizations and county and municipal governments following the declaration of a federal disaster"[28] (see Table 3-2).

Administrative and Technical Capability

Huntingdon County's 48 municipalities include 18 boroughs and 30 townships. Each of these municipalities conducts its daily operations and provides various community services according to local needs and limitations. Some adjacent municipalities have formed cooperative

[27] Alexandria Borough, *Intergovernmental Cooperation Agreement*. (05 Jan 04): 1.

[28] Huntingdon County Emergency Operations Plan, *ESF #19 – Disaster Recovery and Assessment*. (November 2004): 1.

agreements and work jointly with their neighboring municipalities to provide services such as police protection, fire and emergency response, infrastructure maintenance, and water supply management. Other municipalities have chosen to operate on their own. Each municipality varies in staff size, resource availability, fiscal status, service provision, constituent population, overall size, and vulnerability to identified hazards.

County Planning and Development Department

In Pennsylvania, planning responsibilities traditionally have been delegated to each county and local municipality through the Municipalities Planning Code (MPC).

A planning agency acts as an advisor to the governing body on matters of community growth and development. A governing body may appoint individuals to serve as legal and engineering advisors to the planning agency. In addition to the duties and responsibilities authorized by Article II of the MPC, a governing body may, by ordinance, delegate approval authority to a planning agency for subdivision and land development applications. A governing body has considerable flexibility, not only as to which powers and duties are assigned to a planning agency, but also as to what form an agency will possess. A governing body can create a planning commission, a planning department, or both.

The mission of the Huntingdon County Planning and Development Department is to develop and implement a positive vision for Huntingdon County: one that reflects economic prosperity, a rural and small-town atmosphere, protection of natural resources, centers-focused development, greenway corridors, improved highway and communication access, and a high standard of excellence in both personal and community development.[29] The Planning and Development Department is responsible for the administration of the county's planning, geographic information, and community development programs. The Department is responsible for preparation and maintenance of the Huntingdon County Comprehensive Plan, *Continuity Through Conservation II*. Staff is responsible for development of various functional plans in response to community needs, including land use, housing, economic development, community facilities, cultural heritage, natural resources, and transportation. The Department also provides planning assistance to municipalities in the areas of comprehensive planning, zoning, and subdivision regulation.

The Planning and Development Department works as a partner with local municipalities, acting as a facilitator, educator, and technician in the areas of planning and development. It also works closely with the Board of Commissioners and County departments, assisting in project planning and implementation.

A geographic information system (GIS) has been developed by the Department for use in both planning and 911 addressing. County and municipal maps, as well as census and other information about Huntingdon County, are available from the Department.

[29] Huntingdon County Planning Commission, *2005 Annual Report*: *Mission Statement*. (March 2006): 1.

The Department applies for and administers grants such as the Community Development Block Grant, Rural Utilities, and HOME on behalf of the County and various municipalities. Between 2004 and 2006, the Department applied for and administered grants worth over $2,260,544. Recent activities assisted include: Carbon Township Flood Hazard Mitigation Project, Petersburg Borough Reeds Run Reservoir Rehabilitation Project, Hopewell Township Sanitary Sewer Collection Project, and Huntingdon House and County Comprehensive Plan (see Table 3-3).

Municipal Planning Commission

The MPC conveys the planning authority and establishes the requirements that a municipality must follow. Twenty-seven of Huntingdon County's 48 municipalities have a municipal planning commission. This creates a greater effort of cooperation between the County Planning Department and the local municipal planning commissions (see Table 3-3).

Municipal Engineer

A municipal engineer performs duties as directed in the areas of construction, reconstruction, maintenance and repair of streets, roads, pavements, sanitary sewers, bridges, culverts, and other engineering works. The municipal engineer reviews and/or prepares plans, specifications and estimates of the work undertaken within the municipality.

Thirty-two municipalities within Huntingdon County have municipal engineers. Some municipalities hire engineers on an as-needed basis (see Table 3-3).

Personnel Skilled in Geographic Information System or HAZUS

The Huntingdon County Planning and Development Department has been developing and using data with geographic information system (GIS) software since 1994, initially developed with Atlas GIS and recently converted to ESRI's ArcView software. To date, County efforts have focused on development of municipal base maps, comprehensive planning information, and 911 addressing.

Geographic information system (GIS) is an integrated computer-based system designed to capture, store, edit, analyze, and display geographic information. Some examples of uses for GIS technology in local government are land records management, land use planning, infrastructure management, and natural resources planning. GIS automates existing operations such as map production and maintenance, which translates into time and cost savings. The GIS also includes map features such as contours, capacity of a municipal water supply, acres of public land, etc.

The Huntingdon County GIS is maintained by the Huntingdon County Planning and Development Department. Huntingdon County maintains approximately 115 data layers in the GIS system. The Department has developed base maps for each of the County's 48 municipalities to be used by the Department, municipal officials, and the general public.

The Huntingdon County Map Book, created in 2000, is a detailed street atlas of Huntingdon County created to assist emergency services with the street names used in the County for the 911 addressing project (see Table 3-3).

Emergency Management Coordinator

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

A municipal emergency management coordinator is responsible for emergency management — preparedness, response, recovery, and mitigation within his/her respective authority having jurisdiction (AHJ). The responsibilities of the emergency management coordinator are outlined in PA Title 35 §7503:

- prepare and maintain a current disaster emergency management plan;
- establish, equip, and staff an emergency operations center;
- provide individual and organizational training programs;
- organize and coordinate all locally available manpower, materials, supplies, equipment, and services necessary for disaster emergency readiness, response, and recovery;
- adopt and implement precautionary measures to mitigate the anticipated effects of a disaster;
- cooperate and coordinate with any public and private agency or entity;
- provide prompt information regarding local disaster emergencies to appropriate Commonwealth and local officials or agencies and the general public; and
- participate in all tests, drills and exercises, including remedial drills and exercises, scheduled by the agency or by the federal government.

Huntingdon County has an emergency management coordinator, and a majority of the municipalities within the County, with the exception of Barree Township, Rockhill Borough, Shirleyburg Borough, and Union Township, all have a local emergency management coordinator as well (see Table 3-3).

Fiscal Capability

Fiscal capability is important to the implementation of hazard mitigation activities. Every jurisdiction must operate within the constraints of limited financial resources. The following information pertains to various financial assistance programs pertinent to hazard mitigation.

State and Federal Grants

During the 1960s and 1970s, state and federal grants-in-aid were available to finance a large number of programs, including streets, water and sewer facilities, airports, parks, and

playgrounds. During the early 1980s, there was a significant change in federal policy, based on rising deficits and a political philosophy, that encouraged states and local governments to raise their own revenues for capital programs. The result has been a growing interest in "creative financing"[30] (see Table 3-4).

Capital Improvement Financing

Most capital improvement projects involve the outlay of substantial funds, and local governments can seldom budget for these improvements in the annual operating budget. Therefore, numerous techniques have evolved to enable local governments to finance capital improvements over a time period exceeding one year. Public finance literature and state laws governing local government finance classify techniques that are allowed to finance capital improvements. These techniques include: revenue bonds; lease-purchase, authorities and special districts; current revenue (pay-as-you-go); reserve funds; and tax increment financing.[31]

Some projects may be financed with general obligation bonds. With this method, the jurisdiction's taxing power is pledged to pay interest and principal to retire debt. General obligation bonds can be sold to finance permanent types of improvements, such as schools, municipal buildings, parks, and recreation facilities. Voter approval may be required[32] (see Table 3-4).

Councils of Government

A council of government is a general, multi-purpose, cooperative organization. A joint authority is only a hollow framework until organized as a joint sewer authority or joint transit authority, for instance. Councils of Government (COGs) are a special kind of Act 180 organization. COGs are general or multi-purpose organizations established to enable a group of municipalities to work together on mutually-beneficial projects. A COG has a broad responsibility; it may study and propose new joint programs and projects and is almost always composed of elected officials.[33]

Sixteen municipalities are within Huntingdon County members of a council of government, which includes the following: Alexandria Borough, Brady Township, Henderson Township, Huntingdon Borough, Juniata Township, Lincoln Township, Logan Township, Marklesburg Borough, Mill Creek Borough, Morris Township, Oneida Township, Penn Township, Porter

[30] Frank S. So and Judith Getzels, eds, *The Practice of Local Government Planning*, 2nd ed. (International City Management Association: Washington D.C. 1988): 451.

[31] Thomas Kurtz, *Intergovernmental Cooperation Handbook,* 4th ed. (Pennsylvania Department of Community and Economic Development: Harrisburg, September 1997): 11.

[32] Frank S. So and Judith Getzels, eds, *The Practice of Local Government Planning*, 2nd ed. (International City Management Association: Washington D.C. 1988), 451.

[33] Thomas Kurtz, *Intergovernmental Cooperation Handbook,* 4th ed. (Pennsylvania Department of Community and Economic Development: Harrisburg, September 1997): 11.

Township, Smithfield Township, Walker Township, and Warriors Mark Township (see Table 3-4).

Municipal Authorities

Municipal authorities are most often used when major capital investments are required. In addition to sewage treatment, municipal authorities have been formed for water supply, airports, bus transit systems, swimming pools, and other purposes. Municipal authorities have powers to receive grants, borrow money, and operate revenue generating programs. Municipal authorities are authorized to sell bonds, acquire property, sign contracts, and take similar actions. Authorities are governed by authority board members, which are appointed by the elected officials of the member municipalities[34] (see Tables 3-4 and 3-5).

Sewer Authorities

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

Water Authorities

Water authorities are multi-purpose authorities with water projects, many of which operate both water and sewer systems. The financing of water systems for lease back to the municipality is among the principal activities of the local government facilities financing authorities. An operating water authority issues bonds to purchase existing facilities or to construct, extend, or improve a system. The primary source of revenues is user fees based on metered usage. The cost of constructing or extending water supply lines can be funded by special assessments against abutting property owners. Tapping fees also help fund water system capital costs. Water utilities are also directly operated by municipal governments and by privately owned public utilities regulated by the PA Public Utility Commission. The PA Department of Environmental Protection has a program to assist with the consolidation of small individual water systems into make system upgrades more cost effective.

Circuit – Riding Program (Engineer)

The Circuit – Riding Program is an example of intergovernmental cooperation. This program offers municipalities the ability to join together to accomplish a common goal. The circuit rider is a municipal engineer who serves several small municipalities simultaneously. These are

[34]Thomas Kurtz, *Intergovernmental Cooperation Handbook,* 4th ed. (Pennsylvania Department of Community and Economic Development: Harrisburg, September 1997): 11.

municipalities which may be too small to hire a professional engineer for their own operations, yet needs the skills and expertise the engineer offers. Municipalities can jointly obtain what no one municipality could obtain on its own (see Table 3-4).

NFPA 1600 – Standard on Disaster/Emergency Management and Business Continuity

NFPA 1600 recommends a responsive financial management and administrative framework that complies with the Authority Having Jurisdiction's (AHJ) program requirements and is uniquely linked to disaster/emergency operations.[35] The framework should provide for maximum flexibility to expeditiously request, receive, manage, and apply funds in a non-emergency and emergency environment to ensure the timely delivery of assistance. The program should also be capable of capturing financial data for future cost recovery, as well as identifying and accessing alternative funding sources and managing budgeted and specially appropriated funds. It is equally important to have procedures in place that will allow an entity to expedite financial decision making and ensure proper accounting occurs.

Political Capability

Political capability refers to a jurisdiction's incentive or willingness to accomplish hazard mitigation objectives. Local decision makers may not rank hazard mitigation as a high priority task if there are other, more immediate political concerns. Unfortunately, it often takes a disaster to get people thinking about hazard mitigation. Responding to and recovering from a disastrous event can exhaust local resources, thereby elevating hazard mitigation to the forefront.

Cooperation among planning commission officials, emergency management officials, and other officials is essential to achieve hazard mitigation objectives. Maintaining open lines of communication and sharing up-to-date information is critical.

The conservative and rural nature of Huntingdon County's communities creates a complex planning environment to include hazard mitigation planning. While officials will act in the face of a crisis or where there is strong citizen pressure, there is no perceived crisis or pressure to develop local hazard mitigation measures. The threats of flooding, winter storms, and terrorism are neither imminent nor serious.

Rural communities lack funding and staff to undertake new tasks, such as planning, due to their small size and tax base. The median size of Huntingdon County municipalities is 528; the median real estate value per capita is $15,333. Most municipalities have a part-time secretary and road crew. Further evidence of the challenges faced by municipal capacity is the relatively small number of municipalities (14) with local comprehensive plans.

[35] National Fire Protection Association – *NFPA 1600 Standard on Disaster/Emergency Management and Business Continuity Programs*, 2004 Edition.

In order to overcome these issues, extra effort is needed to educate citizens and elected officials about the types of hazards facing our municipalities. An additional means of mitigating the rural conservatism of our municipalities is the financial assistance available through PEMA, and the provision of services by the Huntingdon County Emergency Management Agency and Planning and Development Department working cooperatively with municipal officials.

Institutional Capability

Huntingdon County's 48 municipalities include 18 boroughs and 30 townships. Each municipality carries out its daily operations and provides various community services according to its local needs and limitations. Some of these municipalities have formed cooperative agreements and work jointly with their neighboring municipalities to provide such services as solid waste disposal and water supply management, while others choose to operate individually. Each municipality varies in size of staff, resource availability, financial status, service provision, constituent population, and vulnerability to the identified hazards.

The differing character and landscape of Huntingdon County also leads to a varying degree of available resources. This may leave the more rural areas with less staff and limited supply of available resources than those in more urbanized areas of the County. This is not to say, however, that hazard mitigation is not an important priority in rural areas.

In addition to the institutional capability of the municipal government structure described here, the County is capable of engaging in hazard mitigation activities. The County has its own mitigation goals and objectives, staff, resources, budget, and equipment to mitigate identified hazards. When partnered with local municipalities, the state, the federal government, local councils of government, watershed groups, environmental groups, or other entities, the results can be very positive.

Continuity of Government (COG) is a critically important planning principle under the concept of "institutional capability." NFPA 1600 (referenced previously) provides those with the responsibility for disaster and emergency management and continuity of government planning programs with the criteria to assess current programs or to develop, implement, and maintain a program to mitigate, prepare for, respond to, and recover from disasters and emergencies.

StormReady!

Through a concerted effort on the part of the County Emergency Management Agency, Huntingdon County was designated a StormReady County by the National Weather Service (NWS) on February 16, 2006. StormReady is a program offered by the NWS in an effort to better protect communities during severe weather conditions. StormReady is volunteer-based and is distinct from FEMA's Pre-Disaster Mitigation (PDM) Program, although both programs complement each other and strive to achieve the same goal of safety and protection throughout communities.

The StormReady program was implemented to encourage communities to establish or improve their hazardous weather plans. It offers communities and municipalities specific recommendations on developing and improving hazardous weather plans.

In order for a community or municipality to become StormReady certified, it must meet several federal guidelines along with specific state and local regulations. The main goal of the program is to reduce the length of time and improve the efficiency in delivering hazardous weather warning messages, and to share useful and proven tactics used by emergency managers during hazardous weather conditions. The program also assists local emergency managers in explaining the importance of funding for relevant programs. In addition, StormReady recognizes the efforts communities make in preparing local hazard mitigation plans and getting those plans approved by FEMA.

Those communities that implement StormReady are eligible to use and promote the StormReady image and logo. The StormReady "image" promotes a dedicated and serious outlook on emergency management in the community. It sends the signal to citizens that the emergency management staff members take their jobs seriously and recognize the effects of hazardous weather.

For a community to be certified StormReady, it must meet the following guidelines:

1. Operate a 24-hour warning point and emergency operations center, and operate a system that monitors local weather conditions.

2. The community must have more than one way to receive severe weather warnings and alert the public regarding them.

3. Seminars expressing the importance of public readiness in hazardous weather conditions also must be offered by the community.

4. A formal hazardous weather plan must be a part of this plan, and personnel must train and educate severe weather spotters and hold emergency exercises for the public to participate in as means of practice.

StormReady recognition is effective for three years. The StormReady program is free; although communities may need to upgrade hazardous weather operations and emergency management plans in order to become eligible.

Legal and Regulatory Capability

Table 3-1 and Table 3-1-B seek to identify the legal authorities within Huntingdon County. An **S** indicates State, a **C** County, and an **L** Local Municipality. A dash (—) indicates none, and a blank designates no information was available. If known, the date the ordinance, code, or regulation was adopted or updated is provided.

Table 3-1

Region/Municipality	Building Code	Zoning Ordinance	Subdivision Ordinance or Regulations	Floodplain Ordinance	National Flood Insurance Program (NFIP) Members	Stormwater Management Plan (Act 167)[1]	Stormwater Management Ordinance[2]
Huntingdon County	S	—	—	—	—	—	
Alexandria Borough	S	L 01/17/74	—	L 04/16/73	L 02/01/80		—
Barree Township	S	—	—	L 05/07/79	L 09/10/84		—
Birmingham Borough	S	—	—	—	—		—
Brady Township	S	—	L 2002	L 02/16/89	L 02/17/89		—
Broad Top City Borough	S	—	L 04/29/96	L 07/28/86	L 07/21/78		—
Carbon Township	S	—	—	L 09/27/86	L 06/19/89		—
Cass Township	S	—	L 07/26/88	L 07/27/76	L 11/01/85		—
Cassville Borough	S	—	L 02/28/94	L 01/25/87	—		—
Clay Township	S	—	L 03/08/82	L 11/07/83	L 08/16/88		—
Coalmont Borough	S	—	—	L 07/15/89	L 08/03/89		—
Cromwell Township	S	—	L 01/14/05	L 01/14/05	L 12/04/85		—
Dublin Township	S	—	L 04/01/78	L 02/10/85	L 12/04/85		—
Dudley Borough	S	C	—	L 07/07/04	L 09/24/84		—
Franklin Township	S	—	—	L 08/10/92	L 02/17/89		—
Henderson Township	S	L 07/18/88	L 09/11/73	L 10/18/95	L 08/03/89		—
Hopewell Township	S	—	L 01/04/93	L 08/14/89	L 08/15/89		—
Huntingdon Borough	S	L 01/15/85	L 09/17/02	L 01/15/85	L 09/29/78		L
Jackson Township	S	—	L 07/10/00	L 07/01/04	L 08/03/89		—
Juniata Township	S	—	—	L 04/03/95	L 02/17/89		—
Lincoln Township	S	—	L 05/03/05	L 05/03/05	—		—
Logan Township	S	—	L 01/02/81	L 07/10/89	L 08/03/89		—
Mapleton Borough	S	—	—	L 03/12/85	L 07/05/77		—

[1] See Stormwater Management Table 3-1-B

[2] See Stormwater Management Table 3-1-B

Table 3-1 (continued)

Region/Municipality	Building Code	Zoning Ordinance	Subdivision Ordinance or Regulations	Floodplain Ordinance	National Flood Insurance Program (NFIP) Members	Stormwater Management Plan (Act 167)[1]	Stormwater Management Ordinance[2]
Marklesburg Borough	S	—	L 11/05/84	L 03/04/02	—		—
Mill Creek Borough	S	—	—	L 05/06/85	L 03/02/89		—
Miller Township	S	—	L 1968	L 03/06/89	L 03/02/89		—
Morris Township	S	—	L 03/07/02	L 02/12/98	L 12/04/05		—
Mount Union Borough	S	L 02/12/79	—	L 05/09/73	L 07/18/77		—
Oneida Township	S	L 06/02/99	L 03/05/86	L 10/06/99	L 03/02/89		L
Orbisonia Borough	S	L 02/30/99	—	L 07/02/75	L 12/31/82		—
Penn Township	S	—	L 01/06/03	L 11/05/87	L 11/15/85		—
Petersburg Borough	S	—	—	L 08/01/89	L 05/18/89		—
Porter Township	S	—	L 04/02/02	L 08/03/04	L 03/16/81		—
Rockhill Borough	S	—	—	L 04/05/99	L 07/03/90		—
Saltillo Borough	S	—	—	L 03/08/99	L 10/15/85		—
Shade Gap Borough	S	L 01/06/86	—	—	—		—
Shirley Township	S	—	L 11/01/73	L 06/28/99	L 08/15/89		—
Shirleysburg Borough	S	—	—	L	L 04/15/86		—
Smithfield Township	S	L 1985	L 03/12/01	L 01/05/98	L 03/15/77		L
Springfield Township	S	—	L 10/27/05	L 12/07/84	L 12/04/85		—
Spruce Creek Township	S	—	L 12/03/03	L 07/07/04	L 03/02/89		—
Tell Township	S	—	L 1972	L 2005	L 06/11/82		—
Three Springs Borough	S	—	—	L 05/04/04	L 10/01/82		—
Todd Township	S	—	L 09/05/05	L 10/04/04	L 08/15/89		—
Union Township	S	—	L 05/22/02	L 01/06/03	L 03/02/89		—
Walker Township	S	L 04/24/06	L 10/04/93	L 12/01/05	L 09/10/84		—
Warriors Mark Township	S	L 03/01/05	L 10/01/98	L 01/03/89	L 03/02/89		L 10/01/98
West Township	S	—	L 05/07/91	L 03/01/75	L 12/04/85		—
Wood Township	S	—	L 09/08/73	L 01/06/93	L 11/01/85		—

[1] See Stormwater Management Table 3-1-B

[2] See Stormwater Management Table 3-1-B

Huntingdon County Stormwater Management
Table 3-1-B

Plans/Ordinances	Act 167 Compliant		Not Compliant with Act 167																
			General Stormwater Management Ordinance																
Region	Muddy Run Watershed Act 167 Plan	Muddy Run Stormwater Ordinance	Aughwick Creek Watershed	Backloa Creek Watershed	Crooked Creek Watershed	Frackstown Branch Juniata River Watershed	Great Trough Creek Watershed	Juniata River Watershed	Little Juniata Ricer Watershed	Mill Creek Watershed	Ravenstown Branch Juniata River Watershed	Shaver Creek Watershed	Shoup Run Watershed	Sidelong Hill Creek Watershed	Spring Creek Watershed	Standing Stone Creek Watershed	Spruce Creek Watershed	Three Springs Creek Watershed	Tuscarora Creek Watershed
Huntingdon County	C																		
Alexandria Borough																			
Barree Township																			
Birmingham Borough																			
Brady Township																			
Broad Top City Borough																			
Carbon Township																			
Cass Township																			
Cassville Borough																			
Clay Township																			
Coalmont Borough																			
Cromwell Township																			
Dublin Township																			
Dudley Borough																			
Franklin Township																			
Henderson Township																			
Hopewell Township																			
Huntingdon Borough		L																	
Jackson Township																			
Juniata Township																			
Lincoln Township																			
Logan Township																			
Mapleton Borough																			
Marklesburg Borough																			
Mill Creek Borough																			
Miller Township																			
Morris Township																			
Mount Union Borough																			
Oneida Township		L																	
Orbisonia Borough																			
Penn Township																			
Petersburg Borough																			

Huntingdon County Stormwater Management
Table 3-1-B

Plans/Ordinances	Act 167 Compliant		Not Compliant with Act 167																
			General Stormwater Management Ordinance																
Region	Muddy Run Watershed Act 167 Plan	Muddy Run Stormwater Ordinance	Aughwick Creek Watershed	Backloa Creek Watershed	Crooked Creek Watershed	Frackstown Branch Juniata River Watershed	Great Trough Creek Watershed	Juniata River Watershed	Little Juniata Ricer Watershed	Mill Creek Watershed	Ravenstown Branch Juniata River Watershed	Shaver Creek Watershed	Shoup Run Watershed	Sidelong Hill Creek Watershed	Spring Creek Watershed	Standing Stone Creek Watershed	Spruce Creek Watershed	Three Springs Creek Watershed	Tuscarora Creek Watershed
Porter Township																			
Rockhill Borough																			
Saltillo Borough																			
Shade Gap Borough																			
Shirley Township																			
Shirleysburg Borough																			
Smithfield Township																			
Springfield Township																			
Spruce Creek Township																			
Tell Township																			
Three Springs Borough																			
Todd Township																			
Union Township																			
Walker Township																			
Warriors Mark Township									L								L		
West Township																			
Wood Township																			

Legal And Regulatory Capability (continued)

An **S** indicates State, a **C** County, and an **L** Local Municipality. A dash (—) indicates none, and a blank designates no information was available. If known, the date the ordinance, code, or regulation was adopted or updated is provided.

Table 3-2

Region	Comprehensive Plan	A Capital Improvements Plan	Emergency Operations Plan (Title 35)	Intergovernmental Cooperation Agreement[1]	A Post-Disaster Recovery Plan[2]
Huntingdon County	C 06/11/00	—	C		
Alexandria Borough	—	—	C	C	C
Barree Township	—	—	C	C	C
Birmingham Borough	—	—	C	C	C
Brady Township	—	—	C	C	C
Broad Top City Borough	L 07/30/91	—	C	—	—
Carbon Township	L 07/30/91	—	C	C	C
Cass Township	—	—	C	—	—
Cassville Borough	—	—	—	—	—
Clay Township	—	—	C	C	C
Coalmont Borough	L 07/30/91	—	C	C	C
Cromwell Township	—	—	C	C	C
Dublin Township	—	—	C	C	C
Dudley Borough	L 07/30/91	—	—	—	—
Franklin Township	—	—	C	C	C
Henderson Township	—	—	C	C	C
Hopewell Township	L 07/30/91	—	—	—	—
Huntingdon Borough	L 06/01/92	—	C	—	—
Jackson Township	—	—	C	C	C
Juniata Township	—	—	C	C	C
Lincoln Township	—	—	—	—	—
Logan Township	—	—	C	C	C
Mapleton Borough	—	—	C	C	C

[1] The County Intergovernmental Cooperation Agreements adopted and declared the Emergency Operations Plan of the County to be the emergency operations plan of each of their municipalities.

[2] The County Emergency Operations Plan Emergency Support Function (ESF) #19 establishes the procedures and responsibilities for disaster recovery and assessment.

Table 3-2 *(continued)*

Region	Comprehensive Plan	A Capital Improvements Plan	Emergency Operations Plan (Title 35)	Intergovernmental Cooperation Agreement[1]	A Post-Disaster Recovery Plan[2]
Marklesburg Borough	—	—	C	C	C
Mill Creek Borough	—	—	C	—	C
Miller Township	—	C	C	C	C
Morris Township	—	—	C	C	C
Mount Union Borough	L 02/12/79	—	C	—	C
Oneida Township	L 1993	—	C	C	C
Orbisonia Borough	L 06/04/97	—	C	C	C
Penn Township	—	—	C	—	C
Petersburg Borough	—	—	C	—	C
Porter Township	—	—	C	C	C
Rockhill Borough	—	—	C	C	C
Saltillo Borough	—	—	C	C	C
Shade Gap Borough	—	—	C	—	C
Shirley Township	—	—	C	C	C
Shirleysburg Borough	—	—	—	C	—
Smithfield Township	L 1971	—	C/L	C	C
Springfield Township	—	—	C	C	C
Spruce Creek Township	L	—	C/L	C	C
Tell Township	—	—	C	C	C
Three Springs Borough	—	—	C	C	C
Todd Township	—	—	C	C	C
Union Township	—	—	C	C	C
Walker Township	L 01/25/02	—	C	C	C
Warriors Mark Township	L 02/01/05	—	C	—	C
West Township	—	—	C	C	C
Wood Township	L 07/30/91	—	C	C	C

[1] The County Intergovernmental Cooperation Agreements adopted and declared the Emergency Operations Plan of the County to be the emergency operations plan of each of their municipalities.

[2] The County Emergency Operations Plan Emergency Support Function (ESF) #19 establishes the procedures and responsibilities for disaster recovery and assessment.

Administrative and Technical Capability

The following table seeks to identify the resource availability within Huntingdon County. An **S** indicates State, a **C** County, and an **L** Local Municipality. A dash (—) indicates none, and a blank designates no information was available. If known, the date the ordinance, code, or regulation was adopted or updated is provided.

Table 3-3

Region	County Planning Commission	Municipal Planning Commission	Municipal Engineer	Personnel skilled in GIS and/or HAZUS	Emergency Management Coordinator
Huntingdon County	C			C	C
Alexandria Borough	C	—	L	C	L
Barree Township	C	—	—	C	—
Birmingham Borough	C	—	—	C	L
Brady Township	C	L	L	C	L
Broad Top City Borough	C	—	L	C	L
Carbon Township	C	—	—	C	L
Cass Township	C	—	—	C	L
Cassville Borough	C	—	L	C	L
Clay Township	C	—	—	C	L
Coalmont Borough	C	—	—	C	L
Cromwell Township	C	—	L	C	L
Dublin Township	C	L	L	C	L
Dudley Borough	C	—	—	C	L
Franklin Township	C	—	L	C	L
Henderson Township	C	L	L	C	L
Hopewell Township	C	—	L	C	L
Huntingdon Borough	C	L	L	L/C	L
Jackson Township	C	L	L	C	L
Juniata Township	C	—	L	C	L
Lincoln Township	C	—	L	C	L
Logan Township	C	—	—	C	L
Mapleton Borough	C	—	L	C	L

Administrative and Technical Capability (continued)

The following table seeks to identify the resource availability within Huntingdon County. An **S** indicates State, a **C** County, and an **L** Local Municipality. A dash (—) indicates none, and a blank designates no information was available. If known, the date the ordinance, code, or regulation was adopted or updated is provided.

Table 3-3 *(continued)*

Region	County Planning Commission	Municipal Planning Commission	Municipal Engineer	Personnel skilled in GIS and/or HAZUS	Emergency Management Coordinator
Marklesburg Borough	C	L	L	C	L
Mill Creek Borough	C	—	L*	C	L
Miller Township	C	L	—	C	L
Morris Township	C	L	L	C	L
Mount Union Borough	C	L	L	C	L
Oneida Township	C	L	L*	C	L
Orbisonia Borough	C	L	L	C	L
Penn Township	C	L	L	C	L
Petersburg Borough	C	—	L	C	L
Porter Township	C	L	L	C	L
Rockhill Borough	C	—	L	C	—
Saltillo Borough	C	L	L	C	L
Shade Gap Borough	C	—	—	C	L
Shirley Township	C	L	L	C	L
Shirleysburg Borough	C	—	—	C	—
Smithfield Township	C	L	L	C	L
Springfield Township	C	L	L	C	L
Spruce Creek Township	C	L	L	C	L
Tell Township	C	—	—	C	L
Three Springs Borough	C	—	—	C	L
Todd Township	C	L	—	C	L
Union Township	C	—	—	C	—
Walker Township	C	L	L	C	L
Warriors Mark Township	C	L	L	C	L
West Township	C	L	—	C	L
Wood Township	C	—	L	C	L

L* - Municipal Engineer: indicates the municipality hires a municipal engineer on an as-needed basis.

Fiscal Capability

This table seeks to identify whether the political jurisdiction has access to, or is eligible for, the following financial resources for hazard mitigation. A **Y** indicates Yes, an **N** indicates No, and an **E** indicates Eligible and an **L** Local Municipality. A blank designates no information was available.

Table 3-4

Region	State and Federal Funding	Capital improvements financing	Authority to levy taxes for specific purposes	Incur debt through general obligation bonds	Municipal Authorities	Member of a Council of Government (COG)	Engineer Circuit-Riding Program
Huntingdon County	E	E	E	E	E	E	E
Alexandria Borough	E	E	E	E	Y	Y	E
Barree Township	E	E	E	E	E	N	E
Birmingham Borough	E	E	E	E	E	N	E
Brady Township	E	E	E	E	Y	Y	E
Broad Top City Borough	E	E	E	E	Y	N	E
Carbon Township	E	E	E	E	Y	N	E
Cass Township	E	E	E	E	E	N	E
Cassville Borough	E	E	E	E	Y	N	E
Clay Township	E	E	E	E	Y	N	E
Coalmont Borough	E	E	E	E	Y	N	E
Cromwell Township	E	E	E	E	E	N	E
Dublin Township	E	E	E	E	Y	N	E
Dudley Borough	E	E	E	E	Y	N	E
Franklin Township	E	E	E	E	E	N	E
Henderson Township	E	E	E	E	E	Y	E
Hopewell Township	E	E	E	E	E	N	E
Huntingdon Borough	E	E	E	E	Y	Y	E
Jackson Township	E	E	E	E	E	N	E
Juniata Township	E	E	E	E	E	Y	E
Lincoln Township	E	E	E	E	E	Y	E
Logan Township	E	E	E	E	E	Y	E
Mapleton Borough	E	E	E	E	Y	N	E

Fiscal Capability (continued)

This table seeks to identify whether the political jurisdiction has access to, or is eligible for, the following financial resources for hazard mitigation. A **Y** indicates Yes, an **N** indicates No, and an **E** indicates Eligible and an **L** Local Municipality. A blank designates no information was available.

Table 3-4 *(continued)*

Region	State and Federal Funding	Capital improvements financing	Authority to levy taxes for specific purposes	Incur debt through general obligation bonds	Municipal Authorities	Member of a Council of Government (COG)	Engineer Circuit-Riding Program
Marklesburg Borough	E	E	E	E	Y	Y	E
Mill Creek Borough	E	E	E	E	Y	Y	E
Miller Township	E	E	L	L	E	N	E
Morris Township	E	E	E	E	E	Y	E
Mount Union Borough	E	E	E	E	Y	N	E
Oneida Township	E	E	E	E	E	Y	E
Orbisonia Borough	E	E	E	E	Y	N	E
Penn Township	E	E	E	E	E	Y	E
Petersburg Borough	E	E	E	E	Y	N	E
Porter Township	E	E	E	E	Y	Y	E
Rockhill Borough	E	E	E	E	Y	N	E
Saltillo Borough	E	E	E	E	Y	N	E
Shade Gap Borough	E	E	E	E	Y	N	E
Shirley Township	E	E	Y	Y	Y	N	Y
Shirleysburg Borough	E	E	E	E	E	N	E
Smithfield Township	E	E	L	L	Y	Y	E
Springfield Township	E	E	E	E	E	N	E
Spruce Creek Township	E	E	E	E	E	N	E
Tell Township	E	E	Y	N	E	N	E
Three Springs Borough	E	E	E	E	Y	N	E
Todd Township	E	E	E	E	E	N	E
Union Township	E	E	E	E	Y	N	E
Walker Township	E	E	E	E	Y	Y	E
Warriors Mark Township	E	E	E	E	Y	Y	E
West Township	E	E	E	E	E	N	E
Wood Township	E	E	E	E	Y	N	E

Municipal Authorities

Table 3-5		
Region/Municipality	**Water**	**Public Sanitary Sewer**
Huntingdon County Government	—	—
Alexandria Borough	Alexandria Borough Water Authority	Alexandria - Porter Joint Sewer Authority
Barree Township	—	—
Birmingham Borough	—	—
Brady Township	Mill Creek Area Municipal Authority	Mill Creek Area Municipal Authority
Broad Top City Borough	Broad Top Area Water Authority	Broad Top Area Sewer Authority
Carbon Township	Dudley, Carbon, Coalmont Joint Municipal Authority	Dudley, Carbon, Coalmont Joint Municipal Authority
Cass Township	—	—
Cassville Borough	—	Cassville Borough Water and Sewer Authority
Clay Township	—	—
Coalmont Borough	Dudley, Carbon, Coalmont Joint Municipal Authority	Dudley, Carbon, Coalmont Joint Municipal Authority
Cromwell Township	Orbisonia Rockhill Joint Municipal Authority	Cromwell Township Authority, Orbisonia Rockhill Joint Municipal Authority
Dublin Township	—	Shade Gap Area Joint Municipal Authority
Dudley Borough	Dudley, Carbon, Coalmont Joint Municipal Authority	Dudley, Carbon, Coalmont Joint Municipal Authority
Franklin Township	—	—
Henderson Township	Mill Creek Area Municipal Authority	Mill Creek Area Municipal Authority
Hopewell Township	—	—
Huntingdon Borough	Huntingdon Borough Water and Sewer Authority	Huntingdon Borough Water and Sewer Authority
Jackson Township	—	—
Juniata Township	—	—
Lincoln Township	—	—
Logan Township	Petersburg Water Authority	Petersburg Sewer Authority
Mapleton Borough	Mapleton Area Joint Municipal Authority	Mapleton Area Joint Municipal Authority

Municipal Authorities (continued)

Table 3-5 *(continued)*

Region/Municipality	Water	Public Sanitary Sewer
Marklesburg Borough	—	Marklesburg Sewer Authority
Mill Creek Borough	Mill Creek Area Municipal Authority	Mill Creek Area Municipal Authority
Miller Township	—	—
Morris Township	—	—
Mount Union Borough	Mount Union Municipal Authority	Mount Union Municipal Authority
Oneida Township	—	Oneida Sewer Authority
Orbisonia Borough	Orbisonia Rockhill Joint Municipal Authority	Orbisonia Rockhill Joint Municipal Authority
Penn Township	—	—
Petersburg Borough	Petersburg Water Authority	Petersburg Sewer Authority
Porter Township	Alexandria Borough Water Authority	Alexandria-Porter Joint Sewer Authority
Rockhill Borough	Orbisonia Rockhill Joint Municipal Authority	Orbisonia Rockhill Joint Municipal Authority
Saltillo Borough	—	Spring Creek Joint Sewer Authority
Shade Gap Borough	—	Shade Gap Area Joint Municipal Authority
Shirley Township	Mt. Union Municipal Authority	Shirley Township General Authority
Shirleysburg Borough	Shirleysburg Borough Water	—
Smithfield Township	Huntingdon Borough Water and Sewer Authority	Huntingdon Borough Water and Sewer Authority
Springfield Township	—	—
Spruce Creek Township	—	—
Tell Township	—	—
Three Springs Borough	Three Springs Borough Water	Spring Creek Joint Sewer Authority
Todd Township	—	—
Union Township	Marklesburg Municipal Water Authority	Mapleton Area Joint Municipal Authority
Walker Township	Walker Township Municipal Authority	Walker Township Municipal Authority
Warriors Mark Township	Warriors Mark General Authority	—
West Township	—	—
Wood Township	Wood-Broad-Top Wells Joint Municipal Authority	Wood-Broad-Top Wells Joint Municipal Authority

Section 4: Hazard Mitigation Strategies and Implementation

Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): The hazard mitigation plan shall include a description of goals to reduce or avoid long-term vulnerabilities to the identified hazards.[36]

Hazard Mitigation Strategies and Implementation

Requirement §201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.[37]

Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.[38]

Implementation of Mitigation Actions

Requirement §201.6(c)(3)(iii): The mitigation strategy section shall include an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.[39]

Introduction

The Hazard Vulnerability Analysis contained in Section 2 of the Huntingdon County Multi-Jurisdictional Hazard Mitigation Plan evaluated the County's vulnerabilities and risks to a series of natural, man-made, and technological hazards. This analysis determined that Huntingdon County and its 48 municipalities are most vulnerable to natural hazards, particularly flooding, severe weather, and severe winter weather.

[36] Federal Emergency Management Agency, *Plan Review Crosswalk*, Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000, (March 2004).

[37] Ibid.

[38] Ibid.

[39] Ibid.

This section, therefore, specifies a comprehensive mitigation strategy that includes the following goals as mitigation actions: emergency services, natural resource protection, preparedness, property protection, public information, and structural projects.

Emergency services focus on preparedness opportunities for Huntingdon County Emergency Management Agency (HCEMA), County GIS staff, Local Emergency Planning Committee (LEPC), and Local Emergency Management Coordinators.

Such measures include:

- eommunications and warning
- emergency operations planning
- continuity of Government Planning (using guidelines established in NFPA 1600)
- evacuation route planning
- critical facilities protection
- public health and safety
- standardized street addressing
- hazardous materials planning
- damage assessment and reporting
- HAZUS training
- special needs population

Natural resource protection measures help preserve the County's floodways (regulatory and fringes) and protect public and private property through:

- floodplain and riparian areas protection
- storm water management
- erosion and sediment control

Preparedness measures strengthen county- and municipal-level planning and administration activities for all-hazard events through post-disaster recovery and reconstruction, and intergovernmental cooperation.

Property protection measures identify and protect both public and private sector-owned property assets and critical infrastructure. These measures include repetitive-loss properties and identifying opportunities to permanently remove people, property, and businesses from the County's flood-prone areas. Property protection mitigation measures include: repetitive loss structures, flood insurance, business continuity planning, floodplain regulations, and critical infrastructure protection.

Public information measures are intended to advise officials and the public of hazards and ways to protect people and property from them. Public information measures include: flood maps and data, public advisory and outreach programs, flood warning and responses, and technical and financial assistance.

Structural projects identify capital improvement opportunities to mitigate local critical infrastructure from flood risks and power outages from severe storms. Examples include: bridge improvements, levees, floodwalls, channel modifications, critical facility relocation, evacuation route improvements, communications, and power supply.

Hazard Mitigation Goals

The goals developed for the Huntingdon County Multi-Jurisdictional Hazard Mitigation Plan were developed in response to the aforementioned Hazard Vulnerability Analysis section of this report and inputs received from the project's public involvement process. The following goal statements denote long-term objectives to reduce or avoid vulnerabilities to flooding and other natural, man-made, and technological hazards profiled.

- Strengthen County and local capabilities to reduce the potential impacts of flooding on existing and future public/private assets, including structures, critical facilities, and infrastructure.
- Increase intergovernmental cooperation and build public/private partnerships to implement activities that will reduce the impact of natural, manmade, and technological hazards.
- Enhance planning and emergency response efforts among state, county, and local emergency management personnel to protect public health and safety.
- Continue to build Huntingdon County's spatial information resources to strengthen public and private hazard mitigation planning and decision-support capabilities.
- Increase public awareness on both the potential impacts of natural hazards and activities to reduce those impacts.

Hazard Mitigation Measures

Found in Appendix D, Table D-1 illustrates each jurisdiction's structural and nonstructural projects and the hazard each structural project aims to mitigate. Tables D-2 and D-3 identify and analyze a comprehensive range of specific mitigation actions and structural projects to reduce the impact of flooding and other natural, manmade, and technological hazards profiled under the Hazard Vulnerability section. Table D-4 incorporates those projects currently on Huntingdon County Transportation Improvement Program (TIP) under the safety category. Table D-5 presents potential funding sources to assist in the implementation of hazard mitigation projects.

Table D-2 presents a series of non-structural mitigation measures and their respective implementation schedules. These measures are grouped according to the aforementioned categories and by applicable hazard vulnerability. The measures were also prioritized by their respective impact and benefit scores. This prioritization methodology examined each measure's impact and benefit relative to cost, segment of the population affected (countywide vs. local), and long-term benefit to the population served. Table D-2 also establishes an implementation strategy for each measure and specifies a schedule, potential funding source(s), responsible entity(ies), and estimated costs.

Table D-3 presents a series of structural projects solicited from Huntingdon County's 48 municipalities through the hazard mitigation planning process. These measures have been thoroughly evaluated and prioritized, and will be implemented and administered according to the specified implementation strategy. The Huntingdon County Emergency Management Agency possesses a substantial amount of visual documentation of flooding hazards throughout the County that may be utilized for future hazard mitigation project submissions.

Table D-4 presents a list of transportation safety improvement projects that are currently part of the Huntingdon County Transportation Improvement Program (TIP). While these projects may pull from a variety of funding sources, such as TIP funding, it is important to illustrate the interrelationship between TIP safety projects and hazard mitigation planning. These safety improvement projects illustrate how the TIP can help mitigate transportation hazards within the County.

Section 5: Plan Maintenance

Plan Maintenance Process

Subsections 201.6(c)(4)(i – iii) of DMA 2000 specify the requirements to maintain the county's multi-jurisdictional plan. These requirements are specified below.

Monitoring, Evaluating, and Updating the Plan

Requirement §201.6(c)(4)(i): The plan maintenance process shall include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.[40]

Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): The plan shall include a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.[41]

Continued Public Involvement

Requirement §201.6(c)(4)(iii): The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process.[42]

The following discussion addresses these requirements.

Introduction

Hazard mitigation planning in Huntingdon County is a responsibility of all levels of government (i.e., county and local), as well as the citizens of the County. The Huntingdon County Hazard Mitigation Planning Subcommittee, made up of representatives from the Huntingdon County Emergency Management Agency (HCEMA) and the County Planning Department and the local Emergency Management Coordinators, will be responsible for maintaining this Multi-Jurisdictional HMP and will review the plan annually and following each emergency declaration. Each review process will ensure that the hazard vulnerability data and risk analysis reflect current conditions of the County, the Capabilities Assessment accurately reflects local circumstances, and that the hazard mitigation strategies are updated based on the County's damage assessment reports and local mitigation project priorities.

[40] Federal Emergency Management Agency, *Plan Review Crosswalk*, Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000, (March 2004).

[41] Ibid.

[42] Ibid.

The Huntingdon County Hazard Mitigation Planning Subcommittee will complete a Hazard Mitigation Progress Report, attached to this plan as Appendix H, to evaluate the status and accuracy of the Multi-Jurisdictional HMP, and record the Subcommittees review process. The Huntingdon County Emergency Management Agency (HCEMA) will maintain a copy of these records.

In order to streamline any necessary updates to the HMP, the Emergency Management Agency Director and the Planning Director will discuss the Plan during their quarterly meetings. This will allow for continuous public input between the annul Subcommittee reviews.

Huntingdon County will continue to work with all municipalities regarding Hazard Mitigation projects, especially those municipalities that did not submit projects for inclusion in this Plan. Of the 48 total municipalities, projects were received for 24 municipalities, and Huntingdon County.

Huntingdon County Comprehensive Plan

Article III of the Pennsylvania Municipalities Planning code (Act 247 of 1968, as reenacted and amended) requires all Pennsylvania counties (except Philadelphia) to adopt a comprehensive plan and update it at least every 10 years. In September 2005, Huntingdon County began the process of updating its Comprehensive Plan. The County Commissioners adopted the Comprehensive Plan Update on November 30, 2007. The plan is available on the County website at http://huntingdoncounty.net/.

The Huntingdon County Planning Commission is responsible for maintaining and updating the County Comprehensive Plan and the County Subdivision and Land Development Ordinance. The Commission meets monthly to review, discuss, and comment on municipal subdivision and land development plans. It uses this information to identify necessary revisions and to amend both the Comprehensive Plan and the Subdivision and Land Development Ordinance. The Planning Commission's meetings are open to the public and are advertised according to the Pennsylvania Sunshine Act (65 PA C.S.A.).

Technical assistance on community planning matters is provided to the Huntingdon County Planning Commission and the County Board of Commissioners through the Huntingdon County Planning Department. The Planning Department administers the *County Comprehensive Plan*, along with the County Subdivision and Land Development Ordinance. The Planning Department also performs technical reviews of municipal subdivision and land development plans, municipal floodplain ordinances, municipal storm water management plans and ordinances, and other community planning and development matters.

The Huntingdon County Comprehensive Plan update was adopted by the County Commissioners on November 30, 2007. The County's Comprehensive Plan will then be scheduled for an update in the year 2017, based on the Municipalities Planning Code's 10-year review cycle. Coupling this requirement with the DMA 2000-required five-year update cycle for HMPs (when possible) will allow the County to better integrate the County Comprehensive Plan

and Multi-Jurisdictional HMP planning processes and strengthen public participation for both efforts.

Huntingdon County Emergency Operations Plan

Method

The Pennsylvania Emergency Management Services Code, 35 PA C.S. Sections 7701-7707, as amended, requires each county and municipality to prepare, maintain, and keep current an emergency operations plan (EOP). Huntingdon County Emergency Management Agency (HCEMA) is responsible for preparing and maintaining the County's EOP, which applies to both the County and municipal emergency management operations and procedures.

The EOP is reviewed at least biennially. Whenever portions of the plan are implemented in an emergency event or training exercise, a review is performed and changes are made where necessary. These changes are then distributed to the County's local emergency management coordinators for safekeeping.

Maintenance Schedule

Huntingdon County Emergency Management Agency (HCEMA) should consider the County's Multi-Jurisdictional HMP during its biennial review of the County EOP. Recommended changes to the HMP will then be coordinated with the Hazard Mitigation Planning Subcommittee.

Plan Interrelationships

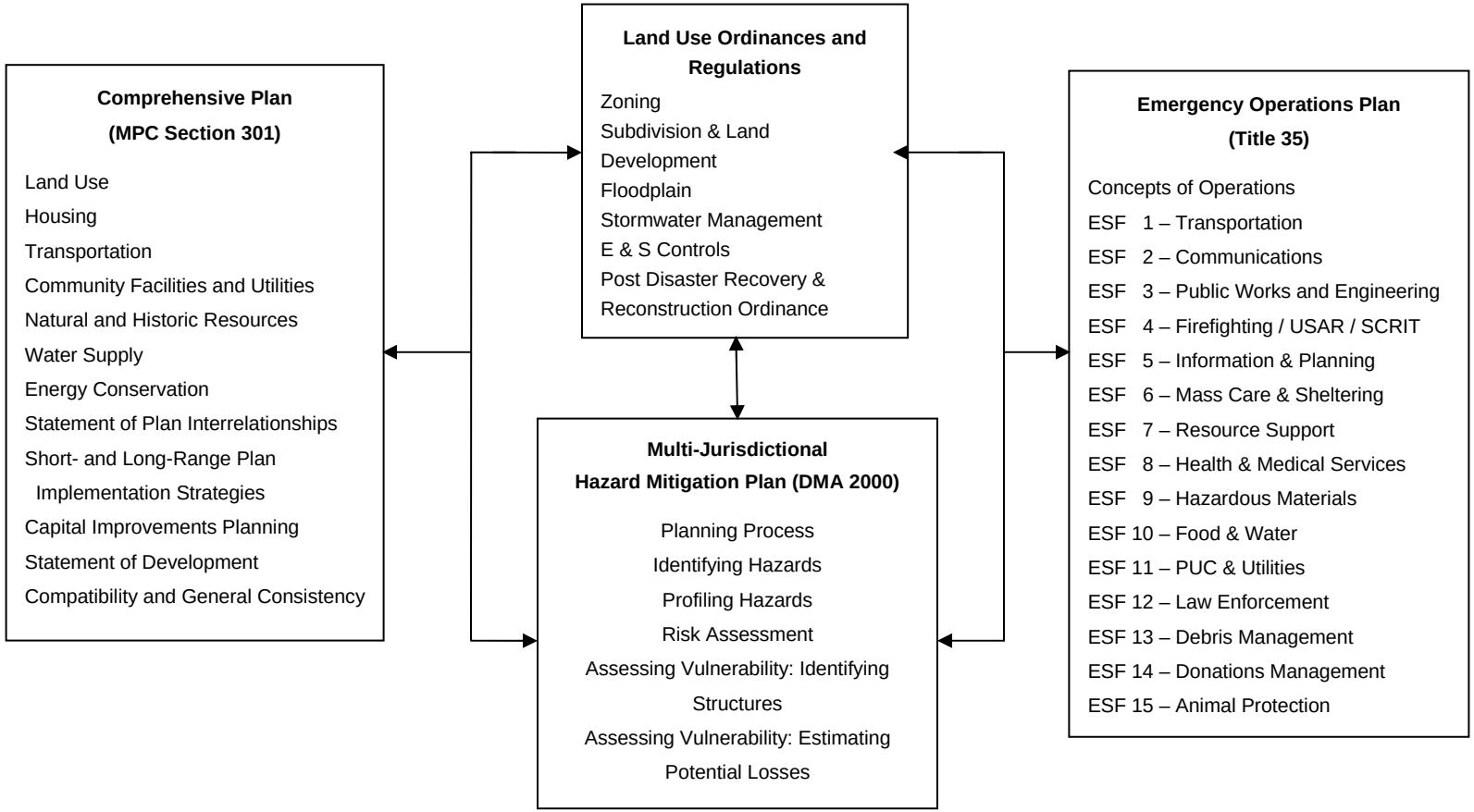
Figure 5-1 illustrates the interrelationships between the Multi-Jurisdictional HMP, County Comprehensive Plan, and the County EOP, and other community planning mechanisms. Ensuring consistency between these planning mechanisms is critical. In fact, Section 301 (4.1) of the Pennsylvania Municipalities Planning Code requires that comprehensive plans include a discussion of the interrelationships among its various plan components, "which may include an estimate of the environmental, energy conservation, fiscal, economic development, and social consequences on the environment."

When updating Huntingdon County's multi-jurisdictional HMP, the certain sections of the County's previously FEMA approved HMP, Comprehensive Plan, Emergency Operations Plan, and various land use ordinances and regulations provided key information. Moving forward, each of these documents should not be treated as unrelated and updated separately. The County and each participating municipality is responsible for implementing the specific mitigation actions recommended in this plan into the necessary planning documents including the appropriate comprehensive plan, the County Emergency Operations Plan, and any land use ordinances and regulations.

To that end, Huntingdon County and its municipalities must ensure that the components of the Multi-Jurisdictional Plan are integrated into existing community planning mechanisms and are generally consistent with goals, policies, or recommended actions. Huntingdon County and the

Hazard Mitigation Planning Subcommittee will utilize the existing maintenance schedule of each Plan to incorporate the goals, policies, or recommended actions as each plan is updated.

Figure 5-1
County Comprehensive Plan Inter-Relationships



Section 6: Authorities and References

This section lists references used to prepare the Huntingdon County Hazard Mitigation Plan (HMP). Existing plans and studies were reviewed and integrated into the Plan. The County Comprehensive Plan, supplied by the Huntingdon County Planning Commission, was incorporated into multiple aspects of this HMP. Information from the Comprehensive Plan was used to formulate the County profile, to identify the history of individual hazards, and to detail the population projections in Huntingdon County. The flood insurance study acquired from the Federal Emergency Management Agency was incorporated into the flood hazard profile. Data from this study was utilized in the Hazard Vulnerability Analysis to detail the flood background for the affected municipalities.

Federal

1. *Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988*, as amended by Public Law 106-390 (October 30, 2000).

2. *Disaster Mitigation Act of 2000*, Public Law 106-390, 106th Cong., (October 30, 2000).

3. Department of Homeland Security, *National Infrastructure Protection Plan, 2006*.

4. Federal Emergency Management Agency, http://www.fema.gov

5. ———. *State and Local Mitigation Planning How-to Guide (FEMA 386-Series)*.

6. ———. *Post-Disaster Hazard Mitigation Planning Guidance for State and Local Governments*.

7. ———. *Planning for Post-Disaster Recovery and Reconstruction, (FEMA, American Planning Association.)*

8. ———. *Multi-Hazard Identification and Risk Assessment Report.*

9. ———. *FEMA's Local Hazard Mitigation Plan Review Crosswalk*.

10. ———. Federal Insurance and Mitigation Administration *National Flood Insurance Program: Program description*, (August 2002), http://www.fema.gov/doc/library/nfipdescrip.doc

11. ———. National Flood Insurance Program Community Status Book, *Communities Participating in the National Flood Insurance Program: Pennsylvania*. http://www.fema.gov/crs/PA.pdf

12. Bureau of Transportation Statistics, http://www.bts.gov

13. United States Environmental Protection Agency, http://www.epa.gov

14. National Climatic Data Center, National Oceanic and Atmospheric Administration NOOA, http://www.ncdc.noaa.gov/oa/ncdc.html

15. United States Department of Commerce, Bureau of the Census, http://www.census.gov

16. United States Geological Survey, http://www.deltafour.com

17. Federal Aviation Administration, http://www.faa.gov.

State

1. *Pennsylvania Municipalities Planning Code of 1968*, Act 247 as reenacted and amended by Act 170 of 1988.

2. Pennsylvania Department of Environmental Protection, http://www.depweb.state.pa.us/dep/site/default.asp

3. ———. *Act 167 Stormwater Management Plan Status by DEP Region* (11/07/06): 40-41. http://www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/StormwaterManagement/TechnicalInformation/167RegionReport.pdf. Accessed 11/14/06.

4. Pennsylvania Department of Conservation and Natural Resources, http://www.dcnr.state.pa.us

5. Pennsylvania Emergency Management Agency, http://www.pema.state.pa.us

6. ———. *Pennsylvania Emergency Management Services Code*. Title 35, Pa C.S. Section 101.

7. Pennsylvania State Data Center, http://www.pasdc.hbg.psu.edu

8. PENNDOT Bureau of Highway Safety and Traffic Engineering. "2001 Pennsylvania Crash Facts and Statistics; Pennsylvania County Crashes, 58-69." http://www.dot.state.pa.us/Internet/Bureaus/pdBHSTE.nsf/InfoFb01?OpenForm (accessed July 7, 2006).

9. Pennsylvania Department of Education. "Education Names and Addresses Educational Entity Search Results: Huntingdon County." http://edna.ed.state.pa.us/EntitySearchResult.asp (accessed July 10, 2006).

10. Pennsylvania Emergency Management Council. "Mulit-Hazard Identification and Risk Assessment, (July 2000).

Local

1. Huntingdon County Planning Commission, *2005 Annual Report*: *Mission Statement*. (March 2006): 1.

2. Huntingdon County Home Page, http://huntingdoncounty.net/hunt_co/site/default.asp

3. Huntingdon County Planning and Development Department, http://huntingdoncounty.net/hunt_co/cwp/view.asp?a=1212&q=441780

4. Huntingdon County Emergency Management Agency (EMA), http://huntingdoncounty.net/hunt_co/cwp/view.asp?a=1212&Q=514033

5. Huntingdon County Local Hazard Mitigation Plan, (December 2004).

6. Huntingdon County Emergency Operations Plan, *ESF #19 – Disaster Recovery and Assessment*. (November 2004): 1.

7. Huntingdon County Comprehensive Plan, *Continuity Through Conservation II: Our Vision for the Future* (Summary), January 2001. http://huntingdoncounty.net/hunt_co/lib/hunt_co/Plan_Summary_Complete.pdf

8. Huntingdon County Comprehensive Plan Update, http://www.dmai.com/HuntingdonCounty.htm

Other

1. Kurtz, Thomas. *Intergovernmental Cooperation Handbook.* 4th ed. Pennsylvania: Department of Community and Economic Development, 1997.

2. National Fire Protection Association (NFPA). *NFPA 1600: Standard on Disaster/Emergency management and Business Continuity Programs*, 2004.

3. So, Frank S., and Judith Getzels, eds. *The Practice of Local Government Planning*, 2nd ed. Washington, D.C.: International City Management Association, 1988.

Geospatial Data

Pennsylvania Spatial Data Access (PASDA)

Title: Impervious Surface Area for Northeast Pennsylvania, 1985

Short Title: pa1985isaa_ne
Edition: Revision 2003
Type of Data: Raster Digital Data
Publication Information:
Publication Place: University Park, PA
Publisher: Penn State University, Department of Meteorology

Description:

Abstract: Impervious surface area for Pennsylvania was estimated from Thematic Mapper data using algorithms developed by Dr. Toby Carlson. The Value attribute indicates percentage of the 25 meter grid cell that is impervious and range from 0 to 100 and use integer rather than decimal values for reduced storage volume. Date of the imagery ranged from 1985 to 1987, availability depended on extent of cloud cover at time of acquisition. All images were collected for the late Spring or Summer months (May-August).

Purpose:

The impervious surface data was generated to support hydrologic investigations. Impervious surfaces promote runoff during and following precipitation events. Runoff impacts both quantity and quality of receiving waters. Excessive quantities of runoff promote erosion and flooding. Runoff water acquires pollutants from the impervious surface over which it flows. Pollutants can then be transported to a receiving water body. Impervious surface area is also a useful tool in assessing urbanization and urban sprawl, including the effect of urbanization on surface microclimate.

Title: Impervious Surface Area for Northeast Pennsylvania, 2000

Short Title: pa2000isaa_ne
Edition: Revision 2003
Type of Data: Raster Digital Data
Publication Information:
Publication Place: University Park, PA
Publisher: Penn State University, Department of Meteorology

Description:

Abstract: Impervious surface area for Pennsylvania was estimated from Thematic Mapper data using algorithms developed by Dr. Toby Carlson. The Value attribute indicates percentage of the 25 meter grid cell that is impervious and range from 0 to 100 and use integer rather than decimal values for reduced storage volume. Date of the imagery ranged from 1999 to 2002, availability depended on extent of cloud cover at time of acquisition. All images were collected for the late Spring or Summer months (May-August).

Purpose:

The impervious surface data was generated to support hydrologic investigations. Impervious surfaces promote runoff during and following precipitation events. Runoff impacts both quantity and quality of receiving waters. Excessive quantities of runoff promote erosion and flooding. Runoff water acquires pollutants from the impervious surface over which it flows. Pollutants can then be transported to a receiving water body. Impervious surface area is also a useful tool in assessing urbanization and urban sprawl, including the effect of urbanization on surface microclimate.

Title: Pennsylvania County Boundaries, 2007

Short Title: PennDOT – Pennsylvania County Boundaries 2007
Type of Data: Vector Digital Data
Publication Information:
Publication Place: Harrisburg, PA
Publisher: Pennsylvania Department of Transportation

Description:

County boundaries within Pennsylvania as delineated for the PennDOT Type 10 general highway map.

Purpose:

Public information and support for transportation planning, design, and development.

Title: Floodplains of Pennsylvania

Type of Data: Vector Digital Data
Publication Information:
Publication Place: Harrisburg, PA
Publisher: Pennsylvania Department of Environmental Protection

Description:

In an effort to expedite the permit review process for Water Obstruction and Encroachment Applications, the Pennsylvania Department of Environmental Protection has initiated a plan to replace hard-copy maps with digital GIS sets. The project is referred to as the 105 Spatial Data System /8105SDS/9. Pennsylvania river floodplains and coastal floodplains are two of many spatial data sets that were used in the 105SDS project. As a result of work completed by Law Environmental, Inc. on the statewide low-level radioactive waste siting project, DEP received two coverages depicting river and coastal floodplains. However, due to the process used in constructing these data sets, there were many areas throughout the state in which floodplains were not digitized. The primary purpose of this task was to complete the digital floodplain mapping in these areas.

Purpose:

INTENDED USE OF DATA; Created to do permit reviews for Water Obstruction and Encroachment Applications. LIMITATIONS OF DATA; Due to the nature of transferring the floodplains from the Federal Emergency Management Agency maps to our plotted 1:24,000 scale maps this coverage should be considered to be the “best representation” of the data but not as accurate as, for example, a map of Global Positioning System’s floodplain coordinates.

Title: Streets and Highways, 2006

Short Title: streetscarto.sdc
Type of Data: Vector Digital Data
Publication Information:
Publication Place: Redlands, CA
Publisher: ESRI

Description:

U.S. Streets Cartographic represents detailed streets, interstate highways, and major roads within the United States.

Purpose:

U.S. Streets Cartographic provides streets with a reduced number of attributes and features that are designed to support cartographic display.

Title: Pennsylvania Active Railroads, 1996

Title: Active Railroads
Type of Data: Vector Digital Data
Publication Information:
Publication Place: Harrisburg, PA
Publisher: Pennsylvania Department of Environmental Protection

Description:

Location of active rail lines in Pennsylvania, digitized from 1:24,000 USGS topographic maps on a stable mylar base.

Purpose:

Educational.

Provided Data

In addition to the data listed on previous pages, Huntingdon County provided prepared geospatial data used in the Geographic Information Systems analysis. Information about the location of Huntingdon County SARA facilities was provided by the Emergency Management Agency. For details on the form and publication of this data, please contact the Huntingdon County Department of Geographic Information Systems.

Description:

Fire Stations

Municipal Boundaries

Senior Centers

SARA Facilities

Schools

Fire Stations

Medical Facilities/Hospitals

Parcels

Pipelines

Section 7: Glossary of Acronyms and Definitions

Acronyms

CFR	Code of Federal Regulations
CRS	Community Rating System
COG	Continuity of Government; also, Council of Government
COG	Council of Governments
DMA 2000	Disaster Mitigation Act of 2000
EAP	Emergency Action Plan
EMC	Emergency Management Coordinator
EMPG	Emergency Management Performance Grant
EOC	Emergency Operation Center
EOP	Emergency Operations Plan
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
GIS	Geographic Information Systems
HAZMAT	Hazardous Material
HCEMA	Huntingdon County Emergency Management Agency
HCPD	Huntingdon County Planning Department
HMGP	Hazard Mitigation Grant Program
HMP	Hazard Mitigation Plan
HVA	Hazard Vulnerability Analysis
LEPC	Local Emergency Planning Committee
MARFC	Mid-Atlantic River Forecasting Center
MPC	Municipal Planning Code
NCDC	National Climatic Data Center
NFIRA	National Flood Insurance Reform Act of 1994
NWS	National Weather Service
PDM	Pre-Disaster Mitigation Grant
PEMA	Pennsylvania Emergency Management Agency
SARA	Superfund Amendments and Reauthorization Act of 1986
UCC	Uniform Construction Code

Definitions

Agri-terrorism – The malicious use of plant or animal pathogens to cause devastating disease in the agriculture sector. It may also take the form of hoaxes and threats intended to create public fear of such events.

Avian Influenza – This is a version of the flu that affects birds. Most commonly, it is transmitted to humans by birds or though an intermediate host.

Comprehensive Environmental Response, Compensation, and Liability Act – Commonly referred to as Superfund, this law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

Debris Flow – Similar to landslides, this is a soil mixed with grain sizes from mud, sand, and boulders, and moves almost as a liquid, such as wet concrete.

Disaster Mitigation Act of 2000 – Amending the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988, this legislation reinforces the importance of pre-disaster mitigation planning to reduce the Nation's disaster losses, and is aimed primarily to control and streamline the administration of federal disaster relief and mitigation programs.

Emergency Operations Center – A site from which government officials (municipal, county, state, and federal) exercise direction and control in an emergency or disaster. (FEMA 229)

Emergency Operation Plan – A plan that describes the basis for a coordinated and effective response to any type of emergency or disaster that affects lives and property in the plan's jurisdiction. This plan defines the roles and responsibilities of the county government, private and volunteer organizations, and state and federal agencies within the county.

Frequency of Occurrence – The probability of a hazard occurring over time.

Hazard Mitigation Plan – A document that determines how to reduce or eliminate the loss of life and property damage resulting from natural or human-caused hazard.

Hazard Vulnerability Analysis – The process of evaluating risk associated with a specific hazard and defined in terms of probability and frequency of occurrence, magnitude, severity, exposure, and consequences.

Hepatitis – A disease affecting the liver. This disease can affect anyone. Many instances have been seen with both isolated cases and widespread outbreaks. Hepatitis is usually spread person to person.

Hurricane – A violent, tropical, cyclonic storm of the western North Atlantic, having wind speeds of or in excess of 72 mph (32 m/sec).

Influenza – "The Flu" – Spread through person to person by respiratory droplets that are released when sneezing and coughing. 10 to 20% of U.S. residents get the flu each year. Influenza will be the cause of death for 36,000 Americans every year.

Ingestion Exposure Pathway – A 50-mile radius around a nuclear facility that could receive radioactive contamination in small amounts. It is more important to monitor the food chain instead of human external exposure because consumption can cause internal exposure.

Landslides – Natural movements of earth down a slope, usually from heavy precipitation.

Mad Cow Disease (Bovine Spongiform Encephalopathy, BSE) – A fatal brain disease that occurs in livestock. In human cases, it is referred to as Creutzfeldt-Jakob Disease or CJD.

Magnitude "Richter" Scale – A scale of numbers that expresses the relative sizes of earthquakes.

Natural Areas Inventory – An extensive biological summary of natural areas within a defined area.

Pennsylvania Emergency Management Services Code – This code states that every county, city, borough, and township in the Commonwealth is required to have an emergency management coordinator who is selected by the elected officials of the jurisdiction. The Emergency Management Coordinator's role is to develop plans, conduct training, and coordinate all available resources in the community.

Pennsylvania Municipalities Planning Code – The state law that grants townships, boroughs, and most cities the legal power to regulate and to plan land use through the comprehensive plan, subdivision and land development ordinance, zoning ordinance, official map, and other tools.

Primary Hazard – The initial manmade or natural hazard to occur. An example includes a tornado, transportation accident, or flood.

Public Health Emergency – Occurrence of imminent threat of exposure to an extremely dangerous condition or the occurrence of a highly infectious disease or toxic agent that poses an imminent threat of substantial harm to the population.

Robert T. Stafford Disaster Relief and Emergency Assistance Act – Enacted to support state and local governments and their citizens when disasters overwhelm them. This law establishes a process for requesting and obtaining a Presidential

disaster declaration, defines the type and scope of assistance available under the Stafford Act, and sets the conditions for obtaining that assistance.

Superfund Amendments and Reauthorization Act of 1986 – An act that amended the Comprehensive Environmental Response, Compensation, and Liability Act. It stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites; required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; provided new enforcement authorities and settlement tools; increased state involvement in every phase of the Superfund program; increased the focus on human health problems posed by hazardous waste sites; encouraged greater citizen participation in making decisions on how sites should be cleaned up; and increased the size of the trust fund to $8.5 billion.

SARA Title III Facilities – Facilities at which hazardous chemicals are present in excess of specified thresholds.

Secondary Hazard – A hazard that is the result of another hazard. The hazard occurring before the secondary hazard is known as the primary hazard. An example of a secondary hazard is a flood caused by a dam failure.

Sinkholes – Occurring in areas with limestone, carbonate rock, and salt beds, sinkholes form when the rock below the ground dissolves and an empty space is created. After some time, the land and soil above the hole will suddenly fall and fill the space that was created below the surface.

Subsidence – Sinking of the ground surface due to the removal of large quantities of water or petroleum from the pores of underlying sediments or rocks.

Terrorism – Violent act, or an act dangerous to human life that is in violation to the criminal laws of the U.S. or any state, to intimidate or coerce a government, the population, or a segment thereof in furtherance of political or social objectives.

Tropical Storm – A former hurricane that spins counter clockwise, has winds of more than 39 mph, and its biggest impact is the flooding it leaves behind.

West Nile Virus – Usually spread by mosquitoes, a mild case of this virus will mimic the flu, while a severe case will be life threatening. No drugs or vaccines are available to treat West Nile Virus.