

**HAZARD MITIGATION PLAN  
LEHIGH VALLEY, PA.  
JULY 2006**

**— EXECUTIVE SUMMARY —**

**OVERVIEW**

Natural disasters can strike anywhere, anytime. A disaster can come in many forms including floods, earthquakes, winter storms and tornadoes, among others. The result of these disasters has been the loss of homes, property, communities, jobs, and in some cases, lives. According to the National Weather Service, the average annual number of fatalities in the United States due to severe weather between 1994 and 2003 was 514. Severe weather includes floods, tornadoes, lightning, hurricanes, heat, cold and winter storms. The average annual severe weather damage costs over the same time period were approximately \$12 billion. The National Oceanic and Atmospheric Administration reports that 90% of all natural disasters in the United States involve flooding and about 100 people on average are killed each year by flooding.

In October 2000, in an effort to reduce the nation's disaster losses, the President signed into law the Disaster Mitigation Act of 2000. The Act provides an opportunity for communities to reduce natural disaster losses through disaster mitigation planning. This proactive strategy is designed to reduce the potential for losses before an event occurs. The term "mitigation", as defined by the Federal Emergency Management Agency (FEMA), is any cost-effective action taken to eliminate or reduce the long-term risk to life and property from hazards. Actions can be structural or nonstructural in nature and can include construction of levees, storm drainage improvements, property acquisition, floodproofing, natural resource protection, zoning ordinance amendments, land use planning, public awareness and improved emergency service measures, among others. Local governments are required to have approved natural hazard mitigation plans to be eligible for federal hazard mitigation funding.

Since 1955, there have been 32 statewide or county specific gubernatorial and presidential disaster declarations affecting the Lehigh Valley. The region is susceptible to a range of natural disasters including floods, tornadoes, winter storms, sinkholes and droughts. Flooding is by far the most significant natural hazard facing the Lehigh Valley. In Lehigh and Northampton counties, all municipalities have areas prone to flooding along streams and rivers. There have been 14 flood events within the Lehigh Valley since 1955 that have resulted in disaster declarations. Lehigh and Northampton counties recognize the impact of natural hazards on the region and that proactive measures are needed to reduce or eliminate their impacts. The two counties joined efforts in 2005 with the Lehigh Valley Planning Commission (LVPC) to prepare a regional natural hazard mitigation plan to help protect the health, safety and welfare of Lehigh Valley residents.

**MUNICIPAL INVOLVEMENT**

Municipal involvement is an important component in the development of the plan. Municipalities in the two counties must participate in the planning process to be eligible for hazard mitigation funding. According to FEMA requirements, municipalities must adopt the plan by resolution. During the planning process, there were two meetings held for municipal officials and local emergency service coordinators. These meetings were to explain the planning process, encourage municipalities to participate in the process and encourage municipalities to submit proposed hazard mitigation projects. To-date, 55 of 62 Lehigh Valley municipalities have agreed to participate with the counties on the plan.

**PUBLIC INVOLVEMENT**

The planning process included an opportunity for the public, including businesses, academia, agencies involved in hazard mitigation activities and neighboring communities to provide comments on the plan. For public involve-

ment purposes, the LVPC posted draft plan components on the LVPC website as they were completed. Lehigh and Northampton counties also created a link on their websites to the LVPC website. The November/December 2005 LVPC newsletter included an article on the Lehigh and Northampton County Hazard Mitigation Plan. Once the draft plan was prepared, a media release was issued notifying the public that a draft plan was available for review and that comments were requested. The draft plan was made available at the Lehigh and Northampton County Emergency Management Agency (EMA) offices, municipal (participating) offices, Lehigh and Northampton County Government Centers, the LVPC, public libraries and the Lehigh County website ([www.lehighcounty.org](http://www.lehighcounty.org)). Revisions to the plan were made based on comments received. The public was notified through a legal notice that the plan was available for review prior to county and municipal adoption.

## **EXISTING HAZARD MITIGATION RESOURCES**

One of the key components of the Hazard Mitigation Plan is documentation of the existing capabilities and resources already in place in the Lehigh Valley to reduce hazard risks. Resources are available at the municipal, county, state and federal levels to help mitigate local hazards.

By state law, each municipality in Pennsylvania is required to establish a local emergency management organization and have a coordinator responsible for the planning, administration and operation of the local organization. Direction of disaster emergency management services is the responsibility of the lowest level of government affected. When two or more political subdivisions within a county are affected, the county organization shall exercise responsibility for coordination and support to the area of operations. When two or more counties are involved, coordination shall be provided by the Pennsylvania Emergency Management Agency (PEMA) or by area organizations established by PEMA.

Each municipality is responsible to provide emergency response to their municipality in Emergency Medical Services (EMS), Fire and Police. If a municipality does not have one of these providers in their community, they have mutual aid agreements with an adjacent political subdivision to provide such. In Lehigh County there are 15 EMS Stations, 44 Fire Companies, 13 Municipal Police Departments, 2 State Police Barracks, City of Allentown 9-1-1 and City of Bethlehem 9-1-1. In Northampton County there are 22 EMS Stations, 41 Fire Companies, 29 Municipal Police Departments, 2 State Police Barracks, and the City of Bethlehem 9-1-1. The municipalities may also be equipped with several systems to monitor emergency information and warnings. They include: Pennsylvania Emergency Incident Reporting System (PEIRS), Radio Amateur Civil Emergency Services (RACES) and National Oceanic and Atmospheric Administration (NOAA) Weather Radios.

Lehigh and Northampton counties operate 9-1-1 and Emergency Operations Centers (EOCs). 9-1-1 is a telephone number linked to an emergency response system used for reporting all types of emergencies – Police, Fire, and Emergency Medical. The 9-1-1 System is equipped and ready to accept calls from deaf persons utilizing a telecommunications device for the deaf (TDD). Each county operates a 9-1-1 center and there are separate 9-1-1 operations in the City of Allentown and the City of Bethlehem. These four operations would need to be coordinated in a regional hazard event. In the event of an impending emergency or disaster, both Lehigh and Northampton counties would activate their EOCs. The purpose of the EOC is to manage the emergency response and coordinate the distribution of resources to a disaster incident. When activated, the EOCs are in constant communication with the 9-1-1 centers to ensure coordination of activities.

The Lehigh and Northampton County EMA capabilities fall under two categories: Emergency Service Measures and Public Information Programs. Emergency service measures protect people during and immediately following a disaster:

- Alert Warning System – Emergency Alert System (EAS) – Lehigh County operates as an EAS initiating station, covering Lehigh and Northampton counties. The EAS is an alert system for disseminating emergency information and warnings to the general public, utilizing the resources of the broadcast and cable industries.
- Monitoring Systems – The counties have several systems they monitor that will disseminate emergency

information and warnings. An example is the Satellite Emergency Voice Alerting Network (SEVAN) that allows PEMA, counties and cities to communicate without need for telephones.

- Emergency Response Planning – Lehigh and Northampton counties have prepared Emergency Operations Plans (EOPs) to document the counties emergency preparedness planning. The EOP includes county-specific emergency response procedures during significant emergency events. Further, Lehigh and Northampton counties have formal mutual aid agreements in place with each other and with the Pennsylvania counties contiguous to each.
- Evacuation – The counties are in the early stages of developing an Evacuation Plan at the county level and also at a regional level. This plan will address the following basic scenarios: 1) evacuation of a large population or geographic area within our region, and 2) mass exodus of population from another area entering our area. The counties, in cooperation with the American Red Cross, have designated shelters set up throughout the counties. These shelters may be used during times of emergency and disasters.

The counties have a number of public information programs available as described below.

- Outreach Projects
  - Are You Ready? – An in-depth program for Citizen Preparedness (individual, family and community preparedness). Provides a step-by-step approach to disaster preparedness.
  - Community Emergency Response Teams (CERT) – Training to educate citizens about disaster preparedness and training in basic disaster response skills, such as light search and rescue.
  - Citizen Corps Council – The mission of the Citizen Corps is to harness the power of every individual through education, training, and volunteer service.
  - Emergency Management Courses are provided through the county EMA offices to the Local Coordinators and Elected Officials.
- Technical Assistance – The county EMA offices can support local, public and private entities as needed through coordination and provision of information and equipment resources.

PEMA is the state government agency responsible for the development and implementation of the state's comprehensive disaster preparedness program. PEMA is also responsible for coordinating and managing disaster recovery efforts. PEMA provides a number of programs and services to achieve these goals. They maintain the state's Emergency Operations Center, which is staffed on a 24 hour per day, 7 day a week basis. The center is the state's central point of contact for incidents, emergencies or disasters. The center shares important warning information to the 67 counties in the state and also gathers requests from them on unmet needs that will be filled either through state agencies or its federal counterparts.

FEMA, a former independent agency that became part of the new Department of Homeland Security in 2003, is charged with responding to, planning for, recovering from and mitigating against disasters. FEMA initiates proactive mitigation activities, trains first responders and manages the National Flood Insurance Program (NFIP) and the U.S. Fire Administration. FEMA has nearly 4,000 standby assistance employees who are available for deployment after disasters. FEMA often works in partnership with other organizations that are part of the nation's emergency management system. These partners include state and local emergency management agencies, 27 federal agencies and the American Red Cross. These agencies provide state and local governments with personnel, technical expertise, equipment and other resources, and assume an active role in managing the response to a federally-declared disaster.

## **LEHIGH VALLEY HAZARD MITIGATION STRATEGY**

The Hazard Mitigation Strategy describes the goals and recommended actions to reduce or eliminate the long-term risks to life and property from hazards affecting the Lehigh Valley. Goals created for the Hazard Mitigation Plan are as follows:

- To minimize the risk to human life associated with natural hazards.
- To promote hazard avoidance, especially in floodplains, by removing high-risk and repetitive loss struc-

tures and through restrictions on future development.

- To reduce the damages from natural hazards to existing and future public and private assets including structures, critical facilities and infrastructure.
- To protect and restore existing natural resources including wetlands, floodplains and riparian buffers.
- To develop, prioritize and implement cost-effective, long term actions that will reduce the impacts of natural hazards.
- To recommend local regulations to reduce the impacts of natural hazards.
- To enhance planning and emergency response efforts among federal, state, county and local emergency management personnel to protect public health and safety.
- To promote public awareness on both the potential impacts of natural hazards and actions to reduce those impacts.

A series of county-level recommended actions are described as part of the mitigation strategy. One key action is to implement a Reverse 9-1-1 System, also known as Interactive Communication Notification System. This is a communication solution that uses a patented combination of database and Geographic Information System (GIS) mapping technologies to deliver high volume outbound notifications for all hazards. Users can quickly target a precise geographic area and saturate it with thousands of calls per hour. The system's interactive technology provides immediate interaction with recipients and aids in rapid response to specific needs.

The municipalities have been asked to provide recommended hazard mitigation projects. For Lehigh County, 10 municipalities recommended a total of 103 projects. For Northampton County, 26 municipalities recommended 106 projects. The vast majority of projects (203 of 209 or 97%) were related to floods. Combined with county level actions, the total number of projects identified in the plan is 224. An important aspect of this plan is to provide a sense of priority for recommended actions. Given the number of flood projects, this plan identifies a specific priority system to organize the flooding projects within each county as presented below.

| <b>FLOOD PROJECT PRIORITIES</b>  |
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| <p><b>High Priority - Public Infrastructure/Critical Facilities</b> - Public infrastructure includes sewage treatment plants, water supply plants, electric and gas facilities. Critical facilities include hospitals, schools, day care, nursing homes, emergency shelters, emergency services, government buildings, public utilities, communications and transportation. Continued operation of these facilities is vital to the community.</p> |
| <p><b>Medium Priority - Acquisitions and Floodproofing/Elevation</b> - Includes projects with building or property in the 100-year floodplain.</p>   |
| <p><b>Low Priority - Storm drainage improvements</b> - Includes culverts, inlets, etc. Non-floodplain projects. No part of a property is in a 100-year floodplain.</p>   |

## PLAN MAINTENANCE

The hazard mitigation plan is required to include a plan maintenance process to ensure that the plan remains an active and relevant document. The plan maintenance process must include a method and schedule for monitoring, evaluating and updating the plan at least every five years and describe how, when and by whom the work will be done. The plan recommends that an annual review be conducted to determine if modifications to the plan are needed. The County Emergency Management Agencies would meet with a planning committee to prepare the annual review. A major update of the plan is recommended every 5 years, again to be coordinated by the County EMAs.

**Lehigh and Northampton Counties  
Lehigh Valley Planning Commission  
Lehigh County Emergency Services  
Northampton County Emergency Management**