Allegheny County Vulnerability Assessment and Hazard Mitigation Plan

September 2005




prepared for:

Allegheny County Department of Emergency Services
400 North Lexington Street, Suite 200
Pittsburgh, Pennsylvania 15208

prepared by: URS 200 Orchard Ridge Drive, Suite 101, Gaithersburg, Maryland

DANIEL A. ONORATO
CHIEF EXECUTIVE

County of Allegheny

RESOLUTION

THIS RESOLUTION approved and adopted by the Chief Executive of Allegheny County, Pennsylvania, on the sixth day of October in the year two-thousand and five. Executive Action number 1163-05.

WHEREAS, 44 CFR Part 201 Hazard Mitigation Planning, establishes criteria for hazard mitigation planning authorized by §322 of the Stafford Act, as amended by §104 of the Disaster Mitigation Act. Section 322 of the Disaster Mitigation Act of 2000, mandates that Allegheny County; prepare, maintain and keep current a hazard mitigation plan for evaluating the County's hazards, identifying resources and capabilities, selecting appropriate actions, and developing and implementing mitigation measures to eliminate or reduce future damage from those hazards in order to protect the health and safety, and welfare of residents within this County; and

WHEREAS, in response to the mandate stated above, this County has affirmed a commitment in preparing a hazard mitigation plan to identify any cost-effective action taken to eliminate or reduce the long-term risk to life and property from natural and technological hazards; and

WHEREAS, this County has also committed to reducing the potential affects of a major emergency or disaster and to protect the health, safety and welfare of the residents of this municipality through the efforts outlined by the plan;

NOW, THEREFORE, as Chief Executive of the County of Allegheny, I hereby approve, adopt and place into immediate effect the Allegheny County Vulnerability and Hazard Mitigation Plan which shall be reviewed every five years, at a minimum, to make certain that it conforms to the requirements of the provisions set forth by federal statutes and the Pennsylvania Emergency Management Agency's Guidelines.

Daniel A. Onorato, Chief Executive
County of Allegheny

Attest:

10/21/05

James M. Flynn, Jr., Manager (Date)
County of Allegheny

In accordance with 44 CFR §201.6, the Interim Final Rule for the Disaster Mitigation Act of 2000 (DMA 2000), the County of Allegheny, Pennsylvania, developed the **Allegheny County Hazard Vulnerability Assessment and Mitigation Plan**. This plan was developed to identify hazards that threaten the County, as well as ways to reduce future damages from natural and manmade disasters. Along with the County government, the following municipalities within Allegheny County participated in the mitigation planning process and have adopted this plan, authorizing municipal government staff to carry out the actions detailed herein. It is anticipated that the majority of the municipalities that have not adopted this plan, to date of submittal, will do so by the end of 2005. Appendix A contains signed resolution forms adopting the plan.

Participating jurisdictions and their representative Council of Government (COG) in Allegheny County are noted below:

Jurisdiction	Representative COG	Adopted the Plan Yes/No
Aspinwall	Allegheny Valley North	
Blawnox	Allegheny Valley North	
Brackenridge	Allegheny Valley North	
Cheswick	Allegheny Valley North	
East Deer	Allegheny Valley North	
Fawn	Allegheny Valley North	
Frazier	Allegheny Valley North	
Harmar	Allegheny Valley North	
Harrison	Allegheny Valley North	
Springdale Borough	Allegheny Valley North	
Springdale Township	Allegheny Valley North	
Tarentum	Allegheny Valley North	
Verona	Allegheny Valley North	
West Deer	Allegheny Valley North	5/04/2005
Bradford Woods	North Hills	9/13/2004
Etna	North Hills	4/19/2005
Fox Chapel	North Hills	11/15/2004
Franklin Park	North Hills	11/17/2004
Hampton	North Hills	
Indiana	North Hills	
McCandless	North Hills	5/23/2005
Marshall	North Hills	
Millvale	North Hills	
O'Hara	North Hills	
Ohio	North Hills	10/04/2004
Pine	North Hills	9/20/2004
Reserve	North Hills	9/13/2004
Richland	North Hills	10/06/2004
Ross	North Hills	9/27/2004
Shaler	North Hills	4/26/2005
Sharpsburg	North Hills	
West View	North Hills	
Bridgeville	Char West	

Jurisdiction	Representative COG	Adopted the Plan Yes/No
Carnegie	Char West	
Collier	Char West	
Coraopolis	Char West	
Crafton	Char West	
Crescent	Char West	
Findlay	Char West	
Ingram	Char West	
Kennedy	Char West	
McKees Rocks	Char West	
Moon	Char West	
Neville	Char West	
North Fayette	Char West	
Oakdale	Char West	
Pennsbury Village	Char West	
Robinson	Char West	
Rosslyn Farms	Char West	
South Fayette	Char West	
Stowe	Char West	
Thornburg	Char West	
Aleppo	Quaker Valley	
Avalon	Quaker Valley	
Bell Acres	Quaker Valley	
Bellevue	Quaker Valley	
Ben Avon	Quaker Valley	
Edgeworth	Quaker Valley	
Emsworth	Quaker Valley	
Glenfield	Quaker Valley	
Haysville	Quaker Valley	
Kilbuck	Quaker Valley	
Leet	Quaker Valley	
Leetsdale	Quaker Valley	
Osborne	Quaker Valley	
Sewickley Borough	Quaker Valley	
Ben Avon	Quaker Valley	
Baldwin Borough	South Hills Area	
Baldwin Township	South Hills Area	
Bethel Park	South Hills Area	
Brentwood	South Hills Area	
Castle Shannon	South Hills Area	
Dormont	South Hills Area	
Greentree	South Hills Area	
Heidelberg	South Hills Area	
Jefferson Hills	South Hills Area	
Mt. Lebanon	South Hills Area	
Pleasant Hills	South Hills Area	

Jurisdiction	Representative COG	Adopted the Plan Yes/No
Scott	South Hills Area	
South Park	South Hills Area	
Upper St. Clair	South Hills Area	
Whitehall	South Hills Area	
Braddock Hills	Steel Valley	6/09/2005
Clairton	Steel Valley	6/14/2005
Dravosburg	Steel Valley	6/21/2005
Duquesne	Steel Valley	
Homestead	Steel Valley	2/09/2006
Munhall	Steel Valley	6/15/2005
West Elizabeth	Steel Valley	7/05/2005
West Homestead	Steel Valley	6/14/2005
Whitaker	Steel Valley	6/09/2005
Braddock	Turtle Creek Valley	
Chalfant	Turtle Creek Valley	
Churchill	Turtle Creek Valley	
East McKeesport	Turtle Creek Valley	9/09/2004
East Pittsburgh	Turtle Creek Valley	
Edgewood	Turtle Creek Valley	
Forest Hills	Turtle Creek Valley	9/15/2004
Monroeville	Turtle Creek Valley	9/14/2004
North Braddock	Turtle Creek Valley	9/21/2004
North Versailles	Turtle Creek Valley	
Penn Hills	Turtle Creek Valley	
Pitcairn	Turtle Creek Valley	
Plum	Turtle Creek Valley	
Rankin	Turtle Creek Valley	
Swissvale	Turtle Creek Valley	9/01/2004
Turtle Creek	Turtle Creek Valley	
Wall	Turtle Creek Valley	9/08/2004
Wilkins	Turtle Creek Valley	9/27/2004
Wilkinsburg	Turtle Creek Valley	
Wilmerding	Turtle Creek Valley	
Elizabeth Borough	Twin Rivers	
Elizabeth Township	Twin Rivers	
Forward	Twin Rivers	
Glassport	Twin Rivers	
Liberty	Twin Rivers	
Lincoln	Twin Rivers	
Port Vue	Twin Rivers	
South Versailles	Twin Rivers	
West Mifflin	Twin Rivers	
White Oak	Twin Rivers	
McKeesport	Twin Rivers	
McDonald	None	

Jurisdiction	Representative COG	Adopted the Plan Yes/No
Sewickley Heights	None	
Sewickley Hills	None	
Ben Avon Heights	None	
Oakmont	None	
Mt. Oliver	None	
Trafford	None	
City of Pittsburgh	None	

Signed adoption resolutions from the participating jurisdictions can be found in Appendix A.

This document, the ***Allegheny County Hazard Vulnerability Assessment and Mitigation Plan***, represents the work of citizens, elected and appointed government officials, business leaders, and volunteers to develop a plan that will serve as a blueprint for protecting community assets, preserving the economic viability of the community, and saving lives. Endorsed by the Federal Emergency Management Agency (FEMA), the hazard mitigation planning process and the plan will help the County become more disaster resistant.

The hazard mitigation planning process consisted of:

- Public involvement through meetings and workshops with community representatives;
- Identification of hazards that could affect the County;
- Assessment of the County's vulnerability to these hazards in terms of the number and types of structures and critical facilities affected;
- Identification of mitigation actions that can reduce the risk from these hazards; and
- Development of an implementation strategy identifying roles and responsibilities.

No plan can succeed without the support of the community. Because of the diversity of interests in the County and participating jurisdictions, the Allegheny County Hazard Mitigation Planning Committee, established by the County Executive, encouraged public input throughout the planning process, allowing citizens a voice in the decisions that will affect their future.

Section One: Introduction and Planning Process provides a brief explanation of the impetus behind this plan, provides general information about Allegheny County, and describes the process Allegheny County undertook to complete this plan.

Section Two: Hazard Identification identifies all types of hazards that can affect Allegheny County and determines those that are most likely to impact the County. The most significant hazards are profiled and addressed in detail in the plan.

Section Three: Hazard Profiles defines hazards in terms of their previous events, likelihood of occurrence, physical characteristics, and the potential severity of such an occurrence. A hazard profile is developed to determine the frequency or probability of future events, the characteristics of the hazard as it occurs in the County, including its severity and factors in the County that may exacerbate the severity. The hazards addressed in this plan include;

- Flooding;
- Landslides;
- Hazardous Materials Incidents;
- Mine Subsidence;
- Severe Weather; and
- Wildfires.

Section Four: Vulnerability Assessment identifies the effects of a natural or manmade hazard event by estimating the exposure of people, buildings, and infrastructure to hazardous conditions. The assessment allows the County and its municipalities to focus attention on areas most likely to be damaged or most likely to require early response activity during a hazard event, helping to set mitigation priorities.

Depending upon the data available, a vulnerability assessment can involve counting the number of structures or people in the path of potential hazards or describing what these hazards can do to physical, social, and economic assets. Each hazard is discussed in terms of its potential impact on the community; including the types of structures and infrastructure that may be damaged or cause further harm.

Section Five: Mitigation Goals and Objectives present goals and objectives to guide mitigation activities associated with the identified hazards.

Section Six: Alternative Mitigation Actions identifies and evaluates alternative actions to address the identified vulnerability to natural and manmade hazards and to achieve the goals and objectives of the plan.

Section Seven: Mitigation Plan and Implementation Strategy contain prioritized actions accompanied by details about the responsible organizations, estimated costs, possible funding sources, and the timeline for implementation. This section concludes with a discussion of a proposed program of periodically monitoring, evaluating, and updating the plan; this discussion recommends establishing a permanent Hazard Mitigation Committee to effectively lead the implementation of the plan and continuation of the hazard mitigation planning process.

The Allegheny County Department of Emergency Services would like to acknowledge and thank the following individuals and organizations who contributed to the completion of this plan:

Task Force Members: Harry Litman, Dan Lynch, Victor Roque, Bill Myer, Alex Sciulli, Katherine Henderson, Linda Kelly, Ellen Kight, John Java, Kathleen Criss, Rob Jones Sr., Gary Ciampanelli, Edward Dudek, Myron Rickens, William Smith, Jeffrey Wess, and Chuck Rodger.

COG directors: Thomas Benecki, Wayne Roller, George Scarborough, John Jakiela, Lou Gorski, George Tkach, Norine Kelly, John Palyo / Rosemary Bradley and Raymond DeMichiei, City of Pittsburgh.

County Steering Committee representatives: Bruce Dixon (County Health), Tom Donatelli (Public Works), Andy Baechle (County Parks), James Frank (GIS Director), Dennis Davin / Howard Schubel (Economic Development), Marc Cherna / Rich Venezia (Human Services) and Robert Full and Dennis Narey (Emergency Services).

Other contributors were Judy Neelan, Chris Ruppen, John Harper, and Gene Vaskov of the Pittsburgh Geological Society; Richard J. Kane of the National Weather Service; Edward B. Feigel of the Allegheny County Conservation District, Susan Parker; and the many, many flood and landslide victims and residents of numerous municipalities throughout Allegheny County.

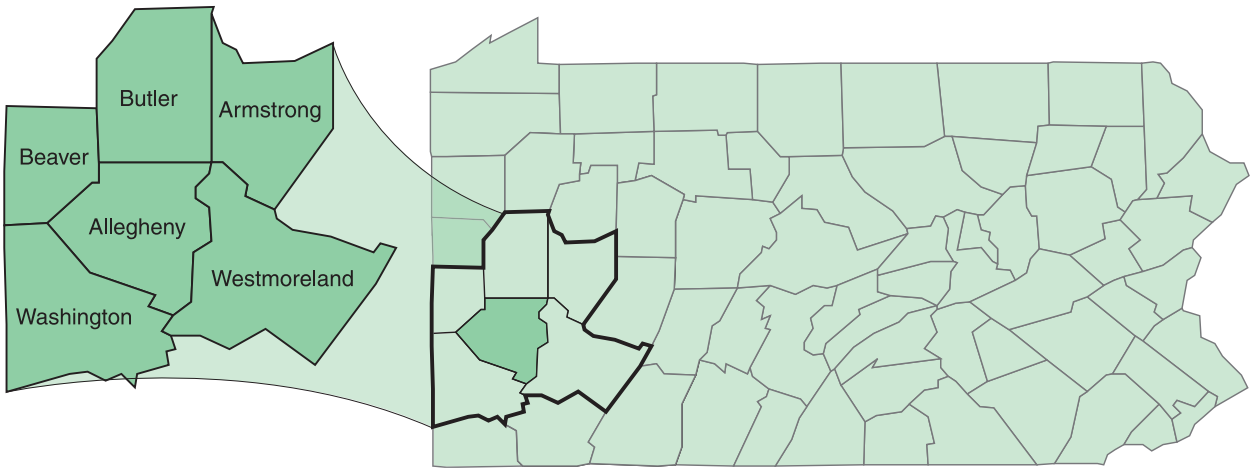
PURPOSE

Across the United States, natural and manmade disasters have led to increasing levels of deaths, injuries, property damage, and interruption of business and government services. The time, money, and efforts needed to recover from these disasters exhaust resources, diverting attention from important public and private programs. Allegheny County, Pennsylvania, is no exception with 12 presidential disaster declarations and 24 Governor's Proclamations of Disaster Emergency since 1954. Emergency management personnel in Allegheny County recognized the impact of disasters on their communities and concluded that proactive efforts needed to be taken to reduce the impact of natural and manmade hazards.

Accordingly, the Allegheny County Hazard Mitigation Planning Committee - composed of county and business leaders, the local Councils of Governments (COGs) as well as state and federal representatives - has sponsored and prepared this *Allegheny County Hazard Vulnerability Assessment and Mitigation Plan*. The Plan is the result of efforts by Allegheny County to develop a pre-disaster multi-hazard mitigation plan that will not only guide the County toward greater disaster resistance, but will respect the character and needs of the local communities. In addition, this plan will lay the groundwork for future mitigation planning and will demonstrate the County's long-term commitment to hazard mitigation principles.

To maintain eligibility for federal aid for technical assistance and post-disaster funding, local jurisdictions must comply with the Disaster Mitigation Act of 2000 (DMA 2000) and its implementing regulations (44 CFR Section 201.6, published February 26, 2002). The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been prepared to meet the Federal Emergency Management Agency (FEMA) and Pennsylvania Emergency Management Agency (PEMA) requirements for funding and technical assistance from state and federal hazard mitigation programs.

ABOUT ALLEGHENY COUNTY

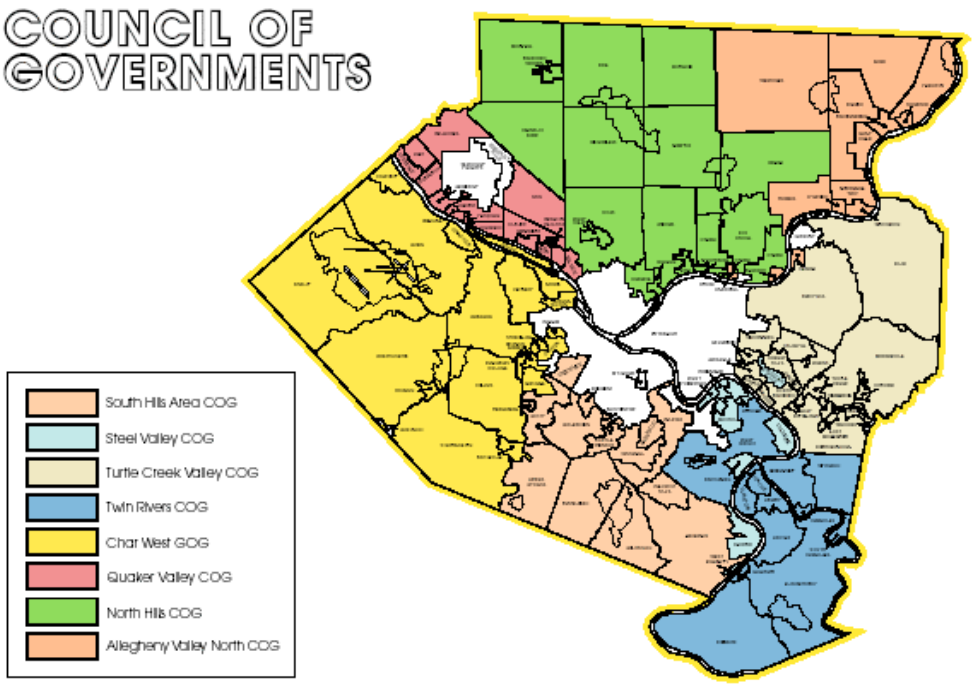


Allegheny County is a large, urban County located in southwest Pennsylvania. It is bordered by Butler County to the north, Armstrong County to the northeast, Westmoreland County to the east, Washington County to the southwest and Beaver County to the northwest. The 2000 population of the county was 1,281,666; a decrease of 4% from the 1990 population of 1,336,449. The City of Pittsburgh is the largest of the county's 130 municipalities with 334,563 residents and a land area of 58 square miles. See Plate 1 for a base map of Allegheny County.

There are eight Councils of Government (COGs) in the County, each containing 9 to 20 member municipalities, which are local planning organizations that help the municipalities organize

and/or take action on various issues that arise in the County. The eight COGs are: Allegheny Valley North, Char West, North Hills, Quaker Valley, South Hills Area, Turtle Creek Valley, Steel Valley and Twin Rivers. The City of Pittsburgh is not in a COG, but in many respects provides similar functions for the many neighborhoods in the City.

Figure 1.1: Allegheny County COGs



The county is 730 square miles in size and is known for the three rivers that flow through the County and meet in Pittsburgh - the Allegheny, the Monongahela, and the Ohio. Early in the 19th century, the area became one of the key manufacturing areas in the United States. Pittsburgh's proximity to large coal deposits and river transportation led the city to become one of the largest steel producing cities in the world and the largest inland port in the nation, which it remains today. However, the historic actions of locating industrial and other large facilities next to rivers has resulted in many important facilities being located in the floodplain, increasing the County's vulnerability to flooding and other hazards.

As with most communities, Allegheny County has dealt with changes over time in its economic and physical environment. In recent times the most notable situation was the region's response to the steel industry decline; including the development of retraining programs, new industry incubators, and university engagement in entrepreneurial activities, including the development of a biotech industry. The region is currently home to a number of large companies, including the Heinz/Del Monte Corporation, Alcoa, Bayer Corporation, PPG Industries, Mellon Bank, PNC Bank, US Airways and US Steel. Allegheny County also contains world-class universities such as Carnegie Mellon, Duquesne and the University of Pittsburgh, as well as several major cultural destinations, including the Andy Warhol Museum, the Carnegie Museum of Art, the Carnegie Museum of Natural History, and the Pittsburgh Symphony Orchestra and is home to the black and gold Pittsburgh Steelers, Pirates and Penguins.

Today the major economic sectors (listed by percent of people employed in each sector) are: educational, health, and social services (24%); retail trade (12%); professional, scientific, administrative and waste management services (11%); and manufacturing (9%).

Despite improvements in economic and environmental conditions, Allegheny County has suffered huge losses in the past due to flooding, and has been impacted as well by other hazards. This plan looks comprehensively at what Allegheny County can do to protect and minimize new and existing development from damage due to disasters.

HAZARD MITIGATION PLANNING PROCESS

Hazard mitigation is any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards (FEMA, 2003). A hazard mitigation plan is a plan that identifies actions a community can take to reduce or eliminate the loss of life and property damage that results from natural and manmade hazards. Pre-disaster mitigation actions are taken in advance of a hazard event and are essential to breaking the typical disaster cycle of damage, reconstruction, and repeated damage and are a component of comprehensive planning that can help create a safe and sustainable community.

On October 30, 2000, the President signed into law the Disaster Mitigation Act of 2000 (DMA 2000). This act mandates that all states and local governments must have DMA 2000-consistent hazard mitigation plans approved by the Federal Emergency Management Agency (FEMA) by November 1, 2004, to maintain eligibility for certain types of federal disaster assistance funding. The Commonwealth of Pennsylvania's Emergency Management Agency (PEMA) has a significant role in the DMA 2000 implementation process and has chosen to seek compliance with the act through the development of plans at the county level. In response, the Allegheny County Department of Emergency Services undertook the process of developing a county-wide hazard mitigation plan.

It is important to note the distinction between hazard mitigation planning and emergency response planning. Hazard mitigation planning is identifying community policies, actions, and tools for implementation in the long term that result in a reduction of risk and potential for future losses BEFORE a disaster hits. Hazard mitigation plans are continually applied by the governing body to development decisions, and the actions described in a mitigation plan are implemented on an ongoing basis, as resources and local politics allow. Emergency response planning is done to minimize the impacts of a disaster and entails the development of things such as evacuation plans, hazardous material response and containment plans, and plans for the provision of basic services.

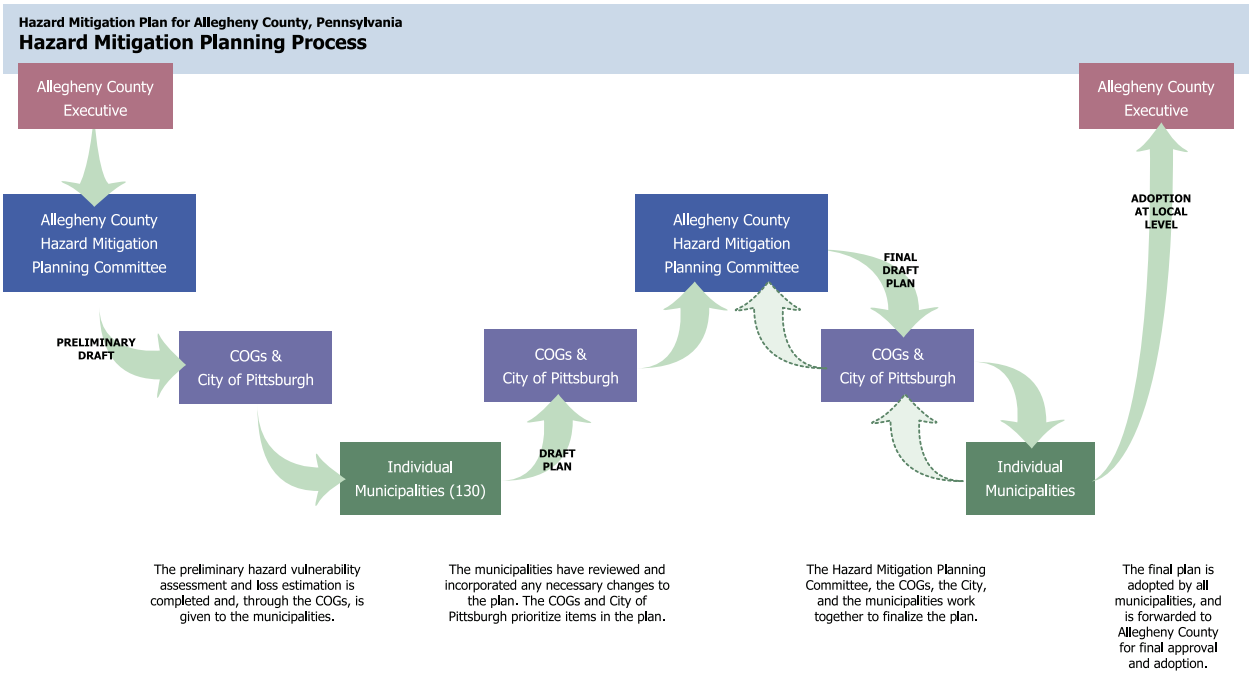
This plan addresses mitigation actions and outlines actions Allegheny County can take to prevent or minimize damage from disasters. Emergency response planning is important, however, and for some of the hazards identified in this plan, it is hard to mitigate their impacts, and having a good emergency response plan is the best way to deal with them (e.g., hazardous materials incidents).

MULTI-JURISDICTIONAL APPROACH

Allegheny County undertook an intensive multi-jurisdictional approach to involve all 130 municipalities in the planning process while preparing its hazard mitigation plan. Because of the large number of municipalities within the County, it was logical and in the best interest of the municipalities for the local Councils of Governments (COGs) to play an integral role in plan development and to serve as intermediaries between the County and the individual municipalities. The exception is the City of Pittsburgh, which addressed neighborhood concerns and functioned in a fashion similar to the COGs. Other non-COG municipalities were encouraged to seek the assistance of neighboring COGs. With respect to DMA 2000 requirements, municipality is used interchangeably with jurisdiction throughout this plan and is considered equivalent, since the DMA requirements reference jurisdictions.

The project consultants, working in concert will all these groups, provided information to facilitate effective and efficient use of the local resources to gain more detailed information about risks and capabilities, and a sense of what community members thought were the priorities for the plan's recommendations. The resulting *Vulnerability Assessment and Hazard Mitigation Plan* recommendations were communicated back through the COG and City of Pittsburgh Planning Committees for consideration by the Hazard Mitigation Planning Committee, including input from the varying perspectives of the six Task Forces. The Executive Committee took into consideration all the information provided at the grass roots level in the development of the *Final Hazard Vulnerability Assessment and Mitigation Plan*. The final plan was reviewed by all parties involved and the planning process fostered an interactive process which allowed for discussion and negotiation in the production of the final plan.

Figure 1.2: Summary of Hazard Mitigation Planning Process



ALLEGHENY COUNTY HAZARD MITIGATION PLANNING TEAM

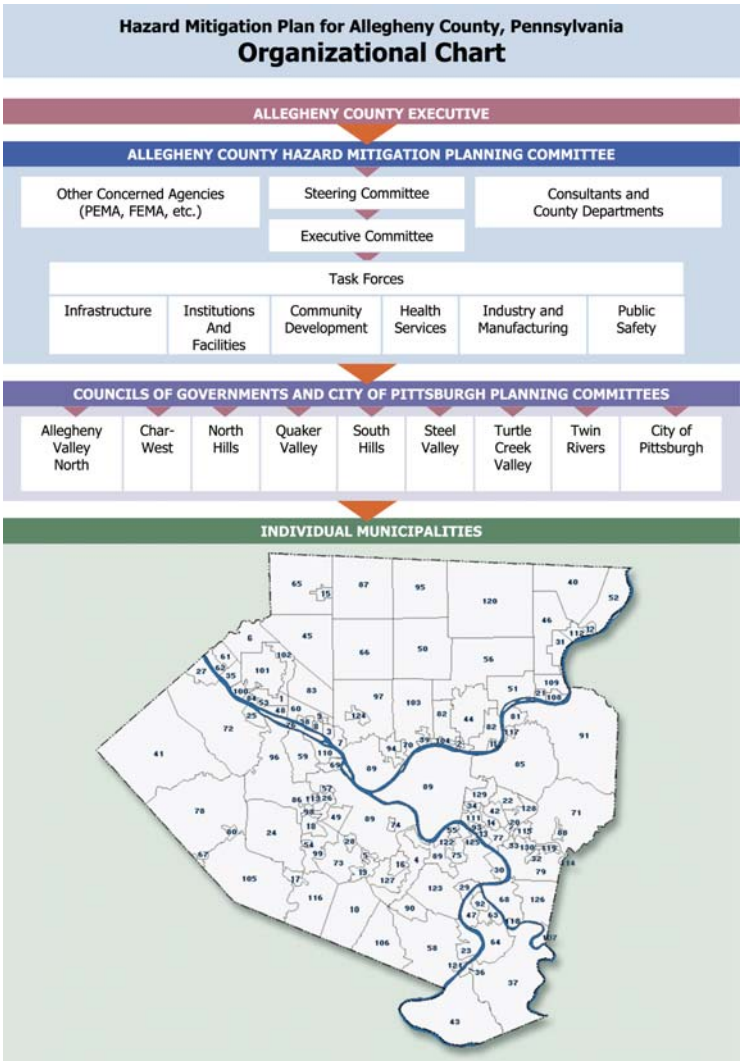
In 2001, the Allegheny County Department of Emergency Services (ACES) was awarded a hazard mitigation planning grant by the Pennsylvania Emergency Management Agency (PEMA). After receiving the grant, ACES formed the Allegheny County Hazard Mitigation Steering Committee, which contracted the services of URS Corporation (URS) to assist in preparing the plan.

A Project Initiation Meeting was held on September 23, 2002, and was attended by the County Hazard Mitigation Steering Committee (consisting of seven County department heads or representatives), PEMA representatives, and URS planners. The Steering Committee decided to create several additional committees to work with the 130 communities in Allegheny County and ensure that these communities had adequate input into the Hazard Mitigation Plan. As such, the Allegheny County Hazard Mitigation Planning Committee was formed. This committee includes a Steering Committee, Executive Committee, several Task Forces, FEMA and PEMA representatives, other interested county agencies, local COG representatives, and URS planners.

In addition there was a separate working group, the Councils of Government and City of Pittsburgh Planning Committee, which worked in cooperation with the Allegheny County Hazard Mitigation Planning Committee. This working group had the majority of the responsibility for interacting with the local communities. The COG Directors and a representative from the City of Pittsburgh worked directly with each of their constituent communities and neighborhoods respectively, to ensure that all interested citizens could contribute to and participate in development of the hazard mitigation plan. In addition to the meetings described below (see description of public involvement), each of the COGs and City of Pittsburgh held several meetings on their own and brought the results and work products from these meetings to the main working meetings.

To undertake such a regional planning effort, the County needed to involve its member municipalities since only they have the legal authority to enforce compliance with land use planning and development issues, due to the local government system established in the Commonwealth of Pennsylvania.

Figure 1.3: Planning Committee Organizational Chart



PUBLIC INVOLVEMENT

Due to the large population and number of municipalities in Allegheny County, public involvement was accomplished by working through the local COGs and City of Pittsburgh. The Allegheny County Hazard Mitigation Planning Committee (ACHMPC) hosted a series of working meetings during 2002-2004 to educate stakeholders about their risks, involve them in identifying issues, and educate them about alternative mitigation actions.

In addition, each COG and the City of Pittsburgh (hereafter referred to as the City) held their own public meetings during which they solicited input into the development of the plan. They were responsible for hosting and advertising the public meetings, as well as incorporating the public input into their overall COG/City work products; these work products were brought to the meetings hosted by the ACHMP Committee.

This form of public involvement fostered the development of a local planning infrastructure that will continue after the plan is complete. Like many communities, Allegheny County has limited resources to devote to long-term mitigation planning so it was essential that the COGs and City establish their own coordinated planning framework. The integration of these participants has helped to create a "culture" of mitigation in Allegheny County that will persist long after the publication of the plan, providing the institutional infrastructure for future refinements of the County's mitigation strategy. In this type of planning process, all participants have an equal voice in creating a more disaster resistant Allegheny County.

The ACHMPC Meetings were held on the following days and are summarized as follows:

- September 23, 2002 - Project Initiation Meeting; this meeting was attended by several County Department Heads, PEMA Representatives (including the State Hazard Mitigation Officer), and URS planners. The project was introduced and URS explained DMA 2000 requirements. The various planning committees, planning process, and project timeline were established.
- November 22, 2002 - Planning Committee Meeting; attended by COG and City representatives, County Department Heads, PEMA Representatives, and URS planners. The hazard mitigation planning process was explained in detail. PEMA gave a presentation on DMA 2000 requirements and explained why completing a hazard mitigation plan is important.
- February 5, 2003 - Planning Team Workshop; attended by COG and City representatives, non-COG municipality representatives (local municipalities which have elected not to be part of a COG), County Department Heads, PEMA Representatives, and URS planners. The hazard mitigation planning methodology and work-in-progress results for the draft hazard identification and vulnerability assessment were presented by URS. A brief training session was given on the requirements for building the mitigation planning team and involving local communities in the planning process. Sample field verification worksheets and an initial capability assessment questionnaire were distributed.
- February 24-25, 2003 - COG and City of Pittsburgh Planning Workshop; attended by several representatives from each of the COGs, the City, non-COG municipalities, County Representatives, and URS planners.

  The same information was covered on both days, but the session was divided into two days to make sure that everyone interested could attend one of the days. During these

two days URS presented the results of the draft hazard vulnerability assessment and preliminary mitigation plan to the COGs and City.

The COGs and City were given materials and instructions on how to best review and provide feedback on the results. Information was also presented on how to select appropriate mitigation actions for the identified vulnerabilities. Preliminary goals and objectives were established.

At the end of the working meeting, all of the COGs and the City were provided with a draft hazard vulnerability assessment and preliminary mitigation plan, including several maps, a binder containing detailed vulnerability assessment information including draft maps and tabulated data for the vulnerable areas in the County, and a bound document with information and resources on hazard mitigation planning. The COGs and City were responsible for disseminating this information to their local municipalities and receiving public input on the work products.

- March 13, 2003 - Executive Committee and Task Force Briefing; attended by members of the Executive Committee and Task Force Chairs, as well as URS planners. This meeting provided an overview and discussion of the hazard mitigation planning process, a review of the work accomplished to-date, and an outline of the next steps.

- April 14, 2003 - COG and City Working Meeting; attended by ACHMPC Representatives, COG and City Representatives, and URS planners. The COGs and City brought questions and comments from their communities on the planning work completed to-date. The COG and City deliverable to URS was clarified (namely how to format the field verification data gathered and any feedback they received). Corrections to the maps were noted and non-participating municipalities were discussed.
- April 15, 2003 - Executive Committee Informational Meeting; attended by many people representing the non-profit, public service, community development, private institution, utility, armed services, and port authority sectors in Allegheny County, as well as members of the Steering Committee and URS planners. Participants reviewed the draft hazard vulnerability assessment and mitigation plan, work accomplished to-date by the COGs and City, and discussed the roles and responsibilities of the Task Forces. Initial results of the vulnerability assessment tabulated on a county-wide perspective were distributed for review.
- July 1, 2003 - COG and City Working Meeting; attended by COG Directors, Allegheny County Representatives, and URS planners. Reviewed the COGs and City work-to-date on their review and field verification of the vulnerability assessment. The COGs had several specific questions about situations they were encountering and the County and URS addressed these questions.
- September 15, 2003 - COG and City Working Meeting; attended by COG Directors, City Representatives, Allegheny County Representatives, and URS planners. Draft mitigation recommendations for the identified vulnerabilities were handed out to the COGs and City for their review. Those who had completed their capability assessment questionnaires turned them in to URS and the rest were instructed to mail them to URS.

- March 11, 2004 – Meeting with the entire Allegheny County Emergency Management Staff and the Counties Geographic Information System Manager. The purpose of the meeting was for plan review and the development of GIS mapping strategies.
- March 22, 2004 – The Hazard Mitigation Steering Committee met with the consultant to review draft version on the plan and establish a time table for final draft version.
- April 13, 2004 - Meeting with all of the Council of Governments to review the final draft version of the plan and to obtain feedback as to how their input was translated and incorporated into the document.
- April 13, 2004 – Subcommittee members of the Executive Committee met to review the plan and incorporate feedback from their areas of expertise.
- August 8, 2004 – Meeting with the Council of Governments, Steering Committee Members and the PEMA Hazard Mitigation Officer to finalize strategy for final plan review and adoption.
- September 17, 2004 - Heavy rains associated with the remnants of hurricane Ivan caused the most extensive and sever flash flooding in recent Allegheny County history, resulting in a Presidential Declaration of Disaster.
- September 17, 2004 to present – On-going coordination with Federal and State Agencies and municipalities for short and long term mitigation efforts, including encouraging municipalities to apply for Hazard Mitigation Program Grant Funds. (see 4/12/05 meeting sign-in sheet in Appendix B-1 as an example of this coordinated effort)
- April 6, 2005 – Steering Committee Members met with the PEMA Hazard Mitigation Officer who indicated preliminary acceptance of the current final draft version of the plan as meeting the basic requirements as set forth in the Disaster Mitigation Act of 2000.
- August 1-31, 2005 – Published legal notice to the general public in the 2 major newspapers in Pittsburgh soliciting public comment on the final draft version of the Hazard Mitigation Plan which was available both on the Allegheny County Web Site and in hard copy. (see legal notices included in Appendix B of this document)

  The ACHMPC informed participants about these meetings through various means, and the COGs and City advertised their internal public meetings through their regular newsletters, letters, and newspaper ads.

Attendance Sheets from the meetings described above are located in Appendix B of this report.

REGULATORY COMPLIANCE

The planning process and the plan itself allow Allegheny County and its participating municipalities to establish a foundation for future mitigation activities, capitalize upon implementation resources and opportunities, and implement life- and property-saving mitigation measures.

The plan components also address the local and multi-jurisdictional hazard mitigation planning requirements of the Disaster Mitigation Act of 2000. The table in Appendix C - PEMA Crosswalk, indicates the sections of the plan that address specific requirements in the Interim Final Rule (44 CFR Section 201.6), the regulation implementing DMA 2000.

The first step in developing a hazard mitigation plan is to identify the hazards that can affect the planning area. Utilizing many sources of information, URS identified the hazards that could affect Allegheny County, and the ACHMPC, the COGs and City representatives selected the hazards that the plan would address. Many hazards initially identified (tsunamis, coastal storms and erosion, avalanches, and volcanoes) pose no threat to the County and were not investigated further. The following hazards were identified for further investigation:

- Flooding
- Landslides
- Hazardous Materials Incidents
- Mine Subsidence
- Severe Weather (tornadoes and winter storms)
- Wildfires
- Hurricanes
- Major Aviation Incidents
- Dam Failures
- Drought
- Earthquakes
- Nuclear Facility Incidents
- Terrorism

The different national, regional, and local sources of information used included interviews, websites, published documents, databases, and maps. Some of the specific sources included:

- 1995 Allegheny County Hazards Vulnerability Analysis
- PEMA Disaster Update
- Pittsburgh Post-Gazette Newspaper
- Allegheny County Flood Insurance Study (FIS)
- Allegheny County Flood Insurance Rate Map (FIRM)
- South Hills Area COG - Flood Mitigation Plan
- Environmental Protection Agency (EPA)
- Allegheny County Emergency Management Incident Reports
- Commodity Flow Study for Allegheny County
- The Tornado Project
- U.S. Forest Service (USFS)
- Pennsylvania State University (PSU)
- National Oceanic & Atmospheric Administration (NOAA)
- Pennsylvania Department of Conservation and Natural Resources (DCNR)
- *Floodplain, Land Use, Population and Damage Estimates Report*, Volume X, Uniform Region 10 (1974)
- *The Allegheny River* (1938)
- *Flood Preparedness 1977: A Pittsburgh Area Study (*1977*)*

During the hazard identification process, it was determined that some of the identified hazards pose little danger to the County because of a very low probability of occurrence; for example, earthquakes. There are also some hazards, particularly manmade ones such as terrorism, aviation incidents, or dam breaks, for which little can be done to mitigate in advance for their effects. These types of hazards are best addressed by improved response and recovery planning; for example, maintenance plans for dams or emergency management plans. As explained in Section One, such issues are not in the purview of a hazard mitigation plan. Table 2.1 summarizes the findings of the hazard identification process. The hazards are ranked high,

medium, or low for two factors - relative probability of occurrence and relative ease of mitigation – compared to other hazards occurring in the County. If a hazard ranks low or medium for relative probability of occurrence, and low for relative ease of mitigation, it is not addressed in the mitigation plan.

Table 2.1: Hazard Identification Process

Hazard	Sources Used for Identification	Relative Probability of Occurrence	Relative Ease of Mitigation	Disposition
Flooding	• 1995 Allegheny County Hazards Vulnerability Analysis • PEMA Disaster Update • List of declared disasters on PSU website • NOAA • Pittsburgh Post-Gazette newspaper • Allegheny County FIS • Allegheny County FIRM • South Hills Area COG - Flood Mitigation Plan • *Floodplain, Land Use, Population and Damage Estimates Report*, Volume X, Uniform Region 10 (1974) • *The Allegheny River* (1938) • *Flood Preparedness 1977: A Pittsburgh Area Study* (1977)	High	High	Addressed in the plan
Landslides	• 1995 Allegheny County Hazards Vulnerability Analysis • PEMA Disaster Update • U.S. Geological Survey (USGS)	High	High	Addressed in the plan
Hazardous Materials Incidents	• 1995 Allegheny County Hazards Vulnerability Analysis • PEMA Disaster Update • List of declared disasters on PSU website • EPA • ACES Incident Reports • Commodity Flow Study for Allegheny County	High	Low	Addressed in the plan
Mine Subsidence	• 1995 Allegheny County Hazards Vulnerability Analysis • PEMA Disaster Update	High	Low	Addressed in the plan
Severe Weather o Tornadoes o Winter Storms	• 1995 Allegheny County Hazards Vulnerability Analysis • PEMA Disaster Update • The Tornado Project • NOAA	High	Medium	Addressed in the plan
Wildfires	• 1995 Allegheny County Hazards Vulnerability Analysis • PEMA Disaster Update • USFS	Low	High	Addressed in the plan
Hurricanes	• PEMA Disaster Update	Low	High	Addressed in the plan as part of flooding
Major Aviation Accidents	• 1995 Allegheny County Hazards Vulnerability Analysis	Medium	Low	Not addressed in the plan.
Dam Failures	• 1995 Allegheny County Hazards Vulnerability Analysis • PEMA website	Medium	Low	Not addressed in the plan.
Drought	• 1995 Allegheny County Hazards Vulnerability Analysis	Low	Low	Not addressed in the plan.
Earthquakes	• 1995 Allegheny County Hazards Vulnerability Analysis • National Seismic Hazard Mapping Project map, USGS	Low	Low	Not addressed in the plan
Nuclear Facility Incidents	• 1995 Allegheny County Hazards Vulnerability Analysis	Low	Low	Not addressed in the plan.

Table 2.1: Hazard Identification Process				
Hazard	**Sources Used for Identification**	**Relative Probability of Occurrence**	**Relative Ease of Mitigation**	**Disposition**
Terrorism	• 1995 Allegheny County Hazards Vulnerability Analysis • Anecdotal and personal accounts of local events related to September 11, 2001	Low	Low	Not addressed in the plan.

HAZARDS NOT ADDRESSED IN THIS PLAN

As noted above, the hazards that were ranked low or medium for relative probability of occurrence, and low for relative ease of mitigation, are not addressed in this mitigation plan. For those hazards not addressed in the plan, the justification for the ranking is summarized below by hazard:

Major Aviation Accidents

The 1995 Allegheny County Hazard Vulnerability Analysis has a short paragraph about air transportation. It says that in addition to the Pittsburgh International Airport, Allegheny County has four other commercial and three personal use airports. Also, there are numerous heliports in the county. There has been one significant incident on September 8, 1994, US Air Flight #427 crashed in neighboring Beaver County. Allegheny County and Pittsburgh International Airport personnel and equipment were used to aid Beaver County in the response and recovery efforts related to the incident. These facts led to the "medium" ranking for the probability of occurrence. Also, efforts to reduce the effects of aviation incidents fall in the category of emergency management; therefore the hazard is ranked as "low" for relative ease of mitigation.

Dam Failures

The 1995 Allegheny County Hazard Vulnerability Analysis has a list of 27 dams in the County and 11 dams outside the County whose collapse could affect the County. It is stated that there have been no dam failures in Allegheny County. The "Dam Safety and Encroachment Act" provides for the regulation of dams and reservoirs in the Commonwealth. The Allegheny County Emergency Management Agency (ACES) maintains a copy of the warning and evacuation plan, generated in accordance with the Act, for each applicable dam in the County. The section concludes with "… the chances of dam failure occurring in Allegheny County should remain low with continued maintenance of all dams in the county." (ACES, 1995). Therefore, dam failure was ranked as having a medium probability of occurrence, to account for the presence of high hazard dams and approximately 1,167 buildings in the high hazard dam inundation areas, according to PEMA. Also, efforts to reduce the effects of dam failure (e.g., monitoring, emergency notification procedures, development of evacuation plans, development of plans for flood fighting to control degree of flooding, etc.) fall under the category of emergency management; therefore the hazard is ranked as low for ease of mitigation.

Drought

Allegheny County experienced drought conditions in March of 1971 and was in a drought "watch to warning stage" in 1991-1992 and 1993. According to the 1995 Allegheny County Hazard Vulnerability Analysis, the majority of the County's raw water supply is obtained from the Allegheny, Monogahela, Ohio, and Youghiogheny rivers, which normally maintain sufficient quality and quantity to fulfill the County's requirements. Major shortages could occur only during periods of low winter snowfall, followed by diminished rainfall in spring and summer. Therefore

the hazard is ranked as low for the probability of occurrence. The Vulnerability Analysis further explains that inter-connections between water supply systems in various parts of the County have been developed. Contingency plans for water usage reduction have been developed or are in stages of development by the major water suppliers in the County. Because of a low probability of occurrence and because most efforts to be prepared for a drought fall in the category of emergency management activities, drought is ranked as low for ease of mitigation.

Earthquakes
Research about the history of earthquakes in Allegheny County does not reveal any epicenters in the County. The 1995 Allegheny County Hazard Vulnerability Analysis also confirms that there have been no epicenters in the County. Areas in the County have felt tremors from earthquakes whose epicenters were located outside the County on two occasions, in 1980 and 1986, and there were no substantial property damages or injuries from the events. The Vulnerability Analysis concludes that earthquakes pose a minor threat to Allegheny County and that it appears that the probability of occurrence will remain very low. Therefore, earthquakes are ranked as having a low probability of occurrence. Such a low perceived risk does not warrant expensive retrofitting or any other mitigation action; therefore the hazard is also ranked as low for ease of mitigation.

Nuclear Facility Incidents
According to the 1995 Allegheny County Hazard Vulnerability Analysis, the County is not located within the 10-mile radius Emergency Planning Zone (EPZ) of the Beaver Valley Power Station, but the entire county is located within the 50-mile radius of facility's ingestion exposure pathway. This means that, should an accident occur at the plant, Allegheny County may receive some radioactive contaminant in very small amounts. Federal law establishes the criterion for determining the adequacy of offsite planning and preparedness. More information can be readily accessed on the FEMA website at http://www.fema.gov/hazards/nuclear/radiolo.shtm. Since such an event has never affected the County before, and the efforts to manage response to such an event fall under the category of emergency management, the hazard is ranked as low for both the probability of occurrence and for ease of mitigation.

Terrorism
Following several serious international and domestic terrorist incidents during the 1990s and early 2000s, citizens across the United States paid increased attention to the potential for deliberate, harmful actions of individuals or groups. The term "terrorism" refers to intentional, criminal, malicious acts but the functional definition of terrorism can be interpreted in many ways. According to FEMA, terrorism encompasses intentional, criminal or malicious acts involving Weapons of Mass Destruction (WMDs), including biological, chemical, nuclear, and radiological weapons; arson, incendiary, explosive, and armed attacks; industrial sabotage and intentional hazardous material releases; and cyber-terrorism (attacks via computerized means).

Emergency management officials all over the country are working to prevent and mitigate terrorist activities. Detailed information cannot be provided as part of this plan due to security reasons. Since no major events have affected the County, and the efforts to plan for response to such events fall under the category of emergency management; the hazard is ranked as low for the probability of occurrence and for ease of mitigation.

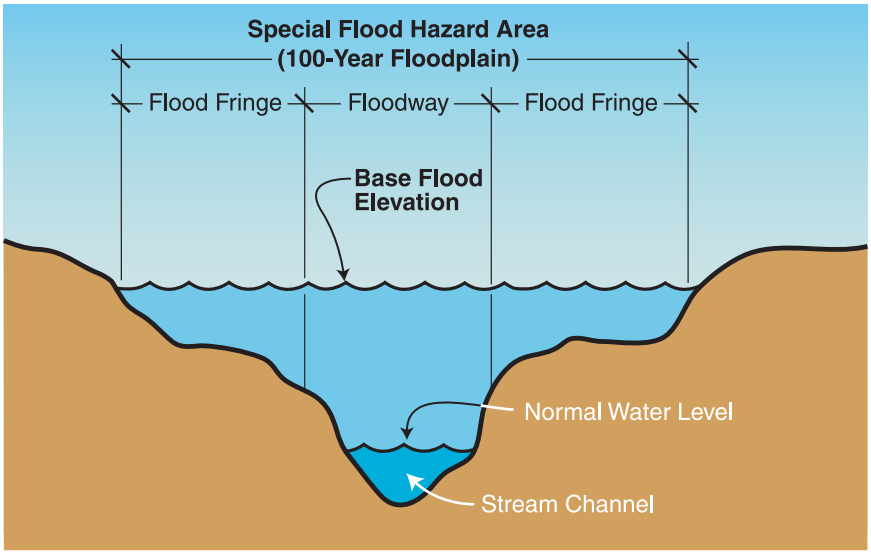
SUMMARY

The hazards addressed in this mitigation plan are those that comprise a higher level of risk relative to other hazards that can affect Allegheny County. They include flooding, landslides, hazardous materials incidents, mine subsidence, severe weather (including tornadoes and winter storms), and wildfires. Section Three profiles these hazards.

OVERVIEW

A flood is a natural event for rivers and streams. For inland areas such as southwest Pennsylvania, excess water from snowmelt or rainfall accumulates and overflows onto the stream banks and adjacent floodplains. As illustrated in Figure 3.1, floodplains are lowlands adjacent to rivers, streams, and creeks that are subject to recurring floods.

Figure 3.1: Definition Sketch for Floodplains



Source: (FEMA, 2001)

Floods are considered hazards when people and property are affected. Nationwide, hundreds of floods occur each year, making flooding one of the most common hazards in all 50 states and U.S. territories. In Pennsylvania, flooding occurs commonly and can occur during any season of the year from a variety of sources. As such, floods are the most prevalent type of natural hazard in Pennsylvania. Every two to three years, serious flooding occurs along one or more of Pennsylvania's major rivers or streams, and it is not unusual for this to occur several years in succession. When these rivers and streams flood, some of the more isolated communities can be cut off because their main access roads are flooded making them impassible. Most injuries

and deaths from flooding happen when people are swept away by flood currents and most property damage results from inundation by sediment-filled water.

Several factors determine the severity of floods, including rainfall intensity and duration, topography and ground cover. A large amount of rainfall over a short time span can result in flash flood conditions. A small amount of rain can also result in floods in locations where the soil is frozen or saturated from a previous wet period or if the rain is concentrated in an area of impermeable surfaces such as large parking lots, paved roadways, or other impervious developed areas. In addition, although rare, ice jams can cause localized flooding problems.

PREVIOUS OCCURRENCES

Allegheny County has a long history of flooding problems. Since the Allegheny, Monongahela, and Ohio Rivers, along with a large number of their tributaries, are located in Allegheny County, the County has suffered damage from numerous major overbank floods and localized flash flooding. In addition to an historic pattern of development occurring in the floodplain, Allegheny County has steep slopes that allow fast runoff from storms, which exacerbates flooding conditions. There are also several bridges and culverts that get blocked with debris and cause backup flooding during a large storm.

According to the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center, there have been 90 major flood events reported in the county since 1950 (NOAA website, 2004). Table 3.1 lists a few of the most significant flood events that have occurred in Allegheny County in the past few years. See Appendix D for a detailed history of flooding in Allegheny County.

Table 3.1: Significant Flood Events in Allegheny County

Date	Type of Flood Event	Estimated Damages ($)*	Damage Description
September 17, 2004	Flash Flood	100,000,000+	Most wide spread and devastating flash flood in recent history that resulted in a Presidential Declaration of Disaster.
July 22, 2003	Flash Flood	120,000	Little Deer Creek Road in W. Deer Township flooded.
July 18, 2002	Flood	100,000	Flash-flooding in Overbrook section of Pittsburgh. Cars stranded in 4-5 feet of water at intersection of Routes 51 and 88. First-floor flooding in the vicinity.
January 31, 2002	Flood	2,000,000	Ice jams produced flooding along the Youghiogheny River from Boston to McKeesport. Destroyed 210 boat slips at the McKeesport Marina.
August 6, 2000	Flood	10,000,000	51 communities reported some degree of damage; approximately 1,200 homes and 51 businesses were impacted. Street and roadway flooding throughout the county.
February 19, 2000	Flood	5,000,000	31 homes in Elizabeth and W. Elizabeth suffered minor damage, 1 home had major damage. Point State Park, Mon Parking Wharf, and the 10th Street Bypass were forced to close.
July 28, 1999	Flash Flood	1,000,000	Brentwood, Castle Shannon, Mt. Lebanon, Dormont, and W. Elizabeth declared emergencies; many streets, facilities and businesses flooded. Roof, shingle, and siding damage to homes and businesses, some out-buildings destroyed. Port Authority's entire light rail line was disabled due to flooding; 110,000 customers lost power; air traffic at Pittsburgh International Airport was suspended for 4 hours.

Table 3.1: Significant Flood Events in Allegheny County			
Date	**Type of Flood Event**	**Estimated Damages ($)***	**Damage Description**
July 1, 1997	Flash Flood	10,000,000	429 homes, 12 businesses, 2 sewer systems, 1 park, and 13 roads/bridges in Pitcairn, Monroeville, Turtle Creek, and Wilkins Township were impacted; 13 structures in Pitcairn were moved from their foundations. An elementary school in Pitcairn (built over a channelized creek bed) had several walls destroyed. Mudslide at a gas station along Route 22; bridge at the intersection of Routes 130 and 48 was washed out. 1 fatality.
June 19, 1996	Flash Flood	3,100,000	Allegheny River Boulevard in Pittsburgh experienced extensive flooding. Mudslides along Route 51.
January 19, 1996	Flood	9,600,000	650 buildings damaged, many in downtown Pittsburgh sustained extensive basement flooding. 22 cars were submerged, many pleasure boats/barges broke away and were destroyed. Allegheny County Sanitary Authority had to shut down its sewage treatment plant that serves 113 communities. Several hundred people had to be evacuated. Point Park Museum was flooded with 41/2 feet of water.

Source: NOAA, 2004
* Some of the dollar damage estimates are for the entire area affected by the event, including areas outside of Allegheny County.

Table 3.2 details the State and federal disaster declarations granted to Allegheny County after extreme flooding events during the past 40 years.

Table 3.2: Declared Flood Disasters in Allegheny County	
Date	**Type of Declaration**
September, 2004	Governor's Proclamation and Presidential Declaration
May, 2004	Small Business Administration (SBA) Declaration
August, 2000	SBA Declaration
February, 2000	Governor's Proclamation
January, 1996	Governor's Proclamation and Presidential Declaration
May, 1986	Governor's Proclamation and Presidential Declaration
November, 1985	Governor's Proclamation and Presidential Declaration
August, 1984	Governor's Proclamation and Presidential Declaration
June, 1972	Governor's Proclamation and Presidential Declaration
March, 1964	Governor's Proclamation

PROBABILITY OF OCCURRENCE

Floods are described in terms of their extent (including the horizontal area affected and the vertical depth of floodwaters) and the related probability of occurrence. Flood studies use historical records to determine the probability of occurrence for different extents of flooding. The probability of occurrence is expressed in percentages as the chance of a flood of a specific extent occurring in any given year.

A specific flood that is used for a number of purposes is called the base flood, which has a 1% chance of occurring every year. The base flood is often referred to as the 100-year flood since its probability of occurrence suggests it should occur once every 100 years, although this is often not the case. Experiencing a 100-year flood does not mean a similar flood cannot happen for the next 99 years; rather it reflects the probability that over a long period of time, a flood of that magnitude should only occur in 1% of all years.

Smaller floods occur more often than larger (deeper and more widespread) floods. Thus, a 10-year flood has a ten times greater likelihood of occurring than a 100-year flood. Table 3.3 shows a range of flood recurrence intervals and their probabilities of occurrence.

The extent of flooding associated with a 1% probability of occurrence – the base flood - is used as regulatory boundaries by a number of federal, state and local agencies. Also referred to as the special flood hazard area (see Figure 3.1), this boundary is a convenient tool for assessing vulnerability and risk in flood prone communities, since many communities have maps available that show the extent of the base flood.

Table 3.3: Flood Probability Terms

Flood Recurrence Intervals	Chance of Occurrence in Any Given Year
10 years	10%
50 years	2%
100 years	1%
500 years	0.2%

Plate 2 shows the base flood areas (100-year floodplain) in Allegheny County. In addition, FEMA publishes maps of flood prone areas that show the extent and depth of flooding for flood insurance purposes. These Flood Insurance Rate Maps (FIRMs) may be viewed for additional detail on flooding in Allegheny County.

SEVERITY

Several factors determine the extent or severity of floods, including rainfall intensity and duration or volume and rate of snowmelt. Topography and ground cover also contribute to the location and severity of floods; for example, water runoff is greater in areas with steep slopes and little or no vegetative ground cover.

Allegheny County also has several conditions that may exacerbate the effects of floods:

- Steep Slopes: Allegheny County has sloping terrain which can contribute to increased flooding since runoff reaches the receiving creeks, streams, and rivers more rapidly over steeper terrain.
- Obstructions: During floods, bridge abutments can block flood flow and trap debris, damming floodwaters and potentially causing increased flooding upstream.
- Hazardous Materials Facilities: Facilities that handle or store hazardous materials located in the 100-year floodplain present potential sources of contamination during flood events.

LOCATION AND EXTENT

Allegheny County is located in the Ohio, Monongahela, Lower Allegheny, and Youghiogheny River Basins. Overbank flooding of the Monongahela River, including backwater flooding from the Allegheny River, is the principal flooding problem in Allegheny County. Allegheny County has been, and remains, one of the great industrial areas in the U.S. - due in large part to the accessibility of major waterways for transportation of coal, steel, and other products. As such,

substantial development took place and industrial facilities were sited in the 100-year floodplain, which has led to many buildings being flooded.

In addition to riverine flooding, there are many tributaries in the County that have experienced flash flooding and present flash flood hazards.

The following streams / creeks and their tributaries (grouped by Allegheny County warning sector as designated by the County) present a recurring flood threat:

- Northwest Sector - Pine Creek, Girtys Run, Brush Creek, and Little Sewickley Creek
- Northeast Sector - Bull Creek, Deer Creek, Lowries Run and Rawlins Run
- East Sector - Plum Creek, Turtle Creek and Dirty Camp Run / Pitcairn
- Southeast Sector – Sawmill Run, Streets Run, Crooked Run, Long Run, and Peters Creek
- Southwest Sector - Chartiers Creek, Robinson Run, Moon Run, McLaughlin Run, Montour Run and Campbells Run

The Youghiogheny River and Pine Creek have also experienced localized flooding problems due to ice jams. Because of the shallow water and prominent sandbar conditions, the Youghiogheny River has caused flooding in the Boston area of Elizabeth Township and major ice flow damage in the McKeesport area (municipal docks). Just upstream from Boston (in the Coulter area), a massive sandbar can stop flowing ice and cause ice jams. After a period of time, large ice floes will break out of the jam and move downstream where they will again jam at the railroad bridge between Boston and McKeesport. At each jam, water will back up causing shore flooding, and as the jams start to break up and move downstream, they can cause damage to anything built near the shores.

Pine Creek flows from North Park Lake through Hampton Township, Shaler Township, the Borough of Etna and Millvale and into the Allegheny River. On its path to the river, it runs along Route 8 with numerous crossings under Route 8. When ice forms in this stream, it can jam at the numerous turns or narrow spots, causing shoreline flooding.

Plate 3 shows the flood vulnerability for the County and indicates the number of buildings per municipality that are located in the 100-year floodplain.

LANDSLIDES

OVERVIEW

A landslide is the downward and outward movement of masses of rock, earth or debris down a slope, under the force of gravity. The term covers a broad category of events, including

mudflows, mudslides, debris flows, rock falls, rock slides, debris avalanches, debris slides, and earth flows. All of these differ in terms of content and flow.

Several natural and human factors may contribute to or influence landslides. The principal natural factors are topography, geology, and precipitation - either periods of sustained above-average precipitation, specific rainstorms, or snowmelt events. Other elements that determine slope stability are vegetative cover and slope aspect. The principal human activities that can contribute to slope failure include altering the slope gradient, increasing the soil water content, and removing vegetative cover through mining and construction of highways, buildings, and railroads.

PREVIOUS OCCURRENCES

According to the Pennsylvania Department of Conservation and Natural Resources (DCNR), no one really knows how many landslides occur each year in Pennsylvania or how much damage they cause, although there have been a few efforts to determine totals. A 1986 study identified more than 700 recent and active landslides in Allegheny County. U.S. Geological Survey (USGS) landslide inventory maps identify more than 3,000 recent and 12,000 older landslides in Allegheny and Washington Counties (DCNR, 2001). A 1991 list from the Pennsylvania Department of Transportation (PennDOT) showed that there were 226 problem landslides in Allegheny County (Commonwealth of Pennsylvania, 2000).

Landslides are not the type of hazard that receive a disaster declaration since they affect only localized sites. However, a few catastrophic landslide events have occurred in Pittsburgh in the past, include a rockslide in 1942 that buried a bus near Aliquippa, killing 22 people on board. In 1951, excavators for a new office building made an 8-foot deep cut at the base of a hill along Island Avenue in Stowe, triggering a 500-foot wide landslide that destroyed 6 houses and disrupted a streetcar line and utilities. In 1983, a rockslide killed 2 people who were sitting in their cars at a traffic light on Saw Mill Run Boulevard. Figure 3.3 illustrates a rockslide near the Wabash Tunnel. Appendix E has more information about landslides in Pennsylvania.

Figure 3.3: Rockslide at Wabash Tunnel

PROBABILITY OF OCCURRENCE

Since the exact number of previous landslides over a definite time interval is not known, it is not possible to determine a quantitative probability of future occurrence for landslides in Allegheny County. With many landslide events in the past, the presence of areas susceptible to landslides, and increasing human development near hillsides, landslides causing varying levels of damage are likely to continue to occur every year in the absence of mitigation activities.

SEVERITY

Landslides can have potentially devastating consequences in very localized areas. Landslides cause damage to transportation routes, utilities, and buildings and create travel delays and other side effects. Structures or infrastructure built on susceptible land will likely collapse as their footings slide downhill. Structures below the landslide can be crushed. Landslides next to roads and highways have the potential to fall on and damage vehicles or cause accidents.

According to the DCNR website, deaths and injuries due to landslides are rare in Pennsylvania. Most Pennsylvania landslides are moderate to slow moving and damage property rather than people. Almost all of the known deaths due to landslides have occurred when rockfalls or other slides along highways involved vehicles. If residential and recreational development increases on and near steep mountain slopes, the hazard from these rapid events will also increase. Storm-induced debris flows are the only other type of landslide likely to cause death and injuries in Allegheny County.

Property losses due to landslides and associated effects are more common than injuries and deaths. A small landslide in 1990 that involved a broken petroleum pipeline is an extreme example of the costs of related damages. Spilled petroleum products entered a major river, causing city water systems to shut down. The identified costs of repair of this landslide damage, clean-up of the spill, technical investigations, legal and court costs and environmental fines were approximately $12 million. The incalculable costs include lost productivity while people stayed at home because their businesses were closed or to care for children normally in schools that were closed due to lack of water supply, costs for the National Guard to deliver water to neighborhoods, and costs to the pipeline company and its customers due to business loss for several months. Although this example is extreme, associated damages such as this occur with many landslides. A study done by the USGS found that the total public and private costs of landslides in Allegheny County averaged at least $4 million per year from 1970 to 1976 (Commonwealth of Pennsylvania, 2000). Similar accounting for a more recent period is not available. As noted in Section One of this plan, Allegheny County has been experiencing a declining tax base, which can make it harder for residents to recover when they are impacted by a landslide.

LOCATION AND EXTENT

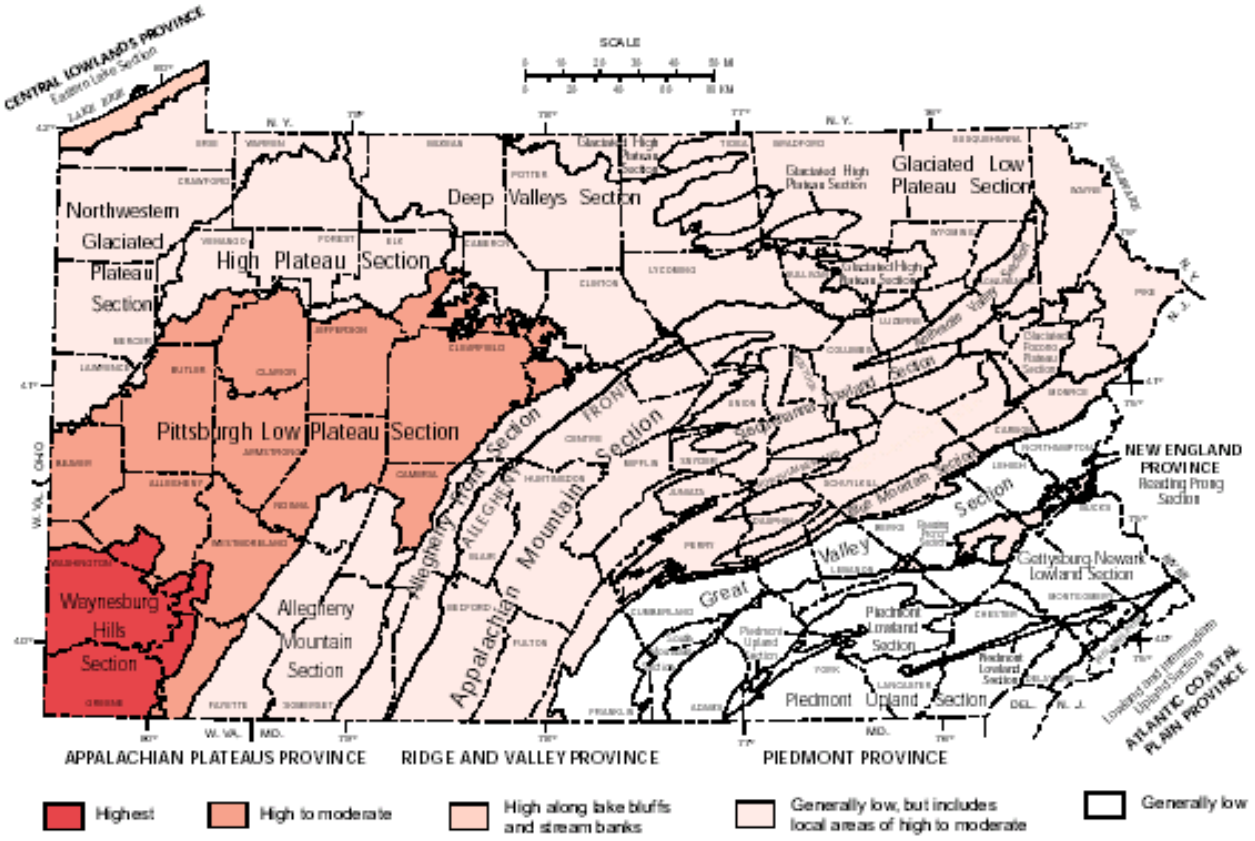
Landslides occur primarily in colluvial (loose) soil and old landslide debris on steep slopes. Steep mountain slopes across the state have experienced debris avalanches associated with extreme rainfall or rain-on-snow events. Glacial and glacial-lake sediments underlie stream bank and lake bluff slumps and other failure areas across the much of the northern part of the state.

According to DCNR, southwestern Pennsylvania has by far the highest concentration of landslides, even though much of the state has susceptible areas. Most major and minor highways have sections cut in rock or soil that can fail. Outside the southwest, high susceptibility areas are smaller and have more varied geology and topography. This can be

confirmed from Figure 3.4 that illustrates the relative landslide hazard susceptibility across the Commonwealth of Pennsylvania. According to the figure Allegheny County has "high to moderate" and "highest" landslide susceptibility in the state.

DCNR website (DCNR, 1997) explains how geologists have studied that a 310-million-year-old landslide in northern Allegheny County slid into the river channel when the sedimentary deposits were young. At the time, southwestern Pennsylvania was a low, flat tropical river delta, draining to the west. These same sediments are now a weak red claystone known as the "Pittsburgh redbeds" which underlie many modern landslide problems predominant in the north-western part of the County.

Figure 3.4: Landslide Hazard Susceptibility in Pennsylvania



Source: Delano and Wilshusen, 2001.

Urban and rural land development increases both the number of landslides and the economic effects of natural slides. Major highway construction with large excavations and fills located in mountainous areas creates potential for many landslides (DCNR, 2001).

In the Pittsburgh area, the major zones of weak rock involved in landsliding are claystones, including many red beds, some of which are located at varying distances below the Pittsburgh coal seam. A stable slope on these claystones may be so modified by human activity as to create problems where none had existed previously (Pittsburgh Geological Society, 1977). In other words, human activity can cause instability in an otherwise stable slope because of the

presence of underlying weak red beds. The location of the red beds is one of the factors considered in the vulnerability analysis done in this plan.

Detailed analysis in the Vulnerability Assessment section of the report identifies the particular areas in Allegheny County that are susceptible to landslides. Plate 4 shows the landslide vulnerability for Allegheny County.

HAZARDOUS MATERIAL RELEASES

OVERVIEW

Hazardous material releases can occur at facilities (fixed sites) or along transportation routes and can cause direct injuries and death, while also contaminating, air, water, and soils. They can occur as a result of human activity, intentional or unintentional, and natural hazards. Natural disasters such as hurricanes, earthquakes, and floods can cause significant environmental damage and result in the unwanted release of pollutants into the air and water. Disasters can also generate enormous amounts of solid waste. When caused by natural hazards, these incidents are known as secondary hazards.

Hazardous materials can include toxic chemicals, radioactive materials, infectious substances, and hazardous wastes. An accidental hazardous material release can occur wherever hazardous materials are manufactured, used, stored, or transported. Such releases can affect the nearby population and contaminate critical or sensitive environmental areas.

Facilities that use, manufacture, or store hazardous materials in Pennsylvania must comply with Title III of the federal Superfund Amendments and Reauthorization Act (SARA) and the Commonwealth's reporting requirements under the Hazardous Materials Emergency Planning and Response Act (1990-165), as amended. The community right-to-know reporting requirements keep communities abreast of the presence and release of chemicals at individual facilities.

Key information about the chemicals handled by manufacturing or processing facilities is contained in the Environmental Protection Agency's (EPA's) Toxic Release Inventory (TRI) database. The TRI Program requires businesses to report the locations and quantities of chemicals stored on-site to state and local governments. These data are collected annually by the EPA and made available to the public. TRI reporting requirements now cover 650 different chemicals.

PREVIOUS OCCURRENCES

There are 326 listed TRI Facilities in Allegheny County, including three of the top ten facilities in the State of Pennsylvania for most on-site releases of hazardous chemicals. Allegheny County also has many major transportation corridors including railroads, highways, and waterways, used for hazardous material transport. According to the July 2000, *Commonwealth of Pennsylvania Multi-Hazard Identification and Risk Assessment,* the threat of a release of hazardous materials is greater from transported materials than from fixed facilities.

In 2001 there were 94 TRI reported hazardous materials releases in the County (EPA, 2004). The following table summarizes the number of releases by COG and municipality.

Table 3.4: TRI Reported Releases for 2001, Allegheny County, Pennsylvania		
COG	**Municipality**	**Number of Releases**
Allegheny Valley North	Brackenridge	1
Allegheny Valley North	Cheswick	5
Allegheny Valley North	Verona	1
Allegheny Valley North	Springdale	1
Allegheny Valley North	Natrona Heights, Tarentum Borough	1
Allegheny Valley North	Creighton, East Deer Township	2
Allegheny Valley North	Harwick, Springdale Township	2
Char-West	Coraopolis	2
Char-West	Bridgeville	6
Char-West	Oakdale	1
Char-West	Carnegie	2
Char-West	McKees Rocks	1
Char-West	Neville Island, Neville Township	1
Non-COG	Pittsburgh	37
Non-COG	Oakmont	2
North Hills	Glenshaw, ShalerTownship	2
North Hills	Gibsonia	2
North Hills	Indianola, Indiana Township	2
North Hills	Bakerstown, Richland Township	1
Quaker Valley	Leetsdale	1
South Hills Area	South Park	1
South Hills Area	Jefferson Hills	2
Steel Valley	Munhall	1
Steel Valley	West Elizabeth	1
Steel Valley	Dravosburg	1
Steel Valley	Clairton	3
Steel Valley	Homestead	1
Turtle Creek Valley	Braddock	1
Turtle Creek Valley	Wilmerding	1
Turtle Creek Valley	Monroeville	3
Turtle Creek Valley	Rankin	1
Turtle Creek Valley	Turtle Creek	2
Twin Rivers	Bunola, Forward Township	1
Twin Rivers	McKeesport	2
Twin Rivers	West Mifflin	3
Twin Rivers	Glassport	1
	Total Releases	98

Source: EPA, 2004

Pittsburgh had the most releases with 37, followed by Bridgeville with 6 and Cheswick with 5. A sample of the chemicals released include: lead, chromium, mercury, arsenic, and selenium, all of which pose high health and environmental risks. Of the 326 TRI facilities in the County, 23 of the large companies have Risk Management Plans that can be viewed at www.rtknet.org/rmp. These plans outline what the facilities are doing proactively to avoid hazardous materials releases and what should be done if there is a release.

Table 3.5: Top 5 TRI Chemical Releasing Facilities in Allegheny County

Name	Location	Pounds of Chemicals Released
Cheswick Power Plant	Cheswick	3,752,503
USS Clairton Works	Clairton	1,616,068
Calgon Carbon Corporation	Neville Island, Neville Township	331,005
PPG INDS. Inc.	Springdale	280,259
Eastman Chemical Resins, Inc.	Jefferson Hills	254,971

For additional information on the amount and types of chemicals released in Allegheny County, see Appendix F, which contains the printout of the EPA list of facilities that experienced hazardous material releases and the types of chemicals released.

According to the Hazardous Materials Information System (HMIS), which is part of the U.S. Department of Transportation (USDOT), Pennsylvania had 1,114 hazardous materials incidents in 2000 and 1,006 incidents in 2001; with combined damages totaling more than $4 million. There are approximately 3,000 carriers registered to transport hazardous materials in the Commonwealth of Pennsylvania, including transport by truck, rail, and water.

There have been two major train derailments in Allegheny County that resulted in extensive emergency response actions. On April 11, 1987, there was a derailment of 33 railcars in the City of Pittsburgh, which caused the release of phosphorus oxychloride, resulting in the evacuation of 16,000 residents. On August 22, 1987, there was a derailment of 16 railcars in McKeesport, which caused the release of butane, sodium hydrochloride, and hydrochloric acid and forced the evacuation of 700 residents, including patients at the Kane Regional Center and the Riverside Nursing Center. At the time of this plan's completion, the Port Authority was not able to provide a profile or history of hazardous materials incidents that have occurred under its jurisdiction. This information will be included in subsequent plan updates.

Every year many traffic accidents result in hazardous materials releases in Allegheny County. Fuel spillages due to an accident with a tanker truck or rupture of fuel tanks are the main causes of transportation-related hazardous materials incidents in Allegheny County.

A 2002 *Commodity Flow Study* conducted for the LEPC by the University Center for Social and Urban Research at the University of Pittsburgh discussed the specific types and quantities of hazardous materials flowing into, through, and out of Allegheny County. The purpose of the study was to inform local emergency planners about the degree of risk posed by specific hazards from materials located in storage facilities and being moved by the various transportation methods in Allegheny County. The study showed the following:

- Continuing incidence of releases involving hazardous materials in Allegheny County;
- Increasing exposure to hazardous materials in Allegheny County;
- Decreasing pattern of cooperation in reporting commodity flow;

- Increased need to improve monitoring process; and,
- Increased need to improve training for personnel to manage increasing exposure to risk.

Based on the research completed for the study, the authors concluded that the current flow of hazardous materials through Allegheny County has been reasonably well managed, but the risks are high and increasing.

HAZARD CHARACTERISTICS

While hazardous material release incidents in Allegheny County have occurred in the past, they are generally considered difficult to predict. An occurrence is largely dependent upon the accidental or intentional actions of a person or group.

In Allegheny County, there are several major hazardous materials transportation routes including Highways I-76, I-279, and U.S. Route 22, several rail lines, as well as the Allegheny, Monongahela, and Ohio Rivers. According to the USDOT, highways and roads are where the greatest number of accidents occur and accidents are usually caused by human error (USDOT, 2003). As such, transportation carriers must have response plans in place to address accidents, otherwise the local emergency response team will step in to secure and restore the area.

Table 3.6: Declared Hazardous Materials Disasters in Allegheny County

Date	Description	Type of Declaration
April 1989	Petroleum Spill	Governor's Proclamation
January 1988	Oil Spill	Governor's Proclamation

Severity

In 2001, Allegheny County was in the top 10 percent of areas in the United States for the worst major chemical releases and waste generation. With a hazardous material release, whether accidental or intentional, there are several potentially exacerbating or mitigating circumstances that will affect the severity or impact of the release. Exacerbating conditions are characteristics that can enhance or magnify the effects of a hazard. Mitigating conditions, on the other hand, are characteristics of the site of the release and the physical environment that can reduce the effects of a hazard. These conditions include:

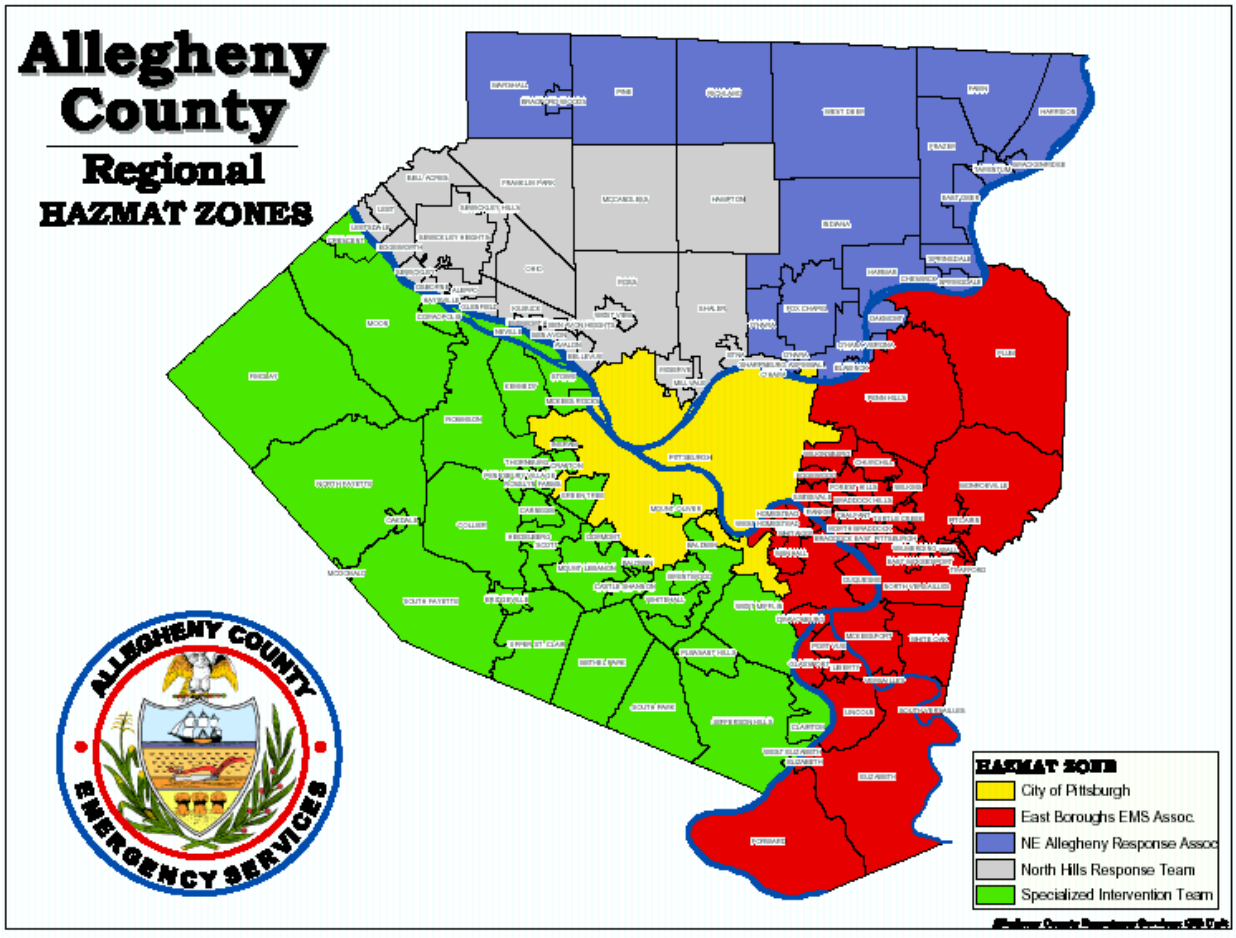
- Weather conditions - affect how the hazard develops;
- Micro-meteorological effects (small-scale weather conditions that occur immediately around an obstruction such as a building or mountain) of buildings and terrain - can alter travel and duration of products;
- Shielding in the form of sheltering-in-place (people nearby staying indoors during an incident) - protects people from harmful effects; and
- Non-compliance with applicable codes (e.g., fire and building codes) and maintenance failures (e.g., fire protection and containment features) - can substantially increase the damage to the facility itself and to surrounding buildings.

The severity of the incident varies with the type of material released and the distance and related response time for emergency response teams. The areas closest to the release are generally at greatest risk, yet depending on the type of chemical released, it can travel great

distances or exist over a long time (e.g., nuclear radiation), resulting in far-reaching effects to people and the environment.

Due to the nature of hazardous materials incidents, much of the time this hazard relies on the presence of up-to-date emergency response plans and timely emergency response rather than mitigation actions. There are five Hazardous Materials (Hazmat) Response Teams in Allegheny County. Each one is responsible for responding to incidents in a specific geographical area (see Figure 3.5) and each is fully certified by PEMA and the Commonwealth of Pennsylvania and are dispatched by Allegheny County Emergency Services. Between 1988 and 2000, the County's Hazmat Response Teams responded to over 1,000 incidents.

Figure 3.5:



Also, as part of the National Contingency Plan, the EPA helps to coordinate local and federal responses to natural disasters. The EPA is the primary agency responsible for emergency support related to hazardous materials, and it provides technical assistance for environmental monitoring needs. The EPA also helps states and local communities develop contingency plans for managing the debris and other products of natural disasters.

Location and Extent

Plate 5 shows the SARA Title III hazardous materials facilities and number of buildings within a ½-mile radius of these facilities, and major transportation routes.

MINE SUBSIDENCE

OVERVIEW

Mine subsidence occurs when undermining of coal, metallic ores, limestone, salt, and sulfur results in the loss of surface elevation ranging from broad, regional lowering of the land surface to localized collapse. Mine subsidence occurs slowly and continuously over time or on abrupt occasions, as in the case of the sudden formation of sinkholes. A sinkhole can be defined as a subsidence feature that can form rapidly and that is characterized by a distinct break in the land surface and the downward movement of surface materials into the resulting hole or cavity. In addition to mine subsidence, subsidence can also result from other processes like withdrawal of groundwater, petroleum, and geothermal fluids; dewatering of organic soils; wetting of dry, low density deposits known as hydro compaction; natural sediment compaction; melting of permafrost; liquefaction; and crustal deformation.

PREVIOUS OCCURRENCES

According to the Hazards Vulnerability Analysis done by ACES, isolated incidents throughout the coal regions over the years have occurred when houses, garages, and trees are swallowed up by subsidence holes. Lengths of local streets and highways, and countless building foundations have been damaged. Deep coal mining has occurred under approximately 250 square miles or 35% of the land surface of Allegheny County (ACES, 1995).

The Pennsylvania Department of Conservation and Natural Resources maintains a database of sinkholes throughout the Commonwealth. No sinkholes have been reported in Allegheny County. This is likely due to the fact that the subsidence problem in Allegheny County is related to mine subsidence.

In 1994, mine subsidence occurred in Shaler Township in areas not previously known to be undermined. Therefore there is a countywide campaign to enable residents to be covered by mine subsidence insurance. In 1998, a local newspaper reported that about 45,000 homes across the state were insured against mine subsidence. More than 90 percent of the policies are for southwestern Pennsylvania homeowners – with 20,000 in Allegheny County alone.

PROBABILITY OF FUTURE OCCURRENCE

There is currently no reliable information regarding the probability of future occurrences of mine subsidence. One way of estimating probability of future occurrence would be to project the historical trends into the future, but there is no comprehensive documentation of previous occurrences for mine subsidence events in the County. According to the1995 Allegheny County Vulnerability Analysis, and because deep mines are present under 35% of the land surface of the County, subsidence is likely to continue to occur every year in the absence of mitigation activities.

SEVERITY

Mine subsidence can have potentially devastating consequences, but in very localized areas. Structures or infrastructure built on undermined land will likely collapse as their footings slide downhill. Structures below the subsidence location can be crushed.

LOCATION AND EXTENT

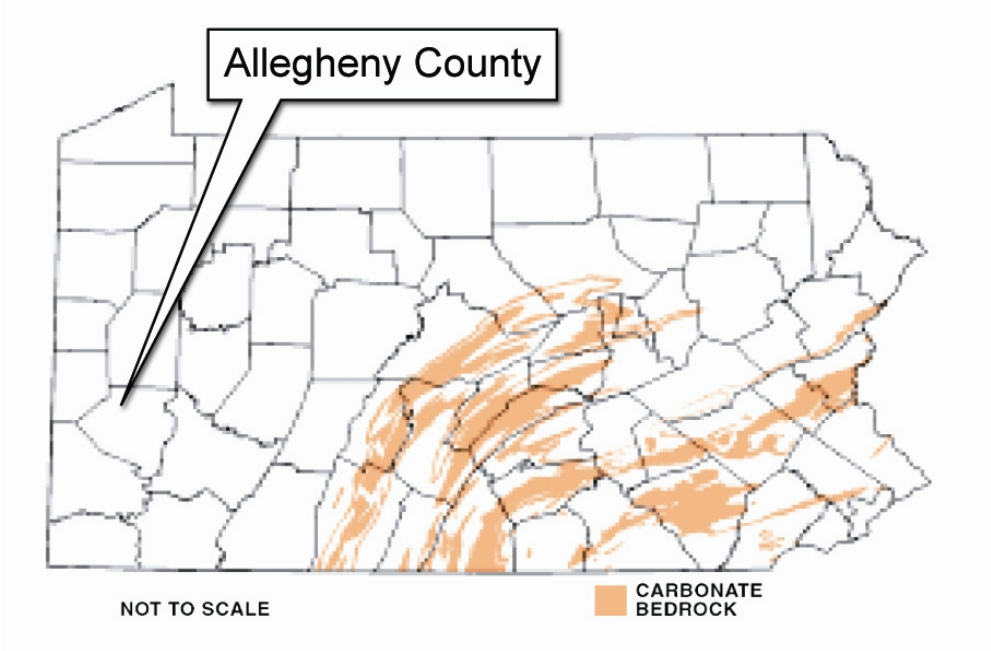
According to the Pennsylvania Department of Environmental Protection (DEP) website, there are two distinct coal fields in Pennsylvania known as the Anthracite and Bituminous coal

regions. Bituminous coal is mined in 21 Pennsylvania counties and Allegheny County is ranked 19th in order of production (DEP website, 2004).

Since Pennsylvania has extensive mining history, Allegheny County faces the problem of mine subsidence in all the areas of the County that have been undermined. These areas are shown in Plate 6, Mine Subsidence Hazard Vulnerability Map. This map is based on mapping procured from the County Geographic Information System (GIS), whose source is the Pennsylvania Spatial Data Access (PASDA). These mine subsidence areas include surface and deep coal and non-coal mined areas. The coal mined areas cover almost the entire southern half of the County and some portion in the northeastern part of the county.

In Pennsylvania, case histories of sinkholes reveal that sinkholes are found in areas underlain by carbonate bedrock. Figure 3.6 shows the areas within Pennsylvania that have carbonate bedrock. The areas are located mostly in central and eastern Pennsylvania, and none fall within Allegheny County.

Figure 3.6: Carbonate Bedrock Areas in Pennsylvania



In addition to the areas shown on Figure 3.6 some extensive and large caves occur in calcareous sandstone bedrock along Chestnut Ridge in southwestern Pennsylvania. Caves, like sinkholes, are another form of karst topography which is a distinct landscape where the soil has already started dissolution. No additional information on the location of such caves is available; therefore, it is not clear whether any areas of Allegheny County are prone to subsidence due to these caves. Cave subsidence is not reported to be a major problem in the County (Pittsburgh Geological Society, 1977). Hence this plan addresses only mine subsidence.

Flood vulnerability is described in terms of what community assets lay in the path of floods. The flood hazard vulnerability assessment for Allegheny County focused on the 100-year floodplain. While greater and smaller floods are possible, information about the extent and depth for the 100-year floodplain is available in a consistent format for all Allegheny County municipalities.

DATA LIMITATIONS

There were data limitations encountered during the flood hazard vulnerability assessment that prevented specific flood depths from being determined for the buildings located in the 100-year floodplain. First, there were no first floor elevations for structures in the County. Second, the contour file used to develop a Digital Elevation Model of Allegheny County (a model that shows topographical elevations for all points in the County), contained errors and the subsequent topographical elevations developed were not valid. As a result, buildings are indicated as being inside or outside the floodplain, but no depths of flooding can be determined. In addition, because there were no data about the buildings in the building footprint map, it was not possible to gather detailed information about the buildings located in the floodplain.

METHODOLOGY

For Allegheny County, 100-year flood data based on Flood Insurance Rate Maps (FIRMs) was used to show the location of floodplains in the County. This was overlaid on a County map (supplied by the Allegheny County GIS Department) that includes building footprints for all the buildings in the County. Those buildings located in the 100-year floodplain were then highlighted and mapped.

The COGs and City were given detailed large-scale flood maps of their respective municipalities, and they reviewed these using their knowledge and experience to develop a list of specific buildings vulnerable to flooding. The specific municipality data are presented in Appendix I, whereas this section presents the flood vulnerability assessment from a county-wide perspective.

Table 4.1: Buildings Vulnerable to Flooding, Listed by COG (located in the 100-year floodplain)

COG Name	Total Number in Floodplain	
	Buildings	Critical Facilities
Allegheny Valley North	1,384	3
Char-West	2,100	6
North Hills	2,661	11
Quaker Valley	479	0
South Hills Area	798	4
Steel Valley	360	0
Turtle Creek Valley	1,320	4
Twin Rivers	1,081	3
Pittsburgh	1,001	8
Non-COG	99	0
Total in the County	11,283	39

Plate 3 shows flood vulnerability in the County based on total number of buildings in the floodplain per municipality. The following table provides details on the municipalities with the greatest numbers of structures in the floodplain. Detailed information on the most vulnerable buildings and facilities located in the floodplain was not available for this plan. This information will be included in subsequent updates to the plan.

Table 4.2: Municipalities with Over 200 Buildings in the 100-Year Floodplain

COG	Municipality	# of Buildings in floodplain
Allegheny Valley North	East Deer Township	200
	Fawn Township	235
	Harrison Township	222
Char-West	Bridgeville Borough	226
	Coraopolis Borough	207
	Neville Township	380
	North Fayette Township	235
Non-COG	Pittsburgh	1,001
North Hills	Etna Borough	492
	Millvale Borough	425
	Ross Township	230
	Shaler Township	377
	Sharpsburg Borough	390
Turtle Creek Valley	Plum Borough	234
	Turtle Creek Borough	210
Twin Rivers	Elizabeth Township	547

Repetitive Loss Properties are defined as structures that have experienced two flood events within a 10-year timeframe, resulting in at least $1,000 worth of cumulative damage (as defined by the National Flood Insurance Program [NFIP], which is administered by FEMA). Mitigating damage to these properties is a priority of the NFIP. The following table summarizes the number of repetitive loss properties by COG and municipality. Details are not included in the plan due to privacy concerns.

Table 4.3: Repetitive Loss Properties

COG	Municipality	# of Repetitive Loss Properties
Allegheny Valley North	Fawn Township	3
	Verona Borough	1
	West Deer Township	1
Char-West	Bridgeville Borough	6
	Collier Township	1
	McKees Rocks Borough	2
Non-COG	Pittsburgh	6
North Hills	Etna Borough	3
	Hampton Township	5
	Millvale Borough	1

Table 4.3: Repetitive Loss Properties		
COG	**Municipality**	**# of Repetitive Loss Properties**
	Richland Township	1
	Ross Township	8
	Shaler Township	9
	Sharpsburg Borough	1
South Hills	Baldwin Township	1
	Bethel Park Borough	4
	Castle Shannon Borough	3
	South Park Township	2
	Upper St. Clair Township	1
Steel Valley	Clairton	1
	Jefferson	2
	West Elizabeth Borough	1
Turtle Creek Valley	North Versailles Township	2
	Penn Hills Township	1
Twin Rivers	Elizabeth Borough	1
	Elizabeth Township	1
	McKeesport	1
Quaker Valley	Bellevue Borough	1
	Emsworth Borough	1
	Total	71

Source: ACES, 2000

SUMMARY OF HAZARD VULNERABILITY ASSESSMENT

Floods have been and will continue to be a significant threat to the economic and social well-being of Allegheny County. The main sources of flooding in the County are the Ohio, Allegheny, Monongahela, and Youghiogheny Rivers and their tributaries. The County has had nine declared flooding disasters since 1964.

Based on damage estimates provided by the National Climatic Data Center for flood events that have occurred in Allegheny County within the past 10 years, the average amount of losses suffered per year is approximately six million dollars (NOAA website, 2004).

Exacerbating the effects of flooding in the County are the steep slopes, the large numbers of industrial facilities located in the floodplain, and the many bridges and culverts that can act as temporary dams by trapping debris during a large rain event.

Current zoning and development regulations in certain areas of the County allow development to occur within the floodplain, leading to potential additional losses. Simply stated, development has been permitted in naturally occurring floodplains and has resulted in damage primarily caused by human infringement upon natural processes. It is important to realize that future development in floodplains can be limited through appropriate legislative and administrative actions and procedures.

Although in recent years there have been mitigation efforts, including acquisition of properties, establishment of buffer zones and greenways, and enforcement of building restrictions to

reduce the number of facilities in the floodplain, flooding remains the most significant hazard facing Allegheny County. Details of these past efforts could not be obtained for inclusion in this plan, but will be included in subsequent updates of this plan.

LANDSLIDES

A landslide vulnerability assessment involves determining the location of susceptible lands and then determining what community assets are located on those susceptible lands. The following steps are typically followed to determine the spatial extent of landslide hazard (FEMA, 2001):

- Identify existing or old landslides:
  - on or at the base of slopes;
  - in or at the base of minor drainage hollows;
  - at the base or top of an old fill slope;
  - at the base or top of a steep cut slope; or
  - developed hillsides where leach field septic systems are used.
- Map the topography, since steeper slopes have greater probability of landslides.
- Map the geology, because in addition to the slope angle, the presence of rock or soil that weakens when saturated, as well as poorly drained rock or soil are indicators of slope instability as well.
- Contact local and state geological survey, other persons who might be knowledgeable about the local conditions in relation to landslides.

Conditions that may exacerbate or mitigate the severity and effects of landslides include erosion, unstable slopes, earthquakes, increase of weight of slopes, hydrologic factors and human activity.

Human activities are responsible for initiating or intensifying certain conditions where otherwise there would have been little or no risk. Activities that increase vulnerability by triggering landslides include:

- Excavations and development in unstable slope materials.
- Haphazard construction or improper use of pipelines.
- Disruption of surface or subsurface drainage (streams and springs) e.g. by filling.
- Overuse of fill materials on slopes, particularly at the heads of existing slide masses.
- Removal of materials at the bases of slopes.
- Vibrations from heavy traffic, blasting, and driving piles near unstable slopes.

DATA LIMITATIONS

URS followed the aforementioned methodology quite closely. The analysis did not include conditions that may exacerbate or mitigate the effects of landslides. Those conditions are mostly site-specific conditions that can only be verified by site visits, done by professional geologists (e.g., slope is considered but the orientation of slope with respect to other factors is also very important but that is not included for lack of that data).

METHODOLOGY

Plate 4: Landslide Hazard Vulnerability map for Allegheny County shows the result of the vulnerability analysis done by using the best available data. The three main components of the analysis are:

1. Landslide susceptibility map – USGS Miscellaneous Field Studies Map 685-B is the result of an inventory completed in 1974 by USGS. This inventory had two main steps: the interpretation of aerial photographs; and the verification of findings in the field. Analysis of susceptibility to landsliding involved the correlation of landslide distribution with available geologic, geomorphic, and soil survey data. The inventory resulted in a landslide susceptibility map (Briggs, 1977).

   The County's GIS system has a layer that has very similar features as the features shown on the USGS map. The origin of the GIS data is uncertain but it appears to match the USGS map data and was therefore used in this analysis. The following features were used from that layer:

   a) Recent landslides – These are the primarily earth slumps and earth flows that are recorded historically or are characterized by fresh scars.

   b) Rockfalls – These are natural and cut slopes and cliffs, 15 to more than 150 feet high, mainly thick-bedded sandstone and limestone, having layers 1 to more than 10 feet thick, highly fractured and locally undercut by weathering of interbedded subordinate flaggy sandy shale and silty and clayey shale;

   c) Manmade fill – These are areas of heterogeneous soil and rock material.

   d) Redbed – These are outcrops of thick red beds and associated rocks. Weathered rock and related soil commonly result in soil creep and landsliding.

   e) Creep – These are slopes with conspicuous soil creep. Clayey soils, generally less than 5 feet thick, commonly underlain by weathered shale and characterized by shallow, slow, but distinct, downslope movement.

   f) Prehistoric landslides – These are primarily earth slumps and earth flows characterized by hummocky topography and slump benches (Briggs, 1977).

   Although the information was created more than 30 years ago, the methodology used for the inventory and the detail of the features make it relevant and worthwhile to include in our present analysis.

2. Soils prone to landslides for engineering and planning purposes – The County's GIS database includes soils as a layer. The Allegheny County Soil Survey indicates which soils are 'prone to landslide' as a consideration for highway construction and town and country planning.

3. Steep slopes – Slopes greater than 25% are used for this layer because steepness contributes to instability.

All three components were mapped for Allegheny County and the areas where all three occur concurrently are identified as "very hazardous," since those areas have characteristics that increase the chances of occurrence of a landslide, and thus deserve priority attention and concern. Landslides can occur where even one of these three components are present. Those areas are called "hazardous". The "hazardous" and "very hazardous" areas in the County are shown on Plate 4: Landslide Hazard Vulnerability.

According to the Hazards Vulnerability analysis done by ACES , approximately 110 square miles, or 15% of the total area of Allegheny County, is susceptible to landslides. The analysis done in this plan, as described before, determines the spatial location of the susceptible lands.

The COGs and City were given detailed large-scale landslide susceptibility maps of their municipalities and they used these along with their knowledge and experience to develop a list

of specific buildings vulnerable to landslides. The COG and City actions are presented in *Section 6- Alternative Mitigation Actions.*

VULNERABLE COMMUNITY ASSETS

Using GIS, overlaying the very hazardous areas for landslides with the buildings and critical facilities in each municipality and each COG revealed how many buildings and critical facilities are vulnerable. A count of these vulnerable buildings and critical facilities by COG is provided in Table 4.4. Appendix I has tables that show counts by municipalities and counts by type of building (residential, commercial, etc.).

Table 4.4: Community Assets Vulnerable to Landslides in Allegheny County by COG

COG Name	Total Number in "Very Hazardous" areas	
	Buildings	Critical Facilities
Allegheny Valley North	53	0
Char-West	381	1
North Hills	1092	2
Quaker Valley	185	1
South Hills Area	56	0
Steel Valley	197	0
Turtle Creek Valley	1444	0
Twin Rivers	331	0
Pittsburgh	967	0
Non-COG	37	0
Total in the County	4743	4

As shown in Table 4.4, there are 4,743 buildings and 5 critical facilities located in very hazardous landslide areas, of the approximately 500,000 buildings in the County. Turtle Creek Valley COG (1,444 buildings) and North Hills COG (1,092 buildings) have the greatest number of buildings located in the very hazardous areas for landslides. A majority of vulnerable buildings in Turtle Creek Valley COG are residential buildings (1,191 out of the 1,444 buildings), which is repeated in the case of North Hills COG (954 residential buildings out of the 1,092 buildings).

Of all municipalities, the City of Pittsburgh has the highest number of vulnerable buildings (967 buildings). Penn Hills Township in Turtle Creek Valley COG (394 buildings) and Shaler Township in North Hills COG (245 buildings) have the next highest number of vulnerable buildings.

Two of the four critical facilities situated on very hazardous areas for landslides in the County are located in North Hills COG. The two facilities are a cell tower in Millvale Township, and a school in Shaler Township.

SUMMARY

Allegheny County has a moderate to high vulnerability to landslides, due to the geography, history of the hazard and human activities in the county. The County is most susceptible where all three factors that contribute to landslides – steep slopes, soils prone to landslides, and landslide features (rockfall areas, creep, redbeds, historic landslides, etc.) – occur in the same place. Such areas are termed "very hazardous" for the purpose of this plan's analysis. Considering the buildings and critical facilities located in the very hazardous areas, Turtle Creek Valley COG, North Hills COG, and the City of Pittsburgh are the most vulnerable.

HAZARDOUS MATERIAL RELEASES

There are 326 Toxic Release Inventory (TRI) sites located in Allegheny County (as discussed previously in the *Hazard Profile* section). The TRI Program requires businesses to report the locations and quantities of chemicals stored on-site to state and local governments. These data are collected annually by the EPA and made available to the public. TRI reporting requirements now cover 650 different chemicals.

METHODOLOGY

The TRI sites were mapped using HAZUS data, which uses EPA data. A ½ mile radius was drawn around these sites and the buildings within the radius were counted. These sites are shown on Plate 5 and are indicated by different color dots. For purposes of this plan, the number of buildings was assumed to correspond to the number of people (i.e., the more buildings, the greater number of people). Because many hazardous materials releases occur during transport, Plate 5 also shows the railroads and major roadways in the County.

The following Table 4.5 shows the municipalities within each COG that have the greatest number of hazardous materials sites. It is assumed that the greater the number of hazardous materials facilities the more traffic there will be in the area, and as a result the chances of a hazardous materials release due to a traffic accident is greater. It is also assumed that having a greater number of hazardous facilities in an area increases the chance of a release occurring.

Table 4.5: Number of Hazardous Materials Sites Listed by Number of Buildings within a ½ -Mile Radius

COG	Municipality	Number of buildings < 500	Number of buildings 500-1,500	Number of buildings 1,501-2,500	Number of buildings > 2,500
		Number of hazmat facilities			
Allegheny Valley North	Harmar Township	34	13	--	--
	Springdale Borough	--	54	3	--
Char-West	Moon Township	45	13	--	--
	Robinson Township	45	2	--	--
Non-COG	Pittsburgh	107	377	284	141
North Hills	Ross Township	12	53	--	--
	Shaler Township	1	49	--	--
Quaker Valley	Haysville Borough	14	--	--	--
	Leetsdale Borough	11	5	--	--
South Hills Area	Bethel Park Borough	1	63	--	--
	Green Tree Borough	--	34	--	--

Table 4.5: Number of Hazardous Materials Sites Listed by Number of Buildings within a ½ -Mile Radius

COG	Municipality	Number of buildings < 500	Number of buildings 500-1,500	Number of buildings 1,501-2,500	Number of buildings > 2,500
Steel Valley	Clairton	--	47	3	--
	West Mifflin Borough	29	32	4	--
Turtle Creek Valley	Monroeville	64	25	--	--
	Penn Hills Township	8	55	7	--
Twin Rivers	Elizabeth Township	13	17	--	--
	McKeesport	1	38	12	10

In Allegheny County, there are several major hazardous materials transportation routes including I-76, I-279 and U.S. Route 22, and several rail lines, as well as the Allegheny, Monongahela, and Ohio Rivers. According to the USDOT, highways and roads are where the greatest number of accidents occur and are usually caused by human error.

Every year many traffic accidents result in hazardous materials releases in Allegheny County. The major causes of hazardous materials incidents in Allegheny County are fuel spills from a tanker truck or rupture of fuel tanks.

While hazardous material release incidents in Allegheny County have occurred in the past, they are generally considered difficult to predict.

A *Commodity Flow Study* was completed for Allegheny County and contains current data and research on hazardous materials in the County. We mapped the hazardous materials facilities listed in the *Commodity Flow Study*, but only 50% of the facilities had addresses that could be mapped. Therefore, HAZUS information was used for mapping the hazardous materials facilities rather than the *Commodity Flow Study* information.

The EPA designates “302 facilities” which are the facilities that are required to notify the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) of the presence of any “extremely hazardous substance” (substances in excess of the specified “threshold planning quantity”). Additionally, “312 facilities” are those facilities required to maintain material safety data sheets (MSDS) on all the chemicals used or stored at the facility (these chemicals are usually less hazardous than those at 302 facilities and are in smaller quantities) and to notify the SERC, LEPC, and the local fire department on the types of hazardous chemicals located at the site. The MSDS’s contain specific information about the chemicals, such as reactivity with other agents and health effects, to allow the emergency response teams to better plan for a hazardous materials release.

Although these sites were not able to be mapped, a list of all of the 302 and 312 sites in Allegheny County are located in Appendix G. This list was also provided to the COGs and City of Pittsburgh for their review and incorporation into the vulnerability assessment. The detailed COG and City data are presented in Appendix I as this section presents the hazardous materials vulnerability assessment from a countywide perspective.

MINE SUBSIDENCE

Pennsylvania has an extensive mining history, and Allegheny County faces the problem of mine subsidence in all the areas of the County that have been mined. A mined area may be differentially prone to subsidence based on its geology and depth of coal seam but reliable information about the different locations of varying depths of coal seam is not available.

Information from Pennsylvania Spatial Data Access (PASDA) of Pennsylvania State University shows coal mined areas for the County. This information is shown in Plate 6: Mine Subsidence Hazard Vulnerability map. Geologists agree that all areas that are mined are prone to subsidence; therefore the coal mined areas are shown as vulnerable to mine subsidence on Plate 6: Mine Subsidence Hazard Vulnerability map.

VULNERABLE COMMUNITY ASSETS

The coal mined areas are shown on Plate 6: Mine Subsidence Hazard Vulnerability. This map shows that the entire southern half of the County and some portions in the north-eastern part of the County are mined. Currently there are 257,377 buildings whose centerpoints fall within mined areas. All of the areas, including the buildings and critical facilities located in those areas, are vulnerable to mine subsidence.

SEVERE WEATHER

The severe weather hazards – high winds and snow and ice events, do not lend themselves to being displayed graphically using GIS because they uniformly affect the entire County. Rather, the vulnerability assessment for these hazards is typically based upon the analysis of building characteristics, namely age of building and type of construction. For these analyses, two sources of data are important. The first is the building code history for each municipality, including which building code is used and when it was instituted. The second is the Real Estate Database, which can be used to sort structures according to municipality, age, and type of construction.

The age of the building determines what building code was in effect at the time of its construction. It is assumed that buildings built before a code was instituted are more vulnerable. The type of construction is another factor in determining the vulnerability of structures. For example, a masonry house is sturdier than a frame house. There are differences in the relative vulnerability of new buildings as well, based on their type of construction. But, relative to buildings built 100 years ago, all newer buildings are assumed to be less vulnerable for the purpose of this vulnerable assessment.

The tabulations of structure information were given to the COGs and respective municipalities so they could review the information and decide which structures should be subjects of mitigation. Though the COGs did not identify any facilities as a priority for mitigation, the following is the vulnerability analysis from a countywide perspective.

VULNERABLE COMMUNITY ASSETS

The County provided a database of over 450,000 properties to URS. Of these, 450,324 properties had the information about the year in which they were built. The oldest 0.5% of the properties in the County is simply the top 2,252 (0.5% of 450,324) properties when all the properties are arranged in ascending order of the year in which they were built. These 2,252 properties were constructed from 1800 to1872.

Appendix I has the tabulation of these properties by COG, which also shows the year built, use, exterior walls, roof material, basement type, and condition of the property. Any combination of these criteria can be used to determine vulnerability. Buildings more than 100 years old and in very poor condition are assumed to be one of the categories of vulnerable buildings in the County. Table 4.6 provides an analysis of the vulnerable building by COG.

Table 4.6: Community Assets Vulnerable to Severe Weather in Allegheny County by COG

COG Name	Number of Buildings	
	Oldest 0.5% of the County	In "Very Poor" Condition
Allegheny Valley North	190	3
Char-West	206	4
North Hills	367	7
Quaker Valley	133	0
South Hills Area	120	2
Steel Valley	36	2
Turtle Creek Valley	147	9
Twin Rivers	209	18
Pittsburgh	804	24
Non-COG	40	2
Total	2252	71

As evident from the table, the City of Pittsburgh has the highest number of old buildings in the County (804 properties) and some of them are in "very poor" condition (24 properties). The COGs that have the most number of old buildings are North Hills COG (367 properties), Twin Rivers COG (209 properties), and Char-West COG (206 properties). Of these, Twin Rivers COG is more vulnerable, with 18 of the old properties in very poor condition.

SUMMARY

Allegheny County experiences several severe weather events every year that create many adverse effects. Tornadoes, hurricanes, heavy snowstorm, ice storm, and blizzard are the types of hazard events possible in Allegheny County. Due to the frequency of past events, winter storms are very likely to continue affecting normal activity in the County in the coming years.

Every area within the County is equally exposed to severe weather. For all severe weather events aged, dilapidated, or buildings not adequately built or not built to applicable building codes are more vulnerable. Strong winds can rip roofs off houses, overturn manufactured homes, or cause total failure of poorly constructed structures. Gable-ended roofs are also especially vulnerable to strong winds. Aged or otherwise compromised structures are also susceptible to snow loads if their roofing systems are not built to applicable standards. For that reason, vulnerability is described in terms of structures or infrastructure that is most vulnerable to the hazards. The City of Pittsburgh and Twin Rivers COG have the most number of old buildings that are in very poor condition, and so they are most vulnerable to severe weather hazards by those criteria.

WILDFIRE

Wildfire vulnerability can be assessed by mapping the fire fuel model used by the U.S. Forest Service with an overlay of the steep slopes. Heavy fire fuel is considered to be round wood 3 to 8 inches in diameter, medium fire fuel is round wood 1/3 inch to 3 inches in diameter, and light fuel is herbaceous plants and round wood less than ¼ inch in diameter. Slopes less than 40% are considered to have a low fire hazard, slopes between 41 and 60% are considered to have a medium hazard, and slopes greater than 61% are considered to have a high hazard.

The fire fuel model recommended by the U.S. Forest Service requires information on the size (diameter) and specific types of vegetation in the County. These data are not available, so the fire hazard areas are identified as woodlands in the County GIS system. Those areas are shown on Plate 7: Wildfire Hazard Vulnerability.

The U.S. Forest Service provides a periodic wildfire risk assessment in the form of an Observed Fire Danger Class rating. It shows areas of high fire hazard vulnerability for a specified time period. The website http://www.fs.fed.us/land/wfas/ can be checked for the fire danger rating for a particular month. Generally, the state's vulnerability increases during the period between mid-March to mid-May and mid-October to mid-December due to dry weather conditions.

VULNERABLE COMMUNITY ASSETS

Structures built very close to large tracts of forested land are most vulnerable to wildfires. In Allegheny County there are no state forests, and the location of private forests is not shown in the County's GIS system. Appendix J contains maps of the County parks and shows the extent of the wooded areas in those parks. Plate 7: Wildfire Hazard Vulnerability map shows the woodlands in the County. Structures within and around wooded areas are vulnerable to wildfires, but information about numbers and location of such structures is not available.

TERMINOLOGY

Goals are general guidelines that explain what you want to achieve. Goals are usually expressed as broad policy statements representing desired long-term results.

Objectives describe strategies or implementation steps to attain the identified goals. Objectives are more specific statements than goals; the described steps are usually measurable and can have a defined completion date.

Actions provide more detailed descriptions of specific activities or programs to help a community achieve the goals and objectives. For each objective statement, there are alternatives for mitigation actions that must be evaluated to determine the best choices for each situation (see *Section Six: Alternative Mitigation Actions*).

Mitigation Plan includes a listing and description of the preferred mitigation actions and the strategy for implementation; i.e., who is responsible, how will they proceed, when should the action be initiated and/or completed, etc. (see *Section Seven: Implementation Strategy*).

The *Vulnerability Assessment and Hazard Mitigation Plan* for Allegheny County, Pennsylvania, supports the State Hazard Mitigation goals shown below:

In meetings held in February, March, and April, 2003, citizens and local government representatives reviewed and prioritized goals and objectives based on the findings of the vulnerability assessment. They expressed the desire that mitigation activities should maintain the rich historic, recreational, and cultural fabric of the county.

Participants felt that priority should be given to mitigation actions that protect people, property, local government functions, and the local economy from the effects of hazards.

The goals for the *Allegheny County Vulnerability Assessment and Hazard Mitigation Plan* are listed on the following pages and were developed in response to the vulnerability assessment findings presented in *Section Four* of this plan, the desires of Allegheny County residents, and the Commonwealth of Pennsylvania's Hazard Mitigation Goals as listed in Table 5.1.

Table 5.1: Commonwealth of Pennsylvania Hazard Mitigation Goals

	Goals
1.	To encourage actions that support: public safety during hazard events; natural hazard identification and awareness; hazard avoidance; damage minimization; environmental historic protection; and the mitigation of future severe and repetitive damage due to natural hazards.
2.	To ensure that local and state agencies identify critical buildings, facilities, and infrastructure that are at risk of damage due to natural hazards, and to undertake feasible and cost-effective hazard mitigation measures to minimize future losses and expenditures.
3.	To make hazard mitigation a public value.
4.	To promote economic development consistent with floodplain management, building codes, and similar guidance.
5.	To develop an effective public awareness programs for the natural hazards that Pennsylvania is most likely to experience.
6.	To encourage scientific study of natural hazards and the development of data to support mitigation strategies for those hazards that are a threat to the Commonwealth.
7.	To promote recognition of the value of hazard mitigation to the health, safety, and welfare of the population.

GOALS AND OBJECTIVES

The plan has eight goals. Each goal is followed by objectives that address in more specific terms the results of the vulnerability assessment and reflect the nature of what can be mitigated for the identified hazards, as well as existing limitations in data and information.

Goal I: *Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities, and infrastructure due to* ***floods****.*

Goal I Objectives:

I.A Develop a comprehensive approach to reducing the possibility of damage and loss of function to critical facilities due to floods.

I.B Protect existing assets with the highest relative vulnerability to the effects of flooding associated with the 100-year floodplain.

I.C Promote the continuing purchase of flood insurance by property owners in flood hazard areas.

I.D Address identified data limitations regarding lack of detailed information about:

- individual structures located in the 100-year floodplain;
- flood probabilities other than the 100-year flood; and
- first floor elevations for priority areas.

Goal II: *Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities, and infrastructure due to* ***landslides.***

Goal II: Objectives:

II.A Develop a comprehensive approach to reducing the possibility of damage and loss of function to critical facilities due to landslides.

II.B Protect existing assets with the highest relative vulnerability to the effects of landslides.

II.C Address identified data limitations regarding lack of detailed information about individual structures located in the highest landslide vulnerability areas

Goal III: *Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities, and infrastructure due to* ***hazardous material releases****.*

Goal III Objectives:

III.A Develop a comprehensive approach to reducing the possibility of injury and loss of life for residents and occupants of existing addressable structures and critical facilities with the highest relative vulnerability to the effects of hazardous material releases from discrete locations.

III.B Address identified data limitations regarding lack of detailed information about probabilities for manmade events, including:

- contamination due to hazardous materials releases along key stretches of transportation corridors
- terrorist incidents against areas of higher relative occupancy and critical facilities

Goal IV: *Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities, and infrastructure due to* ***mine subsidence.***

Goal IV: Objectives:

IV.A Develop a comprehensive approach to reducing the possibility of damage and loss of function to critical facilities due to mine subsidence.

IV.B Protect existing assets with the highest relative vulnerability to the effects of mine subsidence.

IV.C Address identified data limitations regarding lack of detailed information about individual structures located in the mine subsidence vulnerability areas.

Goal V: *Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities, and infrastructure due to* ***severe weather****.*

Goal V Objectives:

V.A Develop a comprehensive approach to reducing the possibility of damage and loss of function to critical facilities due to severe weather in terms of high winds and heavy snow and ice loading.

V.B Protect existing assets with the highest relative vulnerability to the effects of severe weather events.

V.C Address identified data limitations regarding lack of detailed information about individual structures, other critical facilities and infrastructure with the highest relative vulnerability to the effects of high wind events and heavy snow loads including characteristics of individual structures such as construction type, age, condition, compliance with current building codes, etc.

Goal VI: *Reduce possibility of damage and loss to existing community assets including addressable structures, critical facilities, and infrastructure due to* ***wildfires****.*

Goal VI Objectives:

VI.A Develop a comprehensive approach to reducing the possibility of injury and loss of life due to the exposure of SARA Title III facilities to wildfires in forested areas.

VI.B Develop a comprehensive approach to reducing the possibility of damage and loss of function due to the exposure of critical facilities and infrastructure to wildfire.

VI.C Address identified data limitations regarding lack of detailed information about vegetation types and individual structures (e.g., roof construction) located within areas more prone to wildfire.

Goal VII: *Promote disaster-resistant future development.*

Goal VII Objectives:

VII.A Encourage and facilitate the development or revision of comprehensive plans and zoning ordinances to limit development in high hazard areas.

VII.B Encourage and facilitate the adoption of building codes that provide protection for new construction and substantial renovations from the effects of identified hazards.

VII.C Provide adequate and consistent enforcement of ordinances and codes within and between jurisdictions.

VII.D Discourage activities that exacerbate existing hazardous conditions.

VII.E Address identified data limitations regarding lack of detailed information about development build-out potential in high hazard areas.

Goal VIII: *Promote hazard mitigation as a public value in recognition of its importance to the health, safety, and welfare of the population.*

Goal VIII Objectives:

VIII.A Provide public education to increase awareness of hazards and opportunities for mitigation.

- All interested individuals will be encouraged to participate in hazard mitigation planning and training activities
- Managers of public facilities will be knowledgeable in hazard mitigation techniques and the components of the community's mitigation plan

VIII.B Promote partnerships between the municipalities and the County to continue to develop a County-wide approach to identifying and implementing mitigation actions.

VIII.C Promote disaster resistance in the business community.

VIII.D Monitor and publicize the effectiveness of mitigation initiatives implemented in the community.

This section discusses mitigation actions for each hazard addressed in this plan, as well as the process used to evaluate the actions.

ALTERNATIVE FLOOD MITIGATION ACTIONS

There are several different categories of flood hazard mitigation measures possible for the neighborhoods and structures, infrastructure, and critical facilities within the flood hazard areas.

ACQUISITION

Acquisition involves the municipal government purchasing and demolishing or moving (referred to as relocation) structures in the floodplain. The land may then be permanently deed-restricted for open space uses in order to restore the natural and beneficial functions of the floodplain. Structures that have been repetitively flooded, or experience floods with high flood depths, velocities greater than 5 feet per second, or long duration, are normally the best candidates for acquisition. Acquisition is one of the most effective flood mitigation measures because it entirely removes structures from the pathway of floods.

Table 6.1: Additional Considerations for the Acquisition Option

Historic Property?	Historic properties are community assets which should be saved for their cultural value. See Table 6.4 for a list of considerations for historic properties.
Attached/Semi-Detached Housing or other closely spaced structure?	Acquiring one attached or semi-detached structure while leaving the other should be avoided. Attempt to acquire all at-risk properties.
Adjacent to Open Space? Won't leave a "hole" in the neighborhood/streetscape?	This criterion is related to the previous criterion. Acquiring a patchwork of homes is undesirable without a long-term plan to acquire a cohesive block of structures. Acquiring structures that are adjacent to open space is the preferred mitigation option.
In poor condition?	Structures that are in poor condition are also more suitable for acquisition and demolition.
Appropriate future use for the open space property?	When structures are acquired using federal funding, the jurisdiction acquiring the property is required to maintain the property as open space in perpetuity. The jurisdiction acquiring the parcel must decide whether to maintain it as a greenway or park, allow it to revert back to a natural area or to be maintained by other residents.

Acquisition is an effective mitigation measure, but one which can erode the neighborhood fabric. It is cost-effective for structures with high flood vulnerability; however, obtaining the homeowner's approval, managing the implementation of the project, and accessing funding to complete the project are sometimes difficult.

BARRIERS

Flood barriers built of soil are called berms, while those built of concrete or steel are called floodwalls; all can keep floodwaters from reaching a building.

DRY FLOODPROOFING

Dry floodproofing entails making all areas below the base flood elevation impervious to water. Walls can be coated with a waterproofing compound or plastic sheeting. Openings such as doors, windows, sewer lines, and vents are closed, either permanently or with removable shields. Dry floodproofing is appropriate for buildings on sound slab foundations that are subject to less than 3 feet of flooding. Most building walls and floors are not strong enough to

withstand the hydrostatic pressure from more than 3 feet of water. However, this method does not remove the structure and its contents from the path of floods.

ELEVATION

Raising a building above the base flood elevation is the best on-site property protection method. Water flows under the building, causing little or no damage to the structure or its contents. Alternatives are to elevate on continuous foundation walls (creating an enclosed space below the building) or elevate on compacted earthen fill, which can be more costly than elevating on an open foundation or continuous foundation walls. If raised 8 or more feet, the lower area can be floodproofed and used for parking or storage.

Elevation is suitable where flood depths are less than 10 feet and have low velocity (less than 5 feet per second), and in areas that are not prone to ice floes,, or in off-channel areas that have minimal potential for damaging floating debris. Elevation is not suitable for areas with long-duration flooding since accessing the structures would be difficult or unsafe in flood situations.

The most common elevation methods include:

- Elevating in place using solid wall, piles, or post foundations (see Table 6.2 for more information on appropriate uses of foundation types);
- Filling in the basement and replacing the space with an elevated first floor;
- Abandoning the first floor and building a second floor.

Factors like foundation type, soil type and bearing capacity, weight of the house, and lateral forces on the house from water (and other natural hazards such as winds and earthquake), condition of house, and height of the proposed elevation above the grade affect the actual method for elevating a specific house. These methods are best determined by the property owner and engineer on a case-by-case basis.

Table 6.2 shows broad guidelines for selecting one elevated foundation versus another.

Table 6.2: Elevation Methods Based on Existing Foundation Types and Other Conditions

Condition	Existing Foundation Type			
	Basement	Crawlspace	Slab-on-grade	Open
Poor Soil				
House is heavy or has lateral wind/earthquake/water forces				
Must be elevated high above grade				
Flood velocity greater than 5 ft/sec				
Recommended Foundation Type for Elevated Structure	Solid walls	Solid walls	Solid walls	Piles, piers, posts

Politically and socially, elevation may be the most feasible option because it leaves neighborhoods intact, allows structures to remain near the water, and prevents damage from floods.

STRUCTURAL PROJECTS

Dikes, levees, dams, channelization, channel widening, stream realignment, seawalls, groins, and jetties are mitigation actions which can be used to protect flood vulnerable structures. Structural projects have fallen out of favor as mitigation options because they tend to be expensive to build and maintain, and can often increase flooding downstream or on the opposite side of the waterway. Furthermore, FEMA's mitigation programs emphasize nonstructural measures for mitigation of the flood hazard. These projects tend to be disruptive to the environment and can fail or be overtopped in sufficiently large flood events. Politically and administratively, structural projects require additional studies, public input, and can sometimes take a long time to implement.

WET FLOODPROOFING

Wet floodproofing entails letting flood waters inside the structure and removing assets like furniture or household appliances from the floodable area. Wet floodproofing avoids the problems of pressure from floodwaters presented by dry floodproofing. Wet floodproofing is usually used for basements and garages and not for one-story houses, as the flooded areas would be the living areas.

PROPERTY PROTECTION DECISION MATRIX

Mitigation measures need to be evaluated based on the flooding conditions at the site and the characteristics of the structure. After first finding information about foundation types in the tax database, planners should use the estimated depth of flooding for each structure and the decision matrix to identify appropriate mitigation measures. Properties that are at or above base flood elevation (other than those with basement foundations) are not considered in the following decision matrix because they are considered to be outside of the regulatory floodplain and are of low mitigation priority compared to other flood structures.

Table 6.3: Property Protection Decision Matrix

First Floor Flood Depth	First Recommendation	Second Recommendation
Slab		
< 2 feet	Barrier	Dry Floodproof
≥ 2 feet	Elevate	Relocate/Acquire
> 9 feet	Relocate/Acquire	Relocate/Acquire
Crawlspace		
≥ 0 feet	Elevate	Elevate
> 9 feet	Relocate/Acquire	Relocate/Acquire
Basement		
≥ 0 feet	Elevate, fill in basement	Relocate/Acquire
> 9 feet	Relocate/Acquire	Relocate/Acquire
Pier/Pilings		
≥ 0 feet	Elevate	Elevate
> 9 feet	Relocate/Acquire	Relocate/Acquire

Another important consideration for flood hazard mitigation is historic properties. Historic properties are assets that have cultural value to communities and should be preserved where feasible. Table 6.4 presents additional considerations about the impact of hazard mitigation alternatives on historic properties. Although no properties listed in the National Register of Historic Places are within the flood hazard area, local officials must further consider the impact of mitigation options like acquisition and demolition or relocation on local historic resources.

Table 6.4: Considerations for Historic Properties		
Hazard Mitigation Alternative	**Reduction of Risk**	**Level of Impact to Historic Properties**
Acquisition & Demolition	High	High
Relocation	High	Medium - High
Elevation	Medium	Medium
Dry Floodproofing	Low - Medium	Low - Medium
Wet Floodproofing	Low	Low
Stream Channel Improvements	Low	High
Levees & Floodwalls	Medium	Medium

ALTERNATIVE LANDSLIDE MITIGATION ACTIONS

ACQUISITION/RELOCATION

Structures in the identified hazardous and very hazardous areas can be acquired so that they do not face any danger from slide incidents.

ENGINEERING STRUCTURES

A range of engineering options can be employed to keep rockfalls from causing damage to the roads and development beside it. Retaining walls, shotcrete, rock bolts, rock fencing, ditch and berm, and rock netting are some examples of these engineering options. These measures would be appropriate where hazardous and very hazardous areas occur along highways. However, site-specific visual assessment and a geologic study would be required to consider erosion, water content of soils, and vegetation types.

LAND MODIFICATIONS

- **Slope Reduction:** The stability of a slope can be increased by regrading it or creating benches and terraces appropriately. These measures reduce the slope, thus increasing its stability. The type of soil, height of fill or cut, and soil compaction are essential components of appropriate grading in land failure susceptible areas. This measure is expensive and is appropriate only after professional field investigation of landslide sites.
- **Construction of a Drop Zone**: A drop zone can be created by cutting back the mountainside to allow for safe rock fall.

REGULATIONS

Many kinds of land use regulations are possible alternatives for the purpose of mitigating the hazard from landslides**:**

- **Zoning and land development ordinances** are regulations that describe allowable and non-allowable uses in specified zones as well as acceptable land development practices. These planning tools can be used to designate landslide hazard areas for those zoning districts that are compatible, such as open-space recreation, buffer zones, conservancy or agriculture. A land development ordinance or slide-prone area ordinance can regulate improper debris dumping in hazardous landslide areas, which can overload the top of the slope creating unstable hillsides. The ordinance could also regulate

undercutting of slopes that can create a loaded hillside, address site drainage, fills on slopes, and setbacks from the toe or head of the slope.

- **Other Ordinances** require developers to obtain grading permits and provide technical reports that analyze slope stability, provide surface/subsurface drainage specifications, and call for detailed designs for fill placement and excavation. Hillside Development Ordinances can limit the amount and type of development that may occur on hillsides by including: (1) Slope Density provisions which decrease allowable development densities as slope increase; and (2) Soil Overlay provisions that assign use and density based on soil characteristics in sloped areas.

STUDIES AND DATA COLLECTION

Geotechnical reports provide a detailed analysis of soil types at a site. These reports are prepared by qualified professionals and can identify potentially unstable soils prior to implementing construction projects. This allows for the appropriate structural design to maximize slope stability. Similarly, a geological report can identify potentially unstable areas at or near the site by identifying landforms typical to different stages in the landslide process. These studies could be made mandatory under an ordinance for obtaining development permit for the hazard areas identified as hazardous and very hazardous for landslides as part of this plan.

PUBLIC AWARENESS

Owners of existing buildings located in areas identified as hazardous and very hazardous for landslides should be informed of their risk. The general public should be aware of the possible repercussions of development on slopes.

ALTERNATIVE HAZARDOUS MATERIALS INCIDENTS MITIGATION ACTIONS

Hazmat facilities must comply with State and federal regulations, including design standards, notifying the appropriate authorities in the case of an accident, and having emergency response plans. Most community actions fall in the response category: knowing what to do in the event of an accident or hazardous material release. Thus educating the public to be aware of these hazards and take appropriate actions is very important for reducing losses to life and property. Communities can also work with the private sector and local officials to enhance response measures. Finally, communities can take this hazard into account when making land-use planning decisions.

PUBLIC EDUCATION

Citizens should be aware of the procedures to follow after a HazMat incident. Local officials, in partnership with the private and non-profit sector could develop a public education campaign targeting residents living in proximity to the SARA Title III facilities (hazardous materials facilities regulated by the EPA).

RESPONSE ENHANCEMENTS

- **Highway "call boxes"**: HazMat trucks travel along many major transportation routes in the County. Call boxes could be installed at those points so that quicker response activities can be carried out.

- **Warning systems**: Warning systems could be installed in the vicinity of hazmat facilities.
- **Training**: Appropriate training should be provided to local emergency responders or at the state level for response activities for hazmat incidents.

LAND USE PLANNING

- **Segregation of transportation routes**: Segregating HazMat trucks from regional traffic could help reduce the risk from a transportation accident. Such alternate routes should be considered during the preparation of future transportation improvement programs and comprehensive plans for the County.
- **Siting of HazMat Facilities:** The siting of facilities should be prohibited in natural hazard-prone areas, or best management practices should be used for existing facilities in hazard prone areas.
- **Buffer zones around HazMat facilities**: When siting new facilities or where space permits it, appropriate buffer zones can be established. This can be accomplished through a buffer-zone ordinance or voluntary program.
- **Reconstruction in less hazard-prone areas:** In the event of a disaster, affected structures should be relocated or rebuilt outside of hazard prone areas.

ALTERNATIVE MINE SUBSIDENCE MITIGATION ACTIONS

REMEDIATION

The only way to completely prevent mine subsidence is to stop mining and backfill all existing mines. Different ways and materials are suitable for different types of mines and conditions. For example, where an area or structure is underlain by abandoned room-and-pillar mines, but pillar support is insufficient, filling the mine, adding roof supports, and constructing grout columns may be effective. Grout is a slurry of water-rich cement injected into mine openings through drilled holes. This is a common form of remediation in the Pittsburgh area. Construction of roof supports within old mines is undertaken only in areas that are accessible, dry, and where the roof rock is relatively strong.

Remediation is very expensive, and very rarely used for single family homes. It is typically used for larger buildings such as schools, where the cost of remediation is balanced by the need for safety and the importance to the community.

PROTECT NEW DEVELOPMENT

New development can be protected from the mine subsidence hazard if the site is thoroughly investigated before construction and necessary steps taken to remedy any problems.

PUBLIC AWARENESS/ INSURANCE

County residents should be aware of the dangers of building or buying property in a subsidence-prone area. They can contact the Department of Environmental Protection (DEP) for information. DEP encourages all County residents to purchase mine subsidence insurance.

ALTERNATIVE SEVERE WEATHER MITIGATION ACTIONS

There are a number of mitigation actions that can be used to mitigate wind and weather hazards. Wind and weather mitigation strategies usually involve identifying actions that affect individual structures or particular critical facilities. This can be done through public education, improving County implementation capabilities, and/or strengthening regulations.

The following wind hazard mitigation strategies should be used in combination with each other. Other than regulations, most of these measures can be implemented by property owners with assistance from County and municipal governments.

REGULATIONS

Building Codes/Safety Codes: Properly constructed buildings are essential to resisting the force of winds and weather to structures. Ordinary construction methods produce a house that will stand up to 110-mph tornadoes and other wind storms. Model building codes are designed using wind-speed maps produced by the American Society of Civil Engineers (ASCE). The design wind speeds are high enough to resist the majority of tornadoes and other strong winds. Building codes are also important to preventing collapse of buildings under heavy snow loads. Jurisdictions within the Commonwealth of Pennsylvania have recently been directed to adopt modern building codes or lose their authority to issue building permits.

BUILDING STRENGTHENING

Manufactured home tie-downs: Manufactured homes (mobile homes) are some of the most vulnerable structures to high winds, having thin walls that cannot withstand wind pressure and wind-blown projectiles. Manufactured homes have large surface area relative to their weight, making them susceptible to overturning. Furthermore, many manufactured homes are not adequately installed. Manufactured homes properly tied down with the correct number of anchors and the correct ground anchor for the soil type can reduce the vulnerability to high wind damages. Education and inspection programs can aid upgrading units to resist anticipated wind loads.

Manufactured homes installed on permanent foundations, especially double-wide manufactured homes, are significantly less vulnerable to wind hazards than other manufactured homes and should be considered to have lower mitigation priority. The County or concerned property-owners will have to identify which manufactured homes are in need of tie-downs. Retrofitted tie-downs cost about $1,000 to $1,500 to install, per tie-down. For low-income property owners, this can be a significant cost, and the County and municipal governments should assist with loans and grants.

Retrofits: Building retrofits like safety glass, roof bracing, structural connectors, or storm shutters are methods of strengthening existing structures. Not every structure will need such measures. Buildings that were built to modern codes should be sturdy enough to withstand most strong winds. Therefore, buildings built before codes were in place are likely more susceptible to wind and snow damage and should be considered to have greater mitigation priority than those built to code.

LANDSCAPING

Buffers and Windbreaks: Structures, especially their roofs, can be protected by creating buffer spaces around buildings. Simply by pruning back overhanging or dead branches from trees, property owners can prevent damage to their property from falling limbs during strong winds.

On the other hand, planting tall trees on usually northern exposures can serve as a windbreak to strong winds, snow, and cold weather. The typical windbreak has several components: (1) dense conifer trees to reduce wind velocity; (2) tall broadleaf or conifer trees to extend the area of protection; (3) low shrubs to trap snow, provide wildlife habitat, and/or provide aesthetic value. A "living snowfence" can be created with a windbreak with a density of 70 to 80 percent of multiple rows of dense conifer trees. A "field windbreak" to spread snow across cropland should have a density of 25 to 35 percent with one or two rows of mixed broadleaf or pine trees. Most farmstead or livestock windbreaks can be achieved with a density of 40 to 60 percent by planting multiple rows of conifer and broadleaf trees. The most effective protection is obtained by orienting windbreaks perpendicular to the prevailing wind. Windbreaks designed for winter protection are generally located north and west of farmsteads, livestock concentration areas, working facilities or other areas to be protected. Although often overlooked, protection from northeast storms should be considered when designing a windbreak. Also, planting evergreen trees and shrubs as windbreaks can reduce winter heating costs. Because most structures can benefit from simple attention to landscaping and vegetation matters, mitigation action items should focus on actions that will affect/reach all residents/properties in the County.

WARNING SYSTEMS

Sirens: Warning systems like sirens can be used to alert residents when tornadoes or other hazards threaten vulnerable areas. Manufactured home parks (both for permanent residents and recreational/camping sites) are especially vulnerable to severe storms and residents may need the extra time that sirens or NOAA weather radios may provide to reach adequate shelter.

SHELTERING

Emergency Shelters: For extreme wind events like tornadoes and hurricanes, mitigation measures center on protecting residents from the storm. This is an especially important objective for manufactured housing since ordinary, in-house protection measures like basements or in-house safe rooms are not available. For manufactured home parks, community shelters can help protect residents and visitors from severe storm events. A community shelter is defined as a shelter that is designed and constructed to protect a large number of people from a natural hazard event. Community shelters include stand-alone shelters – separate buildings (i.e., not within or attached to any other building) designed to withstand high winds and the impact of windborne debris (missiles) during tornadoes, hurricanes, or other extreme-wind events.

Internal shelters, i.e., rooms or areas within or attached to larger buildings are designed to be structurally independent of the larger building and to provide the same wind and missile protection as a stand-alone shelter. These shelters are intended to provide protection during a short-term high-wind event (i.e., an event that lasts no more than 36 hours) such as a tornado or hurricane. They are not recovery shelters intended to provide services and housing for people whose homes have been damaged or destroyed by fires, disasters, or catastrophes.

Both stand-alone and internal community shelters may be constructed near or within school buildings, hospitals and other critical facilities, nursing homes, commercial buildings, disaster

recovery shelters, and other buildings or facilities occupied by large numbers of people. Stand-alone community shelters may be constructed in neighborhoods where existing homes lack shelters. Community shelters may be intended for use by the occupants of buildings they are constructed within or near, or they may be intended for use by the residents of surrounding or nearby neighborhoods or designated areas.

PUBLIC INFORMATION AND EDUCATION

Wind and weather hazards can affect the entire County, and many of the mitigation measures presented can be economically implemented by property owners. Public information and education are essential to mitigating wind and weather hazards.

ALTERNATIVE WILDFIRE MITIGATION ACTIONS

LANDSCAPING/VEGETATION MANAGEMENT

- **Fuel Management:** Fuel management programs reduce available fuels that promote wildland fires. Establishing fire-resistant vegetation and constructing fuel breaks / firebreaks along the border of urban areas helps reduce the threat of a urban wildland fire.
- **Defensible Space:** Defensible space is a natural or man-made area where trees, brush and other fire fuels have been cleared to create a "buffer zone" around an existing structure. Defensible space reduces the potential for damage from wildfire. Areas of 30 to 100 feet are cleared of combustible materials and maintained on year-round, slowing the movement of fire by preventing contact to fuels. Thinning dense undergrowth, pruning vegetation, and removing dead trees, shrubs and plants are essential to maintaining defensible spaces.

  A defensible space program in Allegheny County is an appropriate mitigation measure. Because much of the work in creating a defensible space can be done inexpensively by property-owners, a program of promoting defensible space through public education would likely be effective.

REGULATIONS

- **Zoning**: Zoning regulations can keep development away from fire hazard areas, such as steep slopes where fires spread fastest. They can also be used to keep development more clustered, which will aid in the defense of the development when fire does occur.
- **Building Codes**: Building codes can ensure the use of fire-safe building techniques and materials in fire hazard areas. Codes can implement current fire safety regulations and can also be helpful in upgrading existing structures; particularly for fire-safe roofing requirements.

FIRE-RESISTANT CONSTRUCTION

Damage to structures can be minimized or eliminated by using fire-resistant construction materials. Many buildings catch fire from blown embers that land on the roof or other horizontal surfaces. Types of fire-resistant construction include:

- **Roofs and Exteriors**: Wood shingles and wood siding are highly flammable. Even those coated with fire retardant lose their effectiveness after several years. Class A is

the highest category of fire-resistance for shingles, followed by Class B, Class C and Non-Rated. Roofs and exteriors of buildings should be of fire-resistant materials such as tile, slate, cement shingle, sheet metal or rag-felt roll roofing.

- **Screening**: Eaves, attics, under-floor openings, and chimneys should be covered by a non-flammable screen. Protective shutters should be considered for large window surfaces to protect interiors from radiant heat.
- **Power Lines**: Electrical service lines leading from the main power line to a structure can provide a route for fire. Wherever possible, power lines should be installed underground. Short of this, all vegetation near power lines should be trimmed back.

PUBLIC EDUCATION

- **Publications:** Fire safety programs that disseminate information to the public can be highly effective. Such outreach efforts can address the kinds of combustible roof coverings, fire safety construction for hazardous fire areas, and the importance of clearing brush and grass away from buildings.
- **Real Estate Disclosure:** Programs for notifying buyers of real estate about associated fire hazards and the availability of fire response resources will enable buyers to make informed decisions about their purchases.

EVALUATION OF MITIGATION ACTIONS

The mitigation options presented in this section are evaluated in light of the expressed desires of the municipalities using several criteria. The criteria assess the suitability of options based on several factors, which are explained below.

HAZARD MITIGATION ACTION PRIORITIZATION PROCESS

After each COG went through the vulnerability assessment process to determine their highest vulnerability areas, they developed mitigation actions to address these concerns. With limited resources at hand, it is necessary to prioritize these mitigation actions so the County can identify the most important actions to address in the next 5 years (the lifespan of this hazard mitigation plan).

The following describes the prioritization criteria, the categories and the reasoning for the scoring system used to prioritize the actions:

- *Type of action* – Different types of mitigation actions have different advantages and disadvantages associated with them; therefore, the types of actions were evaluated using the STAPLE+E criteria (recommended by FEMA) and summarized in Table 6.5.

Table 6.5: STAPLE+E Criteria

Social	Will it cause any one segment of the population to be treated unfairly? Will the action disrupt established neighborhoods, break up voting districts or cause the relocation of low and moderate income people? Is the action compatible with present and future community values? Will the measures adversely affect cultural values or resources?
Technical	How effective is the measure in avoiding or reducing future losses? Will it create more problems than it solves? Does it solve a problem or only a symptom? In light of other community goals, is it the most useful?
Administrative	Does the community have the capability to accomplish the action (i.e., can you implement the mitigation action)? Can the community provide any maintenance necessary? Is there enough staff, technical experts and funding? Can it be accomplished in a timely manner?
Political	Who are the stakeholders in this proposed action? Have all of the stakeholders been offered an opportunity to

Table 6.5: STAPLE+E Criteria	
	participate in the planning process? How can the mitigation goals be accomplished at the lowest cost to the stakeholders? Is there public support both to implement and maintain this measure? Is the political leadership willing to propose and support the favored measure?
Legal	Does the community have the authority to implement the proposed measure? Is there a clear legal basis for the mitigation action? Is an ordinance or resolution necessary? What are the legal side effects? Will the community be liable for the actions or support of actions, or lack of action? Is it likely to be challenged?
Economic	What are the costs and benefits of this measure? How will the implementation of this measure affect the pocketbook of the community? Does the cost seem reasonable for the size of the problem and likely benefits? What burden will be placed on the tax base or local economy? Does the action contribute to other community economic goals such as capital improvements or economic development? What benefits will the action provide?
Environmental	How will this action affect the environment? Will this measure comply with local, state and federal environmental regulations? Is the action consistent with community environmental goals? Are endangered or threatened species likely to be affected?

For this plan, the STAPLE+E criteria are used to rate the types of mitigation actions based on their social, technical, administrative, political, legal, economic, and environmental impacts to the County. All of the mitigation actions proposed by the County, COGs, and municipalities were designated as falling into one of the six categories listed in Table 6.6. The types of actions were then rated using each of the STAPLE+E criteria. Actions or programs receive a score of 1 or neutral as the default rating if there are no particularly notable poor or good potential consequences of the method. The other ratings include poor, which receives a score of 0; good, which receives a score of 2; and excellent, which receives a score of 3.

The outcome of this rating process is summarized in Table 6.6, with each type of action receiving a score.

Table 6.6: STAPLE+E Criteria for Mitigation Actions

	Technical Analyses	Structural/ Land Modification	Increasing Local Capability	Public Awareness	Emergency Services/ Response	Property Acquisition
Social	1	1	3	3	1	1
Technical	2	3	2	1	1	3
Administrative	3	1	0	3	1	1
Political	2	1	1	3	2	2
Legal	2	2	3	3	2	2
Economic	2	1	2	1	2	1
Environmental	2	1	3	3	2	3
Total	14	10	14	17	11	13

Poor = 0, Neutral = 1, Good = 2, Excellent = 3

- *Hazard type* – Categories within the "hazard type" criteria are scored using a basic principle: the more hazards an action addresses the higher score it gets, see Table 6.7. Since flooding is the most important hazard for the County, if an action addresses two hazards including flooding, it gets a higher score than when an action addresses two hazards not including flooding. When an action addresses a single hazard, and that hazard is flooding, landslide or mine subsidence, it gets a higher score than an action that addresses a single hazard, either hazardous materials, wildfire, or severe weather.

Table 6.7: Prioritization Criteria - Hazard Type

Prioritization Criteria:	Hazard Type
Multiplier/ Score	Categories
20	4 hazards or more
15	Flooding, Landslides, Hazardous Materials
10	2 hazards including flooding
8	Hazardous materials, mine subsidence and wildfire
8	Mine subsidence and wildfire
5	Single hazard either flooding or landslide or mine subsidence
2	Single hazard either hazardous materials or wildfire or severe weather
1	anything other than the above (hazards not addressed in the plan)

- *Coverage* – This means the number of municipalities that will benefit from the action. It could be all 130 municipalities in the County or just one municipality. The more municipalities an action addresses the higher score it gets, see Table 6.8. Some actions could potentially affect more than one municipality; they are given a proportional multiplier based on the number of municipalities affected by the action.

Table 6.8: Prioritization Criteria - Coverage

Prioritization Criteria:	Coverage
Multiplier/ Score	Categories
100	=130
(n/130) X 100	n (any number other than 1 or 130)
1	1

- *History* – This criterion assigns scores based on whether the action is addressing a problem that has occurred in the past or not, see Table 6.9. If the problem has occurred and has caused death in the past, the action gets a higher score than if the problem has occurred in the past but the frequency, and damage details are unknown.

Table 6.9: Prioritization Criteria - History

Prioritization Criteria:	History
Multiplier/ Score	Categories
15	Occurred in the past causing death
9	Frequent occurrence, every 1-10 years
8	Occurred in the past causing monetary damage
5	Occurred in the past but details unknown
1	None/ unknown

- *Number of properties at-risk* – The scoring system for this criterion works on the simple principle that the more properties are known to be at-risk because of the problem, the higher the score the action receives, see Table 6.10.

Table 6.10: Prioritization Criteria – Number of Properties at Risk

Prioritization Criteria:	Number of Properties At-risk
Multiplier/ Score	Categories
100	1000+
50	100 properties or more
25	10-99 properties
10	1-9 properties
1	Unknown

- *Nature of properties at-risk* – Categories for this criterion assign higher scores to the relatively more important uses or types of population. For instance, when vulnerable populations, i.e. senior citizens or school going children are at-risk then the action gets a higher score than an action that addresses residential properties, see Table 6.11.

Table 6.11: Prioritization Criteria – Nature of Properties/Population At-risk

Prioritization Criteria:	Nature of Properties/Population At-risk
Multiplier/ Score	Categories
100	Critical facility or vulnerable population
80	Single use either industrial or hazmat facility
60	Residential, commercial and transportation
50	Single use either commercial or transportation or government or utility
40	Commercial and residential or utilities
30	Residential and transportation or utilities
10	Residential or streams
1	Not applicable/ Unknown

- *Current mitigation activity/ local champion/capability* – This criterion allows those actions to get a higher score where there some activity is already taking place at the local (municipal or COG) level to address the problem, see Table 6.12. Such actions have a high chance of being implemented in reality and so this mitigation plan should use the opportunity to provide impetus to those actions by giving them higher scores.

Table 6.12: Prioritization Criteria – Current Mitigation Activities

Prioritization Criteria:	Current Mitigation activity/local champion/capability
Multiplier/ Score	Categories
2	Anything other than "none"
1	None

- *Cost-benefit comparison* – Some action descriptions have information that helped the consultants to decide whether it would be feasible to implement the action (i.e., would the benefits will exceed the costs), see Table 6.13. For instance, the cost of performing technical analysis to study a critical facility which has been flooded in the past appears to be exceeded by the potential benefit of mitigating the flood hazard for that facility.

Actions that seemed feasible receive a higher score than those where the costs would clearly exceed the benefits. A score of 0.1 is assigned to those actions that do not seem feasible in order to emphasize the importance of the cost-benefit criteria.

Table 6.13: Prioritization Criteria – Cost-Benefit Comparison

Prioritization Criteria:	Cost-benefit Comparison
Multiplier/ Score	Categories
10	Seems feasible
0.1	Does not seem feasible
1	Unknown

Table 6.14 is the result of the identification of mitigation projects considered important to the communities of Allegheny County. The initial attempt at prioritization using the scoring system was interrupted by the catastrophic Ivan Flooding event. This event has identified many new projects some of which are reflected on this list and the scoring procedure is in review at this time. The consultant that aided in this document preparation suggested that the information provided by the COGs be used to break up into individual columns for prioritization criteria. Each criteria column would then receive a score using the scoring system and that fills in the multiplier columns. All the scores are multiplied with each other to calculate the final priority score for each action. This final score only provides an indication of the relative importance of the action in comparison to other actions.

As Allegheny County experiences the vulnerability to various disasters, we realize that all efforts to make ourselves safer and more sustainable for the future require a complex mix of projects and initiatives undertaken on many scales of operations. The table has arranged the actions in an order of priority at a Pre-Ivan time and has been based only on the number of people potentially affected. Hence, the first action in the table is the highest priority action as a result of the previously described prioritization process.

The prioritized actions to be undertaken that are suggested by this list need to be examined in light of the potential funding and the constraints of those funding programs. For example, a fine project that may be a post 9/11 identified counterterrorism project that may not be able to be funded through funds specifically earmarked for flood mitigation. In this all-hazards mitigation plan, this prioritized listing is included as the initial step forward in identifying the problem statement and setting a direction by which all constituent governments may contribute to the solution. The County realizes that some projects may be best accomplished through local community initiatives or may be multi-municipality in nature or perhaps require the assistance of the Federal government. This prioritized list of projects is a collection of ideas that change as we individually and collectively manage our risks and our perceptions of costs and benefits. This is a dynamic document and will include future identified projects as the project identification information is submitted. It is intended that the project list will be examined by state, county and local municipalities to help focus our collective actions towards the goal of making our county more livable, sustainable and a safer place to be.

Table 6.14 is included at the end of this section. The mitigation projects that are listed at the end of the table either were submitted too late or not enough information supplied to be included in the rating, and/or, are mitigation projects that surfaced post-Ivan.

IMPLEMENTATION STRATEGY - PRIORITIZED MITIGATION ACTIONS

Since the devastating flash flooding that occurred in Allegheny County in September 2004, all levels of government, elected and appointed officials, department and agencies have been working diligently to recover and seek solutions to lessen the impact of flash flooding in the future. (see the 4/12/05 sign in sheet included in this section that is indicative of the intergovernmental strategizing and coordination that continues to take place in the arena of hazard mitigation in Allegheny County). The scoring and prioritization of projects was accomplished pre-Ivan. Included at the end of this section is a map generated by FEMA on registration calls as a result of Ivan. Also included is a map and prioritization list for stream remediation as funds become available. The 141 Creeks and Streams in Allegheny County are listed (approximately 927 tributaries to these streams) and there are 23 listed as HIGH PRIORITY.

Priority as determined by Allegheny County	**Flash Flood Mitigation – See Maps and Priority Listing of Creeks and Streams at the end of this section seven. In addition, a map that shows Hurricane Ivan Impacted Families and Businesses along these creeks, streams and tributaries is included.**
Hazards:	Flash Flooding
Objectives:	Mitigate effects of flash flooding on residents and businesses
Comments:	On September 17, 2004, the remnants of Hurricane Ivan stalled over Allegheny County producing 5"-8"+ of rain that totally inundated the creeks and streams within the County, a 500 year flood event. This resulted in a Presidential Declaration of Disaster (1557) and damages were in the millions and millions of dollars. The municipalities that were most heavily affected are still in the recovery process and will be for years to come. One town lost 50% of its business community and they will not be back knowing that under the current conditions, flash flooding will most certainly occur again. Many residents literally panic during heavy rains fearing the worst. Many also live with their basements filling up with sewage and/or storm water during heavy rains, trapped by poverty and unable to sell their homes. It is imperative that everything possible that can be done is done, to relieve this human suffering.
Responsible Organization:	All levels of government
Estimated Costs:	Project Specific
Possible Funding Sources:	HMPG Grants, PA-DCED, HUD, L & I, Interior, DEP and Congressional supplemental funding.
Timeline for Implementation:	Ongoing – Several funding sources have become available for specific purposes and several municipalities have filed HMPG Grant Applications. The recovery and mitigation activities involve all levels of government and are Multijuridictional. Both short and long range planning and implementation strategies are continuing to be developed and funding sources constantly being pursued.

Several Completed Hazard Mitigation Project Opportunity forms have already been submitted directly to the Pennsylvania Emergency Management Agency from Allegheny County Municipalities applying for Hazard Mitigation Project Grants and are on file at PEMA.

STATE OF PENNSYLVANIA - HAZARD MITIGATION PROJECT OPPORTUNITY

DATE: _____

NAME OF PROJECT: _____
Municipality _____
County _____

PROJECT CONTACT:_____
TITLE: _____
AGENCY: _____

LOCATION (address) OF PROJECT: _____
Latitude_____ Longitude_____
LOT _____ BLOCK _____ PARCEL NUMBER _____
Or Tax Parcel ID _____

ELEVATION _____ CERTIFICATE Y / N
Is the property within the 100-year floodplain? y / n
The property is located on Firm Panel Number _____

FLOOD INSURANCE Y/N Date of Insurance Verification _____

BRIEF DESCRIPTION OF PROJECT:

BRIEF DESCRIPTION OF PROBLEM TO BE SOLVED:

TOTAL ESTIMATED COST: _____ ASSESSMENT VALUE AND DATE

SOURCE OF FUNDING FOR NON-FEDERAL SHARE:
_____
_____

Community Ranking Score _____ Date _____

PLAN MAINTENANCE PROCEDURES

A consistent program of periodic monitoring, evaluation and updating the information, conclusions and implementation of actions is critical to maintaining the relevance of the Plan. Ensuring effective implementation of mitigation activities paves the way for continued momentum in the planning process and gives direction for the future. This section explains who will be responsible for monitoring, evaluating and updating the *Allegheny County Hazard Vulnerability Assessment and Mitigation Plan* and what those responsibilities entail. The section also lays out the method and schedule of these activities and describes how the public will be involved on a continued basis.

HAZARD MITIGATION COMMITTEE

Maintenance of the Plan requires that a permanent entity be designated with responsibility for coordinating the process of monitoring, evaluation and updating. This Plan recommends establishing a permanent planning group, the Allegheny County Hazard Mitigation Committee (the Committee), with representation from all participating municipalities via the Councils of Government and the City of Pittsburgh. The permanent Committee will be an outgrowth of the Allegheny County Hazard Mitigation Planning Committee (ACHMP Committee), and will represent citizen, municipal, business, educational, volunteer and county interests through balanced membership. Therefore, retaining the Task Force structure and membership is an important goal in this process. The leadership of the Committee will come from the County Departments that have comprised the Hazard Mitigation Steering Committee throughout the project.

The Committee will oversee the progress made on the implementation of the identified action items and update the plan, as needed or as a minimum requirement every five years, to reflect changing conditions and improved information. The Committee will therefore serve as the focal point for coordinating the countywide mitigation. The Allegheny County Hazard Mitigation Committee will serve in an advisory capacity to the Allegheny County Chief Executive, the Allegheny County Department of Economic Development / Planning Commission and the Allegheny County Department of Emergency Services

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MONITORING

The Committee will monitor the implementation of specified mitigation actions (and related planning initiatives) by first reviewing reports from the agencies identified for implementation of the different mitigation actions. The Committee will request that the responsible agency or organization submit an annual report, which will provide adequate information to assess the status of mitigation activities.

At a minimum, these reports will include:

- Description of the Mitigation Action;
- Identification of responsible party(ies);
- Original implementation program and schedule;
- Actual implementation progress and expected completion dates for identified milestones;
- Explanation for any discrepancies between original and actual implementation with recommendations for corrective actions.

The Committee will provide feedback to the individual agencies regarding any problems or changes in assumptions and information used in developing the plans. A number of ongoing or anticipated related planning initiatives will provide additional opportunities for involvement of the Hazard Mitigation Committee as part of the monitoring process.

Allegheny County is undertaking an update of its GIS system, starting with improved base mapping information. Since one of the fundamental deficiencies in the data available for this round of planning was the availability of detailed information about individual land parcels and structures, this will be an ideal opportunity to start the process of obtaining improved information. It is recommended that the Hazard Mitigation Committee seek active involvement in the development of the GIS improvements to ensure allowances are made to capture and maintain needed information for future plan updates.

Allegheny County is also embarking on an update of its Comprehensive Plan over the next few years. Part of the conceptual framework of the update includes incorporating recommendations from the Hazard Mitigation Plan. The update to the Comprehensive Plan is also envisioned to involve extensive GIS upgrades and analysis, much of which could feed back into the Mitigation Plan monitoring process. Involvement of the Hazard Mitigation Committee as an active participant in scoping and developing the Comprehensive Plan will ensure that information flows in both directions, maximizing the gain for both initiatives.

EVALUATION

Evaluation of the Plan should not only include checking whether mitigation actions have been implemented, but should also assess their degree of effectiveness. This can be done by reviewing the qualitative and quantitative benefits (or avoided losses) of the mitigation actions. These should then be compared to the goals and objectives the Plan set out to achieve. The Committee should also evaluate mitigation actions if they need to be discontinued, or modified in any way in light of new developments in the community. The progress will be documented by the Committee and submitted to the Chief Executive, as it becomes available.

Results of the proposed planning initiatives will also provide an improved basis for evaluating the potential and actual effectiveness of proposed mitigation activities. For example, improved topographic information in flood prone areas will provide for better evaluation of potential losses avoided by providing the information necessary to complete detailed cost-benefit analyses for proposed mitigation actions.

The final key evaluation criteria is how many and what types of projects are submitted for Hazard Mitigation Grant Funding or other types of funding. Post Ivan, many municipalities have put forth the effort to submit comprehensive grant applications. Those that are successful applicants will be publicized and used as an example of best practice for others to follow.

UPDATING THE PLAN

At a minimum, the Plan will be updated every 5 years, per the requirements of the Disaster Mitigation Act, 2000, or after a disaster. It is the recommendation of this initial effort that the plan be updated for the first time as soon a practical, due to the likelihood of obtaining improved and more detailed information due to related on-going planning initiatives in other departments of Allegheny County and the Commonwealth of Pennsylvania in the recovery from Hurricane Ivan.

The updated Plan would account for this new information as well as any new developments in the community or special unforeseen circumstances (e.g., post-disaster). Issues that arise during monitoring and evaluation that require changes in mitigation strategies and actions should also be incorporated in the Plan at this stage. This plan must remain a “living” document!

Throughout the hazard analysis and vulnerability assessment, descriptions of missing or inadequate data indicate areas in which the County and municipalities can improve their ability to identify vulnerable structures. As the County and municipal governments work to increase their overall technical capacity and implement their comprehensive planning goals, they should attempt to improve their ability to respond to identified hazard vulnerabilities. In short, the County and municipalities can improve upon the hazard identification and vulnerability assessment in subsequent versions of this plan by:

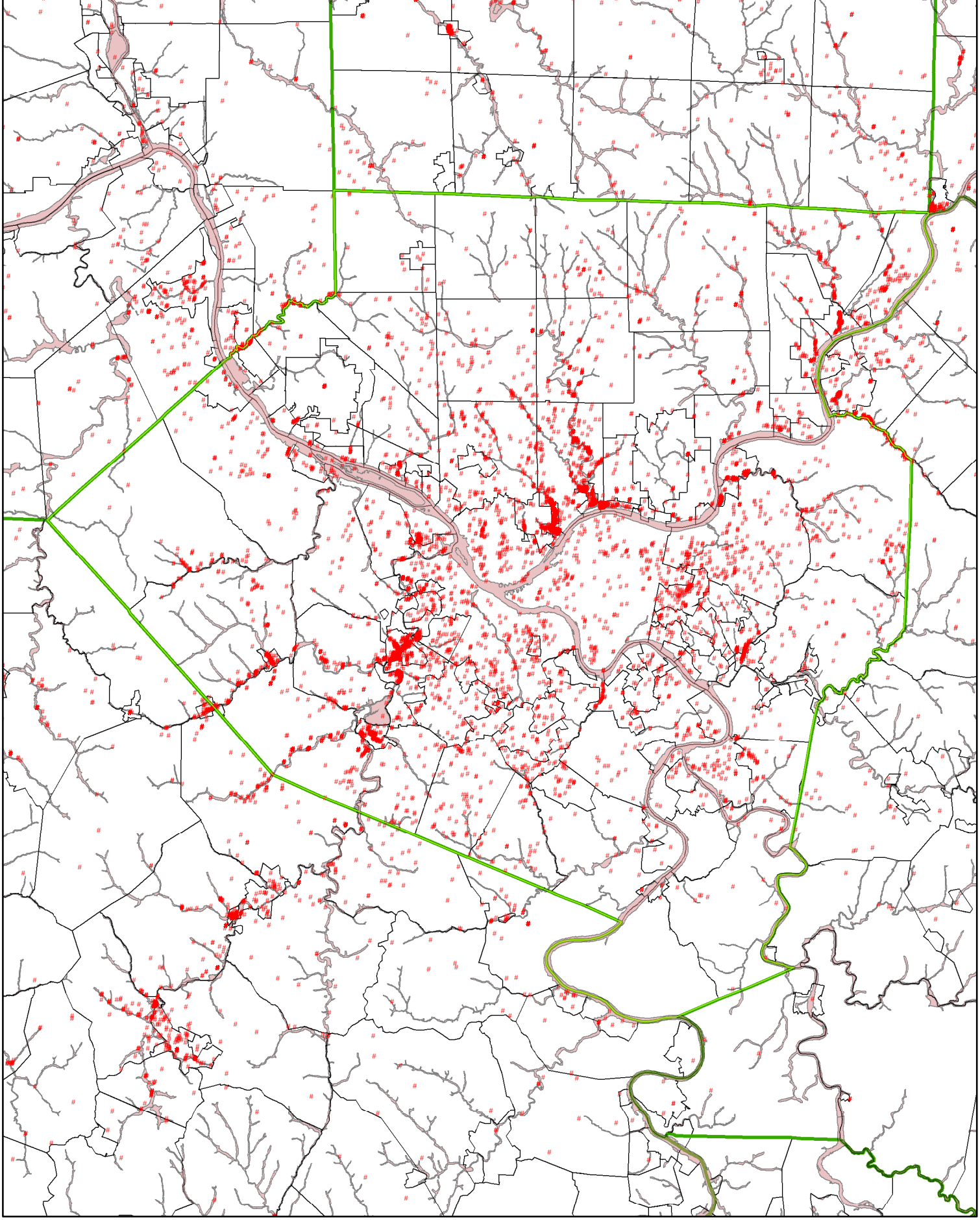
- Revamping County and municipal building permit and data collection systems to require and keep on file elevation certificates for all new construction, elevated structures, and other substantial improvements within the 100- and 500-year floodplain areas.
- Updating the tax and GIS databases with information like addresses, foundation type, construction type, and first-floor elevations for each structure. The updated plan will be better able to identify structures in need of mitigation based on first-floor elevations.
- Obtaining refined topographic contour information for the entire County, which will allow better identification of steep slopes within the County.
- Incorporating existing and in-progress stormwater management plans and projects into the vulnerability assessment and mitigation strategy to connect localized flooding issues with riverine flooding issues.

These improvements will produce a more effective vulnerability assessment and mitigation plan.

PUBLIC INVOLVEMENT

The Committee will continue to involve the public during the evaluation and update of the Plan through public education projects, public workshops, hearings, and legal announcements. The public will also have access to information via newsletters, mailings and the different agencies implementing the plan. The County's website will serve as a means of two-way communication by not only posting the plan on the internet and providing information about mitigation initiatives within the County, but also, having feedback forms and other means for the public to express their views and comments. The Committee will incorporate the public comments in each update of the Plan. The proof of publication notices that appeared in the two major newspapers in Southwestern PA, The Pittsburgh Post-Gazette and The Tribune Review that encouraged public participation in the Allegheny County Vulnerability Assessment and Hazard Mitigation planning process, are in Appendix B.

To be effective, a truly all-hazard holistic planning approach should continue to be all inclusive. The cycle of mitigation, preparedness, response and recovery must entail a grass roots effort. Only through involvement of the entire community can we hope to change the things we can to save lives and protect property. The grass roots approach that worked so well in this mitigation planning project will continue to be solicited. The public-private partnerships that have been nurtured and strengthened is what makes our communities, our City, our County and Southwestern Pennsylvania someplace special. It's people helping people that makes the difference of success or failure. Public involvement will ensure that success!

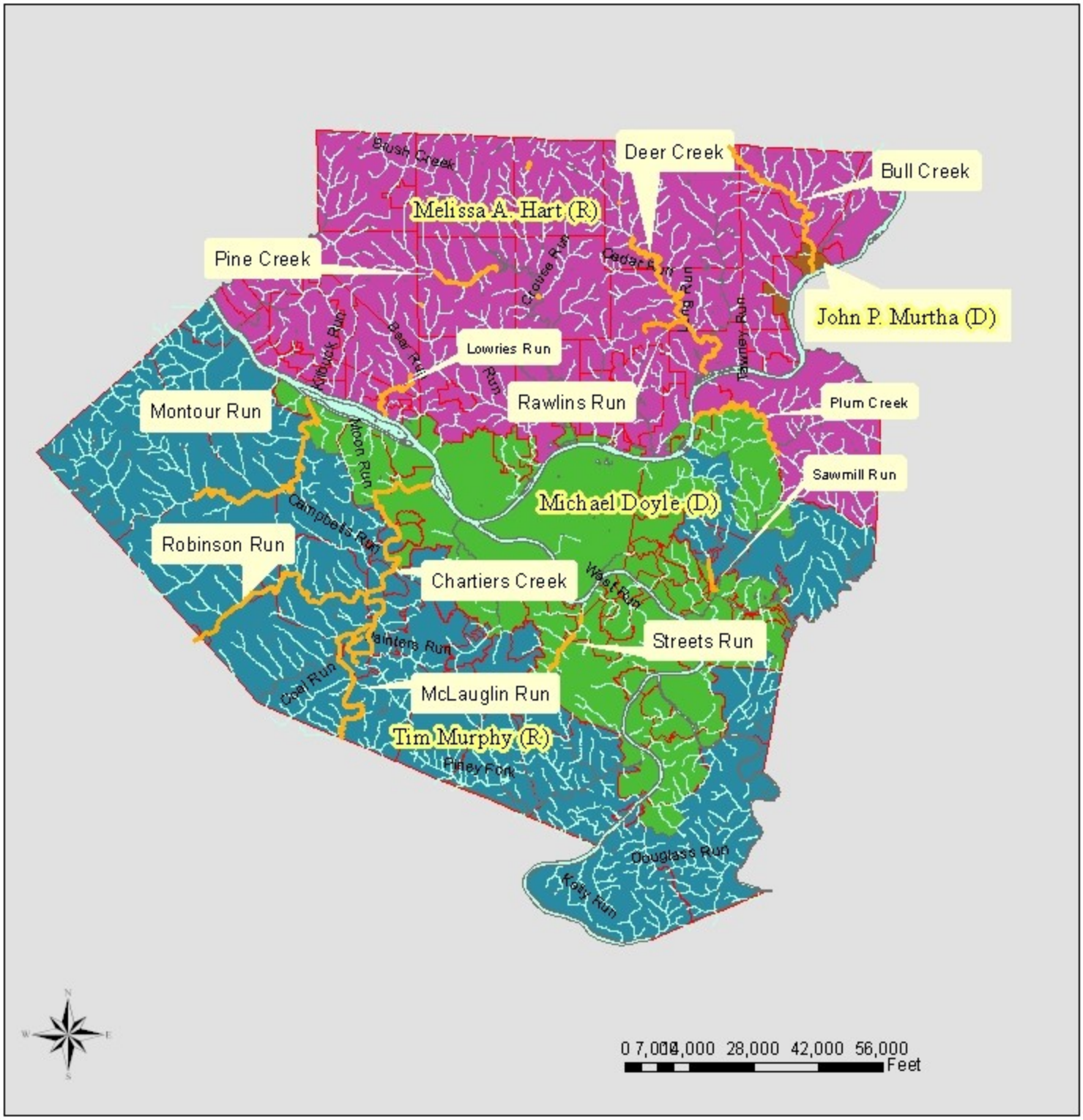


IVAN Impacted Families and Businesses

Key
Red triangle -family or business
Floodplains - pink with grey boundary
Green - County Boundary

PEMA
PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

Priority Streams



Legend

Streams
Hydrology
munibnd polygon

US Congressional Districts

NAME

- John P. Murtha (D)
- Melissa A. Hart (R)
- Michael Doyle (D)
- Tim Murphy (R)

ALLEGHENY COUNTY EMERGENCY SERVICES

GIS Unit

Stream Remediation for Allegheny County
Prioritization List

NAME	Priority
Big Sewickley Creek	High
Bull Creek	High
Campbell Run	High
Chartiers Creek	High
Crawford Run	High
Days Run	High
Deer Creek	High
Girtys Run	High
Little Deer Creek	High
Little Pine Creek	High
Lowries Run	High
McLaughlin Run	High
Millers Run	High
Montour Run	High
North Branch of Robinson Run	High
Painters Run	High
Pine Creek	High
Plum Creek	High
Rawlins Run	High
Robinson Run	High
Sawmill Run	High
Streets Run	High
Thoms Run	High
Abers Creek	Normal
Bailey Run	Normal
Beam Run	Normal
Bigger Run	Normal
Blacks Run	Normal
Blue Run	Normal
Bodies Run	Normal
Boggs Run	Normal
Boston Hollow	Normal
Boyd's Hollow Run (Trib To Youghiogheny)	Normal
Brush Creek	Normal
Bunola Run	Normal
Catfish Run	Normal

Cedar Run	Normal
Chalfant Run	Normal
Clarks Run	Normal
Coal Run	Normal
Crooked Run	Normal
Crouse Run	Normal
Cunningham Run	Normal
Dawson Run	Normal
Desperation Hollow	Normal
Dirty Camp Run (Trib To Turtle Creek)	Normal
Dolphin Run	Normal
Douglass Run	Normal
East Branch Big Sewickley Creek	Normal
Fallen Timber Run	Normal
Falling Springs Run	Normal
Fern Hollow	Normal
Fink Run	Normal
Fish Run	Normal
Fishing Run	Normal
Flaugherty Run	Normal
Georges Run	Normal
Gillespie Run	Normal
Glade Run	Normal
Glass Run	Normal
Gourdhead Run	Normal
Graesers Run	Normal
Guyasuta Run	Normal
Guys Run	Normal
Half Crown Run	Normal
Harrison Hollow	Normal
Harts Run	Normal
Homestead Run	Normal
Humms Run	Normal
Indian Creek	Normal
Jacks Run	Normal
Kaufman Run	Normal
Kelly Hollow	Normal
Kelly Run	Normal
Kilbuck Run	Normal
Lardintown Run	Normal
Leak Run	Normal

Lewis Run	Normal
Lick Run	Normal
Lintons Run	Normal
Little Bull Creek	Normal
Little Plum Creek	Normal
Little Sewickley Creek	Normal
Lobbs Run	Normal
Long Run	Normal
Lynch Ponds	Normal
McCabe Run	Normal
McCaslin Run	Normal
McClarens Run	Normal
McDowell Run	Normal
McKee Road Run	Normal
McKnight Run (mostly Underground)	Normal
Meeks Run	Normal
Moon Run	Normal
Narrows Run	Normal
Nelson Run	Normal
Ninemile Island	Normal
North Fork Montour Run	Normal
North Fork Pine Creek	Normal
Panther Hollow	Normal
Perry Mill Run	Normal
Peters Creek	Normal
Piersons Run	Normal
Piney Fork	Normal
Pinkertons Run	Normal
Pollock Run	Normal
Potato Garden Run	Normal
Powers Run	Normal
Pucketa Creek	Normal
Quigley Creek	Normal
Raredon Run	Normal
Riddle Run	Normal
Rinaman Run	Normal
Rippling Run	Normal
Sandy Creek	Normal
Scotts Run	Normal
Scrubgrass Run	Normal

Shafers Run	Normal
Shouse Run	Normal
Simpson Run	Normal
Sleepy Hollow Run	Normal
Smiths Run	Normal
South Branch Glade Run	Normal
South Fork Montour Run	Normal
Spruce Run	Normal
Squaw Run	Normal
St Patrick Run	Normal
Stewartsville Road Run	Normal
Stony Camp Run	Normal
Thompson Run	Normal
Thorn Run	Normal
Toms Run	Normal
Trout Run	Normal
West Branch Deer Creek	Normal
West Run	Normal
West Smithfield Road Run	Normal
Wexford Run	Normal
Whiskey Run	Normal
Willow Run	Normal
Wylie Run	Normal
Yutes Run	Normal

Includes approx 927 tributaries to these streams.

MEETING: YURHA - DOYLE - ONORATO

Date: 4-12-05

Name	Organization	Address	Phone #	Fax #	Email
WAYNE KUCICH	DEP LOCAL GOV LIA.	400 WATERFRONT DR. PITTS	412-442-4199	412-442-4194	WKUCICH@STATE.PA.U
KENNETH BOWMAN	DEP REGIONAL DIR.	400 WATERFRONT DR. PITTS.	412-442-4179	412-442-4194	KBOWMAN@STATE.PA.
MIKE RATTAY	U.S ARMY CORPS of Engr.	1000 LIBERTY AVE	412-395-7372		michael.j.rattay@usace.army.mi
RICH HANCOCK	U.S. Army Corps of Eng	1000 Liberty Ave, Room 2200	412-395-7105		richard.a.hancock@poa02.usace.army.m
LENNA HAWKINS	" " "	" "	412-395-7249	412-644-5810	Lenna.C.Hawkins@usace.army.mil
BARBARA McMILLEN	USDA RURAL DEVELOPMENT	RD#12 Box 202 A. GBG. PA 15601	724-853-5555 X123	724-832-9721	BARBARA.MCMILLEN@PA.USDA.GOV
SUSAN O'DONNELL	USDA, RD	" "	853-5555 X127	"	susan.odonnell@pa.usda.gov
LAMBERT ROSENBAUM	" "	PO Box 625 Evans City Rd, Butler PA 16001	724 482-4800 X116	724 482-9033	LAMBERT.ROSENBAUM@PA.USDA.GOV
Donna D Davis	DEP - Sew. Plan. Sup	400 Waterfront	4124424048	4424328	dondavis@STATE.PA.U:
JEFF Fliss	DEP-watershed MGR.	" " " "	412-442-4207	412-442-4194	jfliss@state.pa.u
Eric Carlson	EPA-	1060 Chapline St Wheeling WV	304-234-0233	304 234 0259	carlson.eric@epa.
DENNIS NAREY	AC EMERGENCY MANAGEMENT	400 N. LEXINGTON ST, PGH 15208	412-473-2621	412-473-2623	dnarey@county.allegheny.pa.us
Mark Critz	CONG. MURTHA	PO BOX 780 JOHNSTOWN 15907	814-535-2642	814-539-6229	mark.critz@mail.house.gov
JOHN HUGYA	CONG. MURTHA	" " "	"	"	
CINDY ABRAM	CONG. MURTHA	" " "	"	"	
Shawn Fox	Exec. DAN ONORATO		412 350-4695	412 350-6512	sfox@county.allegheny.pa
DENNIS DAVIN	ALLEG COUNTY ECON DEV	REG. ENT. TOWER PGH PA 15219	412 350 1083	412 471-3560	DDAVIN@COUNTY.ALLEGHENY.
LARRY GASPARATO	PENNVEST REGION II	22 S 3RD ST HARRISBURG PA 17101	717-783-6673	717-787-0804	LGASPARATO@STATE.PA.US
Paul D'Alesandro	Cong. Doyle	225 Ross St. 5th Fl. Pgh Pa 15219	412-261-5091	412-261-1983	paul.dalesandro@mail.house.gov
Mark Magliocchetti	The PMA Group	2345 Crystal Drive, Suite 300 Arlington, VA 22202	703-415-0344	703-415-0182	markmag@thepmagroup.com
ROBERT FULL	ALLEGHENY COUNTY EMA	400 N. LEXINGTON ST, PGH, PA 15208	412-473-2550	412-473 2623	rfull@county.allegheny.pa.us

MEETING: MURTHA - DOYLE - ONORATO

Date: 4-12-05

Name	Organization	Address	Phone #	Fax #	Email
KATHY FRANKEL	DCNR	1405 S.O.B. 300 Liberty Ave. Pgh, PA 15222	412-850-0486	412-565-2635	Kfrankel@state.pa.us
Jack Cvislip	DEP-	400 Water Front Drive Pgh 15222	412-442-4004	442-4328	JCVISLIP@state.pa.us
Ramez Ziadeh	DEP	400 Waterfront Drive, Pgh, PA	412-442-4273	412-442-4303	rziadeh@state.pa
FRANK HORRIGAN	GOVERNORS ACTION TEAM	300 Liberty Ave. 14th Fl. 15222	412-565-2788	412 565 2889	fhorrigan@state.pa.u
Steven Weitz	DEP	400 Waterfront Dr., Pgh 15222	412.442.4073	412.442.4328	sweitz@state.pa.us
DAVE PLANK	DEP	400 WATERFRONT DR, PGH, 15222	412 442 4210	412-442-4303	DPLANK@STATE.PA.US
JAY TARARA	DEP	" " " " "	412-442-4209	" " "	JTARARA@STATE.PA.US
CINDY ABRAM	CONG. MURTHA	647 Main St, JOHNSTOWN PA 15901	814-535-2642	814-539-6229	CABRAM@MAIL.HOUSE.G
JASON TIGANO	Cong. Doyle	225 Ross St. Pgh 15219	412-261-5091	412-261-1983	JASON.tigano@mail.housegov
~~KEN BOWMAN~~	~~DEP~~	~~400 WAT~~			

This appendix contains signed adoption resolution forms from the municipalities who adopted the Allegheny County Vulnerability Assessment and Hazard Mitigation Plan.

BOROUGH OF BRADDOCK HILLS
ALLEGHENY COUNTY, PENNSYLVANIA

RESOLUTION NO. 8 OF 2005

A RESOLUTION OF COUNCIL OF THE BOROUGH OF BRADDOCK HILLS, ALLEGHENY COUNTY, PENNSYLVANIA, ADOPTING THE ALLEGHENY COUNTY HAZARD VULNERABILITY ASSESSMENT AND MITIGATION PLAN.

WHEREAS, the Borough of Braddock Hills, Allegheny County, Pennsylvania, is vulnerable to natural hazards such as flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety; and

WHEREAS, an Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by the Allegheny County Hazard Mitigation Project Steering Committee and the people of the County; and

WHEREAS, the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the Borough of Braddock Hills; and

WHEREAS, a series of public meetings were held to develop and review the Plan.

NOW, THEREFORE, BE IT RESOLVED AND IT IS HEREBY RESOLVED BY THE COUNCIL OF THE BOROUGH OF BRADDOCK HILLS AS FOLLOWS:

1. The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official Plan of the Borough of Braddock Hills.

2. By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Council of the Borough of Braddock Hills.

3. The respective Borough officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

RESOLVED AND ENACTED this 9th day of June, 2005, by the Council and the Mayor of the Borough of Braddock Hills, in this lawful session regularly assembled.

ATTEST:

Evelyn M. Baird

Evelyn M. Baird, Secretary

BOROUGH OF BRADDOCK HILLS

By: Robert F. Henkel

Robert F. Henkel, President of Council

Mark Vogel

Mark Vogel, Mayor

RESOLUTION 9 OF 2004

WHEREAS, the Borough of Bradford Woods, in accordance with 44 CFR §201 Hazard Mitigation Planning, establishes criteria for hazard mitigation planning authorized by §104 of the Disaster Mitigation Act. Section 322 of the Disaster Mitigation Act of 2000, mandates that Allegheny County; prepare, maintain and keep current a hazard mitigation plan for evaluating the County's hazards, identifying resources and capabilities, selecting appropriate actions, and developing and implementing mitigation measures to eliminate or reduce future damage from those hazards in order to protect the health and safety, and welfare of residents within Allegheny County; and

WHEREAS, in response to the mandate stated above, Bradford Woods Borough has affirmed a commitment to Allegheny County they have assisted in preparing a hazard mitigation plan to identify any cost-effective action taken to eliminate or reduce the long-term risk to life and property from natural and technological hazards; and

WHEREAS, the Borough of Bradford Woods has also committed to reducing the potential affects of a major emergency or disaster and to protect the health, safety and welfare of the residents of this Borough through the efforts outlined by this plan;

NOW THEREFORE BE IT RESOLVED by the Borough of Bradford Woods Council to hereby approve, adopt and place into immediate effect the Hazard Mitigation Plan of Allegheny County. This Plan shall be reviewed every five years to make certain that it conforms to the requirements of the provisions set forth by the Pennsylvania Emergency Management Agency's Guideline.

ATTEST:

Secretary

BOROUGH OF BRADFORD WOODS

President

Examined and approved this 13TH day of SEPT., 2004

Mayor

CITY OF CLAIRTON
COUNTY OF ALLEGHENY
COMMONWEALTH OF PENNSYLVANIA
RESOLUTION NO. 1521

A RESOLUTION OF THE CITY OF CLAIRTON, ALLEGHENY COUNTY, AND THE COMMONWEALTH OF PENNSYLVANIA, THE ALLEGHENY COUNTY HAZARD VULNERABILITY ASSESSMENT AND MITIGATION PLAN IS HEREBY ADOPTED AS AN OFFICIAL PLAN OF THE CITY OF CLAIRTON.

WHEREAS, the City of Clairton, Allegheny County, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety; and

WHEREAS, a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by Allegheny County Hazard Mitigation Project Steering Committee and the people of the County; and

WHEREAS, the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the City of Clairton; and

WHEREAS, a series of public meeting were held to develop and review the plan.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Members of Council of the City of Clairton that:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the City of Clairton.
- By September 30th of each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Mayor and Members of the City of Clairton.
- The respective City officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

ADOPTED THIS 14TH DAY OF JUNE, 2005

ATTEST:
Ralph D. Imbrogno
Ralph D. Imbrogno, Municipal Manager

CITY OF CLAIRTON
Dominic P. Serapiglia
Dominic P. Serapiglia, Mayor

OFFICIAL
BOROUGH OF DRAVOSBURG
ALLEGHENY COUNTY, PENNSYLVANIA
RESOLUTION NO. 2005-02

A RESOLUTION OF THE BOROUGH OF DRAVOSBURG, COUNTY OF ALLEGHENY AND COMMONWEALTH OF PENNSYLVANIA, APPROVING AND ADOPTING THE ALLEGHENY COUNTY HAZARD VULNERABILITY ASSESSMENT AND MITIGATION PLAN AS AN OFFICIAL PLAN OF THE BOROUGH OF DRAVOSBURG.

WHEREAS, the Steel Valley Council of Governments, of which the Borough of Dravosburg is a member, has requested that the Borough of Dravosburg officially adopt the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan; and

WHEREAS, after considering possible approval of the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan as requested by the Steel Valley Council of Governments, the Council of the Borough of Dravosburg has determined that the adoption of said Plan will promote the health, safety and welfare of the Borough of Dravosburg, and should be adopted as an official plan of the Borough.

NOW, THEREFORE, BE IT RESOLVED AND ADOPTED By the Council of the Borough of Dravosburg, Allegheny County, Pennsylvania, and IT IS HEREBY RESOLVED and ADOPTED by authority of the same, that:

1. The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Borough of Dravosburg.

2. By September 30th of each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Emergency Management Coordinator and Council of the Borough of Dravosburg.

3. The respective Borough officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

RESOLVED AND ADOPTED by the Council of the Borough of Dravosburg, Allegheny County, Pennsylvania, meeting in regular and public session, this 21st day of June, 2005.

ATTEST:

Brenda Honick
Secretary

Borough of Dravosburg

By: Dean Bradley
Dean Bradley
President of Council

Borough of East McKeesport

907 Florence Avenue • East McKeesport, PA 15035
Phone: 412-824-2531 • Fax: 412-824-1026
Council meets second Thursday of each month at 7:00 pm

October 4, 2004

Turtle Creek Valley Council of Governments
519 Penn Avenue
Suite 204
Turtle Creek, PA 15145

To Whom It May Concern:

East McKeesport Borough Council at their September 9, 2004 regular meeting unanimously approved the final draft of the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan.

Attached please find the following documents outlining changes to the plan for the Borough of East McKeesport.

If you have any questions regarding this matter, please feel free to contact our office.

Sincerely,

Connie Rosenbayger
Borough Secretary

Enclosure

BOROUGH OF ETNA
RESOLUTION NO. 1304A

WHEREAS, the Borough of Etna, Allegheny County, is vulnerable to natural hazards including, but not limited to, flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety; and

WHEREAS, a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by the Allegheny County Hazard Mitigation Project Steering Committee and the people of said County; and

WHEREAS, as the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the Borough of Etna; and

WHEREAS, a series of public meetings was held to develop and review the plan.

NOW, THEREFORE, BE AND IT HEREBY IS RESOLVED by the Borough of Etna Council as follows:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan are hereby adopted as an official plan of the Borough of Etna.
- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Borough Council of the Borough of Etna.

ADOPTED this 19th day of April, 2005.

BOROUGH OF ETNA

ATTEST:

Mary Ellen Ramage
Mary Ellen Ramage, Secretary

Peter Ramage
Peter Ramage, President

Resolution No. 1033

WHEREAS the Borough of Forest Hills, Allegheny County, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in properly loss, loss of life, economic hardship and threats to public health and safety,

WHEREAS a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by Allegheny County Hazard Mitigation Project Steering Committee and the people of the County,

WHEREAS the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the Borough of Forest Hills, and

WHEREAS a series of public meetings were held to develop and review the plan,

NOW THEREFORE BE IT RESOLVED by the Mayor and Council President of the Borough of Forest Hills that:

The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Borough of Forest Hills.

By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Mayor and Council President of the Borough of Forest Hills.

The respective borough officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

BE IT RESOLVED AND ENACTED this 15th day of September, 2004.

ATTEST:

Steven J. Morus
Manager

BOROUGH OF FOREST HILLS

Michael Belmonte
Council President

BOROUGH OF FOX CHAPEL
RESOLUTION NO. 519

WHEREAS, the Borough of Fox Chapel, Allegheny County, is vulnerable to natural hazards including, but not limited to, flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety; and

WHEREAS, a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by the Allegheny County Hazard Mitigation Project Steering Committee and the people of said County; and

WHEREAS, the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the Borough of Fox Chapel; and

WHEREAS, a series of public meetings was held to develop and review the plan.

NOW, THEREFORE, BE AND IT HEREBY IS RESOLVED by the Borough Council of the Borough of Fox Chapel as follows:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Borough of Fox Chapel.
- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Borough Council of the Borough of Fox Chapel.
- The respective Borough officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

ADOPTED this the 15th day of November, 2004

Attest:

Dana A. Abate
DANA A. ABATE
Secretary

BOROUGH OF FOX CHAPEL

N. K. Parker, Jr.
N. K. PARKER, JR.
President

OFFICIAL
BOROUGH OF FRANKLIN PARK
RESOLUTION NO. 874-2004

A RESOLUTION OF THE BOROUGH COUNCIL OF THE BOROUGH OF FRANKLIN PARK, ALLEGHENY COUNTY, APPROVING AND ADOPTING THE HAZARD MITIGATION PLAN.

WHEREAS, 44 CFR Part 201 Hazard Mitigation Planning, establishes criteria for hazard mitigation planning authorized by §322 of the Stafford Act, as amended by §104 of the Disaster Mitigation Act. Section 322 of the Disaster Mitigation Act of 2000, mandates that Allegheny County; prepare, maintain and keep current a hazard mitigation plan for evaluating the County's hazards, identifying resources and capabilities, selecting appropriate actions, and developing and implementing mitigation measurers to eliminate or reduce future damage from those hazards in order to protect the health and safety, and welfare of residents within this County; and

WHEREAS, in response to the mandate stated above, this Borough has affirmed a commitment to the County they have assisted in preparing a hazard mitigation plan to identify any cost-effective action taken to eliminate or reduce the long-term risk to life and property from natural and technological hazards; and

WHEREAS, this Borough has also committed to reducing the potential affects of a major emergency or disaster and to protect the health, safety and welfare of the residents of this municipality through the efforts outlined by this plan;

NOW, THEREFORE, BE IT RESOLVED, we, the undersigned Council of Franklin Park Borough do hereby approve, adopt and place into immediate effect the Hazard Mitigation Plan of Allegheny County. This Plan shall be reviewed every five years to make certain that it conforms to the requirements of the provisions set forth by the Pennsylvania Emergency Management Agency's Guideline.

ADOPTED by the Borough Council of the Borough of Franklin Park, Allegheny County, Pennsylvania, at its regular meeting held on the 17th day of November 2004.

ATTEST:

Secretary

BOROUGH OF FRANKLIN PARK

President of Borough Council

BOROUGH OF HOMESTEAD

RESOLUTION NO. 1500

WHEREAS, 44 CFR Part 201 Hazard Mitigation Planning, establishes criteria for hazard mitigation planning authorized by Section 322 of the Stafford Act, as amended by Section 104 of the Disaster Mitigation Act. Section 322 of the Disaster Mitigation Act of 2000, mandates that Homestead Borough: prepare, maintain and keep current a hazard mitigation plan for evaluating the Borough's hazards, identifying resources and capabilities, selecting appropriate actions, and developing and implementing mitigation measures to eliminate or reduce future damage from those hazards in order to protect the health and safety, and welfare of residents within this Borough; and

WHEREAS, in response to the mandate stated above, this Borough has affirmed a commitment to the County they have assisted in preparing a hazard mitigation plan to identify any cost-effective action taken to eliminate or reduce the long-term risk to life and property from natural and technological hazards; and

WHEREAS, this Borough has also committed to reducing the potential affects of a major emergency or disaster and to protect the health, safety and welfare of the residents of this municipality through the efforts outline by this plan;

NOW, THEREFORE, we the undersigned Council of the Borough of Homestead do hereby approve, adopt and place into immediate effect the Hazard Mitigation Plan of Allegheny County. This Plan shall be reviewed every five years to make certain that it conforms to the requirements of the provisions set forth by the Pennsylvania Emergency Management Agency's Guideline.

RESOLVED AND ADOPTED by the Council of the Borough of Homestead, County of Allegheny and Commonwealth of Pennsylvania, a meeting in regular and public session, this 9th day of February, 2006.

ATTEST

Donna Beatty, Borough Manager Secretary

BOROUGH OF HOMESTEAD

Mark Brown, President of Council

OFFICIAL
TOWN OF McCANDLESS
RESOLUTION NO. 3 OF 2005

A RESOLUTION ADOPTING THE ALLEGHENY COUNTY HAZARD VULNERABILITY ASSESSMENT AND MITIGATION PLAN AS THE OFFICIAL HAZARD MITIGATION PLAN OF THE TOWN OF McCANDLESS

WHEREAS, the Town of McCandless, Allegheny County, is vulnerable to natural hazards including, but not limited to, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety; and

WHEREAS, an Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by the Allegheny County Hazard Mitigation Project Steering Committee; and

WHEREAS, the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the Town of McCandless; and

WHEREAS, a series of public meetings was held to develop and review the plan.

NOW, THEREFORE, BE AND IT HEREBY IS RESOLVED by the Town Council of the Town of McCandless as follows:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Town of McCandless so long as the plan (1) does not bind the Town of McCandless to undertake or pay for work it does not intend to undertake, and (2) continues to allow the Town of McCandless to establish its own priorities and pay for or obtain funding to assist in the mitigation of hazards within its boundaries.

- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Town Council of the Town of McCandless.

Motion made by Council member Mohr, seconded by Council member Aufman, and this resolution is adopted this 23rd day of *May 2005*.

ATTEST:

Secretary

TOWN COUNCIL
TOWN OF McCANDLESS

President

I do hereby certify the above to be a true and correct copy of Resolution #3 of 2005 passed by the Town Council of the Town of McCandless on the 23rd day of May, 2005.

Town Secretary

MUNICIPALITY OF MONROEVILLE

ALLEGHENY COUNTY, PENNSYLVANIA

RESOLUTION NO. 04-72

A RESOLUTION OF THE MUNICIPALITY OF MONROEVILLE ADOPTING THE ALLEGHENY COUNTY VULNERABILITY AND MITIGATION PLAN FOR THE MUNICIPALITY OF MONROEVILLE PURSUANT TO THE FEDERAL DISASTER MITIGATION ACT OF 2000

WHEREAS, the Municipality of Monroeville, Allegheny County, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety.

WHEREAS, a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by Allegheny County Hazard Mitigation Project Steering Committee and the people of the County; and

WHEREAS, the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face Monroeville; and

WHEREAS, a series of public meetings were held to develop and review the plan.

NOW, THEREFORE, BE IT RESOLVED by the Council of the Municipality of Monroeville that:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Municipality of Monroeville
- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Mayor and Council of the Municipality of Monroeville.
- The respective municipal officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

ADOPTED this 14th day of September, 2004.

Marshall W. Bond
Municipal Manager

James J. Lomeo
Mayor

ENTERED INTO LEGAL BOOK: September 24, 2004

BOROUGH OF MUNHALL
RESOLUTION 2005-02

WHEREAS, the Borough of Munhall, Allegheny County, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety.

WHEREAS, an Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by Allegheny County Hazard Mitigation Project Steering Committee and the people of the County.

WHEREAS, the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the Borough of Munhall, and

WHEREAS, a series of public meetings were held to develop and review the plan.

NOW THEREFORE BE IT RESOLVED by the Council of the Borough of Munhall that:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Borough of Munhall.
- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an Annual evaluation report to the Council of the Borough of Munhall.
- The respective Borough officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

ADOPTED this 15th day of June, 2005.

Business Manager

President of Council

NORTH BRADDOCK BOROUGH

RESOLUTION NO. 13-2004

WHEREAS BOROUGH OF NORTH BRADDOCK , Allegheny County, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety,

WHEREAS a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by Allegheny County Hazard Mitigation Project Steering Committee and the people of the County,

WHEREAS the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face NORTH BRADDOCK BOROUGH, AND

WHEREAS a series of public meetings were held to develop and review the plan,

NOW THEREFORE BE IT RESOLVED by the NORTH BRADDOCK BOROUGH COUNCIL THAT;

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of NORTH BRADDOCK BOROUGH.
- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the BOROUGH COUNCIL OF THE BOROUGH OF NORTH BRADDOCK.
- The respective BOROUGH officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

ADOPTED this the 21st day of SEPTEMBER, , 2004

MANAGER/SECRETARY of NORTH BRADDOCK BOROUGH, ALLEGHENY COUNTY, PENNSYLVANIA
Douglas P. Marguriet

APPROVED this the 21st day of September, , 2004

COUNCIL PRESIDENT OF NORTH BRADDOCK

ATTESTED and FILED this the 21st day of September, , 2004

MANAGER/SECRETARY OF NORTH BRADDOCK

Resolution No. 16-04

WHEREAS the Ohio Township, Allegheny County, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety,

WHEREAS a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by Allegheny County Hazard Mitigation Project Steering Committee and the people of the County,

WHEREAS the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face Ohio Township, and

WHEREAS a series of public meetings were held to develop and review the plan,

NOW THEREFORE BE IT RESOLVED by the [insert elected official and governing body] of the Ohio Township that:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Ohio Township.
- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Ohio Township Board of Supervisors.
- The respective Township officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

ADOPTED this the 4th day of October, 2004

John L. Sullivan, Jr. Manager / Secretary of Ohio Township Allegheny County, Pennsylvania

APPROVED this the 4th day of October, 2004

Herbert J. Hartle, Chairman of the Board of Supervisors of Ohio Township, Allegheny County, Pennsylvania

ATTESTED and FILED this the 4th day of October, 2004

Michael J. Witherel, Solicitor of Ohio Township, Allegheny County, Pennsylvania"

TOWNSHIP OF PINE

ALLEGHENY COUNTY • PENNSYLVANIA
230 Pearce Mill Road, Wexford, PA 15090

BOARD OF SUPERVISORS

RICHARD BRANT, *Chair*
MICHAEL J. DENNEHY
PHILIP D. HENRY
FRANK J. SPAGNOLO
DANIEL J. SPORRER

GARY J. KOEHLER, AICP, *Manager*

724-625-1591
Facsimile **724-625-1560**
Homepage - **http://twp.pine.pa.us**
e-mail - **gkoehler@twp.pine.pa.us**

September 21, 2004

North Hills Council of Governments
North Pointe Office Park
9800 McKnight Road
Suite 325A
Pittsburgh, PA 15237
Attn. Wayne Roller, Executive Director

RE: Allegheny County Hazard Mitigation Planning Project

Dear Wayne:

At the Township of Pine Board of Supervisors meeting of September 20, 2004 the Township of Pine Board of Supervisors formally approved the draft Allegheny County Hazard Mitigation Plan. (Final Draft Plan, dated July 2004.)

I understand that the plan will now be finalized and the final version will be submitted to the Township and will need to be adopted by the Board by resolution at a future meeting.

Sincerely,

Gary J. Koehler, AICP,
Township Manager

TOWNSHIP OF RESERVE

RESOLUTION NO. 397-04

A RESOLUTION OF THE TOWNSHIP OF RESERVE, COUNTY OF ALLEGHENY AND COMMONWEALTH OF PENNSYLVANIA, AUTHORIZING THE ADOPTION OF THE ALLEGHENY COUNTY HAZARD VUNERABILITY ASSESSMENT AND MITIGATION PLAN AS AN OFFICIAL PLAN OF THE TOWNSHIP.

WHEREAS, the Township of Reserve, Allegheny County, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety,

WHEREAS, a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by Allegheny County Hazard Mitigation Project Steering Committee and the people of the County,

WHEREAS, the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face Township of Reserve, and

WHEREAS, a series of public meetings were held to develop and review the plan,

NOW THEREFORE BE IT RESOLVED by the Board of Commissioners of the Township of Reserve that:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Township of Reserve.

- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Board of Commissioners of the Reserve Township.
- The respective Township officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

RESOLVED and ADOPTED this the 13th day of SEPTEMBER, 2004

ATTEST:

Shirley Scherling

SHIRLEY SCHERLING
Secretary

TOWNSHIP OF RESERVE

DAVID E. BARIE
President
Board of Commissioners

SEAL:

OFFICIAL
TOWNSHIP OF RICHLAND
RESOLUTION NO. 19 OF 2004

A RESOLUTION APPROVING THE ALLEGHENY COUNTY MITIGATION PLAN.

WHEREAS, the Township of Richland, Allegheny County, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety,

WHEREAS a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by Allegheny County Hazard Mitigation Project Steering Committee and the people of the County,

WHEREAS the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face Richland Township, and

WHEREAS a series of public meetings were held to develop and review the plan,

NOW THEREFORE BE IT RESOLVED by the Board of Supervisors of the Township of Richland that:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Township of Richland.

- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the of the Board of Supervisors of the Township of Richland.

- The respective Richland Township officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

RESOLVED AND ADOPTED by the Board of Supervisors of the Township of Richland at duly organized meeting this 6th day of October, 2004.

ATTEST:

Dean E. Bastianini
Township Secretary

TOWNSHIP OF RICHLAND
BOARD OF SUPERVISORS

Herbert C. Dankmyer
Chairman

I, Dean E. Bastianini, Township Secretary of the Township of Richland, do hereby certify that the foregoing is a true and correct copy of the Resolution adopted at the regular meeting of the Board of Supervisors, held on the 6th day of October 2004.

Township Secretary

Date 10-7-04

RESOLUTION NO. 1831

A RESOLUTION OF THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF ROSS, COUNTY OF ALLEGHENY AND COMMONWEALTH OF PENNSYLVANIA, WHICH PROVIDES AS FOLLOWS:

WITNESS TO:

WHEREAS, 44 CFR Part 201 Hazard Mitigation Planning, establishes criteria for hazard mitigation planning authorized by §322 of the Stafford Act, as amended by §104 of the Disaster Mitigation Act, Section 322 of the Disaster Mitigation Act of 2000, mandates that Ross Township; prepare, maintain and keep current a hazard mitigation plan for evaluating the Municipality's hazards, identifying resources and capabilities, selecting appropriate actions, and developing and implementing mitigation measures to eliminate or reduce future damage from those hazards in order to protect the health and safety, and welfare of residents within this Municipality; and

WHEREAS, in response to the mandate stated above, this Municipality has affirmed a commitment to the County they have assisted in preparing a hazard mitigation plan to identify any cost-effective action taken to eliminate or reduce the long-term risk to life and property from natural and technological hazards; and

WHEREAS, this Municipality has also committed to reducing the potential affects of a major emergency or disaster and to protect the health, safety and welfare of the residents of this Municipality through the efforts outlined by this plan;

NOW, THEREFORE, the Ross Township Board of Commissioners do hereby approve, adopt and place into immediate effect the Hazard Mitigation Plan of Ross Township. This Plan shall be reviewed every five years to make certain that it conforms to the requirements of the provisions set forth by the Pennsylvania Emergency Management Agency's Guideline.

BE IT ORDAINED AND ENACTED into law by the Board of Commissioners of Ross Township at its regularly convened public meeting held on the 27th day of SEPTEMBER, 2004.

ATTEST:

Thomas D. Lavorini, Manager

TOWNSHIP OF ROSS:

Peter A. Ferraro, President
Board of Commissioners

TOWNSHIP OF SHALER

RESOLUTION NO. 8-05

WHEREAS, the Township of Shaler, Allegheny County is vulnerable to natural hazards including, but not limited to, flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety; and;

WHEREAS, a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by the Allegheny County Hazard Mitigation Project Steering Committee and the people of said County; and

WHEREAS, the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the Township of Shaler; and;

WHEREAS, a series of public meetings was held to develop and review the plan.

NOW, THEREFORE, BE AND IT HEREBY IS RESOLVED by the Board of Commissioners of the Township of Shaler as follows:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Township of Shaler.
- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Board of Commissioners of the Township of Shaler.
- The respective Township officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

ADOPTED this the 26th day of April, 2005.

Attest: TOWNSHIP OF SHALER

Timothy J. Rogers
Secretary

Thomas J. McElhone
~~President~~
James Boyle, Vice President

TOWNSHIP OF SHALER CONSTITUTED 1900 A TOWNSHIP OF THE FIRST CLASS ALLEGHENY COUNTY, PA

The Borough of Swissvale

7560 ROSLYN STREET
SWISSVALE, PENNSYLVANIA 15218
Phone: 412/ 271-7101
FAX: 412/ 271-5441

September 2, 2004

Turtle Creek Valley Council of Governments
519 Penn Avenue
Suite 204Turtle Creek, PA 15145
Att: Norine Kelly

Dear Norine:

Swissvale Borough Council at its meeting on September 1, 2004 gave preliminary approval to the hazard mitigation plan. If you need any further information please contact me.

Sincerely,

Warren Cecconi
Borough Manager

RESOLUTION NO. 04-06

OF THE BOROUGH OF WALL

A RESOLUTION OF THE BOROUGH OF WALL AUTHORIZI NG THE ADOPTION OF THE HAZARD VULNERABILITY ASSESSI IENT AND MITIGATION PLAN OF THE COUNTY OF ALLEGI ENY

WHEREAS, the BOROUGH OF WALL is vulnerable to n: tural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfire s, landslides, and human-caused hazards that can result in property loss, loss of life, e :onomic hardship and threats to public health and safety;

WHEREAS, an Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by Allegheny County Hazard Mitigation Project Steering Committee and the people of the County;

WHEREAS, the Allegheny County Hazard Vulnerabilit Assessment and Mitigation Plan recommends mitigation activities that will reduce osses to life and property affected by the natural hazards that face the BOROUGH (F WALL; and

WHEREAS, a series of public meetings were held to d velop and review the plan.

NOW THEREFORE, BE IT RESOLVED by the Council of he BOROUGH OF WALL that:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an of icial plan of the BOROUGH OF WALL.
- By September 30 of each year, the Allegher y County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Council of the BOROU GH OF WALL.
- The respective BOROUGH officials and agenci s identified in the strategy of the Plan are hereby directed t implement the recommended activities assigned to them. The will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their a tivities.

RESOLVED, this 8th day of September, 2004, by Co ncil assembled in the BOROUGH OF WALL.

ATTEST:

Secretary

BOROUGH OF WALL

By: President of Council

Dated: September 8, 2004

TOWNSHIP OF WEST DEER
RESOLUTION NO. 2005-9

WHEREAS, the Township of West Deer, Allegheny County, is vulnerable to natural hazards including, but not limited to, flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety; and

WHEREAS, a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan has been developed by the Allegheny County Hazard Mitigation Project Steering Committee and the people of said County; and

WHEREAS, the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the Township of West Deer; and

WHEREAS, Allegheny County held a series of public meetings to develop and review the plan.

NOW, THEREFORE, BE AND IT HEREBY IS RESOLVED by the Township Supervisors of the Township of West Deer as follows:

- The Allegheny County Hazard Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Township of West Deer.
- By September 30 each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Township Supervisors of the Township of West Deer.
- The respective Township officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

ADOPTED this the 4 day of May, 2005.

Attest:

Jason A. Dailey
Township Manager

TOWNSHIP OF WEST DEER

Ronald L. Borczyk, Chairman
Board of Supervisors

RESOLUTION NO. 4 -05

THIS RESOLUTION approved and adopted by the Borough Council of West Elizabeth Township of Allegheny County, Pennsylvania, on the date hereinafter set forth.

WITNESS TO:

WHEREAS, 44 CFR Part 201 Hazard Mitigation Planning, establishes criteria for hazard mitigation planning authorized by §322 of the Stafford Act, as amended by §104 of the Disaster Mitigation Act. Section 322 of the Disaster Mitigation Act of 2000, mandates that Allegheny County prepare, maintain and keep current a hazard mitigation plan for evaluating the County's hazards, identifying resources and capabilities, selecting appropriate actions, and developing and implementing mitigation measures to eliminate or reduce future damage from those hazards in order to protect the health and safety, and welfare of residents within this County; and

WHEREAS, in response to the mandate stated above, West Elizabeth has affirmed a commitment to the County they have assisted in preparing a hazard mitigation plan to identify any cost-effective action taken to eliminate or reduce the long-term risk to life and property from natural and technological hazards, and

WHEREAS, West Elizabeth has also committed to reducing the potential effects of a major emergency or disaster and to protect the health, safety and welfare of the residents of this municipality through the efforts outlined by this plan;

NOW, THEREFORE, we, the Borough Council of West Elizabeth do hereby approve, adopt and place into immediate effect the Hazard Mitigation Plan of Allegheny County. This Plan shall be reviewed every five years to make certain that it conforms to the requirements of the provisions set forth by the Pennsylvania Emergency Management Agency's guideline.

BOROUGH COUNCIL

Louise Biddle

By Louise Biddle,
Council President

ATTEST

Pamela Grimm

Secretary

7-5-05

Date

P0746733.1

OFFICIAL

BOROUGH OF WEST HOMESTEAD

RESOLUTION NO. 1338

RESOLUTION ADOPTING THE ALLEGHENY COUNTY HAZARD VULNERABILITY ASSESSMENT AND MITIGATION PLAN AS THE OFFICIAL PLAN OF THE BOROUGH OF WEST HOMESTEAD

WHEREAS, the Borough of West Homestead, Allegheny County, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety; and,

WHEREAS, a Allegheny County Hazard Vulnerability Assessment and Mitigation Plan, (hereinafter the "Plan") has been developed by the Allegheny County Hazard Mitigation Project Steering Committee and the people of the County; and,

WHEREAS, the Plan recommends mitigation activities that will reduce losses to life and property affected by the natural hazards that face the Borough of West Homestead; and,

WHEREAS, a series of public meetings were held to develop and review the Plan.

NOW, THEREFORE, be it resolved by the Council of the Borough of West Homestead, Allegheny County, Pennsylvania, and it is hereby resolved by the authority of the same as follows:

1. That the Borough Council hereby adopts the Allegheny County

Hazard Vulnerability Assessment and Mitigation Plan as the official plan of the Borough of West Homestead.

2. By September 30th of each year, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Council President and to the Borough of West Homestead.

3. The respective Borough officials and agencies identified in the strategy of the Plan are hereby directed to implement the recommended activities assigned to them. They will consult semi-annually with the Allegheny County Hazard Mitigation Project Steering Committee on the progress of their activities.

This Resolution was passed at an regular meeting of the West Homestead Borough Council on the 14th day of June, 2005.

ATTEST:

Donna M McMichael

BOROUGH OF WEST HOMESTEAD

By:

David M. Weir
President of Council

Examined and approved this 14th day of June, 2005.

By:

John J. Dindak, Mayor

ATTEST:

Donna M McMichael
Borough Secretary

BOROUGH OF WHITAKER
ALLEGHENY COUNTY, PENNSYLVANIA

RESOLUTION NO. 3 OF 2005

A RESOLUTION OF THE BOROUGH OF WHITAKER, COUNTY OF ALLEGHENY, COMMONWEALTH OF PENNSYLVANIA ADOPTING THE ALLEGHENY COUNTY HAZARD VULNERABILITY ASSESSMENT AND MITIGATION PLAN AS AN OFFICIAL PLAN FOR THE BOROUGH OF WHITAKER AND AUTHORIZING OFFICIALS NAMED IN THE MITIGATION PLAN TO IMPLEMENT THE ACTIVITIES RECOMMENDED IN THE PLAN ON BEHALF OF THE CITIZENS OF THE BOROUGH

WHEREAS, the Borough of Whitaker, Allegheny County, Pennsylvania, is vulnerable to natural hazards like flooding, wind and weather hazards, drought, earthquakes, wildfires, landslides, and human-caused hazards that can result in property loss, loss of life, economic hardship and threats to public health and safety; and

WHEREAS, Section 322 of the Disaster Mitigation Act of 2000 mandates that counties in Pennsylvania prepare, maintain and keep current a hazard mitigation plan for evaluating the county's hazards, identifying resources and capabilities, selecting appropriate actions, and developing and implementing mitigation measures to eliminate or reduce future damage from those hazards in order to protect the health and safety and welfare of all residents in the county, and

WHEREAS, *an Allegheny County Hazard Mitigation Project Steering* Committee has been created in Allegheny County; and

WHEREAS, the Allegheny County Hazard Mitigation Project Steering Committee has developed an Allegheny County Vulnerability Assessment and Mitigation Plan after a series of public meetings and hearings, and

WHEREAS, the Allegheny County Vulnerability Assessment and Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by natural hazards that face the Borough of Whitaker; and

WHEREAS, the Allegheny County Hazard Mitigation Project Steering Committee has recommended that all municipalities in Allegheny County should adopt the Allegheny County Vulnerability Assessment and Mitigation Plan and to identify any cost-effective action to eliminate or reduce the long term risks to life and property

NOW, THEREFORE, BE IT RESOLVED, by the Council of the Borough of Whitaker, acting pursuant to the authority granted by the Borough Code, as follows:

1. The Allegheny County Vulnerability Assessment and Mitigation Plan is hereby adopted as an official plan of the Borough of Whitaker.

2. By September 30 of each year following this Resolution, the Allegheny County Hazard Mitigation Project Steering Committee shall prepare an annual evaluation report to the Mayor and Council of the Borough of Whitaker.

3. The public officials and agencies identified in the Allegheny County Vulnerability Assessment and Mitigation Plan are hereby authorized and directed to implement the activities recommended in the Plan. The public officials and agencies identified in the Allegheny County Vulnerability Assessment and Mitigation Plan are further authorized and directed to consult with the Allegheny County Hazard Mitigation Project Steering Committee on the activities undertaken in the Borough to implement the recommendations contained in the Mitigation Plan.

4. If any provision of this Resolution shall be determined to be unlawful, invalid, void or unenforceable, then that provision shall be considered

Township of Wilkins

Allegheny County
Founded in 1821

Irene J. Pohl Municipal Building
110 Peffer Road
Turtle Creek, PA 15145-1192

October 4, 2004

Turtle Creek Valley Council of Governments
Attention: Ms. Norine Kelly
519 Penn Avenue, Suite 204
Turtle Creek, PA 15145

RE: Allegheny County Hazard Mitigation Planning Project

Dear Ms. Kelly:

Please be advised that the Board of Commissioners of the Township of Wilkins, meeting in regular session on Monday, September 27, 2004, unanimously approved a motion to accept the recommendation of N. Leonard Hill, Emergency Management Coordinator for the Township, to approve the final draft of the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan.

If you require further information, please feel free to contact me.

Sincerely,

TOWNSHIP OF WILKINS

Rebecca Bradley
Manager

Cc: Board of Commissioners
Mr. N. Leonard Hill

Telephone: (412) 824-6650
Fax: (412) 824-3808 * Police Fax: (412) 824-6647 * Public Works Fax: (412) 824-1986

This appendix contains meeting sign-in sheets from the meetings held for the Allegheny County Hazard Mitigation Plan.

No. _____ Term, _____

Proof of Publication of Notice in Pittsburgh Post-Gazette

Under Act No. 587, Approved May 16, 1929, P.L. 1784, as last amended by Act No. 409 of September 29, 1951

Commonwealth of Pennsylvania, County of Allegheny, ss: M. Goodwin , being duly sworn, deposes and says that the Pittsburgh Post-Gazette, a newspaper of general circulation published in the City of Pittsburgh, County and Commonwealth aforesaid, was established in 1993 by the merging of the Pittsburgh Post-Gazette and Sun-Telegraph and The Pittsburgh Press and the Pittsburgh Post-Gazette and Sun-Telegraph was established in 1960 and the Pittsburgh Post-Gazette was established in 1927 by the merging of the Pittsburgh Gazette established in 1786 and the Pittsburgh Post, established in 1842, since which date the said Pittsburgh Post-Gazette has been regularly issued in said County and that a copy of said printed notice or publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said Pittsburgh Post-Gazette a newspaper of general circulation on the following dates, viz:

05 of August, 2005

Affiant further deposes that he/she is an agent for the PG Publishing Company, a corporation and publisher of the Pittsburgh Post-Gazette; that, as such agent, affiant is duly authorized to verify the foregoing statement under oath; that affiant is not interested in the subject matter of the aforesaid notice or publication; and that all allegations in the foregoing statement as to time, place and character of publication are true.

COPY OF NOTICE OR PUBLICATION

ALLEGHENY COUNTY EMERGENCY MANAGEMENT NOTICE TO ALL INTERESTED PARTIES

In accordance with 44 CFR 201.6, the Interim Final Rule for the Disaster Mitigation Act of 2000 (DMA 2000), the County of Allegheny, Pennsylvania, developed the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan. This plan was developed to identify hazards that threaten the County and to forward the process of reducing future damages from natural and manmade disasters.

The County's website will serve as a means of two-way communication with the general public by not only posting the plan on the internet and providing information about mitigation initiatives within the County, but also as an avenue for feedback from the public to express their views and comments. The Final Draft Plan can be found on the County's website: http://www.county.allegheny.pa.us/hazard/aplan/toc.asp. The official 30 day comment period will conclude on August 31, 2005, however, the County will continue to review and consider all public comments for incorporation in all subsequent updates of the Plan.

The County's Final Draft Hazard Vulnerability Assessment and Mitigation Plan is also available for review by the public at the below identified locations during regular business hours. 8:30 a.m., to 4:30 p.m., Monday through Friday. Those persons needing special accommodations or communications services should notify Allegheny County Emergency Management at (412-473-2550) to make arrangements.

The Allegheny County Department of Emergency Service, 400 N. Lexington Street, Ste. 200, Pittsburgh, PA 15208-2521, (412-473-2550), or The Allegheny County Department of Economic Development, 425 Sixth Avenue, Ste. 800, Pittsburgh, PA 15219, (412-350-1000).

ROBERT A. FULL, Chief
Dept. of Emergency Services
County of Allegheny

M. Goodwin
PG Publishing Company

Sworn to and subscribed before me this day of:
August 05, 2005

Mary E. Wzenegger

Notarial Seal
Notary Public
County
My Commission Expires Feb. 17, 2008
Member, Pennsylvania Association of Notaries

STATEMENT OF ADVERTISING COSTS

ALCTY EMG. MGMT.
(LEPC) Karen A. Bruno
400 N. Lexington St. Ste. 200
PITTSBURGH PA 15208

To PG Publishing Company

Total ----------$517.65

blisher's Receipt for Advertising Costs

PG PUI IPANY, publisher of the Pittsburgh Post-Gazette, a newspaper of general circulation, hereby acknowlec orsaid advertising and publication costs and certifies that the same have been fully paid.

34 Boule
PITTSBU
Phone

PG Publishing Company, a Corporation, Publisher of Pittsburgh Post-Gazette, a Newspaper of General Circulation

By _____

I hereby going is the original Proof of Publication and receipt for the Advertising costs in the subject matter of

_____
Attorney for

POP6 07/2003

PITTSBURGH
Tribune-Review / Tribune-Review
Legal Advertising

Proof of Publication of Notice in The Tribune-Review
Under Act No. 587, Approved May 16,1929

Commonwealth of Pennsylvania
County of Westmoreland } SS:

LORI SCANLON, Classified Call Center Manager of the Tribune-Review Publishing Company, a corporation of the Commonwealth of Pennsylvania with places of business in Greensburg, Westmoreland County, Pennsylvania and Pittsburgh, Allegheny County , Pennsylvania, being duly sworn, deposes and says that the Tribune-Review is a daily newspaper circulated in Southwestern Pennsylvania Said corporation was established in the year 1924. A copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions of the said daily newspaper on the following dates, viz. **LEGAL 2658293, RE: MITIGATION ACT NOTICE; 31ST DAY OF JULY, 2005.**

Affiant further deposes that s/he is an officer duly Authorized by the Tribune-Review Publishing Company, publisher of The Tribune-Review, to verify the foregoing statement under oath and also declares that affiant is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.

Lori Scanlon

Classified Call Center Manager,
Tribune Review Publishing Company

Sworn to and subscribed before me this
1ST day of AUGUST, 2005.

June Bambery

Notary Public

COMMONWEALTH OF PENNSYLVA
Notarial Seal
June Bambery, Notary Public
City Of Greensburg, Westmoreland Cou
My Commission Expires June 14, 200
Member, Pennsylvania Association of Nota

Statement of Advertising Costs

ATTN: KAREN A. BRUNO, FISCAL DIVISION
ALLEGHENY DEPT. OF EMERGENCY SERVICES-LEPC
400 NORTH LEXINGTON ST. - STE. 200
PITTSBURGH, PA 15208

To **Tribune-Review Publishing Company**, Dr.

For Publishing the notice or advertisement attached hereto on the above stated dates	$309.12
Probating Same	$ 0
Total	**$ 309.12**

Publisher's Receipt for Adve

The **Tribune-Review Publishing Company**, publ newspaper, hereby acknowledges a receipt of the aforesaid adv the same have been fully paid.

Tribune-Review Publishing Company, Publisher of **The Tribune-Review**, a Daily Newspaper.

By

ALLEGHENY COUNTY
EMERGENCY MANAGEMENT
NOTICE TO ALL INTERESTED PARTIES

In accordance with 44 CFR 201.6, the Interim Final Rule for the disaster Mitigation Act of 2000 (DMA 2000) the County of Allegheny, Pennsylvania, developed the Allegheny County Hazard Vulnerability Assessment and Mitigation Plan. This plan was developed to identify hazards that threaten the county and to forward the process of reducing future damages from natural and manmade disasters.

The County's website will serve as a means of two-way communication with the general public by not only posting the plan on the internet and providing information about mitigation initiatives within the County, but also as an avenue for feedback from the public to express their views and comments. The Final Draft Plan can be found on the County's website:http://www.county.allegheny.pa.us/hazard/aplan/toc.asp. The official 30day comment period will conclude on August 31, 2005, however, the County will continue to review and consider all public comments for incorporation in all subsequent updates of the Plan.

The County's Final Draft Hazard Vulnerability Assessment and Mitigation Plan is also available for review by the public at the below identified locations during regular business hours, 8:30AM to 4:30PM, Monday thorough Friday. Those persons needing special accommodations or communications services should notify Allegheny County Emergency Management at (412-473-2550) to make arrangements.

The Allegheny County Department of
Emergency Services
400 N. Lexington Street, Ste. 200
Pittsburgh, PA 15208-2521
(412-473-2550)
Or
The Allegheny County Department of
Economic Development
425 Sixth Avenue, Ste. 800
Pittsburgh, PA 15219
(412-350-1000)

Robert A. Full, Chief Dept. of Emergency Services
County of Allegheny

2658293 7/31

Etna Town Hall Meeting

JULY 20, 2005

Agenda:

Opening Remarks:

Mary Ellen ~ Manager Etna Borough
State Senator Jane Clare Orie

Introductions of Participants:

Timothy Baughman,
Western Region Director, PEMA

Ron Killins,
Hazardous Mitigation Coordinator, PEMA

Chief Bob Full,
Director Allegheny County Emergency Management

Cindy Fillman & Raymond Ort, Regional Manager
Pennsylvania Department of Insurance

Ronald Schwartz, Deputy Director Southwest Office
Pennsylvania Department of Environmental Protection

Wilson Kerry
State Coordinator of Flood Plain Management
DCED, Office of Local Government Affairs & Policy Specialist

Office of Senator Rick Santorum

Office of Congressman Mike Doyle

Lindsay Marquis and Jennifer Young
Office of Congresswomen Melissa Hart

Councilman Edward Kress

Etna Borough Council

North Hills Community Outreach

Remarks and Updates from Participants:

Questions from people in Attendance:

Closing Remarks:

MEETING: YUKHA - DOYLE - ONORATO

Date: 4-12-05

Name	Organization	Address	Phone #	Fax #	Email
WAYNE KUCICH	DEP LOCAL GOV LIA.	400 WATERFRONT DR. PITTS	412-442-4199	412-442-4194	WKUCICH@STATE.PA.U
KENNETH BOWMAN	DEP REGIONAL DIR.	400 WATERFRONT DR. PITTS.	412-442-4179	412-442-4194	KBOWMAN@STATE.PA.
MIKE RATTAY	U.S. ARMY CORPS OF ENG.	1000 LIBERTY AVE	412-395-7372		michael.j.rattay@usace.army.mi
RICH HANCOCK	U.S. Army Corps of Eng	1000 Liberty Ave, Room 2200	412-395-7105		richard.a.hancock@poa02.usace.army.m
LENNA HAWKINS	" " "	" "	412.395.7249	412-644-5810	Lenna.C.Hawkins@usace.army.mil
BARBARA McMILLEN	USDA RURAL DEVELOPMENT	RD#12 BOX 202 A, GBG. PA 15601	724-853-5555 X123	724-832-9721	BARBARA.MCMILLEN@PA.USDA.GOV
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JOHN HUGYA	CONG. MURTHA	" " "	"	"	
CINDY ABRAM	CONG. MURTHA	" " "	"	"	
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MEETING: MURTHA - DOYLE - ONORATO

Date: 4-12-05

Name	Organization	Address	Phone #	Fax #	Email
KATHY FRANKEL	DCNR	1405 S.O.B. 300 Liberty Ave. Pgh, PA 15222	412-850-0486	412-565-2635	Kfrankel@state.pa.us
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FRANK HORRIGAN	GOVERNORS ACTION TEAM	300 Liberty Ave. 14th Fl. 15222	412-565-2788	412 565 2889	fhorrigan@state.pa.u
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JAY TARARA	DEP	" " " " "	412-442-4209	" " "	JTARARA@STATE.PA.US
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~~KEN BOWMAN~~	~~DEP~~	~~400 WAT~~			

HAZARD MITIGATION MEETING

APRIL 6, 2005

	Name	Organization	E-mail
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2	PETE HAVERN	AC COUNTY MANAGER	phavern@county.allegheny.pa.us
3	DAVE BOLLINGER	PEMA HAZARD MITIGATION	dBOLLINGER@STATE.PA.US
4	RICH VENEZIA	AC COUNTY DEPT. HUMAN SVCS	RVENEZIA@county.allegheny.pa.us
5	BOB SCHUBER	AC. ECONOMIC DEV	RSCHUBER@County.Allegheny.PA.US
6	Ron Killins	PEMA	rkillins@state.pa.us
7	BOB FULL	A.C. Emergency Service	RFull@county.allegheny.PA.US
8	Ray Demichele	Pgh EMA	raymond.demichele@city.pittsburgh.pa.us
9			
10			
11			
12			
13			
14			
15			

HAZARD MITIGATION MEETING
AUGUST 8, 2004

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4	JOHN PALYO	TWIN RIVERS COG	jpalyotrcog@earthlink.net
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6	John T. Jakiela	QVCOG	QVCOG @ AOL. COM
7	LOUIS GORSKI	SHACOG	LOU.GORSKI@SHACOG.COM
8	Michele Lutz	CW COG	
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10	Robert A Full	ACES	RFull@county.Allegheny.pa.us
11	RICH VENEZIA	AC DEPT. HUMAN SVCS.	rvenezia@county.allegheny.pa.us
12			
13			
14			
15			

HAZARD MITIGATION MEETING
AUGUST 8, 2004

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18	Ron Killins	PEMA HBG.	rkillins@state.pa.us
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21			
22			
23			
24			
25			
26			
27			
28			

Sign In Sheet
COG Mtg 4/13/04

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4/13/04

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Meeting Sign-In Sheet

Project: Hazard Mitigation - ALCO Steering Committee	**Meeting Date:** Monday, 3/22/04
Facilitator: S. Parker / Stuart Wallace	**Place/Room:** Class Room

Name	Title	Company	Phone	E-Mail
Susan Parker	ACES Outreach Coord + Proj Mgr	ALCO	412/473-2559	sparker@county.allegheny.pa.us
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DRAFT PLAN REVIEW MEETING @ ACES 3.1.04

STUART WALLACE	URS CORPORATION
[illegible]	[illegible]
[illegible]	[illegible]
Jim Frank	GIS Manager Dept. Comp. Services
DENNIS MAREV	ACES — EMA
[illegible]	[illegible]
LARRY BOYLE	ACES - CONTRACTOR
Mike Kotyk	ACES EMA/EMS GIS
[illegible]	[illegible]
[illegible]	ACES - EMA REGION 13
[illegible]	ACES - GIS
[illegible]	ACES EMA

Mike Kotyk	MKotyK@county.allegheny.pa.us
[illegible]	[illegible]
Jim Frank	jfrank@county.allegheny.pa.us

Allegheny County Hazard Mitigation Plan
COG/COP Working Session 9/15/03

SIGN-IN SHEET

Organization	Name	Phone Number/Email
MELLON FINANCIAL	JOHN R. JAVA FOR ALEX SCIULLI TASK FORCE - INDUSTRY & MANUFACTURING	412-234-2306 JAVA.JR @ MELLON.COM
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Organization	Name	Phone Number/Email
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Twin Rivers COG	Rosemary Bradley	trcog2@sgi.net 412-466-7377

URS

Job 7/1/03 | Project No. | Page 1 of 1
Description Allegheny County OES COG Workshop | Computed by | Sheet of
Checked by | Date
Reference

Name	organization	phone #
Carol Maggio	URS Organization	301-721-2276
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George Scarbrough	CWCOG	412-279-3333
Tom Benecki	AUNCOG	412-826-5170
Evan Karelitz	Monroeville	412-856-3376
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Hazard Mitigation Planning – Executive Committee
April 15, 2003

NAME	TASK FORCE
Gail Robbins	Gr Pgh Comm Food Bank
GREGORY KOTSCHBACH	PUBLIC SAFETY
Laura R. Zanshi	Mon Valley Initiative
MICHAEL ZAMISKA	PORT AUTHORITY
BILL McARDLE	PORT AUTHORITY
Ann Heeron	Point Park College
ROB SKERTICH	AMERICAN RED CROSS
Bob Full	Public Safety
Susan Parker	Coordinator - filling in for E. Kight
JOHN R. LEE	DUQUESNE LIGHT
Ray Krawczyk	Allegheny Land TRUST
Carol Maggio	URS
Shubha Srivastava	URS
Cheri Klapp	Manager Non-profits
Andrea Wright-Banks	Hill Comm. Devel. Corp.

Hazard Mitigation Planning – Executive Committee
April 15, 2003

NAME	TASK FORCE
Dave DeSimone	Pgh Cultural Trust
Rebecca White	Pgh Cultural Trust
Tim Snyder	Parental Stress Center
Peg McCormick Barron	West Penn Allegheny Health System
Bob Stropp	Allegheny County Department of Human Services
Catherine Beahn	City of Pittsburgh
BILL McARDLE	Port Authority
Charlie MOFFATT	Pgh Police
Laura Zinski	Mon Valley Initiative
Gerry BARRON	Allegheny County Health
Brenda E. Lee	Mental Health Association
CAROL HARRIS	COMMUNITY DEV.
Nancy Zionts	~~DP~~ Health
Joseph Roth	UPMC

Hazard Mitigation Planning – Executive Committee
April 15, 2003

NAME	TASK FORCE
RAY HELLER	PUBLIC SAFETY
KNOX WALK	Public Safety
Joe Delaney	
TIM DELANEY	PITT P.D.
Bill Cannon	Point Park College
Brenda E. Lee	MHA - Health & Human Svcs.
PAUL WOLF	Police
BILL COE	U.S. ATTORNEY'S OFFICE
GERRY BARRON	Allegheny County Health
Pier. Nocetti	US COAST GUARD
Kelly	Public Safety
Lew Villotti	Community Development
Peter Kroll	URS
John Joyce	FBI
DAN LYNCH	Ex. Comm.
JAY FREROTTE	NON-PROFIT
Thomas J. Whalen	Pittsburgh Cultural Trust
Aryeh Shenman	JF&CS
R. H. RITCHIE	ROBERT MORRIS UNIV.
Dan Haller	Ya Rocke College
Brad Koeneman	Hilton Hotels
GEORGE TKACH	Steel Valley Council of Govts
Tom Corbett	
Tom Benecki	Allegheny Valley North C.O.G.
DENNIS C. NAREY	ALLEGHENY COUNTY EMERGENCY MGMT

URS Sign-In Sheet April 14, 2003

Page ____ of ____

Job _____ Project No. _____ Sheet ____ of ____

Description _____ Computed by _____ Date _____

_____ Checked by _____ Date _____

Reference

Name	Organization	
Carol Maggio	URS	
Shubha Shrivastava	URS.	
Tom Benecki	Allegheny Valley North COG	
GEORGE SCARBOROUGH	CHAR-WEST COG	
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Norine Kelly	TCVCOG	
Barbara Fallon	TCVCOG	
Catherine Beahn	City of Pittsburgh	
GEORGE TKACH	SVCCG	412-462-7600
LOUIS GORSKI	SHACOG	
John T. Jatich	QVCOG	
Bob Full	ALCO	
Susan N. Parker	ALCO	
Denise C Marey	ACES	
Rosemary Bradley	TRCOG	
John Pulye	TRCOG.	
Peter Kroll	URS	
STUART WALLACE	URS	

COG Sign-In Sheet — February 25, 2003

Turtle Creek Valley COG

✓ Norine Kelly TCVCOG@ACL.COM 412 829-7722	
LEE BRANT	N. VERSAILLES TWP Road Dept
DAVID GILLILAND	N. VERSAILLES TWP
James Burns	N Versailles Twp Road Dept.
JACK GRFFNEY	N VERSAILLES VOLUNTEER FIRE
Evan Karelitz	Monroeville Emergency MGT
LEONARD HILL	WILKINS TWP
Edward Mallon	Swissvale Borough
JACK MASON	PENN HILLS
Ellen Jones	Borough of Braddock

City of Pittsburgh

[illegible]	[illegible] Mayor's Office
JOHN JENNINGS	R.I.S.
Darrell Phillips	City D.E.C.
✓ [illegible]	Mayor's office
[illegible]	EMS
DOUG GARRETSON	EMS
Kim Morrison	City - PaCSC
MARY ESTHER VAN SHURA	CITY - PARKS/REC

Others

✓ Jean Statler Gateway Engineers	jstatler@gatewayengineers.com Mt. Oliver, Ben Avon Heights, Sewickley Heights, [illegible]
John Booth Local Govt Services	

COG Sign-In Sheet — February 25, 2003

Sign In Sheet for Tuesday, February 25 – Hazard Mitigation Training

Allegheny Valley North COG

✓ Tom Benecki	
Walter L Thompson	
Susan Kephart	
Tom Benecki	
Michael Cross	
BRIAN W. FARMER	
ROBERT R. SPRINGER	BOROUGH OF OAKMONT

Char West COG

George Scarborough	
SALLY HAAS	West Hills - Airport Area
Jack Donovan	Char-West C.O.G.

COG Sign-In Sheet [redacted]

Sign In Sheet for Monday, February 24 – Hazard Mitigation Training

North Hills COG

Roller, Wayne Roller, Wayne E — NH COG.

LAUX, DAVID, M. — FOX CHAPEL POLICE DEPT.

Quaker Valley COG

Jakiela, John John Jakiela

OLIVER L. POPPENBERG

South Hills Area COG

Gorski, Lou GORSKI LOU

Dennis McDonough — Deputy Chief - South Park

NORMAN M. SIMEONE

EDGAR C. GOOD

JANE McMULLEN

GLORIA SMITH

Steel Valley COG

Tkach, George ✓ — STEEL VALLEY COG

GERALD F. BARSZYK — U.S. ARMY CORPS OF ENGINEERS

DAVE Andrako — "

MAGGIE GATES — "

Rob Horvath — Howard Hanna Commercial

JIM CAMPBELL — WDSU Weather [illegible]

David S. Ausburn — U. Airsid Police Fire & Met Chief

2/27/03

COG Sign-In Sheet — ~~November 22, 2002~~

BARB BALISTERE	MANAGER - MUNHALL AREA PREHOSPITAL SERVICES

Twin Rivers COG

Bradley, Rosemary [signature]	DIR. TRCOG.
RICHARD J. COTTER	SENATE ENGINEERING
CARLA BARRON	COMMUNITY DEVELOPMENT COORD.
JOHN PALYO	PROGRAMS COORD

Hazard Mitigation - February 5, 2003

Benecki, Tom – AVN	Tom Benecki - AVNCOG
Bradley, Rosemary - TRCOG	Rosemary Bradley - TRCOG
Gorski, Lou - SHACOG	Louis Gorski - SHACOG
Jakiela, John – QVCOG	John J Jakiela - QVCOG
Kelly, Norene - TCVCOG	Norene Kelly - TCVCOG
Roller, Wayne - NHCOG	Wayne Roller NHCOG
Scarborough, George - CWCOG	George Scarborough - CWCOG
Tkach, George - SVCOG	George Tkach Jr - SVCOG
City – Ray DeMichiei	Ray DeMichiei
John Rowntree	John Rowntree
Ben Avon Heights Borough	Jean Statler
McDonald Borough	
Mt. Oliver Borough	Jean Statler Gateway Engineers, Inc
Oakmont Borough	Adeline Brown - Dale Peoples
Sewickley Heights Borough	Jean Statler
Sewickley Hills Borough	NORBERT M. MICKLO
Trafford Borough	
Beiber, Deb	Deb Beiber
Dixon, Bruce	
Donatelli, Tom	Tom Donatelli
Full, Bob	
Gelzhiser, Marilyn	Marilyn Gelzhiser
Madsen, Per	
Schubel, Bud	Bud Schubel
Venezia, Rich	RICH VENEZIA
	Steve Wilhelm - Allegheny County Emergency Services
	Dennis C. Nacey - Allegheny County Emergency Services

Carol Maggio - URS

Ron Killins - PEMA

STUART WALLACE - URS

MARY JO KULIK - MIZERAK BOWERS & ASSOC.

ELIZABETH BOWERS MBA

HERBERT P. FORD - SEWICKLEY HEIGHTS BORO.

An Lewis - Steel Valley COG
(GIS Consultant)

JOHN PALYO - TWIN RIVERS COG.

Barbara Fallon Turtle Creek Valley COG

Hazard Mitigation Planning Committee Meeting
November 22, 2002
1 to 5 PM
Emergency Operation Center
400 North Lexington Street

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	Dixon, Bruce		
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Parker, Susan

✓ Roller, Wayne NHOOG

4✓ Roque,, Victor for Victor Roque

Scarborough, George

Schubel, Bud

✓ Sirabella, Sal

Tkach, George ✓

Venezia, Rich

Wallace Stuart ✓

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✓ Norine Kelly TCVCOG@AOL.com

✓ Peter Kroll URS Corp peter_kroll@urscorp.com

Hazard Mitigation — Project Initiation Meeting
September 23, 2002

Allegheny County Hazard Mitigation Steering Committee

Beiber, Deb (GIS Manager, Allegheny County Dept. of Computer Services) Deb Beiber

DePalma, Diane (Allegheny County Emergency Services) _____

Dixon, Dr. Bruce (Director, Allegheny County Health Dept.) Bruce Dixon MD

Donatelli, Tom (Director, Allegheny County Dept. of Pub. Works) _____

Full, Bob (Director, Allegheny County Emergency Services Bob Full

Lewis, Rich (Allegheny County Deputy Chief Information Officer) Rich Lewis

Madsen, Per (Allegheny County Chief Information Officer) Per Madsen

Parker, Susan (Project Director, AC Emergency Services) Susan H. Parker

Schubel, Bud (Allegheny County Dept. of Economic Dev.) _____

Venezia, Rich (Allegheny County Dept. of Human Services) _____

Litman, Harry (Chairman of Community Committee, former US Attorney for western Pennsylvania) _____

Pennsylvania Emergency Management Agency

Fleming, Barbara (Emergency Mgt. Specialist, Western Division) Barbara Fleming

Killins Sr., Ron (State Hazard Mitigation Officer) Ron Killins Ron Killins

Tamm, Alan (Hazard Mitigation staff) Alan Tamm (717) 651-2702

_____

URS Team

De Jong, Pieter (Quality Control) _____

~~French, David R. (Kimball, Local Coordinator)~~ Carol Maggio-URS- Carol Maggio

~~Holmes, Mark E. (Kimball, GIS)~~ JIM LONGELLA - L R KIMBALL

Kroll, Peter (Local Coordinator) Peter Kroll Peter J Kroll

_____

Over →

Lehman, Dale (Quality Control) _____

Maggio, Carole (Mitigation Planning Coordination) Carol Maggio

Mizerak, Sally (Mizerak Bowers & Assoc.- Public Participation) Sally Mizerak

Pardue, Steve (Vulnerability Assessment/Cost-Benefit Analysis) _____

Wallace, Stuart (Project Manager) Stuart D. Wallace

ELIZABETH BOWERS (Mizerak Bowers Assoc.) Elizabeth A. Bowers

This appendix contains the PEMA Crosswalk.

Instructions for Using the Plan Review Crosswalk for Review of Local Mitigation Plans

Attached is a Plan Review Crosswalk based on the ***Multi-Hazard Mitigation Planning Guidance Under the Disaster Mitigation Act of 2000***, published by FEMA, dated 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.

SCORING SYSTEM

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Each requirement includes separate elements. All elements of a requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a summary score of "Satisfactory." A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing.

When reviewing single jurisdiction plans, reviewers may want to put an N/A in the boxes for multi-jurisdictional plan requirements. When reviewing multi-jurisdictional plans, reviewers may want to put an N/A in the prerequisite box for single jurisdiction plans.

States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

Optional matrices for assisting in the review of sections on profiling hazards, assessing vulnerability, and identifying and analyzing mitigation actions are found at the end of the Plan Review Crosswalk.

The example below illustrates how to fill in the Plan Review Crosswalk.

Example

Assessing Vulnerability: Overview

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include an **overall summary** description of the jurisdiction's **vulnerability** to each hazard?				
B. Does the plan address the **impact** of each hazard on the jurisdiction?				
		SUMMARY SCORE		

Local Mitigation Plan Review and Approval Status

Jurisdiction: Allegheny County	**Title of Plan: Allegheny County, Pennsylvania Vulnerability Assessment and Hazard Mitigation Plan**	**Date of Plan: July 2004**
Local Point of Contact: Dennis C. Narey **Title: Manager of Emergency Operations** **Division of Emergency Management** **Agency: Allegheny County, Pennsylvania**	**Address:** **Allegheny County Emergency Services** **400 North Lexington Street** **Suite 200** **Pittsburgh, PA**	
Phone Number: 412-473-2550	**E-Mail: dnarey@county.allegheny.pa.us**	

State Reviewer: Alan Tamm	**Title: Planner**	**Date: 8/24/05**

FEMA Reviewer:	**Title:**	**Date:**
Date Received in FEMA Region [Insert #]		
Plan Not Approved		
Plan Approved		
Date Approved		

Jurisdiction:	**NFIP Status***			
	Y	**N**	**N/A**	**CRS Class**
1.				
2.				
3..				
4.				
5.				

*** Notes:** **Y = Participating** **N = Not Participating** **N/A = Not Mapped**

LOCAL MITIGATION PLAN REVIEW SUMMARY

The plan cannot be approved if the plan has not been formally adopted.

Each requirement includes separate elements. All elements of the requirement must be rated "Satisfactory" in order for the requirement to be fulfilled and receive a score of "Satisfactory." Elements of each requirement are listed on the following pages of the Plan Review Crosswalk. A "Needs Improvement" score on elements shaded in gray (recommended but not required) will not preclude the plan from passing. Reviewer's comments must be provided for requirements receiving a **"Needs Improvement"** score.

SCORING SYSTEM

Please check one of the following for each requirement.

N – Needs Improvement: The plan does not meet the minimum for the requirement. Reviewer's comments must be provided.

S – Satisfactory: The plan meets the minimum for the requirement. Reviewer's comments are encouraged, but not required.

Prerequisite(s) (Check Applicable Box)	**NOT MET**	**MET**
Adoption by the Local Governing Body: §201.6(c)(5) **OR**		
Multi-Jurisdictional Plan Adoption: §201.6(c)(5) **AND** Multi-Jurisdictional Planning Participation: §201.6(a)(3)		

Planning Process	**N**	**S**
Documentation of the Planning Process: §201.6(b) and §201.6(c)(1)		

Risk Assessment	**N**	**S**
Identifying Hazards: §201.6(c)(2)(i)		
Profiling Hazards: §201.6(c)(2)(i)		
Assessing Vulnerability: Overview: §201.6(c)(2)(ii)		
Assessing Vulnerability: Identifying Structures: §201.6(c)(2)(ii)(A)		
Assessing Vulnerability: Estimating Potential Losses: §201.6(c)(2)(ii)(B)		
Assessing Vulnerability: Analyzing Development Trends: §201.6(c)(2)(ii)(C)		
Multi-Jurisdictional Risk Assessment: §201.6(c)(2)(iii)		

Mitigation Strategy	**N**	**S**
Local Hazard Mitigation Goals: §201.6(c)(3)(i)		
Identification and Analysis of Mitigation Actions: §201.6(c)(3)(ii)		
Implementation of Mitigation Actions: §201.6(c)(3)(iii)		
Multi-Jurisdictional Mitigation Actions: §201.6(c)(3)(iv)		

Plan Maintenance Process	**N**	**S**
Monitoring, Evaluating, and Updating the Plan: §201.6(c)(4)(i)		
Incorporation into Existing Planning Mechanisms: §201.6(c)(4)(ii)		
Continued Public Involvement: §201.6(c)(4)(iii)		

Additional State Requirements*	**N**	**S**
Insert State Requirement		
Insert State Requirement		
Insert State Requirement		

LOCAL MITIGATION PLAN APPROVAL STATUS

PLAN NOT APPROVED ☐

PLAN APPROVED ☐

*States that have additional requirements can add them in the appropriate sections of the *Multi-Hazard Mitigation Planning Guidance* or create a new section and modify this Plan Review Crosswalk to record the score for those requirements.

See Reviewer's Comments

PREREQUISITE(S)

Adoption by the Local Governing Body

***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 Commissioner, Tribal Council).*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Has the local governing body adopted the plan?		Multijuridictional plan Not applicable		
B. Is supporting documentation, such as a resolution, included?		Multijuridictional plan Not applicable		
		SUMMARY SCORE		

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Does the plan indicate the specific jurisdictions represented in the plan?	Adopted as indicated pg i thru iii,			
B. For each jurisdiction, has the local governing body adopted the plan?	Adoption documents located in Appendix A			
C. Is supporting documentation, such as a resolution, included for each participating jurisdiction?	Adoption documents located in Appendix A			
		SUMMARY SCORE		

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE NOT MET	SCORE MET
A. Does the plan describe **how** each jurisdiction participated in the plan's development?	Section 1 describes the process and Appendix B contains the meeting sign in sheets			
		SUMMARY SCORE		

PLANNING PROCESS: ***§****201.6(b): An open public involvement process is essential to the development of an effective plan.*

Documentation of 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 and non-profit interests to be involved in the planning process; and
(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan provide a narrative description of the process followed to prepare the plan?	Section 1 describes the process followed to prepare the			

	plan			
B. Does the plan indicate who was involved in the planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)	Section 1 describes who was involved in the planning process			
C. Does the plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)	62, DR 1587 particularly impacted Allegheny County and numerous meeting are being held to explore options for inclusion in future plan iterations. See Section 7 pg 62 and Appendix B for proof of publication for public comment.			
D. Was there an opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?	Section 1 describes who was involved in the planning process also public notice			
E. Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?	Section 2			
			SUMMARY SCORE	

Name of Plan Allegheny County

RISK ASSESSMENT: *§201.6(c) (2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

Identifying Hazards - ***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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include **a description** of the types of **all natural hazards** that affect the jurisdiction? If the hazard identification omits (without explanation) any hazards commonly recognized as threats to the jurisdiction, this part of the plan cannot receive a Satisfactory score. Consult with the State Hazard Mitigation Officer to identify applicable hazards that may occur in the planning area.	Section 2			
		SUMMARY SCORE		

Profiling Hazards

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the risk assessment identify the **location** (i.e., geographic area affected) of each natural hazard addressed in the plan?	Plates 1-7			
B. Does the risk assessment identify the **extent** (i.e., magnitude or severity) of each hazard addressed in the plan?	Section 2 and appendixes			
C. Does the plan provide information on **previous occurrences** of each hazard addressed in the plan?	Section 2 and appendixes			
D. Does the plan include the **probability of future events** (i.e., chance of occurrence) for each hazard addressed	Section 2 page 10			

in the plan?				
		SUMMARY SCORE		

Assessing Vulnerability: Overview

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include an **overall summary** description of the jurisdiction's **vulnerability** to each hazard?	Section 2 and Plates			
B. Does the plan address the **impact** of each hazard on the jurisdiction?	Section 2 and Appendices			
		SUMMARY SCORE		

Assessing Vulnerability: Identifying Structures

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 ….*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan describe vulnerability in terms of the **types and numbers** of **existing** buildings, infrastructure, and critical facilities located in the identified hazard areas?	Section 3 and Appendix I			
B. Does the plan describe vulnerability in terms of the **types and numbers** of **future** buildings, infrastructure, and critical facilities located in the identified hazard areas?	Section 3 and Plates 1-7			
		SUMMARY SCORE		

Assessing Vulnerability: Estimating Potential Losses

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 … .*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan estimate **potential dollar losses** to vulnerable structures?	Section 3			
B. Does the plan describe the **methodology** used to prepare the estimate?	Section 3			
		SUMMARY SCORE		

Assessing Vulnerability: Analyzing Development Trends

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

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan describe land uses and development trends?	County just reinstituted Planning Dept.			
		SUMMARY SCORE		

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan include a risk assessment for each participating jurisdiction as needed to reflect unique or varied risks?	Plates 1-7			
		SUMMARY SCORE		

MITIGATION STRATEGY: *§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.*

Local Hazard Mitigation Goals

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

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A Does the plan include a description of mitigation **goals** to reduce or avoid long-term vulnerabilities to the identified hazards? (**GOALS** are long-term; represent what the community wants to achieve, such as "eliminate flood damage"; and are based on the risk assessment findings.)	Section 5			
		SUMMARY SCORE		

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan identify and analyze a **comprehensive range** of specific mitigation actions and projects for each hazard?	Section 6			
B Do the identified actions and projects address reducing the effects of hazards on **new** buildings and infrastructure?	Section 6			
C. Do the identified actions and projects address reducing the effects of hazards on **existing** buildings and infrastructure?	Section 6			
		SUMMARY SCORE		

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the mitigation strategy include how the actions are **prioritized**? (For example, is there a discussion of the process and criteria used?)	Section 6			
B. Does the mitigation strategy address how the actions will be **implemented and administered**? (For example, does it identify the responsible department, existing and potential resources, and timeframe?)	Section 6			
C. Does the prioritization process include an emphasis on the use of a **cost-benefit review** (see page 3-36 of *Multi-Hazard Mitigation Planning Guidance*) to maximize benefits?	Section 6 particularly Mitigation Project inventory Table 6.14			
		SUMMARY SCORE		

Multi-Jurisdictional Mitigation Actions

Requirement §201.6(c) (3) (iv): *For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A Does the plan include at least one identifiable **action item** for each jurisdiction requesting FEMA approval of the plan?	Mitigation Project inventory Table 6.14			
		SUMMARY SCORE		

PLAN MAINTENANCE PROCESS

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan describe the method and schedule for **monitoring** the plan? (For example, does it identify the party responsible for monitoring and include a schedule for reports, site visits, phone calls, and meetings?)	Section 7 pages 60-62			
B. Does the plan describe the method and schedule for **evaluating** the plan? (For example, does it identify the party responsible for evaluating the plan and include the criteria used to evaluate the plan?)	Section 7 pages 60-62			
C. Does the plan describe the method and schedule for **updating** the plan within the five-year cycle?	Section 7			
		SUMMARY SCORE		

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.*

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan identify other local planning mechanisms available for incorporating the requirements of the mitigation plan?	Section 7			
B. Does the plan include a process by which the local government will incorporate the requirements in other plans, when appropriate?	Section 7			
		SUMMARY SCORE		

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.

Element	Location in the Plan (section or annex and page #)	Reviewer's Comments	SCORE N	SCORE S
A. Does the plan explain how **continued public participation** will be obtained? (For example, will there be public notices, an on-going mitigation plan committee, or annual review meetings with stakeholders?)	Section 7			
		SUMMARY SCORE		

Matrix A: Profiling Hazards

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each natural hazard that can affect the jurisdiction. **Completing the matrix is not required**.

*Note: First, check which hazards are identified in requirement §201.6(c) (2) (i). Then, place a checkmark in either the N or S box for each **applicable** hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.*

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Location		B. Extent		C. Previous Occurrences		D. Probability of Future Events	
	Yes	N	S	N	S	N	S	N	S
Avalanche	☐	☐	☐	☐	☐	☐	☐	☐	☐
Coastal Erosion	☐	☐	☐	☐	☐	☐	☐	☐	☐
Coastal Storm	☐	☐	☐	☐	☐	☐	☐	☐	☐
Dam Failure	☐	☐	☐	☐	☐	☐	☐	☐	☐
Drought	☐	☐	☐	☐	☐	☐	☐	☐	☐
Earthquake	☐	☐	☐	☐	☐	☐	☐	☐	☐
Expansive Soils	☐	☐	☐	☐	☐	☐	☐	☐	☐
Extreme Heat	☐	☐	☐	☐	☐	☐	☐	☐	☐
Flood	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hailstorm	☐	☐	☐	☐	☐	☐	☐	☐	☐
Hurricane	☐	☐	☐	☐	☐	☐	☐	☐	☐
Land Subsidence	☐	☐	☐	☐	☐	☐	☐	☐	☐
Landslide	☐	☐	☐	☐	☐	☐	☐	☐	☐

To check boxes, double click on the box and change the default value to "checked."

Severe Winter Storm	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tornado	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tsunami	☐	☐	☐	☐	☐	☐	☐	☐	☐
Volcano	☐	☐	☐	☐	☐	☐	☐	☐	☐
Wildfire	☐	☐	☐	☐	☐	☐	☐	☐	☐
Windstorm	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other _____	☐	☐	☐	☐	☐	☐	☐	☐	☐

Legend:
§201.6(c) (2) (i) Profiling Hazards
A. Does the risk assessment identify the location (i.e., geographic area affected) of each hazard addressed in the plan?
B. Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the plan?
C. Does the plan provide information on previous occurrences of each natural hazard addressed in the plan?
D. Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the plan?

Matrix B: Assessing Vulnerability

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure that their plan addresses each requirement. **Completing the matrix is not required**.

*Note: First, check which hazards are identified in requirement §201.6(c) (2) (i). Then, place a checkmark in either the N or S box for each **applicable** hazard. An "N" for any element of any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.*

Note: Receiving an N in the shaded columns will not preclude the plan from passing.

To check boxes, double click on the box and change the default value to "checked."

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	§201.6(c)(2)(ii) Assessing Vulnerability: Overview	A. Overall Summary Description of Vulnerability		B. Hazard Impact		§201.6(c)(2)(ii) Assessing Vulnerability: Identifying Structures	A. Types and Number of Existing Structures in Hazard Area (Estimate)		B. Types and Number of Future Structures in Hazard Area (Estimate)		§201.6(c)(2)(ii) Assessing Vulnerability: Estimating Potential Losses	A. Loss Estimate		B. Methodology	
	Yes		N	S	N	S		N	S	N	S		N	S	N	S
Avalanche	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Coastal Erosion	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Coastal Storm	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Dam Failure	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Drought	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Earthquake	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Expansive Soils	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐
Extreme Heat	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐

Flood	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Hailstorm	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Hurricane	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Land Subsidence	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Landslide	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Severe Winter Storm	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Tornado	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Tsunami	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Volcano	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Wildfire	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Windstorm	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Other _____	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Other _____	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	
Other _____	☐		☐	☐	☐	☐		☐	☐	☐	☐		☐	☐	☐	☐	

Legend:
§201.6(c)(2)(ii) Assessing Vulnerability: Overview
A. Does the plan include an overall summary description of the jurisdiction's vulnerability to each hazard?
B. Does the plan address the impact of each hazard on the jurisdiction?

§201.6(c)(2)(ii)(A) Assessing Vulnerability: Identifying Structures
A. Does the plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?
B. Does the plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

§201.6(c)(2)(ii)(B) Assessing Vulnerability: Estimating Potential Losses
A. Does the plan estimate potential dollar losses to vulnerable structures?
B. Does the plan describe the methodology used to prepare the estimate?

Matrix C: Identification and Analysis of Mitigation Actions

This matrix can assist FEMA and the State in scoring each hazard. Local jurisdictions may find the matrix useful to ensure consideration of a range of actions for each hazard. **Completing the matrix is not required.**

*Note: First, check which hazards are identified in requirement §201.6(c) (2) (i). Then, place a checkmark in either the N or S box for each **applicable** hazard. An "N" for any identified hazard will result in a "Needs Improvement" score for this requirement. List the hazard and its related shortcoming in the comments section of the Plan Review Crosswalk.*

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Comprehensive Range of Actions and Projects	
	Yes	N	S
Avalanche	☐	☐	☐
Coastal Erosion	☐	☐	☐
Coastal Storm	☐	☐	☐
Dam Failure	☐	☐	☐
Drought	☐	☐	☐

To check boxes, double click on the box and change the default value to "checked."

FEMA Region III - Pennsylvania
Local Mitigation Plans
Part 3 Plan Review Criteria
Disaster Mitigation Act of 2000
44 CFR Parts 201 and 206; Interim Final Rule

Name of Plan Allegheny County

Hazard Type	Hazards Identified Per Requirement §201.6(c)(2)(i)	A. Comprehensive Range of Actions and Projects	
	Yes	N	S
Earthquake	☐	☐	☐
Expansive Soils	☐	☐	☐
Extreme Heat	☐	☐	☐
Flood	☐	☐	☐
Hailstorm	☐	☐	☐
Hurricane	☐	☐	☐
Land Subsidence	☐	☐	☐
Landslide	☐	☐	☐
Severe Winter Storm	☐	☐	☐
Tornado	☐	☐	☐
Tsunami	☐	☐	☐
Volcano	☐	☐	☐
Wildfire	☐	☐	☐
Windstorm	☐	☐	☐
Other _____	☐	☐	☐
Other _____	☐	☐	☐
Other _____	☐	☐	☐

Legend:
§201.6(c) (3) (ii) Identification and Analysis of Mitigation Actions
A. Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?

State Requirements				
Location identification	The State requires that the plan cover contains at least the county name.			
Project identification	The State requires that Hazard Mitigation Project Opportunity Forms be included.			
Electronic deliverable	The State requires that plan be submitted with a PDF or similar electronic file of the document.			

***States that have additional requirements can add them in the appropriate sections of the plan or create a new section. States need then modify this worksheet to record the score for those requirements.**

Name of Plan Allegheny County

Local Mitigation Plan Review

Local Requirement: ***Inclusion of Hazard mitigation Opportunity Form(s)***		
Local Plan Reviewed by:	**Title:**	**Date:**
Local Plan Submitted to the State by:	**Title:**	**Date:**

State Requirement		
State Reviewer:	**Title:**	**Date:**

FEMA Requirement		
FEMA Reviewer:	**Title:**	**Date:**
Date Received in FEMA Region VIII		
Plan Not Approved		
Plan Approved		
Date Approved		

Query Results

99 FLOOD event(s) were reported in **Allegheny County, Pennsylvania** between **01/01/1994** and **02/29/2004**.

*Click on **Location or County** to display Details.*

Mag: Magnitude
Dth: Deaths
Inj: Injuries
PrD: Property Damage
CrD: Crop Damage

Pennsylvania

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Countywide	01/28/1994	1651	Flood/flash Flood	N/A	0	0	5K	0
2 Pittsburgh	03/10/1994	0430	Flood/flash Flood	N/A	0	0	0	0
3 Sewickley	06/18/1994	1830	Flood/flash Flood	N/A	0	0	0	0
4 Pittsburgh	07/06/1994	2000	Flash Flood	N/A	0	0	50K	0
5 Pittsburgh	08/02/1994	1430	Flood/flash Flood	N/A	0	0	0	0
6 Allegheny	08/27/1994	2100	Flash Flood	N/A	0	0	500K	0
7 Pittsburgh	06/03/1995	1628	Flood/flash Flood	N/A	0	0	0	0
8 Bethel Park	06/10/1995	1931	Flood/flash Flood	N/A	0	0	5K	0
9 Pittsburgh	06/10/1995	2010	Flood/flash Flood	N/A	0	0	0	0
10 Pittsburgh	06/10/1995	2100	Flood/flash Flood	N/A	0	0	0	0
11 Emsworth	06/21/1995	2030	Flood/flash Flood	N/A	0	0	0	0
12 Coraopolis	06/21/1995	2110	Flood/flash Flood	N/A	0	0	0	0
13 Sewickley	06/21/1995	2120	Flood/flash Flood	N/A	0	0	2K	0
14 Avalon	06/21/1995	2130	Flood/flash Flood	N/A	0	0	5K	0
15 Emsworth	06/21/1995	2130	Flood/flash Flood	N/A	0	0	5K	0
16 Countywide	06/24/1995	1940	Flash Flood	N/A	0	0	70	0
17 Pleasant Hills	06/24/1995	2100	Flood/flash Flood	N/A	0	0	0	0
18 Monroeville	07/15/1995	1945	Flood/flash Flood	N/A	0	0	2K	0
19 Countywide	08/02/1995	1920	Flash Flood	N/A	0	0	10K	0
20 Countywide	08/11/1995	1240	Flash Flood	N/A	0	0	200K	0
21 PAZ020>021	01/19/1996	04:00 PM	Flood	N/A	0	0	9.6M	0
22 Pittsburgh	01/19/1996	06:00 AM	Flash Flood	N/A	0	0	0	0

23 PAZ021 - 030 - 032	01/19/1996	08:00 AM	Flood	N/A	0	0	0	0
24 PAZ021 - 029>032	01/19/1996	10:00 AM	Flood	N/A	0	0	12.7M	0
25 PAZ015 - 021>022	01/19/1996	11:00 PM	Flood	N/A	0	0	4.4M	0
26 Pittsburgh	03/19/1996	08:30 PM	Flash Flood	N/A	0	0	8K	0
27 Moon	05/17/1996	08:20 AM	Flash Flood	N/A	0	0	0	0
28 PAZ021 - 029>030	05/18/1996	01:00 AM	Flood	N/A	0	0	0	0
29 Monroeville	06/08/1996	04:00 PM	Flash Flood	N/A	0	0	0	0
30 Bridgeville	06/18/1996	05:45 PM	Flash Flood	N/A	0	0	0	0
31 Leetsdale	06/19/1996	07:00 PM	Flash Flood	N/A	1	0	0	0
32 Mc Keesport	06/19/1996	12:00 AM	Flash Flood	N/A	0	0	3.1M	0
33 Pittsburgh	06/24/1996	01:00 PM	Flash Flood	N/A	0	0	150K	0
34 PAZ015 - 021>022 - 030	07/19/1996	03:00 PM	Flood	N/A	0	0	35K	0
35 PAZ021	07/19/1996	11:00 PM	Flood	N/A	0	0	5K	0
36 PAZ021 - 029>030	07/20/1996	01:30 AM	Flood	N/A	0	0	12K	0
37 Pittsburgh	08/08/1996	04:00 PM	Flash Flood	N/A	0	0	80K	0
38 PAZ021 - 029>030	03/02/1997	09:00 PM	Flood	N/A	0	0	0	0
39 Penn Hills	05/25/1997	01:00 PM	Flash Flood	N/A	0	0	10K	0
40 Penn Hills	06/13/1997	04:30 AM	Flash Flood	N/A	0	0	6K	0
41 West Mifflin	06/18/1997	02:15 PM	Flash Flood	N/A	0	0	0	0
42 Pitcairn	07/01/1997	06:00 PM	Flash Flood	N/A	1	0	10.0M	0
43 PAZ021	01/09/1998	07:00 AM	Flood	N/A	0	0	0	0
44 Tarentum	04/26/1998	07:00 PM	Flash Flood	N/A	0	0	0	0
45 Verona	06/02/1998	06:15 PM	Flash Flood	N/A	0	0	150K	0
46 Wilkinsburg	06/02/1998	06:30 PM	Flash Flood	N/A	0	0	100K	0
47 Carnegie	06/27/1998	01:10 PM	Flash Flood	N/A	0	0	0	0
48 Imperial	06/27/1998	01:20 PM	Flash Flood	N/A	0	0	0	0
49 Mt Lebanon	06/27/1998	01:30 PM	Flash Flood	N/A	0	0	0	0
50 Coraopolis	08/16/1998	05:30 PM	Flood	N/A	0	0	0	0
51 Pittsburgh	04/09/1999	03:00 PM	Flash Flood	N/A	0	0	2K	0
52 Pittsburgh	04/22/1999	12:30 AM	Flash Flood	N/A	0	0	0	0
53 East Portion	05/18/1999	05:56 PM	Flash Flood	N/A	0	0	100K	0
54 Countywide	07/28/1999	11:30 AM	Flash Flood	N/A	0	0	1.0M	0
55 PAZ021 - 029>030 - 032	02/19/2000	12:00 AM	Flood	N/A	0	0	5.0M	0

56 Imperial	07/28/2000	02:10 PM	Flood	N/A	0	0	5K	0
57 Emsworth	07/28/2000	05:15 PM	Flood	N/A	0	0	0	0
58 Wilkinsburg	07/30/2000	07:00 PM	Flood	N/A	0	0	10K	0
59 Bridgeville	07/31/2000	08:00 PM	Flood	N/A	0	0	20K	0
60 Dormont	08/06/2000	07:35 AM	Flood	N/A	0	0	0	0
61 Countywide	08/06/2000	09:35 PM	Flood	N/A	0	0	10.0M	0
62 Countywide	08/06/2000	12:40 PM	Flood	N/A	0	0	10K	0
63 Monroeville	09/02/2000	07:20 PM	Flood	N/A	0	0	0	0
64 Mc Keesport	01/31/2001	08:55 PM	Flood	N/A	0	0	2.0M	0
65 Pittsburgh	05/18/2001	05:25 PM	Flood	N/A	0	0	25K	0
66 Wexford	07/01/2001	02:00 PM	Flood	N/A	0	0	1K	0
67 Elizabeth	03/21/2002	06:00 AM	Flood	N/A	0	0	5K	0
68 PAZ014 - 021>023 - 029>032	03/26/2002	12:20 PM	Flood	N/A	0	0	85K	0
69 East Mc Keesport	05/31/2002	06:10 PM	Flood	N/A	0	0	0	0
70 Pleasant Hills	07/01/2002	05:15 PM	Flood	N/A	0	0	0	0
71 Castle Shannon	07/18/2002	05:30 PM	Flood	N/A	0	0	100K	0
72 Pittsburgh	07/25/2002	04:15 PM	Flood	N/A	0	0	5K	0
73 Harmerville	08/12/2002	04:35 PM	Flood	N/A	0	0	0	0
74 Unity Center	10/03/2002	07:22 PM	Flood	N/A	0	0	0	0
75 PAZ021	02/24/2003	01:00 AM	Flood	N/A	0	0	0	0
76 Castle Shannon	05/10/2003	07:50 AM	Flash Flood	N/A	0	0	0	0
77 Bellevue	05/10/2003	08:15 AM	Flash Flood	N/A	0	0	0	0
78 Russelton	06/12/2003	06:39 PM	Flash Flood	N/A	0	0	0	0
79 Etna	06/12/2003	10:45 PM	Flash Flood	N/A	0	0	0	0
80 Pittsburgh	06/20/2003	06:20 PM	Flash Flood	N/A	0	0	0	0
81 Pittsburgh	07/04/2003	06:00 PM	Flash Flood	N/A	0	0	2K	0
82 Russelton	07/22/2003	04:20 PM	Flash Flood	N/A	0	0	12K	0
83 Pittsburgh	07/23/2003	07:55 AM	Flash Flood	N/A	0	0	5K	0
84 Pittsburgh	07/23/2003	08:50 AM	Flash Flood	N/A	0	0	0	0
85 Leetsdale	08/03/2003	03:35 AM	Flash Flood	N/A	0	0	0	0
86 Bridgeville	08/04/2003	12:30 PM	Flash Flood	N/A	0	0	0	0
87 Monroeville	08/06/2003	08:45 PM	Flash Flood	N/A	0	0	0	0
88 Oakmont	08/10/2003	07:57 PM	Flash Flood	N/A	0	0	0	0

89 Emsworth	08/12/2003	06:00 PM	Flash Flood	N/A	0	0	0	0
90 Bell Acres	11/19/2003	01:10 PM	Flash Flood	N/A	0	0	5K	0
91 PAZ021 - 029 - 032	11/19/2003	07:15 PM	Flood	N/A	0	0	68K	0
92 Dravosburg	11/19/2003	08:36 AM	Flash Flood	N/A	0	0	0	0
93 Turtle Creek	11/19/2003	09:50 AM	Flash Flood	N/A	0	0	0	0
94 Baldwin	11/19/2003	12:25 PM	Flash Flood	N/A	0	0	0	0
95 Dravosburg	12/10/2003	09:47 PM	Flash Flood	N/A	0	0	0	0
96 Russelton	12/10/2003	09:50 PM	Flash Flood	N/A	0	0	0	0
97 PAZ021	01/04/2004	11:15 AM	Flood	N/A	0	0	25K	0
98 PAZ014 - 020>022 - 030 - 032	02/06/2004	07:30 AM	Flood	N/A	0	0	85K	0
99 PAZ021 - 029>030	02/07/2004	01:00 AM	Flood	N/A	0	0	18K	0
				TOTALS:	2	0	59.668M	0

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This appendix contains information about lanslides.

Information and Advice for Landslide Victims:

Prepared for Pittsburgh Geological Society by Cynthia Lum,
a landslide victim expressing her personal views.

Western Pennsylvania is a region that is prone to landsliding. Landslides occur for an assortment of reasons - improper drainage, improper land development, improper engineering and construction practices, mining practices, reactivation of ancient landslides, and natural weaknesses in underlying rocks.

Although landsliding also affects roads, the most devastating landslides are those that happen to homeowners. As the need for new land causes expansion into areas previously judged to be unstable and unsuitable for development, landslides are becoming increasingly common. Improper development of the land, such as improper fills, filling in natural drainageways, building in unstable soils, and building on steep slopes, often results in future failures.

When a landslide happens, it can prove devastating and costly, and remediation is difficult and often impossible. The following narrative gives victims some guidance in understanding the ramifications of a landslide.

Local, state and federal contacts:

Landslides generally only slowly affect a small number of properties at a time. For this reason, neither FEMA nor PEMA can directly help you. This also applies to The Army Corps of Engineers and any state or federal disaster programs. These agencies, as well as the Disaster Mitigation Program, are worth contacting, however, as they are very knowledgeable and can give you information. Your local county office can give you contact addresses for these.

Your local municipality should be contacted immediately. Insist that they come to look at your slide and arrange a meeting with the entire municipal council. They should have their engineers do a study and provide you with a report. You also want to try to get copies of any documents and maps relating to the development of your property such as municipal meeting minutes, code and development regulation adherence approvals, and sewer and storm sewer system maps. Do not be surprised if these are not available or have disappeared. Although your local government is protected from joint responsibility for any negligence by Sovereign Immunity, they will not want you looking too closely into the details of their deliberations and approvals for developers' work that was done at your site. Do not be naïve; all those involved with the development and construction of your property will be working to seek legal protection from responsibility, and will not be working in your best interest.

Your municipality will not directly help you if your slide is entirely on private property. They will claim that there is nothing they can do as the slide is now your legal responsibility. The reasons will vary from their inability to use taxpayers' money to "improve" private property, their assistance generating an unwarranted flood of others in your community wanting equal treatment for their own problems, to political reasons. There will also be a reluctance to address your problem openly as dissemination of the possibility that properties in your community are unstable is not advantageous in attracting new home buyers to your area. They can, however,

apply for assistance from state or federal officials if shared community water systems are damaged and must be reinstated. You must be aware, however, that any government assistance can come at a high price to you. Any repairs you undertake yourself, or with government monies, will be your legal responsibility. Landslide prone areas with concrete retaining walls and steel pins have been known to fail repeatedly bringing steel and concrete blocks down on neighbors or roads below.

Under current laws, municipalities have several options if you insist on their help. If they can find a means to partially fund costly repairs through government grants, before they can use tax payers' money for the remainder, they can, and must, charge you, personally, whatever they can, and then place a lien against your home, if they can secure a legal judgment that your slide is a hazard to the community. This will certainly be the result if you are tempted not to pay your property taxes in protest. Bankruptcy for you may follow and condemnation of your home is possible if the risk of habitation of your home is thought to be too high. The property can then be acquired by your municipality by eminent domain and the "private property" issue for repairs, circumvented. Compensation will be at their discretion and based on the arguable value of the property and any liens placed on it. Under current laws, this will place you in a "Catch 22," and will unfortunately ensure that your property is valueless to you even if the slide is repaired.

Victims must contact their county, state, and federal elected officials. Although they will inform you that there is nothing they can do for the same "private property" reasons, the more attention your plight receives, the better. Protection for homeowners in legislation will only come if sufficient pressure is put on governments to address this growing problem. As government officials will be reluctant to help you, contact as many fellow victims as possible and inform the media. You are not alone and the scale of this problem must be highlighted. State and federal assistance may happen if elected officials receive attention for their aid, particularly in an election year. The PA General Assembly has debated bills and resolutions, such as HB 768 (1985) and HR 433 (1996), to protect landslide victims and initiate government funded landslide insurance program. As of yet, these have not been passed. Only pressure from victims will force legislative change.

Your elected officials may contact other agencies such as the Department of Environmental Protection (DEP), but you should make these contacts yourself. Whether or not you have Mine Subsidence Insurance, you should contact the PA Dept. of Mining for information regarding mines below your property. The Pittsburgh Geological Society and the PA Bureau of Topographic and Geologic Survey (DCNR) are well informed regarding landslides and can provide you with information, support and topographical maps. University and college geology departments might provide information and a geologist's assessment of your slide, free of change, as numerous studies have been made of landslides over the years. This is not just a Pennsylvania environmental problem, so look for information in other states. Such groups as the Natural Resources Conservation Service in eastern Kentucky have produced a brochure concerning landslides and the need for insurance coverage such as is available in California and Washington State. A Grand Forks, Minnesota, newspaper in Sept. of 2003, produced an editorial entitled, *A call for landslide insurance*. Knowledge is essential and they will welcome your story. Environmental groups can help to encourage legislators to address this problem.

Legal pursuits for remediation:

Legal pursuits to remediate a landslide can be costly and difficult. The current statute of limitations on the remediation of building problems is 12 years. Outside of this (landslides generally occur beyond this time frame), the burden of proof in holding someone legally responsible is yours. You have to prove negligence in order to receive compensation from the party you are suing. Because "pain and suffering" cannot be included in such cases, a lawyer working on a contingency fee will be hard to find as awards can only include your actual personal property loss. The value of several square feet of "sliding" dirt is minimal. Inclusion of the "loss of the value" to you of your home at its pre-landslide market price is only admissible if this has been proven either by its having been offered for sale or having been condemned due to damage. Either way, it is without its previous value and you will be removed from the property. Again, this is a "Catch 22." Without a repair of the slide, it will remain valueless and compensation awards to you can only be assessed on the likelihood of a repair. This can be as high as a million dollars. Your base award will not be sufficient to fund repairs and a successful outcome for you will only be possible if you can prove negligence on the part of an entity capable of funding repairs.

Suing neighbors and their insurance companies, whom you feel may have contributed to the slide is a costly exercise. You may be no better off after legal expenses and will certainly generate ill feeling among your neighbors with whom you should, instead, be working to gain governmental assistance. You will have to be confident in overcoming the exclusion clause in insurance coverage for landslides. In the 1992 Supreme Court case of *Steele vs. Statesman Insurance Co.*, the wording of the insurance coverage regarding landslides was found to only exclude those from *Force Majeure* (Act of God). Manmade landslides were found to be included. However, this was particular to this case and the wording of most insurance coverage is more specific, particularly after this judgment was upheld. You should also be aware that the cost of taking a case to this level in the court system in time and money can be extremely high and appeals are always likely.

In all court cases, the collection of evidence is time-consuming and difficult. You should not expect any help from your municipality for the reasons stated above. Collection of documents from your municipality, your property's development and home building companies, and sewer and water providers will not be secured without costly legal means. Although you may find data on the susceptibility of your area to landslides, in order to prove negligence in the poor engineering of landfill, you will need geologic data, such as compaction tests on soil, and watershed conditions before the slide. If these are available, then the likelihood is that problems were anticipated and "reasonable" steps were taken to ensure a slide did not happen. For the most part, risks are taken by municipalities in building in unstable areas to increase the tax base and you will only have geo-technical professional opinions of your property's instability. Negligence in the poor engineering of landfill has to be proven based on the likelihood of future problems.

In assessing post-slide conditions, you will have to hire a geo-technical firm to collect data. Although they might give you an inexpensive surface assessment of your slide, their professional opinion in a court of law, due to their reputations, will require a contract and costly

investigations. You should realize, however, that homeowners in your area will be very reluctant to agree to have bore holes drilled on their properties for this purpose. Your slide has already made them fearful that their own property values have been affected. They will not want to risk further perceived problems in any sale of their properties or damage from your collection of evidence. They will not want to know that their properties' might be at similar risk, thus requiring its mention on Disclosure Statements for future sales. You may become the most unpopular figure in your neighborhood. A reluctance to collect and disseminate information regarding the instability of your area or publicity regarding negligence in any landfill placement around homes will not be confined to your municipal government.

As water is one of the primary causes for landslides, a more efficacious pursuit for remediation of a slide is in your sewer, storm and water systems. Some insurance companies will assist in this at no cost to you. Regulations and codes have changed over the years and it might be possible to force municipalities and utility companies to fix your problem if systems are found to be inadequate or out of code. However, informing your insurance company of your situations has additional repercussions of which you should be aware.

Insurance issues and problems:

You cannot hold a mortgage without homeowner insurance coverage. Your mortgage loan is linked to the value of your property. After a slide, your property is rendered valueless and you now have a hazard on your property which you, most likely, cannot remedy. This is grounds for a removal of your coverage and they may call-in your loan against your other assets. The relatively small amount involved in a home loan is no incentive for an insurance company to intervene to fix a costly slide and restore a property's value in order to protect the loan. The response from insurance and mortgage companies varies with each company. Some are willing to investigate the cause of a slide and such data can be useful in your sewer and storm sewer analysis, if they share it with you. This is generally done to assess the extent of the disaster and chances of repair, and to confirm that the company will not be liable. In this case, an assessment is made concerning your coverage and a "wait and see" will be placed on your policy and/or your coverage will continue, but with a loading request for additional monies to cover the added risk. This is done to cover the additional possibility that they would be involved in a personal injury case if someone is injured as direct result of the hazard on your property. Some companies will refuse to continue your insurance. However, you can appeal and you must do so. Your legislators can be of help in such cases.

Mine subsidence Insurance will compensate for you for your loss in land subsidence from mine collapse. However, coverage is limited and pay-out's can take many years. The program's annual budget is inadequate compared to the number if claims made upon it. And, this financial compensation does not address any of the other legal and insurance problems associated with a resulting landslide. Where slides are situated on a hillside, it is virtually impossible to prove mine collapse as any collapse will be blamed on the landslide. There is no compensation in this program from manmade subsidence from poorly engineered landfill.

Tax reduction applications:

Under the present circumstances, the only help government officials will suggest is pursuing property tax reassessments to achieve tax abatements. Outside a normal county reassessment, you can apply for a disaster reassessment; however, more than 50% of your house's structure must be affected. The chances are that in order to qualify under these rules, your home would probably have been condemned, making this an example of bureaucratic nonsense. If you are still in your home, you must consider carefully creating records of a reduced value for your property. If by some miracle the slide is fixed, such records can be used against you in any future sale price negotiation. You should be satisfied that your home is unsaleable for the foreseeable future. This judgment will help you prepare your case for property value reduction.

A case for property value and, therefore, tax reduction is based on several points. Your argument is that your home is valueless and unsaleable, and using the above knowledge, you should stress the following points. The property is potentially unsafe, and without repair, the situation is likely to worsen. You are required by law to state all knowledge of the slide on any Disclosure Statement for the remainder of the house's existence, even if the slide is repaired, in any future sale. A mortgage will be impossible to obtain as new home insurance coverage is very unlikely. If no mortgage is required and the homeowner is happy to live without insurance, there is still the question of legal liability. Any future owner will assume legal responsibility for the slide. This will make them vulnerable to litigation for personal injury or damage. They could be sued by visitors to the property, neighbors, the municipality, utility companies, or service providers. There is the risk of bankruptcy, tax liens, or property condemnation in the future. Death of the owner will only transfer these risks to their heirs. Abandonment of the property or moving the home to a new lot does not remove legal liability from the owner while it remains in their name.

For your case, you should be prepared with supporting evidence. Take photographs, a map of your area indicating the slide, data and maps showing the instability of your property, any media proof of your slide such as newspaper articles, insurance documents with the exclusion clause for landslides highlighted, and letters to legislators and any other officials contacted. A real estate evaluation from a local company is helpful. They will insist that a professional assessment is necessary. Do not waste your money. You will find that there is universal ignorance of the ramifications of landslides, even among professional evaluators. You will find that a local assessment is sufficient, but you will have to inform the agent regarding landslides.

You should be aware that at this level of assessments, their decision for a reduction will not be binding on your base rate. It will be ignored at the next reassessment, and any increase will be based on your previous valuation. You must appeal their decision, even if they have given you a reduction. The only means to set your base rate at the lower level is to argue your case in the Appeals Court. You may end up there anyway, as it is common for municipalities or School Boards to appeal large property value reductions. Ignorance of the full insurance and legal ramifications of landslides is universal even among some real estate lawyers. You can argue your own case, but be well prepared. The municipality, School Board and County will be present. The decision is an agreement that will be certified by the judge.

Conclusion:

The current situation with regard to landslide victims is unacceptable. Legislators must enact laws to prevent future victims and protect current ones. You must be persistent and not accept your plight. Any investment is risky, but homebuyers should be informed of potential risks and protected from negligence in their ability to pursue adequate legal means for compensation when a landslide occurs. Landslides will only increase if insurance companies are not made to insist that municipalities ensure adherence to building regulations and development companies and home builders are set standards to prevent landslides. Information must be made available and legislation must be passed to prevent homeowners from the nightmare of such a devastating loss.

THE
PITTSBURGH
GEOLOGICAL
SOCIETY

LANDSLIDING IN WESTERN PENNSYLVANIA

Civilization exists by geological consent, subject to change without notice.
Will Durant

Although the earth is a relatively hospitable place to live, we take our chances every day with numerous hazards, both man-made and natural. Speeding cars, wobbling stepladders, open manholes, falling safes, and violent crime make up only one side of the coin. On the other side we find diseases, stampeding elephants, earthquakes, great white sharks, volcanoes, violent storms, raging fires, floods – and landslides.

The word **landslide** is a very generic term for any downhill movement of earth materials – rocks, soils, or artificial fills – resulting from slope failure. The movement can be fast or slow and the slope where the movement occurs can be anything from a gentle rise to a vertical cliff. The sliding material can be soaking wet or dry as a bone. Under these conditions, the strength of the slope material is exceeded, gravity takes over, and the material flows, slides, or falls.

CONDITIONS FOR LANDSLIDING

Two natural conditions occurring in western Pennsylvania are most responsible for landslide problems throughout the area. First, in many places the bedrock consists mainly of shales and claystones. This generally means little to the average person who considers rock to be a nuisance at best, particularly in one's garden or yard. The softer the offending rock the easier it is to remove. Unfortunately, if the rock is too soft it commonly deteriorates into a mass of clay that becomes sticky and slippery when it gets wet. The primary culprit in western Pennsylvania, though by no means the only one, is a thick, 40- to 60-foot rock layer called the **Pittsburgh red beds**. This is a series of mostly reddish, greenish, and grayish claystones and shales that tend to weather deeply where they occur on hillsides throughout large portions of western Pennsylvania (Figure 1). One such hillside along Route 28 in Pittsburgh had to be cut back about 50 feet before the highway department could find solid bedrock. The rock rapidly falls apart in water and tends to lose strength with each seasonal freeze-thaw and wet-dry cycle. Water that collects in the rock has little chance to drain and subsequently helps make the slope unstable from the inside out.

Soils formed on shales and claystones typically range from 5 to 15 feet thick, but they can be much thicker. They grade downward into partially decomposed rock , and eventually into solid bedrock (Figure 2). Soils on hillsides are generally thinner than on hilltops. Such soils normally are stiff but very prone to downhill movement, and under the influence of gravity they can creep down even the gentlest slopes. This movement normally is imperceptibly slow. During the spring, however, the soil often becomes very wet from thawing snow and spring rains and the creeping can accelerate into a full-blown landslide. Except near streams, major slides in soils of this type rarely occur under natural conditions.

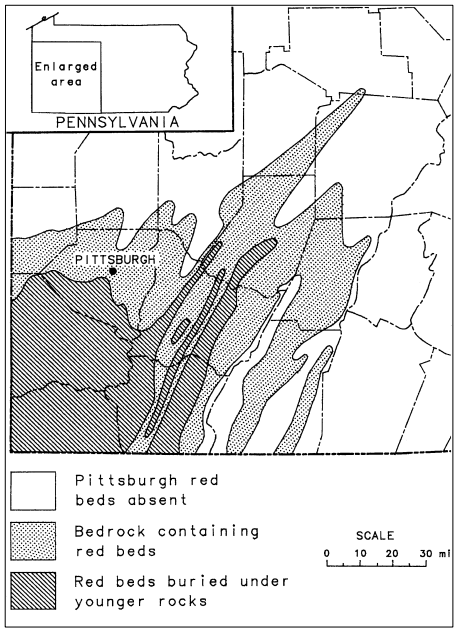

Figure 1. Location of rocks containing Pittsburgh red beds in western Pennsylvania.

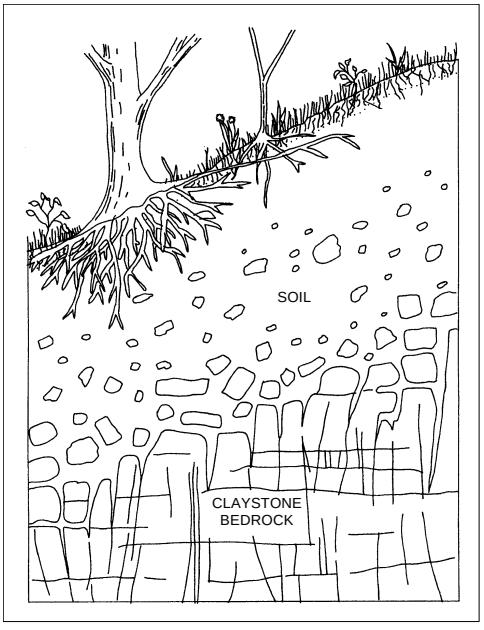

Figure 2. Cross section of a typical hillside showing bedrock and soil.

The second naturally occurring condition responsible for landslides is western Pennsylvania's landscape, which is dominated by steep hills and valleys. This part of the state has many picturesque settings with great scenic views and photo opportunities. As luck would have it, however, this condition also ensures that gravity-induced earth movement will occur now and then, particularly where easily weathered shale and claystone bedrock occurs.

TYPES OF LANDSLIDES

There are three basic types of landslides - falls, slides, and flows. These have been subdivided by geologists and engineers into many subtypes. In western Pennsylvania only four of these types and subtypes occur with any regularity. These include slumps, earthflows, debris slides, and rockfalls.

Slump (Figure 3A) is the downslope sliding of rock, soil, or fill material moving as a unit, characterized by movement along a curved slip plane (Figure 4). This movement acts to tilt the moving mass backward into the slope. Slumps often occur along streams where erosion of the banks allows the ground above to slide down to, or into, the stream. Slumps can be relatively small, involving only a few tens of cubic yards of material. They can also be very large, very complex, and very destructive of property. Slumps are a big problem in western Pennsylvania, causing extensive property damage throughout much of the area.

Earthflow (Figure 3B) is a visible, down-slope movement of soil and weathered rock acting as a thick, sticky fluid, typically flowing over bedrock or a layer of clay. The resulting landform is characterized by a scarp at the top of the flow, a mass of broken and disrupted soil in the midst of the flow, and raised, lumpy terrain at the bottom, or toe (Figure 4). Earthflows are very common in the Pittsburgh area, occurring most often in soils developed on slopes or old landslide deposits, especially on slopes underlain by the Pittsburgh red beds. Because of the unstable nature of these claystones, earthflows can occur anywhere these rocks form the soil or bedrock on sloping terrain.

Debris slides (Figure 3C) are rapid, downslope movements of jumbled masses of soil, rock, and debris in which the mass slides forward and ends up as an irregular, lumpy deposit. The material commonly slides as a relatively intact unit. Many of the landslides that occur in western Pennsylvania act as debris slides during at least part of their downslope movement.

Rockfalls (Figure 3D) are masses of newly detached bedrock that fall from cliffs, steep slopes, cave roofs, or rock arches. Hard beds

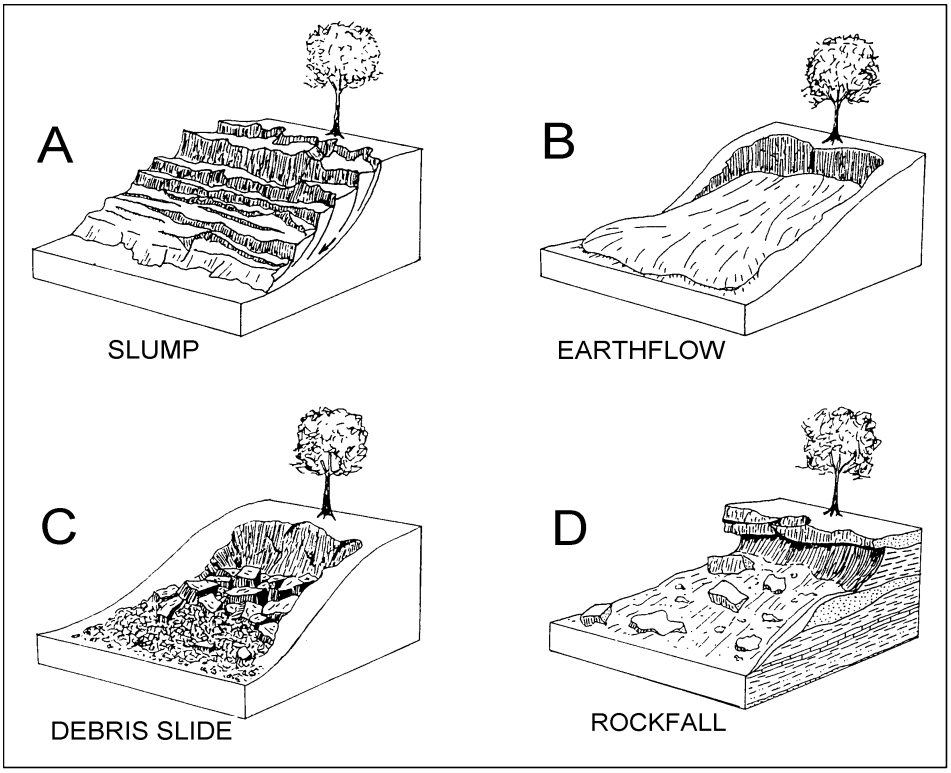

Figure 3. The most common kinds of landslides in western Pennsylvania.

of sandstone or limestone underlain by relatively weaker shales or claystones occur throughout western Pennsylvania. Rapid disintegration of the softer rocks due to weathering and erosion leaves the harder rock hanging as unsupported ledges. In time weathering progresses to the point where the rock ledge can no longer sustain the stress created by its overhanging weight and the ledge falls. Rockfalls can be any size, and formed of any material. They can occur at anytime, but are most common in western Pennsylvania in the spring after the winter freeze-thaw cycles have loosened the rock. Dangerous rockfalls occur mainly along highway cuts having high, steep sides. Coal mines, quarries, and deep stream cuts also commonly experience rockfalls. Although rockfalls resulting in costly clean-up efforts occur frequently in western Pennsylvania, large, life-threatening rockfalls are vry rare. A rockfall that killed 22 people on a bus in Beaver County in 1942 was a notable exception. Most of the rockfalls in this area are better characterized as expensive inconveniences rather than killer landslides.

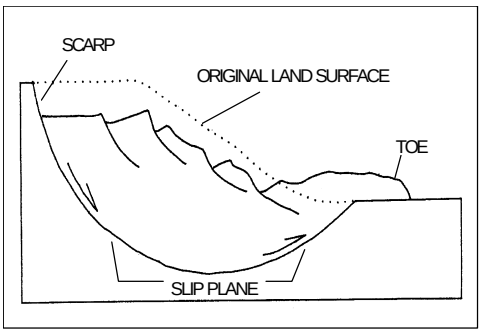

Figure 4. A slump in cross section showing typical landslide terminology.

ANCIENT LANDSLIDES

Although most of the known landslides in western Pennsylvania have occurred since World War II, sliding certainly is not a new phenomenon in the area. The Monongahela River is named for the Native American word "Menaungehilla" which means "river with the sliding banks" or "high banks, which break off and fall down." Landslides were very common in western Pennsylvania during the Ice Age, between 900,000 and 10,000 years ago, and their results can be seen throughout the area. The ancient slide masses commonly occur on the sides of hills and have a flattened, linear shape that stands out as a distinct break in the general slope of the hillside. They are, perhaps, best seen during the winter months when the trees are bare of leaves. Builders like to use the flat upper surfaces as convenient places to construct buildings and roads on western Pennsylvania's otherwise steep topography. There is, however, an ever-present danger of reactivating a long-dormant slide, as many an unlucky homeowner, many businesses,developers, and the various state and local highway departments, have come to realize too late.

MAN-MADE PROBLEMS

Since World War II, most of the landslides in western Pennsylvania have been the direct result of the activities of man. In attempting to build better lives for ourselves, we end up being responsible for initiating or intensifying certain conditions in areas where otherwise there would have been little or no risk. Some of the things we do to trigger landslides include: 1) excavations in unstable slope materials; 2) haphazard construction or improper use of pipelines; 3) overuse of fill materials on slopes, particularly at the heads of existing slide masses; 4) disruption of surface or subsurface drainage (streams and springs); 5) removal of materials at the bases of slopes; and 6) vibrations caused by heavy traffic, blasting, and driving piles near unstable slopes. For example, in 1951 a large landslide about 500 feet wide and several hundred feet long occurred in Allegheny County as a result of a seemingly innocuous little 8 foot cut made in the soils at the base of the slope. This resulted in the total estruction of six houses and damage to several others, as well as dislocation of a highway, a streetcar line, and overhead and underground utilities. Numerous similar, though less severe, situations occur throughout western Pennsylvania every year. Unfortunately, it is more often the unsuspecting homeowner, rather than the builder or land developer, who suffers once the slide begins to move.

WHAT CAN YOU DO?

Western Pennsylvania residents should become aware of the ever-present danger of landslides and other geologic hazards before purchasing new houses or building on undeveloped land. Standard homeowners insurance policies do not cover damages due to landslides, but special rider policies may be purchased at extra cost. Recognition of potential problems, however, is essential in avoiding what could become enormous remediation costs. The Pittsburgh office of the Pennsylvania Geological Survey has maps showing landslide potential throughout the western half of the state. Area citizens wishing to determine the potential for landslide damage are encouraged to call (412) 442-4235 and request assistance. A good guide to the hazards of owning a home or office in western Pennsylvania is *"Lots" of Danger! Property Buyer's Guide to Land Hazards of Southwestern Pennsylvania* which is available for $4.00 + $1.50 for shipping and handling from the Pittsburgh Geological Society, PO Box 58172, Pittsburgh, PA 15209, or call (412) 928-2255. Other useful references, all published by the U.S. Geological Survey (USGS), include: Circular 728, *Landsliding in Allegheny County, Pennsylvania*; Professional Paper 1229, *Landslides in the Greater Pittsburgh Region, Pennsylvania*; and Miscellaneous Field Studies Map MF-685B, *Map of Susceptibility to Landsliding, Allegheny County, Pennsylvania*, in 2 sheets at a scale of 1:50,000.

The Pittsburgh Geological Society
is a non-profit scientific society whose goals are to stimulate geologic thought, advance and disseminate geologic knowledge, and provide a forum for geologic problems.

This appendix contains information about the Toxic Release Inventory Sites in Allegheny County.

This appendix contains information about the 302 and 312 sites in Allegheny County.

302 Facilities

FACILITY NAME	FACILITY ADDRESS
ADT SECURITY SERVICES	2809 BANKSVILLE ROAD, PITTSBURGH, PA 15216
AIR PRODUCTS AND CHEMICALS - CREIGHTON	FREEPORT ROAD - P.O. BOX 565, CREIGHTON, PA 15030
ALCOA ALUMINA & CHEMICALS LLC-RPC	99 WEST PARK ROAD, LEETSDALE INDUSTRIAL PARK, LEETSDALE, PA 15056-1008
ALCOAGLOBAL INFORMATION SERVICES (OFFICE 214)	TWO ALLEGHENY CENTER, PITTSBURGH, PA 15212-5495
ALLEGHENY COLD STORAGE	16-57TH STREET, PITTSBURGH, PA 15201
ALLEGHENY ENERGY - CT SITE 3-4-5	198 BUTLER STREET EXT., SPRINGDALE, PA 15144
ALLEGHENY LUDLUM CORP. - TECHNICAL CENTER	ALABAMA & PACIFIC AVENUES, BRACKENRIDGE, PA 15014
ALLEGHENY LUDLUM STEEL - PLANT	100 RIVER ROAD, BRACKENRIDGE, PA 15014
ALLEGIANCE TELECOM INC.	#3 ALLEGHENY CIRCLE MALL, PITTSBURGH, PA 15212
ALLWASTE CONTAINER SERVICES	ROUTE 51 & PITTSBURGH AVENUE, CORAOPOLIS, PA 15108
AMERIFREEZE COLD STORAGE	24 FRONTIER DRIVE, GIBSONIA, PA 15044
ASHLAND CHEMICAL - NEVILLE ISLAND	2650 NEVILLE ROAD, PITTSBURGH, PA 15225
BOC GASES	101 NORTH CANAL STREET, NATRONA, PA 15065
BRENNTAG NORTHEAST INC.	1085 ALLEGHENY AVENUE, OAKMONT, PA 15139
BROADWING COMMUNICATIONS LLC - PITBPAAI	535 SMITHFIELD STREET, STE 705, PITTSBURGH, PA 15222
BURRELL CORPORATION	2223 FIFTH AVENUE, PITTSBURGH, PA 15219
BUTLER GAS PRODUCTS	110 NICHOL AVENUE, MCKEES ROCKS, PA 15136-2664
CALGON CARBON CORP	200 NEVILLE ROAD, PITTSBURGH, PA 15225-1699
CARDINAL HEALTH	171 THORN HILL ROAD, WARRENDALE, PA 15086
CHEMCENTRAL	3000 CASTEEL DRIVE, CORAOPOLIS, PA 15108
CHOICE ONE COMMUNICATIONS INC.	650 SMITHFIELD STREET, CENTRE CITY TOWER, PITTSBURGH PA 15222
CINTAS CORPORATION	40 ABELE ROAD, BRIDGEVILLE, PA 15017
COLTERYAHN DAIRY	1601 BROWNSVILLE ROAD, PITTSBURGH, PA 15210
COMCAST - CORLISS	300 CORLISS STREET, PITTSBURGH, PA 15220

302 Facilities

COMCAST - PERRYSVILLE	4512 PERRYSVILLE AVENUE. PITTSBURGH, PA 15214
COMCAST - TARENTUM	TOWER DRIVE, TARENTUM, PA 15084
COMCAST - WHITE OAK	MASON ROAD, WHITE OAK, PA 15131
COMPUNETICS	700 SECO ROAD, MONROEVILLE, PA 15146
CONSUMER'S PRODUCE	ONE 21ST & RAILROAD STREETS, PITTSBURGH, PA 15222-4405
COSTCO #332	202 COSTCO DRIVE, PITTSBURGH, PA 15205
COWAN METAL FINISHING CO.	2 DOERR STREET, PITTSBURGH, PA 15233
CROWN CASTLE USA - PA 001 - CRANE AVENUE	1485 CRANE AVENUE, PITTSBURGH, PA 15220
CROWN CASTLE USA - PA 002 - BLUEBELL	122 BLUEBELL AVENUE, PITTSBURGH, PA 15214
CROWN CASTLE USA - PA 030 - CARNEGIE	DOOLITTLE, CARNEGIE, PA 15106
CROWN CASTLE USA - PA 040 - NORTH PARK	WEST RIDGE ROAD, WEXFORD, PA 15090
CROWN CASTLE USA - PA KANE HOSPITAL	KANE BLVD., SCOTT TOWNSHIP, PA 15243
CROWN CASTLE USA - PA-011 - AIRPORT/MOON	451 MOON CLINTON ROAD, CORAOPOLIS, PA 15108
DLM FOODS LLC	1075 PROGRESS STREET, PITTSBURGH, PA 15212
DUQUESNE LIGHT - CHESWICK SUBSTATION	PORTER STREET, SPRINGDALE, PA 15144
DUQUESNE LIGHT - MANCHESTER	2101 BEAVER AVENUE, PITTSBURGH, PA 15233
DUQUESNE LIGHT - NORTH SUBSTATION	THOMPSON RUN ROAD, ROSS TWP., PA 15237
DUQUESNE LIGHT - WOODS RUN COMPLEX - BUILDINGS 2 & 3	2839 & 2841 NEW BEAVER AVENUE, PITTSBURGH, PA 15233
EAST LIBERTY ELECTROPLATING	1126 BUTLER PLANK ROAD - ROUTE 8, GLENSHAW, PA 15116-2660
EAST PENN MFG COMPANY	#4 COMMERCE DRIVE, PITTSBURGH, PA 15239
EASTMAN CHEMICALS	PO BOX 567, STATE HIGHWAY 837, WEST ELIZABETH, PA 15088
ENERSYS INC	811 PARKWAY VIEW DRIVE PITTSBURGH, PA 15205
FENTON HEAT TREATING INC.	3605 HOMESTEAD-DUQUESNE ROAD, WEST MIFFLIN, PA 15122
GENERAL MOTORS - PITTSBURGH	1451 LEBANON SCHOOL ROAD, WEST MIFFLIN, PA 15122
GEROGE WESTINGHOUSE RESEARCH TECHNOLOGY PARK	1310 BEULAH ROAD, PITTSBURGH, PA 15235

302 Facilities

GUARDIAN INDUSTRIES CORP.	1000 GLASSHOUSE ROAD, JEFFERSON HILLS, PA 15025-1000
HUSSEY COPPER LTD	100 WASHINGTON STREET, LEETSDALE, PA 15056
KOPPERS INDUSTRIES INC.	300 NORTH STATE STREET, CLAIRTON, PA 15025-2109
LABCHEM INC.	200 WILLIAM PITT WAY, PITTSBURGH, PA 15238
LEVEL 3 COMMUNICATIONS INC.	143 SOUTH 25TH STREET, PITTSBURGH, PA 15203
MAGELLAN ENVIROGAS - MONROEVILLE	600 THOMAS STREET, MONROEVILLE, PA 15146
MALLET AND COMPANY INC.	BELL AVENUE & ROSSLYN RD., CARNEGIE, PA 15106
MCI WORLDCOM (GLENPA)	OFF DAWSON ROAD #5, GIBSONIA, PA 15044
MCI WORLDCOM (GLFOPA)	5920 GRUBBS ROAD, GIBSONIA, PA 15044
MCI WORLDCOM (PIAJPA)	3170 SASSAFRAS WAY, 32ND & LIBERTY), PITTSBURGH, PA 15222
MCI WORLDCOM (PIBRPA)	2990 SASSAFRAS WAY, PITTSBURGH, PA 15201
MCI WORLDCOM (PIFAPA)	1001 LIBERTY AVENUE, PITTSBURGH, PA 15222
MCI WORLDCOM (PIIOPA)	1400 PENN AVENUE, PITTSBURGH, PA 15222
MCI WORLDCOM (PITSPA)	2630 LIBERTY COMMONS, PITTSBURGH, PA 15222
MEDRAD INC.	ONE MEDRAD DRIVE, INDIANOLA, PA 15051-0780
METAL TREATING COMPANY	4901-11 BUTLER STREET, PITTSBURGH, PA 15201-2718
NATIONAL TIRE & BATTERY #7361	2400 SOUTH PARK ROAD, BETHEL PARK, PA 15102
NATIONAL TIRE & BATTERY #7522	2000 GREENTREE ROAD, PITTSBURGH, PA 15220
NATIONAL TIRE & BATTERY #7611	851 CLAIRTON BLVD., PITTSBURGH, PA 15236
NATIONAL TIRE & BATTERY #7621	8050 MCKNIGHT ROAD, PITTSBURGH, PA 15237
NATIONAL TIRE & BATTERY #7797	4175 WILLIAM PENN HIGHWAY, MONROEVILLE, PA 15146
NATIONAL TIRE & BATTERY #7834	405 HOME DRIVE, PITTSBURGH, PA 15275
NEVILLE CHEMICAL CO.	2800 NEVILLE ROAD, PITTSBURGH, PA 15225-1496
NEXTEL - BRIDGEVILLE	400 BURSCA DRIVE, SUITE 405, BLDG. 400, BRIDGEVILLE, PA 15017
NORTH PITTSBURGH TELEPHONE COMPANY - GIBSONIA	4008 GIBSONIA ROAD, GIBSONIA, PA 15044-9311
NORTH PITTSBURGH TELEPHONE COMPANY - WEXFORD BAYNE	WEXFORD BAYNE ROAD, WEXFORD, PA 15090

302 Facilities

OK GROCERY COMPANY - PERISHABLE FACILITY	735 BEECHNUT DRIVE, PITTSBIRGH, PA 15205
ORION POWER MIDWEST - BRUNOT ISLAND POWER PLANT)	2849 WEST CARSON STREET, PITTSBURGH, PA 15204
ORION POWER MIDWEST - CHESWICK POWER PLANT	PITTSBURGH & PORTER STREET, SPRINGDALE, PA 15144
ORION POWER MIDWEST - PHILLIPS POWER PLANT	BOX 331, JORDAN STREET, SOUTH HEIGHTS, PA 15081
PENN AMERICAN WATER - BELLBRIDGE	BELLBRIDGE ROAD, ELIZABETH, PA 15037
PENN AMERICAN WATER - HAYS MINE	380 BECKS RUN ROAD, PITTSBURGH, PA 15227
PENN AMERICAN WATER - MILL HILL	MILL HILL ROAD, ELIZABETH, PA 15037
PENN AMERICAN WATER - MT. WASHINGTON BOOSTER STATION	ARLINGTON & KNOX AVENUES, PITTSBURGH, PA 15210
PPG INDUSTRIES COMPLEX	125 & 151 COLFAX STREET, SPRINGDALE, PA 15144
PRECOAT METALS	3500 WALNUT STREET, MCKEESPORT, PA 15132
PRESSURE CHEMICAL CO.	3419 SMALLMAN STREET, PITTSBURGH, PA 15201-1997
QWEST COMMUNICATIONS CO - PITTSBURGH POP-1	733 GROSS STREET, PITTSBURGH, PA 15219
QWEST COMMUNICATIONS CO - PITTSBURH POP 2	ONE STATION SQUARE - LANDMARK BLDG - SUITE 700, PITTSBURGH, PA 15219
QWEST LEETSDALE T1	300 LEETSDLAE INDUSTRIAL PARK, BLDG. 1, LEETSDALE, PA 15056
REICHHOLD LLC	1000 PRESTO-SYGAN ROAD, BRIDGEVILLE, PA 15017
REINHOLD ICE CREAM COMPANY	800 FULTON STREET, PITTSBURGH, PA 15233
SAGAR ENTERPRISES	GREGG & HAMMOND STREET, PO BOX 684, CARNEGIE, PA 15106
SAMS CLUB - #6575	249 SUMMIT DRIVE, PITTSBURGH, PA 15275
SANYO CHEMICAL & RESIN INC.	PO BOX 567, STATE HIGHWAY 837, WEST ELIZABETH, PA 15088
SCHNEIDER DAIRY INC.	726 FRANK STREET, PITTSBURGH, PA 15227
SCHREIBER FOODS INC.	4700 CAMPBELLS RUN ROAD, PITTSBURGH, PA 15205

302 Facilities

SEARS AUTO CENTER # 6027	1008 ROSS PARK MALL DRIVE, PITTSBURGH, PA 15237
SEARS AUTO CENTER #2682	1500 ROBINSON CENTER. PITTSBURGH, PA 15205
SEARS AUTO CENTER #6044	3470 WILLIAM PENN HIGHWAY, PITTSBURGH, PA 15235
SEARS AUTO CENTER #6064	300 SOUTH HILLS VILLAGE
SEARS, ROEBUCK AND COMPANY #6177	3075 CLAIRTON ROAD, WEST MIFFLIN, PA 15122
SHENANGO INC.	200 NEVILLE ROAD, PITTSBURGH, PA 15225
SHORE CORPORATION	2917 SPRUCE WAY, PITTSBURGH, PA 15201-1530
SPRINT COMMUNICATIONS	3126 LIBERTY AVENUE, PITTSBURGH, PA 15201
SPRINT SPECTRUM L P - PCS SWITCH	22 39TH STREET, LAWRENCEVILLE COMMERCE PARK, PITTSBURGH, PA 15201
SUNOCO CHEMICALS	NEVILLE ISLAND PLANT, PITTSBURGH, PA 15225
TECH MET INC.	15 ALLEGHENY SQUARE, GLASSPORT, PA 15045
THERMO SHANDON	171 INDUSTRY DRIVE, PITTSBURGH, PA 15275
TRIANGLE CIRCUITS OF PITTSBURGH	931 THIRD STREET, OAMONT, PA 15139
TURNER DAIRY FARMS INC.	1049 JEFFERSON ROAD, PITTSBURGH, PA 15235-4723
UNIVAR USA INC - 1	328 BUNOLA RIVER ROAD, BUNOLA, PA 15020-0300
UPARC	3170 WILLIAM PITT WAY, PITTSBURGH, PA 15238
USS - CLAIRTON	400 STATE STREET, CLAIRTON, PA 15025-1855
USS - EDGAR THOMSON	BRADDOCK AVENUE & 13TH STREET, BRADDOCK, PA 15104
USS - IRVIN WORKS	CAMP HOLLOW ROAD, WEST MIFFLIN
USS - SOUTH TAYLOR ENVIRONMENTAL PARK	555 DELWAR ROAD, WEST MIFFLIN, PA 15236
VERIZON - ALLENTOWN	719 WARRINGTON AVENUE, PITTSBURGH, PA 15210
VERIZON - BETHEL PARK CO	5112 WEST LIBRARY ROAD, PITTSBURGH, PA 15102
VERIZON - BRADDOCK CO	515 FOURTH STREET, BRADDOCK, PA 15104
VERIZON - BRIDGEVILLE	408 WASHINGTON AVENUE, BRIDGEVILLE, PA 15017
VERIZON - CARNEGIE CO	201-211 MAIN STREET, CARNEGIE, PA 15106
VERIZON - CARRICK	2256 BROWNSVILLE ROAD, PITTSBURGH, PA 15210
VERIZON - CLAIRTON CO	306 LARGE AVENUE, CLAIRTON, PA 15025
VERIZON - CORAOPOLIS	410 BROADWAY STREET, CORAOPOLIS, PA 15108
VERIZON - CRAFTON CO	11 SIDNEY STREET, PITTSBURGH, PA 15205

302 Facilities

VERIZON - DORMONT	3151 PIONEER AVENUE, DORMONT, PA 15216
VERIZON - DOWNTOWN CO	416 7TH AVENUE, BLDG. A-B-D, PITTSBURGH, PA 15219
VERIZON - EAST LIBERTY	223 NORTH HIGHLAND AVENUE, PITTSBURGH, PA 15229
VERIZON - ELIZABETH CO	118 SOUTH SECOND STREET, ELIZABETH, PA 15037
VERIZON - ELIZABETH TOWNSHIP	2432 GREENOCK-BUENAVISTA ROAD, BOSTON, PA 15135
VERIZON - GLENSHAW CO	1003 CHARLES STREET, GLENSHAW, PA 15116
VERIZON - GLOBAL NETWORKS INC.	3100 SASSAFRAS WAY, PITTSBURGH, PA 15201
VERIZON - HOMESTEAD CO	303 EAST NINTH AVENUE, HOMESTEAD, PA 15120
VERIZON - MCKEES ROCKS	745 CHARTIERS AVENUE, MCKEES ROCKS, PA 15136
VERIZON - MCKEESPORT	520 SIXTH AVENUE, MCKEESPORT, PA 15130
VERIZON - MILLVALE	KLOPFER & EVERGREEN ROAD, PITTSBURGH, PA 15209
VERIZON - MONROEVILLE	4206 NORTHERN PIKE, MONROEVILLE, PA 15146
VERIZON - NORTH SIDE CO	15 EAST MONTGOMERY STREET, PITTSBURGH, PA 15212
VERIZON - OAKLAND CO	530 NORTH NEVILLE STREET, PITTSBURGH, PA 15213
VERIZON - OAKMONT CO	360 DELAWARE AVENUE, OAKMONT, PA 15139
VERIZON - PA 123103	
VERIZON - PA 43275	625 ALPHA DRIVE, PITTSBURGH PA
VERIZON - PA 59463	501 NIXON ROAD, HARMAR TWP., PA
VERIZON - PENN HILLS	5970 SALTSBURG ROAD, PITTSBURGH, PA 15235
VERIZON - PERRYSVILLE	1104 PERRY HIGHWAY, PITTSBURGH, PA 15237
VERIZON - PIT MTSO	PENN AVENUE, PGH, PA 15222
VERIZON - PLEASANT HILLS	128 TELSTAR DRIVE, PLEASANT HILLS, PA 15236
VERIZON - RIDC WEST HUT	SUMMIT PARK DRIVE, PITTSBURGH, PA 15275
VERIZON - ROBINSON TOWNSHIP	6440 STEUBENVILLE PIKE, PITTSBURGH, PA 15205
VERIZON - SHARPSBURG	1346 MAIN STREET, PITTSBURGH, PA 15215
VERIZON - SQUIRREL HILL	5741 POCUSSETT STREET, PITTSBURGH, PA 15217
VERIZON - TARENTUM	468 7TH AVENUE, TARENTUM, PA 15084
VERIZON - TURTLE CREEK	801 PENN AVENUE, TURTLE CREEK, PA 15145

302 Facilities

VERIZON - WEST MIFFLIN CO	2607 SKYLINE DRIVE, WEST MIFFLIN, PA 15122
VERIZON - WEST VIEW CO	44 CENTER AVENUE, WEST VIEW, PA 15229
VERIZON - WILKINSBURG	1026 HAY STREET, PITTSBURGH, PA 15221
WATSON STANDARD - HARWICK	616 HITE ROAD, HARWICK, PA 15049
WESTINGHOUSE ENERGY SYSTEMS	4350 NORTHERN PIKE & HAYMAKER ROAD, MONROEVILLE, PA 15146
WILLIAMS COMMUNICATIONS - PITBPA1W	2401 PENN AVENUE, PITTSBURGH, PA 15222
ZEP MANUFACTURING COMPANY	BUNCHER INDUSTRIAL DISTRICT, BLDG 13-C, AVENUE B, LEETSDALE, PA 15056

312 Facilities

FACILITY NAME	FACILITY ADDRESS
AEROTECH INC.	101 ZETA DRIVE, PITTSBURGH, PA 15238
AFFIVAL INC. - OAKMONT	10 ANN STREET, OAKMONT, PA 15139
AFFIVAL INC. - PLUM	1297 EASTERN AVENUE, VERONA, PA 15147
AIR PRODUCTS AND CHEMICALS - LEETSDALE	AVENUE B - BUNCHER INDUSTRIAL DRIVE, LEETSDALE, PA 15056
AIRCRAFT SERVICE INTERNATIONAL GROUP	PIA, BOX 12412, PITTSBURGH, PA 15231-0412
AKJ INDUSTRIES INC (AT USS CLAIRTON)	400 NORTH STATE STREET, CLAIRTON, PA 15025
ALLEGHENY PETROLEUM PRODUCTS CO.	999 AIRBRAKE AVENUE, WILMERDING, PA 15148
ALLEGHENY VALLEY HOSPITAL	1301 CARLISLE STREET, NATRONA HEIGHTS, PA 15065
ALLOY OXYGEN & WELDING SUPPLY	60 SOUTH 24TH STREET, PITTSBURGH, PA 15203-2192
AMERICAN AIRLINES	P.O. BOX 12362, PIA, PITTSBURGH, PA 15231
AMERICAN BRIDGE MANUFACTURING	2000 AMERICAN BRIDGE WAY, CORAOPOLIS, PA 15108
AMERIGAS - SAMDOZ BLDG. 4	PARKWAY VIEW INDUSTRIAL PARK, PARKWAY VIEW DRIVE, PITTSBURGH, PA 15205
AMERIGAS - SAMDOZ BLDG. 5	PARKWAY VIEW INDUSTRIAL PARK, PARKWAY VIEW DRIVE, PITTSBURGH, PA 15205
ASTRO NUCLEAR DYNAMICS INC.	1801 ROUTE 51, JEFFERSON HILLS, PA 15025
ATOMIZED MATERIALS	205 PARKS ROAD, MCDONALD, PA 15057
AVIS RENT A CAR SYSTEM INC - PIA	RENTAL CAR ACCESS ROAD, PIA, PITTSBURGH, PA 15731
AVIS RENT A CAR SYSTEM INC - STANWIX	625 STANWIX STREET, PITTSBURGH, PA 15222
AZCON CORPORATION	19TH STREET & ALLEGHENY RIVER, P.O. BOX 7818, SHARPSBURG, PA 15215
B & R POOLS	1105 WASHINGTON BLVD., PITTSBURGH, PA 15206
BAIERL CHEVROLET	10430 PERRY HIGHWAY, RT. 19, WEXFORD, PA 15090
BAUMAN BUS INC.	5807 VALENCIA ROAD, GIBSONIA, PA 15044
BAYER CORPORATION	753 STATE ROUTE 30, IMPERIAL, PA 15126
BENNETT SUPPLY COMPANY	300 BUSINESS CENTER DRIVE, CHESWICK, PA 15024-1071
BESSEMER & LAKE ERIE RAILROAD	135 JAMISON LANE, PO BOX 68, MONROEVILLE, PA 15146

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BESSEMER & LAKE ERIE RAILROAD	135 JAMISON LANE, PO BOX 68, MONROEVILLE, PA 15146
BFI WASTE SYSTEMS - NOBLESTOWN	PO BOX 448, W. NOBLESTOWN ROAD, CARNEGIE, PA 15106
BFI WASTE SYSTEMS OF NORTH AMERICA	11 BOGGS ROAD, IMPERIAL, PA 15126
BOC GASES	MILLER RUN ROAD, C/O REICHHOLD CHEMICALS, BRIDGEVILLE, PA 15017
BOC GASES - BRADDOCK	1000 WASHINGTON AVENUE, BRADDOCK, PA 15104
BOC GASES - C/O GUARDIAN GLASS	GLASSHOUSE ROAD, FLOREFFE, PA 15025
BOX USA	23RD STREET EXT., PO BOX 7832, SHARPSBURG, PA 15215-0832
BP PRODUCTS NORTH AMERICA INC.	510 NARROWS RUN ROAD, CORAOPOLIS, PA 15108
BROOKSIDE LUBER COMPANY	500 LOGAN ROAD, P.O. BOX 327, BETHEL PARK, PA 15102
BUCKEYE TERMINAL LLC - CORAOPOLIS	3324 UNIVERSITY BLVD., MOON TOWNSHIP, PA 15108
BUDGET RENT A CAR SYSTEM INC - MONROEVILLE	3939 WILLIAM PENN HIGHWAY, MONROEVILLE PA 15146
BUDGET RENT A CAR SYSTEM INC - PIA	RENTAL CAR ACCESS ROAD, PIA, PITTSBURGH, PA 15731
C E HOLDEN INC.	938 ROUTE 910, CHESWICK, PA 15024
CALGON CARBON CORP - GRAND AVENUE	4301 GRAND AVENUE, PITTSBURGH, PA 15225
CARGILL INC. - SALT DIVISION	180 NICHOL AVENUE, BLDG 166, MCKEES ROCKS, PA 15136-2667
CARPENTER POWDER PRODUCTS INC.	600 MAYER STREET, BRIDGEVILLE, PA 15017
CENTURY III CHEVROLET	2430 LEBANON CHURCH ROAD, WEST MIFFLIN, PA 15122
CHAMBERS DEVELOPMENT COMPANY, C/O USA WASTE SERVICES CO	600 THOMAS STREET, MONROEVILLE, PA 15146
CHEMSTATION	1800 PREBLE AVENUE, PITTSBURGH, PA 15238
CHURCHILL VALLEY COUNTRY CLUB	800 BEULAH ROAD, PITTSBURGH, PA 15235-4299
CLEARWATER INC.	5605 GRAND AVENUE, PITTSBURGH, PA 15225
CLEARWATER INTERNATIONAL, LLC	100 INDUSTRIAL DRIVE, SUITE A, LEETSDALE, PA 15056
COMCAST - BAKERSTWON	BAKERSTOWN ROAD, TARENTUM, PA 15084
COMCAST - BROWNSVILLE	5211 BROWNSVILLE ROAD, PITTSBURGH, PA 15236

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COMCAST - CHARTIERS	1530 CHARTIERS AVENUE, PITTSBURGH, PA 15204
COMCAST - PENN HILLS	SLOVENE STREET, PITTSBURGH, PA 15235
COMCAST - SUMMITT	15 SUMMITT PARK DRIVE, PITTSBURGH, PA 15275
COMPLIANCE SPECIALISTS	6TH AND CENTER STREETS, PO BOX 28, TARENTUM, PA 15084
COMPUCOM	1401 WEST CARSON STREET, PITTSBURGH, PA 15219
CONSOL ENERGY INC - 2 - RESEARCH AND DEVELOPMENT	4000 BROWNSVILLE ROAD, SOUTH PARK, PA 15129-9566
CONSOL ENERGY INC. 1	CONSOL PLAZA, 1800 WASHINGTON ROAD, PITTSBURGH, PA 15241-1421
CONSOLIDATION COAL CO. - RIVER OPERATIONS	PO BOX 387, CHURCH STREET, ELIZABETH, PA 15037-0387
CP INDUSTRIES INC.	2214 WALNUT STREET, MCKEESPORT, PA 15132
CROWN CASTLE USA - PA 003 - MONROEVILLE	130 SECO ROAD, MONROEVILLE, PA 15146
CROWN CASTLE USA - PA 023 - GLASSPORT	FIRST STREET, GLASSPORT, PA 15045
CROWN CASTLE USA - PA 033 - SEWICKLEY	999 WATERWORKS ROAD, SEWICKLEY, PA 15143
CROWN CASTLE USA - PA 165 - SOUTH PARK	300 STONESHELTER ROAD, BETHEL PARK, PA 15102
CROWN CASTLE USA - PITG94LA(2)B	23 BUFFINGTON AVENUE, PITTSBURGH, PA 15210
CRUCIBLE COMPACTION METALS	1001 ROBB HILL ROAD, OAKDALE, PA 15071
CRUCIBLE RESEARCH	6003 CAMPBELLS RUN ROAD, PITTSBURGH, PA 15205
CRYSTAL SPRINGS WATER COMPANY	45 WEST NOBLESTOWN ROAD, CARNEGIE, PA 15106
CSX TRANSFLO - PGH	408 PATH WAY (CORNER OF COURTLAND & BLAIR), PITTSBURGH, PA 15207
CURTIS WRIGHT ELECTRO MECHANICAL CORP.	LOW GRADE ROAD AT LEMON LANE, CHESWICK, PA 15024-1300
CXL WAREHOUSE INC.	10 PLUM STREET, VERONA, PA 15147
DACAR INDUSTRIES	1000 GREGG STREET, CARNEGIE, PA 15106
DARLING INTERNATIONAL INC.	RR #1, POTATO GARDEN ROAD, IMPERIAL, PA 15126
DAVIS OIL SALES INC.	745 STATE ROUTE 30, IMPERIAL, PA 15126
DEBALDO BROTHERS INC.	3445 HARTS RUN ROAD, GLENSHAW, PA 15116-3027
DELTA AIRLINES INC.	PIA, PO BOX 12328, PITTSBURGH, PA 15231

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DOLLAR RENT A CAR SYSTEMS	RENTAL CAR ACCESS ROAD, PIA, PITTSBURGH, PA 15731
DOMINION EXPLORATION & PRODUCTION - CNGP 11056	LESTER WABCO #1, WILMERDING, PA 15148
DOMINION EXPLORATION & PRODUCTION - CNGP 11064	WESTINGHOUSE AIRBRAKE #3, WILMERDING, PA 15148
DOMINION GAS - ELIZABETH	WALL COMPRESSOR STATION, RD #3, ELIZABETH, PA 15037
DOMINION GAS - ROUTE 286	DICE STATION, 2300 RT 286, HOLIDAY PARK, PITTSBURGH, PA 15239
DUQUESNE LIGHT - ARSENAL SUB	37TH & LIBERTY AVENUE, PITTSBURGH, PA 15201
DUQUESNE LIGHT - BRENTWOOD SUB	CLAIRTON ROAD, ROUTE 51, BRENTWOOD, PA 15227
DUQUESNE LIGHT - BRUNOT ISLAND SUB	2841 NORTH BEAVER AVENUE, PITTSBURGH, PA 15233
DUQUESNE LIGHT - CARNEGIE SUB	GLASS STREET, CARNEGIE, PA 15106
DUQUESNE LIGHT - CARSON SUBSTATION	3400 JANE STREET, PITTSBURGH, PA 15203
DUQUESNE LIGHT - CHESS SUB	168 WARRINGTON AVENUE, PITTSBURGH, PA 15210
DUQUESNE LIGHT - CLINTON SUBSTATION	ROUTE 30, WEST OF CLINTON, FINDLAY, PA 15108
DUQUESNE LIGHT - COLLIER SUBSTATION	FORT PITT ROAD, COLLIER, PA 15142
DUQUESNE LIGHT - CRESCENT SUBSTATION	CRESCENT TWP., RT. 151, WIRETON, PA 15108
DUQUESNE LIGHT - DORMONT SUB	W. LIBERTY AVE & SARANAC AVE., PITTSBURGH, PA 15216
DUQUESNE LIGHT - DRAVOSBURG NORTH YARD	1207 COMMONWEALTH ROAD, WEST MIFFLIN, PA 15122
DUQUESNE LIGHT - DRAVOSBURG SOUTH YARD	1207 COMMONWEALTH ROAD, WEST MIFFLIN, PA 15122
DUQUESNE LIGHT - EAST END SUB	180 N. BEATTY STREET, PITTSBURGH, PA 15206
DUQUESNE LIGHT - ELWYN SUBSTATION	EARLS DALE DRIVE, WHITEHALL, PA 15236
DUQUESNE LIGHT - EVERGREEN SUB	4249 OLD WILLIAM PENN HIGHWAY, MONROEVILLE, PA 15146-1621
DUQUESNE LIGHT - FACILITIES	1800 SEYMOUR STREET, PITTSBURGH, PA 15233
DUQUESNE LIGHT - GLENSHAW - EDISON STREET HEADQUARTERS	1901 EDISON STREET, GLENSHAW, PA 15116
DUQUESNE LIGHT - HIGHLAND SUB	OLIVANT STREET, PITTSBURGH, PA 15206
DUQUESNE LIGHT - LAWRENCE SUB	3322 PENN AVENUE, PITTSBURGH, PA 15201

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DUQUESNE LIGHT - LOGANS FERRY	ROUTE 909 - COXCOMB HILL ROAD - , NEW KENSINGTON, PA 15068
DUQUESNE LIGHT - MCKEESPORT - MCKEESPORT HEADQUARTERS	139 ATLANTIC AVENUE, MCKEESPORT, PA 15132
DUQUESNE LIGHT - MONTOUR SUBSTATION	FOREST GROVE ROAD, ROBINSON, PA 15108
DUQUESNE LIGHT - MT. NEBO SUB	CRAWFORD ROAD, OHIO TOWNSHIP, PA 15237
DUQUESNE LIGHT - NEVILLE SUB	NEVILLE ROAD, PITTSBURGH, PA 15225
DUQUESNE LIGHT - OAKLAND	BLVD OF THE ALLIES, (NEAR BATES STREET), PITTSBURGH, PA 15213
DUQUESNE LIGHT - PENN HILLS	460 HERSHEY ROAD, PITTSBURGH, PA 15235
DUQUESNE LIGHT - PLUM	FONTANA ROAD, PITTSBURGH, PA 15239
DUQUESNE LIGHT - RANKIN SUBSTATION	CLARA STREET AND P & LE RAILROAD, RANKIN, PA 15209
DUQUESNE LIGHT - UNDERGROUND DEPT.	2601 PREBLE AVENUE, PITTSBURGH, PA 15233
DUQUESNE LIGHT - UNIVERSAL SUB	JEFFERSON ROAD, PENN HILLS, PA 15235
DUQUESNE LIGHT - WEST MIFFLIN SUB	OFF LEBANON CHURCH ROAD, WEST MIFFLIN, PA 15122
DUQUESNE LIGHT - WILMERDING SUB	TOP OF CHESTNUT STREET, MONROEVILLE, PA 15146
DUQUESNE LIGHT - WILSON SUBSTATION	MILLER ROAD, ROUTE 02182, JEFFERSON, PA 15025
DUQUESNE LIGHT - WOODS RUN COMPLEX - TRANSPORTAITON - BUILDING 5	2833 NEW BEAVER AVENUE, PITTSBURGH, PA 15233
DUQUESNE LIGHT - WOODVILLE SUB	WASHINGTON PIKE, ROUTE 519, COLLIER, PA 15106
DURA-BOND COATINGS INC.	3200 YOUGHIOGHENY RIBER BLVD., MCKEESPORT, PA 15134
E.E. ZIMMERMAN COMPANY	2020 KNOTT STREET, PITTSBURGH, PA 15233
EDGEWOOD COUNTRY CLUB	100 CHURCHILL ROAD, PITTSBURGH, PA 15235-5199
EM-BED-IT INC.	5637 BUTLER STREET, PITTSBURGH, PA 15201-2326
EMERSON PROCESS MANAGEMENT	200 BETA DRIVE, PITTSBURGH, PA 15238
ENOVATION GRAPHIC SYSTEMS (FORMERALLY PRIME SOURCE CORP)	2403 SIDNEY STREET, PITTSBURGH, PA 15203
EQUITABLE GAS - CREIGHTON STATION	FRONT STREET, CREIGHTON, PA 15030
EQUITABLE GAS COMPANY - REGION A	4 SOUTH 9TH STREET, PITTSBURGH, PA 15203
EQUITABLE GAS COMPANY - REGION B	CLYDE AVENUE, N. VERSAILLES, PA 15137

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ESSROC CEMENT CORPORATION	500 WEST PARK ROAD, LEETSDALE INDUSTRIAL PARK, LEETSDALE, PA 15056
EXPRESS CONTAINER SERVICES	3505 GRAND AVENUE, PITTSBURGH, PA 15225
FEDERAL EXPRESS CORP (AGCA)	351 32ND & LIBERTY, PITTSBURGH, PA 15201
FEDERAL EXPRESS CORP (PITR)	CARGO BLDG #2, BUSINESS ROUTE 60 PITTSBURGH, PA 15231
FEDEX GROUND	1000 FEDEX DRIVE, MOON TOWNSHIP, PA 15108
FERRELLGAS	1000 NEVILLE ROAD, PITTSBURGH, PA 15225
FISHER SCIENTIFIC COMPANY LLC	600 BUSINESS CENTER DRIVE, CAMPBELLS RUN ROAD, PITTSBURGH, PA 15205-1334
FORBES REGIONAL HOSPITAL	2570 HAYMAKER ROAD, MONROEVILLE, PA 15146
GALVTECH	300 MIFFLIN ROAD, PITTSBURGH, PA 15207
GE LIGHTING LLC	540 MAYER STREET, BRIDGEVILLE, PA 15017
GENERAL ELECTRIC INTERNATIONAL INC - INSPECTION AND REPAIR SERVICES	4930 BUTTERMILK HOLLOW ROAD, WEST MIFFLIN, PA 15122
GLASSMERE FUEL SERVICE INC.	1967 SAXONBURG BLVD., TARENTUM, PA15084
GLENSHAW GLASS COMPANY	1101 WILLIAM FLYNN HIGHWAY, GLENSHAW, PA 15116
GORDON TERMINAL SERVICES CO.	1000 ELLA STREET, BOX 313, MCKEES ROCKS, PA 15136
GRECO GAS & WELDING SUPPLIES	450 GRANTHAM STREET, PO BOX 349, TARENTUM, PA 15084-0349
GREYHOUND LINES INC.	11TH & LIBERTY AVENUES, PITTSBURGH, PA 15222
GULF OIL LIMITED PARTNERSHIP	400 GRAND AVENUE, PITTSBURGH, PA 15225
H C HARRINGTON COMPANY INC.	3201 SMALLMAN STREET, PITTSBURGH, PA 15201
HANSON AGGREGATES PMA	819 PENNSYLVANIA AVENUE, CORAOPOLIS, PA 15108
HARBINSON-WALKER REFRACTORIES CO.	AVENUE B - BUNCHER INDUSTRIAL DISTRICT, BLDG 14-A, LEETSDALE, PA 15056
HECKETT DIV OF HARSCO	C/O AL STEEL, FEDERAL STREET, GATE 10, NATRONA HEIGHTS, PA 15065
HERTZ CAR RENTAL	PITTSBURGH INTERNATIONAL AIRPORT, PITTSBURGH, PA 15231
HERTZ EQUIPMENT RENTAL CORP #9161	2001 WILLIAM FLYNN HIGHWAY, ROUTE 8, GLENSHAW, PA 15116

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HIGHLAND COUNTRY CLUB	450 HIGHLAND AVENUE, PITTSBURGH, PA 15229
IA CONSTRUCTION CORPORATION	ROUTE 910, GIBSONIA, PA 15044
INDUSTRIAL TERMINAL SYSTEMS	LAGANS FERRY ROAD, NEWKENSINGTON, PA 15068
IONICS INC	P.O. BOX 99, 3039 WASHINGTON PIKE, BRIDGEVILLE, PA 15017
JACKSON WELDING	1421 WEST CARSON STREET, PITTSBURGH, PA 15219
JEFFERSON REGIONAL MEDICAL CENTER	COAL VALLEY ROAD,PITTSBURGH PA 15236-0119
KELLY RUN SANITATION	PO BOX 298, HAYDEN BLVD., ELIZABETH, PA 15037
KEYWELL LLC	890 NOBLE DRIVE, WEST MIFFLIN, PA 15122
KINDER-MORGAN	P.O. BOX 253, 702 WASHINGTON AVENUE, DRAVOSBURG, PA 15034-0253
KINDER-MORGAN	STATE ROUTE 910, INDIANOLA, PA 15051
KOPP GLASS	2108 PALMER STREET,SWISSVALE, PA 15218
LAFARGE CORPORATION - BROWN RESERVE	BRWON RESERVE OFF REGIS AVENUE, WEST MIFFLIN, PA 15122
LAFARGE CORPORATION - DUQUESNE PLANT	4810 BUTTERMILK HOLLOW ROAD, WEST MIFFLIN, PA 15122
LAIDLAW EDUCATION SERVICES	119 WALL AVENUE, WILMERDING, PA 15148
LAIDLAW TRANSIT INC - HAHN ROAD	200 HAHN ROAD, PITTSBURGH, PA 15209
LAIDLAW TRANSIT INC - RANKIN	97 HARRIETT STREET, RANKIN, PA 15104
LAIDLAW TRANSIT INC.	250 WASHINGTON STREET, DRAVOSBURG, PA 15034
LAIDLAW TRANSIT INC. - CHARTIERS	235CHARTIERS AVENUE, PITTSBURGH, PA 15205
LAIDLAW TRANSIT INC. - ELIZABETH	1860 SCENERY DRIVE, ELIZABETH, PA 15037
LAIDLAW TRANSIT INC. - FRANKSTOWN	101 OLD FRANKSTOWN ROAD, PTTSBURGH, PA 15239
LAIDLAW TRANSIT INC. - INDIANOLA	ROUTE 910, PO BOX 293, INDIANOLA, PA 15051
LAIDLAW TRANSIT INC. - LIBRARY ROAD	4780 LIBRARY ROAD, BETHEL PARK, PA 15102-2918
LAIDLAW TRANSIT INC. - NORTH AVENUE	1720 W. NORTH AVENUE, PITTSBURGH, PA 15233
LAIDLAW TRANSIT INC. - SOUTH 24TH	150 SOUTH 24TH STREET, PITTSBURGH, PA 15203
LAUREL MOUNTAIN WHIRLPOOLS	P.O. BOX 190, 1210 AIRBRAKE AVENUE, TURTLE CREEK, PA 15145-0190
LIBERTY PULTRUSIONS	1575 LEBANON SCHOOL ROAD, WEST MIFFLIN, PA 15122

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LINDY PAVING INC (ALLEGHENY ASPHALT MFG)	P.O. BOX 98100, PITTSBURGH, PA 15227
LONGUE VUE CLUB	400 LONGUE VUE DRIVE, VERONA, PA 15147
M. O'HERRON CO	4002 LORIGAN STREET, PITTSBURGH PA 15224
MARATHON-ASHLAND PETROLEUM LLC	1100 GLASS HOUSE ROAD, JEFFERSON HILLS, PA 15025
MARCEGAGLIO USA	1001 EAST WATERFRONT DRIVE, MUNHALL, PA 15120
MARSTRAND INDUSTRIES	12 RETGERS ROAD, PITTSBURGH, PA 15205
MATTHEWS INTERNATIONAL - FAIRVIEW	101 FAIRVIEW AVENUE, PITTSBURGH, PA15238
MATTHEWS INTERNATIONAL CORPORATION - BRONZE DIVISION	1315 WEST LIBERTY AVENUE, PITTSBURGH, PA 15226
MATTOS INC. / PRO FINISHES	2700 NOBLESTOWN ROAD, PITTSBURGH, PA 15205
MCCANN SHIELDS PAINT COMPANY	27 ALEXANDER STREET, PITTSBURGH, PA 15220
MCCONWAY & TORLEY CORP.	109 48TH STREET, PITTSBURGH, PA 15201
MCKEES ROCKS FORGINGS INC.	75 NICHOL AVENUE, MCKEES ROCKS, PA 15136
MELAMPY MFG CO	22 FRONTIER STREET, GIBSONIA, PA 15044
MERCY HOSPITAL	1400 LOCUST STREET, PITTSBURGH, PA 15219-5166
METALTECH	2400 SECOND AVENUE, PITTSBURGH, PA 15219
MINNOTTE MFG. COMPANY	MINNOTTE SQUARE, PITTSBURGH, PA 15220
MON VALLEY PETROLEUM	5515 WEST SMITHFIELD STREET, MCKEESPORT, PA 15135
MOON TOWNSHIP OLDS/ CADILLAC/DODGE/MAZDA	876 NARROWS RUN ROAD, CORAOPOLIS, PA 15108
MSA	121 GAMMA DRIVE, PITTSBURGH, PA 15238
MSSI INC.	2 JOHN STREET, MCKEES ROCKS, PA 15136
MULTI-FLOW	9TH AND RAILROAD STREET, BRADDOCK, PA 15104
NATIONAL CAR RENTAL SYSTEMS - PIA	PITTSBURGH INTERNATIONAL AIRPORT, LOT #7, RENTAL CAR ACCESS ROAD, PITTSBURGH, PA 15231
NEVILLE METALS	3100 GRAND AVENUE, PITTSBURGH, PA 15225
NEW PENN MOTOR EXPRESS, INC.	2950 GRAND AVENUE, PITTSBURGH, PA 15225
NEXTECH	300 BRADDOCK AVENUE, TURTLE CREEK, PA 15145
NORFOLK SOUTHERN RAILWAY COMPANY - PITCAIRN YARD	BLDG 1, WALL ROAD, WALL, PA 15148

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NORTH AMERICAN REFRACTORIES CO. - WEST MIFFLIN PLANT - FAC ID #18557	1001 PITTSBURGH-MCKEESPORT BLVD., WEST MIFFLIN, PA 15122
NORTH SHORE DISTRICT ENERGY LLC - HEINZ FIELD	900 ART ROONEY AVENUE, PITTSBURGH, PA 15212-5557
NORTHWEST AIRLINES	PITTSBURGH INTERNATIONAL AIRPORT, P.O. BOX 12327, PITTSBURGH, PA 15231
NRG ENERGY CENTER OF PITTSBURGH	111 SOUTH COMMONS, PITTSBURGH, PA 15212-5314
O HOMMEL COMPANY	235 HOPE STREET, CARNEGIE, PA 15106-3696
OAKMONT COUNTRY CLUB	1233 HULTON ROAD, OAKMONT, PA 15139
OK GROCERY COMPANY WAREHOUSE	755 BEECHNEUT DRIVE, PITTSBURGH, PA 15205
ORION POWER MIDWEST - MONARCH PLANT	LITTLE DEER CREEK ROAD, RURAL RIDGE, PA 15075
PA ELECTRIC COIL LTD	1000 OHIO AVENUE, GLASSPORT, PA 15045
PACT LTD - STANWIX STEAM PLANT	120 CECIL WAY, PITTSBURGH, PA 15222
PARC TECHNICAL SERVICES INC.	100 WILLIAM PITT WAY, PITTSBURGH, PA 15238-1327
PENNZOIL - QUAKER STATE CO.	54TH & AVRR, PITTSBURGH, PA 15201-2696
PES - PETROLEUM EQUIPMENT SERVICES	128 CHURCH ROAD, PITTSBURGH, PA 15209
PESTCO INC.	RIDC INDUSTRIAL PARK, 209 ALPHA DRIVE, PITTSBURGH, PA 15238-2903
PETROLEUM PRODUCTS CORPORATION - CORAOPOLIS SOUTH	9 THORN STREET (MOON TWP), CORAOPOLIS, PA 15108
PETROLEUM PRODUCTS CORPORATION - NEVILLE ISLAND	2760 NEVILLE ROAD, PITTSBURGH, PA 15225
PG PUBLISHING COMPANY	34 BLVD OF THE ALLIES, PITTSBURGH, PA 15222
PITT OHIO EXPRESS LLC	15-27TH STREET, PITTSBURGH, PA 15222
PITT PENN OIL	426 FREEPORT ROAD, PO BOX 296, CREIGHTON, PA 15030
PITTSBURGH ANNEALING BOX CO.	NICHOL AVENUE, BLDG. 40, MCKEES ROCKS, PA 15136
PITTSBURGH ELECTRICAL INSULATION, INC.	808 MARTHA STREET, MUNHALL, PA 15120
PITTSBURGH FIELD CLUB	121 FIELD CLUB ROAD, PITTSBURGH, PA 15238-2219
PITTSBURGH INTERNATIONAL AIRPORT ENERGY FACILITY	1000 AIRPORT BLVD., PITTSBURGH, PA 15231
PPG INDUSTRIES - MONROEVILLE	440 COLLEGE PARK DRIVE, MONROEVILLE, PA 15146-1553
PPG INDUSTRIES - WORKS #1	150 FERRY STREET, CREIGHTON, PA 15030-0295

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PPG INDUSTRIES INC, RESINS & FINISHES R&D	4235 ROSANNA DRIVE, ALLISON PARK, PA 15101
PPG INDUSTRIES, GLASS R&D CENTER	GUYS RUN ROAD, PO BOX 11472, PITTSBURGH, PA 15238-0474
PRAXAIR DISTRIBUTION INC	28 MCCANDLESS STREET, PITTSBURGH, PA 15201
PRION MANUFACTURING	ONE PRION DRIVE, OAKDALE, PA 15071-3645
PRUETT SCHAFFER CHEMICAL CORP	3327 STAFFORD STREET, PITTSBURGH, PA 15204-1340
RADO CARBONIC GAS COMPANY	541 CORAOPOLIS ROAD, CORAOPOLIS, PA 15108
RANBAR TECHNOLOGY INC.	1114 WILLIAM FLYNN HIGHWAY, GLENSHAW, PA 15116-2657
REDMILL DRILLING - ALLISON WELLS	#1 & #2, INDIANA TOWNSHIP
ROYSTON (CHASE) LABORATORIES	128 FIRST STREET, PITTSBURGH, PA 15238
RUBBER PRODUCTS TIRE COMPANY	3810 PENN AVENUE, PITTSBURGH, PA 15201
RUSSELL STANDARD CORP.	2 PRESTLEY ROAD, P.O. BOX 479, BRIDGEVILLE, PA 15017
RYDER TRANSPORTATION SERVICES #0424A	15 INGRAM AVENUE, CRAFTON, PA 15205
SAFETY-KLEEN CORP. - BRANCH FILE 1480	650 NOBLE DRIVE, WEST MIFFLIN, PA 15122
SCHAFFNER MFG COMPANY INC	21 HERRON AVENUE, PITTSBURGH, PA 15202
SEAGATE TECHNOLOGY	1251 WATERFRONT PLACE, PITTSBURGH, PA 15222-4215
SENEX EXPLOSIVES INC	710 MILLERS RUN ROAD, CUDDY, PA 15031
SEWICKLEY VALLEY HOSPITAL	720 BLACKBURN ROAD, SEWICKLEY, PA 15143
SILVER STAR MEATS INC.	1720 MIDDLETOWN ROAD, PO BOX 393, MCKEES ROCKS, PA 15136
ST CLAIR COUNTRY CLUB	2300 OLD WASHINGTON ROAD, PITTSBURGH, PA 15241
STONE AND COMPANY	1 HARRISON STREET, GLASSPORT, PA 15045
SUN REFINING & MARKETING CO.	5733 BUTLER STREET, PITTSBURGH, PA 15210
SUNOCO INC. - BLAWNOX TERMINAL	701 FREEPORT ROAD AND BOYD, BLAWNOX, PA 15238
THE LANE CONSTRUCTION CORP - BRIDGEVILLE	3 PRESTLY ROAD, BRIDGEVILLE, PA 15017
THE LANE CONSTRUCTION CORP - MCKEES ROCKS	FOOT OF ROBB STREET, MCKEES ROCKS, PA

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TRUGREEN CHEMLAWN - ALLISON PARK	3812 WM FLYNN HIGHWAY, STE 9, ALLISON PARK, PA 15101-3660
TRUGREEN CHEMLAWN - BRIDGEVILLE	240 BILMAR DRIVE, PITTSBURGH, PA 15205
TYK AMERICA INC	301 BRICKYARD ROAD, CLAIRTON, PA 15025-3650
UNION ELECTRIC STEEL	726 BELL STREET, PO BOX 465, CARNEGIE, PA 15106
UNION RAILROAD COMPANY	DUQUESNE BLVD, DUQUESNE PA 15110
UNION RAILROAD COMPANY - HALL STATION	HALL STATION, THOMPSON RUN ROAD, MONROEVILLE, PA 15146
UNITED AIRLINES - PIA	PITTSBURGH INTERNATIONAL AIRPORT, PITTSBURGH, PA 15231
UNITED PARCEL SERVICE - BEAVER	1821 BEAVER AVENUE, PITTSBURGH, PA 15233
UNITED PARCEL SERVICE - MAZETTE	2253 MAZETTE ROAD, PITTSBURGH, PA 15305
UNITED REFINING COMPANY - SPRINGDALE TERMINAL	PO BOX 121 SPRIGDALE, PA 15144
UNIVERSAL SPECIALTIES	500 BEAVER GRADE ROAD, CORAOPOLIS, PA 15108
UNIVERSAL STAINLESS & ALLOY PRODUCTS - BRIDGEVILLE WORKS	600 MAYER STREET, BRIDGEVILLE, PA 15017
UNIVERSITY OF PITTSBURGH - MAIN CAMPUS	3700 O'HARA STREET, PITTSBURGH, PA 15231
UNIVERSITY OF PITTSBURGH - PLUM RESEARCH CENTER	709 NEW TEXAS ROAD, PITTSBURGH, PA 15239
UNIVERSITY OF PITTSBURGH - RIDC PARK	600 EPSILON DRIVE, PITTSBURGH, PA 15238
UPMC - MAGEE WOMEN'S HOSPITAL	300 HALKET STREET, PITTSBURGH, PA 15213-3180
UPMC - MCKEESPORT	1500 FIFTH AVENUE, MCKEESPORT, PA 15132-2483
UPMC - SHADYSIDE	5230 CENTRE AVENUE, PITTSBURGH, PA 15232
UPMC - SOUTH SIDE HOSPITAL	2000 MARY STREET, PITTSBURGH, PA 15203
UPMC - ST. MARGARET	815 FREEPORT ROAD, PITTSBURGH, PA 15215
UPMC PRESBYTERIAN	200 LOTHROP STREET, PITTSBURGH, PA 15213
US LIQUIDS	R. J. CASEY INDUSTRIAL PARK, COLUMBUS & ADAMS AVENUES, PITTSBURGH, PA 15233
US TOOL & DIE, INC.	200 BRADDOCK AVENUE, PITTSBURGH, PA 15145
USA SOUTH HILLS LANDFILL INC.	3100 HILL ROAD, LIBRARY, PA 15129
USX AIRCRAFT DIVISION	PIA, PO BOX 12345, PITTSBURGH, PA 15231
VALLEY NATIONAL GASES INC. - 1	903 THOMPSON RUN ROAD, WEST MIFFLIN, PA 15122
VALLEY PROTEINS INC.	3800 NEVILLE ROAD, PITTSBURGH PA 15225

312 Facilities

VALSPAR CORPORATION	2000 WESTHALL STREET, PITTSBURGH, PA 15233
VALVOLINE COMPANY	BUNCHER DEVELOPMENT, AVENUE B - BLDG #12, LEETSDALE, PA 15056
VAST-MILES LLC	2901 INDUSTRIAL BLVD., BETHEL PARK, PA 15102
VERIZON - ACCOUNTING REVENUE CENTER	1500 TECH CENTER DRIVE, MONROEVILLE, PA 15146
VERIZON - BELLEVUE	22 SOUTH BALPH AVENUE, PITTSBURGH, PA 15202
VERIZON - BETHEL PARK	2061 MILFORD DRIVE, PITTSBURGH, PA 15102
VERIZON - CARNEGIE	195 BROADWAY AVENUE, CARNEGIE, PA 15106
VERIZON - DORSEYVILLE CDO	INDIANOLA & DORSEYVILLE ROADS, DORSEYVILLE, PA 15238
VERIZON - ETNA	
VERIZON - IMPERIAL CDO	121 CHURCH STREET, IMPERIAL, PA 15126
VERIZON - INCORPORATED - PA 59487 - SPRINGDALE CENTRAL OFFICE	405 PITTSBURGH STREET, SPRINGDALE, PA 15144
VERIZON - MONROEVILLE WC	820 MCBETH DRIVE, MONROEVILLE, PA 15146
VERIZON - NORTH SIDE SC	1707 PENNSYLVANIA AVENUE, PITTSBURGH, PA 15212
VERIZON - PA 123103A	
VERIZON - PA 123103B	
VERIZON - PA 123103C	
VERIZON - PA 123103D	
VERIZON - PA 123103E	
VERIZON - PA 58300	TOWER ROAD & HANGER, PITTSBURGH, PA
VERIZON - ROBINSON TWP MEGA CENTER	5400 CAMPBELLS RUN ROAD, PITTSBURGH, PA 15205
VERIZON - SEWICKLEY	621 BEAVER STREET, SEWICKLEY, PA 15143
VERIZON - TROY HILL	
VERIZON - WARRENDALE	
VERIZON OAKDALE CDO	BRIDGE STREET, OAKDALE, PA 15071
VINCE'S GAS & WELDING SUPPLY CO. INC.	2790 IDLEWOOD AVENUE, CARNEGIE, PA 15106
VISTA METALS INC.	PO BOX 94, SMITHFIELD STREET, BOSTON, PA 15135
W.W. PATTERSON CORP	3 RIVERSEA ROAD, PITTSBURGH, PA 15233
WABTEC CORPORATION	AIR BRAKE AVENUE, WILMERDING, PA 15148
WATSON RHENANIA COATINGS COMPANY	1360 LOW GRADE ROAD, HARWICK, PA 15049

312 Facilities

WATSON STANDARD COMPANY - NEVILLE	OLD NEVILLE ROAD & GRAND AVENUE, PITTSBURGH, PA 15225
WEST PENN LACO INC.	1830 LIVERPOOL STREET, PITTSBURGH, PA 15233-2293
WHEMCO - STEEL CASTINGS INC.	PO BOX 601, WEST SEVENTH AVENUE, HOMESTEAD, PA 15120
WRIGHT NISSAN INC.	10520 PERRY HIGHWAY, WEXFORD, PA 15090-9303
WRIGHT NISSAN INC.	10520 PERRY HIGHWAY, WEXFORD, PA 15090-9303
WRIGHT PONTIAC GMC TRUCK ISUZU	11015 PERRY HIGHWAY, WEXFORD, PA 15090-9303

Query Results

13 TORNADO(s) were reported in **Allegheny County, Pennsylvania** between **01/01/1950** and **02/29/2004**.

*Click on **Location or County** to display Details.*

Mag: Magnitude
Dth: Deaths
Inj: Injuries
PrD: Property Damage
CrD: Crop Damage

Pennsylvania

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 ALLEGHENY	06/10/1954	2215	Tornado	F0	0	0	0K	0
2 ALLEGHENY	05/13/1956	0015	Tornado	F2	0	5	250K	0
3 ALLEGHENY	08/03/1963	2050	Tornado	F3	2	70	25.0M	0
4 ALLEGHENY	07/31/1970	1600	Tornado	F1	0	0	3K	0
5 ALLEGHENY	04/25/1976	1255	Tornado	F0	0	0	3K	0
6 ALLEGHENY	07/07/1977	1830	Tornado	F0	0	0	0K	0
7 ALLEGHENY	06/03/1980	1030	Tornado	F4	0	20	250.0M	0
8 ALLEGHENY	06/21/1981	1430	Tornado	F1	0	0	25K	0
9 ALLEGHENY	05/22/1983	1215	Tornado	F2	0	0	2.5M	0
10 ALLEGHENY	07/13/1992	1910	Tornado	F0	0	0	3K	0
11 Carnegie	06/02/1998	04:55 PM	Tornado	F1	0	50	13.0M	0
12 Greenock	06/02/1998	07:20 PM	Tornado	F0	0	0	5K	0
13 Carnegie	06/12/2003	04:40 PM	Tornado	F0	0	0	30K	0
				TOTALS:	2	145	290.818M	0

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APPENDIX I: VULNERABILITY ASSESSMENT TABLES

This appendix contains vulnerability assessment tables by hazard and by COGs in Allegheny County.

Critical Facilities In Floodplains

Grouped By COG and Municipality

COG	Municipality	Facility Type	Facility Name	Facility Address	Facility Phone
Allegheny Valley North					
	Brackenridge Borough				
		EMS	Parkway Ambulance And Transfer	861 First Ave	724-224-5770
		FIRE	Brackenridge VFD	124 Morgan St	
		FIRE	Pioneer Hose Company	124 Morgan St	
Char-West					
	Bridgeville Borough				
		POLICE		425 Bower Hill Rd	412-221-6052
	McKees Rocks Borough				
		FIRE	Mckees Rocks	340 Bell Ave	
		POLICE		340 Bell Ave	412-331-2300
	Neville Township				
		POLICE		5050 Grand Ave	412-331-0778
	North Fayette Township				
		POLICE		400 North Branch Rd	724-787-8900
	South Fayette Township				
		POLICE		515 Millers Run Rd	412-221-2170
Non COG					
	Pittsburgh				
		EMS	Pittsburgh EMS - Medic 12	514 Baldwin Rd	412-422-6526
		EMS	Pittsburgh EMS - Medic 14	101 River Ave	412-323-7260
		EMS	Pittsburgh EMS - Medic 3	320 S Main St	412-937-3057
		FIRE	Pittsburgh Engine Co. No. 20	514 Baldwin Rd	412-476-1300

COG	Municipality	Facility Type	Facility Name	Facility Address	Facility Phone
		FIRE	Pittsburgh Truck Co. No. 33	101 River Ave	412-323-7215
		HOSPITAL			
		POLICE		312 Main St	412-937-3051
		SCHOOL			
North Hills					
	Etna Borough				
		SCHOOL			
	Fox Chapel Borough				
		EMS	Foxwall EMS	403 Fox Chapel Rd	412-963-6611
		FIRE	Fox Chapel VFD	401 Fox Chapel Rd	
		POLICE		401 Fox Chapel Rd	412-963-7220
	McCandless Township				
		EMS	McCandless Franklin Park Ambulance	9925 Grubbs Rd	724-935-5844
	Ross Township				
		FIRE	Evergreen VFD	2127 Babcock Blvd	
	Shaler Township				
		FIRE	Shaler Villa VFD	960 Saxonburg Blvd	
	Sharpsburg Borough				
		EMS	Seneca Area EMS	1885 Main St	412-781-8569
		FIRE	Sharpsburg VFD	1611 Main St	
		POLICE		1611 Main St	412-781-0546
		SCHOOL			
South Hills Area					
	Baldwin Borough				
		FIRE	Becks Run VFD	801 Becks Run Rd	
	South Park Township				

COG	Municipality	Facility Type	Facility Name	Facility Address	Facility Phone
		FIRE	Broughton VFD	1030 Cochran Mill Rd	412-655-4844
		SCHOOL			
	Upper St. Clair Township				
		HOSPITAL			
Turtle Creek Valley					
	Forest Hills Borough				
		FIRE	Red Team - Forest Hills VFD	2071 Ardmore Blvd.	
		FIRE	Forest Hills VFD	2071 Ardmore Blvd	
	Pitcairn Borough				
		SCHOOL			
	Wilkins Township				
		FIRE	Wilkins #1 VFD	835 Railroad St	
Twin Rivers					
	Elizabeth Township				
		FIRE	Buena Vista VFD	3333 Fire Station St	
		FIRE	Victory VFD	2820 Douglas Run Rd	
		FIRE	Industry VFD		

Critical Facilities In Very Hazardous Landslide Areas

COG	*Municipality*	*Facility Type*	*Facility Name*	*Facility Address*
Char-West				
	Robinson Township			
		POLICE	ROBINSON	340 Forest Grove Rd
North Hills				
	Etna Borough			
		EMS	ETNA	8 Vine Alley
	Millvale Borough			
		CELL TOWER	MILLVALE	Millvale Athletic Field
	Shaler Township			
		SCHOOL	SHALER	
Quaker Valley				
	Aleppo Township			
		POLICE	ALEPPO	100 North Ave

Number Of Buildings In Floodplain per COG

COG	Building Type	Number Of Buildings
Allegheny Valley North		
	Industrial Commercial Buildings	139
	Out Buildings	285
	Public Buildings	4
	Residential Buildings	945
	Unknown Buildings	11
Char-West		
	Industrial Commercial Buildings	566
	Out Buildings	369
	Public Buildings	14
	Residential Buildings	1142
	Unknown Buildings	9
Non COG		
	Industrial Commercial Buildings	234
	Out Buildings	42
	Public Buildings	13
	Residential Buildings	178
	Unknown Buildings	633
North Hills		
	Industrial Commercial Buildings	540
	Out Buildings	375
	Public Buildings	30
	Residential Buildings	1708
	Unknown Buildings	8
Quaker Valley		
	Industrial Commercial Buildings	137
	Out Buildings	99
	Public Buildings	4
	Residential Buildings	234
	Unknown Buildings	5
South Hills Area		
	Industrial Commercial Buildings	160
	Out Buildings	106
	Public Buildings	14
	Residential Buildings	500
	Unknown Buildings	18

COG	Building Type	Number Of Buildings
Steel Valley		
	Industrial Commercial Buildings	61
	Out Buildings	64
	Public Buildings	6
	Residential Buildings	171
	Unknown Buildings	58
Turtle Creek Valley		
	Industrial Commercial Buildings	295
	Out Buildings	208
	Public Buildings	10
	Residential Buildings	802
	Unknown Buildings	5
Twin Rivers		
	Industrial Commercial Buildings	196
	Out Buildings	217
	Public Buildings	8
	Residential Buildings	645
	Unknown Buildings	15

Number Of Buildings In Floodplain For Each Municipality Per COG

COG	*Municipality*	*Number Of Buildings*
Allegheny Valley North		
	Aspinwall Borough	6
	Blawnox Borough	29
	Brackenridge Borough	122
	Cheswick Borough	2
	East Deer Township	200
	Fawn Township	235
	Frazer Township	32
	Harmar Township	120
	Harrison Township	222
	Springdale Borough	4
	Springdale Township	3
	Tarentum Borough	87
	Verona Borough	137
	West Deer Township	185
Char-West		
	Bridgeville Borough	226
	Carnegie Borough	102
	Collier Township	153
	Coraopolis Borough	207
	Crescent Township	57
	Findlay Township	151
	Kennedy Township	13
	McKees Rocks Borough	80
	Moon Township	37
	Neville Township	380
	North Fayette Township	235
	Oakdale Borough	117
	Robinson Township	134
	Rosslyn Farms Borough	10
	South Fayette Township	188
	Stowe Township	10
Non COG		
	McDonald Borough	8
	Oakmont Borough	79
	Pittsburgh	1001
	Sewickley Heights Borough	2
	Sewickley Hills Borough	10
North Hills		
	Bradford Woods Borough	2
	Etna Borough	492

COG	Municipality	Number Of Buildings
	Fox Chapel Borough	23
	Franklin Park Borough	58
	Hampton Township	121
	Indiana Township	59
	Marshall Township	53
	McCandless Township	118
	Millvale Borough	425
	O Hara Township	74
	Ohio Township	20
	Pine Township	18
	Reserve Township	63
	Richland Township	121
	Ross Township	230
	Shaler Township	377
	Sharpsburg Borough	390
	West View Borough	17
Quaker Valley		
	Aleppo Township	5
	Avalon Borough	1
	Bell Acres Borough	45
	Ben Avon Borough	6
	Edgeworth Borough	7
	Emsworth Borough	66
	Glenfield Borough	73
	Haysville Borough	35
	Kilbuck Township	19
	Leet Township	40
	Leetsdale Borough	129
	Osborne Borough	40
	Sewickley Borough	13
South Hills Area		
	Baldwin Borough	65
	Baldwin Township	2
	Bethel Park Borough	114
	Green Tree Borough	16
	Heidelberg Borough	55
	Jefferson Hills Borough	182
	Mount Lebanon	30
	Scott Township	76
	South Park Township	137
	Upper St. Clair Township	121
Steel Valley		
	Braddock Hills Borough	9

COG	Municipality	Number Of Buildings
	Clairton	34
	Dravosburg Borough	49
	Duquesne	5
	Munhall Borough	16
	West Elizabeth Borough	166
	West Homestead Borough	16
	West Mifflin Borough	64
	Whitaker Borough	1
Turtle Creek Valley		
	Braddock Borough	119
	Churchill Borough	59
	East Pittsburgh Borough	5
	Forest Hills Borough	32
	Monroeville	77
	North Braddock Borough	78
	North Versailles Township	58
	Penn Hills Township	129
	Pitcairn Borough	176
	Plum Borough	234
	Rankin Borough	15
	Swissvale Borough	14
	Turtle Creek Borough	210
	Wall Borough	34
	Wilkins Township	80
Twin Rivers		
	Elizabeth Borough	110
	Elizabeth Township	547
	Forward Township	94
	Glassport Borough	15
	Liberty Borough	7
	Lincoln Borough	14
	McKeesport	144
	Port Vue Borough	51
	South Versailles Township	28
	Versailles Borough	9
	White Oak Borough	62

Number Of Buildings In Very Hazardous Landslide Areas For Each Municipality Per COG

COG	*Municipality*	*Number Of Buildings*
Allegheny Valley North		
	Aspinwall Borough	34
	Blawnox Borough	1
	East Deer Township	10
	Harmar Township	5
	Springdale Township	3
Char-West		
	Collier Township	20
	Coraopolis Borough	40
	Crescent Township	75
	Findlay Township	4
	Kennedy Township	20
	McKees Rocks Borough	30
	Moon Township	91
	Robinson Township	31
	Rosslyn Farms Borough	1
	South Fayette Township	6
	Stowe Township	40
	Thornburg Borough	23
Non COG		
	Pittsburgh	967
	Sewickley Heights Borough	19
	Sewickley Hills Borough	18
North Hills		
	Etna Borough	68
	Fox Chapel Borough	80
	Franklin Park Borough	3
	Hampton Township	2
	Indiana Township	26
	Marshall Township	2
	McCandless Township	26
	Millvale Borough	115
	O Hara Township	169
	Ohio Township	27
	Pine Township	3
	Reserve Township	121
	Ross Township	193
	Shaler Township	245
	West View Borough	12
Quaker Valley		
	Aleppo Township	44

COG	Municipality	Number Of Buildings
	Avalon Borough	29
	Bell Acres Borough	1
	Bellevue Borough	6
	Ben Avon Borough	17
	Edgeworth Borough	6
	Emsworth Borough	16
	Glenfield Borough	4
	Haysville Borough	2
	Kilbuck Township	34
	Leet Township	5
	Leetsdale Borough	1
	Osborne Borough	4
	Sewickley Borough	16
South Hills Area		
	Baldwin Borough	17
	Green Tree Borough	4
	Jefferson Hills Borough	15
	South Park Township	10
	Upper St. Clair Township	10
Steel Valley		
	Braddock Hills Borough	12
	Clairton	27
	Dravosburg Borough	25
	Duquesne	1
	Homestead Borough	2
	Munhall Borough	23
	West Homestead Borough	4
	West Mifflin Borough	94
	Whitaker Borough	9
Turtle Creek Valley		
	Chalfant Borough	1
	Churchill Borough	15
	East McKeesport Borough	6
	East Pittsburgh Borough	30
	Forest Hills Borough	42
	Monroeville	219
	North Braddock Borough	75
	North Versailles Township	143
	Penn Hills Township	394
	Pitcairn Borough	34
	Plum Borough	117
	Swissvale Borough	20
	Turtle Creek Borough	52

COG	Municipality	Number Of Buildings
	Wall Borough	65
	Wilkins Township	211
	Wilmerding Borough	20
Twin Rivers		
	Elizabeth Township	47
	Forward Township	31
	Glassport Borough	9
	Liberty Borough	8
	Lincoln Borough	37
	McKeesport	119
	Port Vue Borough	28
	White Oak Borough	52

Number Of Buildings In Very Hazardous Landslide Areas per COG

COG	Building Type	Number Of Buildings
Allegheny Valley North		
	Industrial Commercial Buildings	1
	Out Buildings	5
	Residential Buildings	47
Char-West		
	Industrial Commercial Buildings	18
	Out Buildings	72
	Residential Buildings	289
	Unknown Buildings	2
Non COG		
	Industrial Commercial Buildings	13
	Out Buildings	32
	Public Buildings	2
	Residential Buildings	153
	Unknown Buildings	804
North Hills		
	Industrial Commercial Buildings	23
	Out Buildings	104
	Public Buildings	2
	Residential Buildings	954
	Unknown Buildings	9
Quaker Valley		
	Industrial Commercial Buildings	8
	Out Buildings	30
	Public Buildings	1
	Residential Buildings	146
South Hills Area		
	Out Buildings	4
	Public Buildings	1
	Residential Buildings	50
	Unknown Buildings	1
Steel Valley		
	Industrial Commercial Buildings	9
	Out Buildings	39
	Residential Buildings	132
	Unknown Buildings	17

COG	Building Type	Number Of Buildings
Turtle Creek Valley		
	Industrial Commercial Buildings	42
	Out Buildings	204
	Public Buildings	4
	Residential Buildings	1191
	Unknown Buildings	3
Twin Rivers		
	Industrial Commercial Buildings	11
	Out Buildings	79
	Residential Buildings	240
	Unknown Buildings	1

Number Of Hazus Sites Grouped By # Of Bldgs In 1/2 Mile Radius For Each Municipality Per COG

COG	Municipality	Number Of Hazus Sites	Bldgs In 1/2 Mile Radius
Allegheny Valley North			
	Aspinwall Borough	3	500-1500
	Blawnox Borough	5	> 500
	Blawnox Borough	5	500-1500
	Brackenridge Borough	16	1501-2500
	Cheswick Borough	5	500-1500
	East Deer Township	9	> 500
	Fawn Township	3	> 500
	Frazer Township	9	> 500
	Harmar Township	13	500-1500
	Harmar Township	34	> 500
	Harrison Township	14	500-1500
	Harrison Township	5	1501-2500
	Harrison Township	7	> 500
	Springdale Borough	54	500-1500
	Springdale Borough	3	1501-2500
	Springdale Township	1	> 500
	Springdale Township	5	500-1500
	Tarentum Borough	5	1501-2500
	Tarentum Borough	6	500-1500
	Verona Borough	3	500-1500
	Verona Borough	1	1501-2500
	West Deer Township	11	> 500
Char-West			
	Bridgeville Borough	5	500-1500
	Bridgeville Borough	2	1501-2500
	Carnegie Borough	1	>2500
	Carnegie Borough	11	1501-2500
	Collier Township	25	> 500
	Collier Township	15	500-1500
	Coraopolis Borough	10	500-1500
	Coraopolis Borough	10	1501-2500
	Crafton Borough	7	1501-2500
	Crescent Township	4	> 500

COG	Municipality	Number Of Hazus Sites	Bldgs In 1/2 Mile Radius
	Crescent Township	2	500-1500
	Findlay Township	1	500-1500
	Findlay Township	4	> 500
	Ingram Borough	1	1501-2500
	Kennedy Township	1	> 500
	Kennedy Township	18	500-1500
	McKees Rocks Borough	11	1501-2500
	McKees Rocks Borough	3	>2500
	McKees Rocks Borough	5	500-1500
	Moon Township	13	500-1500
	Moon Township	45	> 500
	Neville Township	28	500-1500
	Neville Township	91	> 500
	North Fayette Township	27	> 500
	North Fayette Township	2	500-1500
	Oakdale Borough	2	500-1500
	Robinson Township	2	500-1500
	Robinson Township	45	> 500
	Rosslyn Farms Borough	1	500-1500
	South Fayette Township	22	500-1500
	South Fayette Township	38	> 500
	Stowe Township	3	>2500
	Stowe Township	3	1501-2500
	Stowe Township	20	500-1500
Non COG			
	Mount Oliver Borough	4	>2500
	Oakmont Borough	25	500-1500
	Oakmont Borough	3	1501-2500
	Pittsburgh	377	500-1500
	Pittsburgh	284	1501-2500
	Pittsburgh	141	>2500
	Pittsburgh	107	> 500
	Sewickley Heights Borough	5	> 500
	Sewickley Hills Borough	1	> 500
North Hills			
	Bradford Woods Borough	1	> 500

COG	Municipality	Number Of Hazus Sites	Bldgs In 1/2 Mile Radius
	Etna Borough	9	1501-2500
	Etna Borough	7	500-1500
	Fox Chapel Borough	10	> 500
	Franklin Park Borough	7	> 500
	Hampton Township	4	500-1500
	Hampton Township	16	> 500
	Indiana Township	33	> 500
	Indiana Township	1	500-1500
	Marshall Township	21	> 500
	McCandless Township	14	500-1500
	McCandless Township	18	> 500
	Millvale Borough	4	1501-2500
	Millvale Borough	3	500-1500
	O Hara Township	41	> 500
	O Hara Township	21	500-1500
	Ohio Township	4	> 500
	Pine Township	13	> 500
	Richland Township	23	> 500
	Ross Township	53	500-1500
	Ross Township	12	> 500
	Shaler Township	1	> 500
	Shaler Township	49	500-1500
	Sharpsburg Borough	23	500-1500
	West View Borough	3	500-1500
	West View Borough	15	1501-2500
Quaker Valley			
	Avalon Borough	4	1501-2500
	Avalon Borough	2	500-1500
	Bellevue Borough	3	1501-2500
	Bellevue Borough	5	500-1500
	Bellevue Borough	6	>2500
	Ben Avon Borough	10	500-1500
	Edgeworth Borough	2	> 500
	Edgeworth Borough	1	500-1500
	Emsworth Borough	6	500-1500
	Haysville Borough	14	> 500

COG	Municipality	Number Of Hazus Sites	Bldgs In 1/2 Mile Radius
	Kilbuck Township	3	> 500
	Leet Township	1	> 500
	Leet Township	1	500-1500
	Leetsdale Borough	11	> 500
	Leetsdale Borough	5	500-1500
	Osborne Borough	2	> 500
	Osborne Borough	1	500-1500
	Sewickley Borough	2	500-1500
	Sewickley Borough	4	1501-2500
South Hills Area			
	Baldwin Borough	2	1501-2500
	Baldwin Borough	11	500-1500
	Bethel Park Borough	1	> 500
	Bethel Park Borough	63	500-1500
	Brentwood Borough	2	1501-2500
	Brentwood Borough	4	>2500
	Castle Shannon Borough	23	500-1500
	Dormont Borough	17	>2500
	Green Tree Borough	34	500-1500
	Heidelberg Borough	4	1501-2500
	Heidelberg Borough	2	500-1500
	Jefferson Hills Borough	1	500-1500
	Jefferson Hills Borough	19	> 500
	Mount Lebanon	12	500-1500
	Mount Lebanon	11	1501-2500
	Mount Lebanon	4	>2500
	Pleasant Hills Borough	3	> 500
	Pleasant Hills Borough	18	500-1500
	Scott Township	14	500-1500
	Scott Township	12	1501-2500
	South Park Township	7	> 500
	South Park Township	7	500-1500
	Upper St. Clair Township	7	> 500
	Upper St. Clair Township	7	500-1500
	Whitehall Borough	12	500-1500
	Whitehall Borough	4	1501-2500

COG	Municipality	Number Of Hazus Sites	Bldgs In 1/2 Mile Radius
Steel Valley			
	Braddock Hills Borough	1	500-1500
	Clairton	3	1501-2500
	Clairton	47	500-1500
	Dravosburg Borough	21	500-1500
	Duquesne	3	500-1500
	Duquesne	10	1501-2500
	Homestead Borough	1	1501-2500
	Munhall Borough	7	1501-2500
	Munhall Borough	4	500-1500
	Munhall Borough	2	>2500
	West Elizabeth Borough	15	500-1500
	West Homestead Borough	2	500-1500
	West Homestead Borough	6	1501-2500
	West Mifflin Borough	29	> 500
	West Mifflin Borough	32	500-1500
	West Mifflin Borough	4	1501-2500
	Whitaker Borough	1	500-1500
Turtle Creek Valley			
	Braddock Borough	9	500-1500
	Braddock Borough	3	>2500
	Braddock Borough	16	1501-2500
	Chalfant Borough	1	1501-2500
	Churchill Borough	3	500-1500
	Churchill Borough	2	> 500
	East McKeesport Borough	1	1501-2500
	East Pittsburgh Borough	5	500-1500
	East Pittsburgh Borough	1	1501-2500
	Edgewood Borough	2	>2500
	Forest Hills Borough	2	500-1500
	Forest Hills Borough	3	1501-2500
	Monroeville	25	500-1500
	Monroeville	64	> 500
	North Braddock Borough	6	1501-2500
	North Braddock Borough	1	500-1500
	North Braddock Borough	2	>2500

COG	Municipality	Number Of Hazus Sites	Bldgs In 1/2 Mile Radius
	North Versailles Township	3	500-1500
	North Versailles Township	8	> 500
	North Versailles Township	6	1501-2500
	Penn Hills Township	55	500-1500
	Penn Hills Township	7	1501-2500
	Penn Hills Township	8	> 500
	Pitcairn Borough	3	500-1500
	Plum Borough	32	> 500
	Plum Borough	10	500-1500
	Rankin Borough	3	1501-2500
	Swissvale Borough	16	>2500
	Swissvale Borough	5	1501-2500
	Turtle Creek Borough	5	500-1500
	Turtle Creek Borough	5	1501-2500
	Wall Borough	1	> 500
	Wilkins Township	3	> 500
	Wilkins Township	2	1501-2500
	Wilkins Township	9	500-1500
	Wilkinsburg Borough	13	>2500
	Wilkinsburg Borough	10	1501-2500
	Wilkinsburg Borough	2	500-1500
	Wilmerding Borough	8	500-1500
Twin Rivers			
	Elizabeth Borough	3	500-1500
	Elizabeth Township	17	500-1500
	Elizabeth Township	13	> 500
	Forward Township	4	> 500
	Glassport Borough	3	500-1500
	Glassport Borough	12	1501-2500
	Liberty Borough	1	> 500
	Lincoln Borough	1	> 500
	McKeesport	1	> 500
	McKeesport	10	>2500
	McKeesport	12	1501-2500
	McKeesport	38	500-1500
	Port Vue Borough	2	500-1500

COG	Municipality	Number Of Hazus Sites	Bldgs In 1/2 Mile Radius
	South Versailles Township	1	> 500
	Versailles Borough	6	500-1500
	White Oak Borough	12	500-1500
	White Oak Borough	4	1501-2500
	White Oak Borough	3	> 500

Number Of Hazus Sites Grouped By # Of Buildings In 1/2 Mile Radius per COG

COG	Buildings In 1/2 Mile Radius	Number Of Sites
Allegheny Valley North		
	> 500	79
	500-1500	108
	1501-2500	30
Char-West		
	> 500	280
	500-1500	146
	1501-2500	45
	>2500	7
Non COG		
	> 500	113
	500-1500	402
	1501-2500	287
	>2500	145
North Hills		
	> 500	200
	500-1500	178
	1501-2500	28
Quaker Valley		
	> 500	33
	500-1500	33
	1501-2500	11
	>2500	6
South Hills Area		
	> 500	37
	500-1500	204
	1501-2500	35
	>2500	25
Steel Valley		
	> 500	29
	500-1500	126
	1501-2500	31
	>2500	2
Turtle Creek Valley		
	> 500	118
	500-1500	140

COG	Buildings In 1/2 Mile Radius	Number Of Sites
	1501-2500	66
	>2500	36
Twin Rivers		
	> 500	24
	500-1500	81
	1501-2500	28
	>2500	10

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APPENDIX L: PEMA HAZARD MITIGATION OPPORTUNITY FORMS

This appendix contains completed PEMA Hazard Mitigation Opportunity Forms for the Allegheny County final mitigation actions.

See explanation in Section 7 of this plan.