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Meigs County All Natural Hazards Mitigation Plan 2011

(Updated from 2004)

URS

Executive Summary

This plan is the successor to hazard mitigation planning efforts begun in Meigs County in 2004 when the County received a grant to develop and adopt an All Natural Hazards Mitigation Plan for the County and the participating jurisdictions'.

Meigs County assets are at risk of damage due to flooding, winter storms, severe (summer) storms, or other natural hazards. This plan provides a long-term approach to reducing the likelihood that a natural hazard will result in severe damage. This plan updates the data upon which the assessment of risk and identification of vulnerabilities is based and presents updated strategies for making Meigs County a safer and more sustainable community.

The Meigs County All Natural Hazards Mitigation Plan Update represents the work of residents, business leaders, and elected and appointed government officials to develop a blueprint for protecting community assets, preserving the economic viability of the community, and saving lives. Endorsed by FEMA as being in compliance with regulations based on the Disaster Mitigation Act of 2000, the plan will help the County to implement mitigation projects so that a natural hazard does not result in a natural disaster.

The hazard mitigation planning process consisted of gathering and analyzing data available from various sources within the County. The data show that the hazards most likely to result in costly damages are flooding, tornadoes and high winds, and heavy snow and ice. Meigs County officials and representatives of local jurisdictions proposed and evaluated strategies that might be effective in mitigating the negative effects of natural hazards and the plan presents a conceptual-level approach for implementing these strategies. The plan recommends a number of public education efforts, structural efforts such as the elevation of structures above anticipated levels of flooding or the development of safe rooms in public schools to provide shelter during tornadoes, and the examination and the potential modification of zoning ordinances and other development regulations to ensure the risk of damage to new structures is minimized.

Most mitigation activities need funding. Under the Disaster Mitigation Act of 2000 (DMA2K, 42 USC 5165), a mitigation plan is a requirement for Federal mitigation funds. Therefore, a mitigation plan will both guide the best use of mitigation funding and meet the prerequisite for obtaining such funds from the Department of Homeland Security's Federal Emergency Management Agency (FEMA). This Mitigation Plan meets the criteria as set forth by FEMA in the DMA2K and provides a community with a "comprehensive guide" for future mitigation efforts as they relate to the hazards that affect their community.

This Mitigation Plan was developed in coordination with a Core Group of individuals from communities and agencies throughout Meigs County. The Core Group met two separate times during the planning process to reevaluate the hazards that affect the County, the problems associated with these hazards, potential mitigation alternatives to minimize the effect of these hazards and goals that they would like to see achieved within the county.

Meigs County has experienced many natural disasters in the past one hundred years. The Core Group evaluated these hazards and chose to address the following hazards based on their impact on human health and property damage: floods, winter storms (snow, ice), severe storms (lightning, hail, high winds, and tornadoes), landslides, mine subsidence, earthquakes and droughts.

The culmination of Meigs County's Mitigation Plan was an Updated Action Plan for the communities to use to track progress on the implementation of their mitigation alternatives. By adopting this updated plan, county, township and incorporated jurisdictions of Meigs County commit to working with citizens and business owners to make their communities safer.

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Introduction

This plan is an update of the **Meigs County All Natural Hazards Mitigation Plan** that was developed in 2004 and adopted for implementation by the Meigs County Commissioners and all incorporated jurisdictions within the County.

Meigs County is at risk of damage from a variety of natural hazards: flooding, tornadoes, severe storms, erosion earthquakes and droughts. This plan explains a rigorous analysis of the potential effects of these natural hazards on the structures and infrastructure within Meigs County and proposes measures to reduce the risk of a natural hazard leading to a disaster with property loss, business disruption, or even loss of life.

In the past, natural hazards have led to costly disasters in Meigs County resulting in a Presidential Declaration of Major Disaster or a Gubernatorial Proclamation of Extreme Emergency. These disasters are listed in Table 1 showing that their causes were flooding, wind, or a combination of the two.

Table 1: Past Disasters in Meigs County

Date	Type of Declaration	Hazard
March 24, 1964	Presidential Declaration of Major Disaster	Heavy rains and floods
June 5, 1968	Presidential Declaration of Major Disaster	Heavy rains and floods
January 26, 1978	Presidential Declaration of Major Disaster	Severe blizzard
January 27, 1996	Presidential Declaration of Major Disaster	Ohio River Flooding
June 24, 1996	Presidential Declaration of Major Disaster	Severe storms and flooding
March 4, 1997	Presidential Declaration of Major Disaster	Flash flooding
June 30, 1998	Presidential Declaration of Major Disaster	Flash flooding, high winds and tornados
March 7, 2000	Presidential Declaration of Major Disaster	Flash flooding
March 24, 2003	Presidential Declaration of Major Disaster	Ice/snow storm
Sept. 19, 2004	Presidential Declaration of Major Disaster	Severe storms and flooding
February 15, 2005	Presidential Declaration of Major Disaster	Severe wind storms, ice and mudslides
September 13, 2005	Presidential Declaration of Major Disaster	Severe rain storms from Hurricane Katrina
July 13, 2011	Presidential Declaration of Major Disaster	Severe storms and flooding

Meigs County's last disaster declaration was in July 13, 2011 for flooding. This was a Presidential Declaration in which funds were made available to the State of Ohio to supplement the state and local recovery efforts in the area struck by severe storms and flooding during the periods of April 4 to May 15, 2011.

Purpose of the Plan

The emergency management community, citizens, elected officials and others in Meigs County recognize the potential impacts of natural hazards on their community and have developed this plan to mitigate potential damages and reduce future losses. Hazard mitigation actions reduce the potential for loss of life and destruction of property. Mitigation actions are taken in advance of the occurrence of a potential hazard and are essential for breaking the disaster cycle of damage, reconstruction, and repeated damage.

This plan presents an evaluation of the potential negative consequences of the natural hazards that may affect Meigs County and proposes strategies that will reduce or mitigate losses.

Adoption of this plan ensures that Meigs County and participating jurisdictions continue to be eligible to apply for and receive certain Federal grant funds that are administered by the Ohio Emergency Management Agency (Ohio EMA) for the Federal Emergency Management Agency (FEMA). This plan complies with the requirements of the Disaster Mitigation Act of 2000 and its implementing regulations published in Title 44 of the Code of Federal Regulations (CFR) Section 201.6.

Organization of the Plan

The organization of the 2011 plan is somewhat different from the organization of the 2004 plan.

The 2004 plan is organized into ten sections and included several appendices. The ten sections are:

- **Introduction:** Identifies the purposes of this plan and the jurisdictions that have participated in plan development.
- **Community Information:** Discusses existing conditions, including development trends and current local government capabilities.
- **Countywide All Natural Hazards Mitigation Planning Process:** Summarizes the earlier planning process as well as the process of creating this plan.
- **Hazard Profile:** Identifies the natural hazards that may affect Meigs County.
- **Vulnerability Assessment:** Assesses the vulnerability to each natural hazard and the critical facilities affected by each hazard.
- **Meigs County Ohio Hazard Risk Assessment:** Summarized the risk assessment for Meigs County and how to use it in conjunction with the Mitigation Plan.
- **Goals:** Presents planning principles, mitigation goals, and objectives.
- **Hazard Mitigation Practices:** Highlights the ways to protect from hazards and the different ways to mitigate the hazards identified.

- **Highest Rated Activities and Action Plan:** Includes the Core Group's action matrix results, mitigation action items for each jurisdiction, and mitigation plan maintenance.
- **Appendices:** Include sample plan adoption resolutions, public notices about the planning process, and the survey instruments used by participating jurisdictions.

To make the plan easier to follow, this updated plan is organized by hazard rather than by steps in the process. This plan explains all steps of the mitigation planning process for each hazard. By organizing the plan by hazard rather than by task, the relationships among a hazard, the potential effect of the hazard, and the actions proposed for mitigating negative effects of that hazard are more obvious.

The sections of this plan are:

- **Introduction:** Identifies the purposes of this plan and the jurisdictions that have participated in plan development.
- **Planning Process:** Summarizes the earlier planning process as well as the process of updating this plan.
- **Community Profile:** Discusses existing conditions, including development trends and current local government capabilities.
- **Hazard Identification:** Identifies the natural hazards that may affect Meigs County.
- **Risk Assessment Sections for Each Identified Hazard:** Includes a summary of changes since the previous plan was adopted, a profile of each hazard, and an assessment of the potential impact of each hazard.
- **Summary of Risk Assessment Findings:** Highlights the conclusions of the previous Risk Assessment Sections.
- **Mitigation Goals:** Presents planning principles, mitigation goals, and objectives.
- **Alternative Mitigation Actions:** Explains the status of actions proposed in the previous plan, presents a comprehensive array of possible actions, and explains how actions were evaluated.
- **Proposed Mitigation Actions:** Explains how actions address existing and future development and continued compliance with the National Flood Insurance Program (NFIP), how actions will be incorporated into other plans, and how actions will be implemented.
- **Plan Maintenance:** Explains how mitigation actions will be monitored and how the plan will be evaluated and updated.
- **Sources of Information:** Lists Web sites and publications used to develop this plan.

- **Appendices:** Include sample plan adoption resolutions, public notices about the planning process, and the survey instruments used by participating jurisdictions.

Jurisdictions Represented in the Plan

This is a multi-jurisdictional hazard mitigation plan. The jurisdictions that participated in the development of this plan are the same jurisdictions that participated in the development of the initial version of this plan and passed legislation adopting the plan. Along with the County government officials involved, the participating jurisdiction's included: the Village of Middleport, Village of Pomeroy, Village of Racine, Village of Rutland and the Village of Syracuse.

Adoption Resolutions

Appendix I provides sample adoption resolutions that participating jurisdictions will adopt after FEMA Region V determines that this plan is approvable pending adoption. An approvable plan meets planning requirements specified in 44 CFR Section 201.6. A plan is fully approved after it is adopted; signed adoption resolutions will be included in Appendix I when the plan is submitted for final approval by FEMA Region V.

Planning Process

Planning Process Update

This 2011 plan is an update of the Meigs County All Natural Hazards Mitigation Plan that was developed in 2004 and adopted for implementation by Meigs County, Ohio and participating jurisdictions within the County in 2004.

This updated **Meigs County All Natural Hazards Mitigation Plan** represent the work of citizens, elected and appointed government officials, business leaders, and volunteers of non-profit organizations in developing a blueprint for protecting community assets, preserving the economic viability of the community, and saving lives.

The process of developing the initial plan was somewhat more complex than the process of updating the plan.

2004 Planning Process

2004 Core Group

Development of the Meigs County All Natural Hazards Mitigation Plan was led by the Meigs County Mitigation Core Group.

Several letters were sent to incorporated jurisdictions to get involvement from all communities in the mitigation planning effort. The process to create the Mitigation Plan started with the creation of a "Mitigation Core Group" of decision makers and implementers. In order to lead the planning efforts effectively and on a countywide basis, other representatives were added. The Core Group included individuals from the following departments and agencies:

- Meigs County EMA
- Meigs County Floodplain Administration
- Meigs County Commissioners
- Meigs County Engineer's Office
- Village of Pomeroy
- Village of Rutland
- Village of Racine
- Village of Syracuse
- Village of Middleport
- Leading Creek Conservancy District
- Daily Times Sentinel

2004 Jurisdictional Participation

Meigs County has five incorporated areas within its borders. All five incorporated communities chose to participate in this planning effort. Those incorporated jurisdictions included:

- Village of Pomeroy
- Village of Rutland
- Village of Racine
- Village of Syracuse
- Village of Middleport

2004 Public Involvement

The formal public notification process as defined in the Federal Code took place prior to approval and/or adoption of the Mitigation Plan. The public was notified that the process to produce the Meigs County All Natural Hazards Mitigation Plan was underway and that they will have an opportunity to review the draft plan for a period determined by the Core Group. The Draft Mitigation Plan was submitted concurrently to the OEMA and FEMA for review and approval.

Other Planning Mechanism

During the initial planning process, the Mitigation Core Group members reviewed existing planning mechanisms to ascertain community capabilities and identify opportunities for support in implementing mitigation actions. Documents consulted included existing municipal and county zoning and subdivision regulations and flood damage prevention ordinances, current county comprehensive plan and building code, and Flood Insurance Studies.

2011 Planning Process

2011 Mitigation Core Group

During 2011 Planning Process, the update of the plan was again led by a Mitigation Core Group. Representatives of the previous Mitigation Core Group (listed above) as well as other community leaders were invited in March of 2011 by the County EMA Office to actively participate in updating the plan; those who accepted the invitation comprise the current Mitigation Core Group members, listed further in this section.

Mitigation Core Group members for updating the plan in 2011 were:

- Robert Byer, Meigs County EMA
- Joe Bolin, Rutland Township
- Lowell Vance, Rutland Village

- Mike Gerlach, Village of Middleport
- Eric Cunningham, Village of Syracuse
- Roy Holter, Chester Township

As before, to aid in the development of the plan, the County contracted the services of URS Corporation, a consulting firm with expertise in hazard mitigation planning.

As part of the effort of updating the initial mitigation plan, the Mitigation Core Group decided to re-organize the plan to make it simpler to follow and to include in each section of the plan a description of how and why it was modified. The Mitigation Core Group prioritized mitigation alternatives through an iterative process of document review during March 30th, 2011 Mitigation Core Group meeting until consensus was reached.

2011 Jurisdictional Participation

During the process of updating the plan, each meeting of the Mitigation Core Group was open to representatives of participating jurisdictions. Representatives were invited to attend the meetings in person or to take advantage of a conference call option to participate in the discussion.

A meeting of the Mitigation Core Group was held in the evening to accommodate schedules on March 30th, 2011 at the Meigs County Courthouse Annex. Representatives from each participating jurisdiction were invited by the Meigs County EMA Director by letter to participate in the meeting, a copy of the e-mail invitation and notes from the meeting are included in Appendix II.

At the March 2011 meeting, in addition to discussing the potential effects of hazards and possible mitigation projects, mitigation accomplishments were identified and mitigation planning principles, goals, and objectives were reviewed. Meeting participants unanimously agreed that no substantial changes should be made in the mitigation planning principles, goals, and objectives, which were presented in the initial version of this plan. However, a reprioritization of the hazards did occur and was unanimously agreed upon.

On November 21th, 2011, a digital copy of the draft plan was mailed to each participating jurisdiction along with a letter of explanation. A list of reviewers and a copy of the cover letter sent to jurisdictions is located in Appendix III.

Additional correspondence occurred throughout the planning process update through the Meigs County Emergency Management Agency. When there were defined gaps in data, the Meigs County EMA helped the consultant either locate the source of the needed data or directly supplied the data to the consultant for inclusion in the Mitigation Plan.

2011 Public Involvement

A notice about updating the hazard mitigation plan was posted on the home page of the Meigs County Government Website (www.meigscountyauditor.org) beginning in November 2011 and continuing throughout the planning update. Residents of Meigs County and neighboring communities who might be interested in participating in the process were invited to participate by the Meigs County EMA Agency. No volunteers responded to this invitation, which is included in Appendix IV.

An invitation to the public to review and comment on the draft plan was posted on the home page of the Meigs County Government Website from August 2011 through the end of November 2011. A screen shot of the Web page is displayed in Appendix VII.

Because public participation in the drafting of the plan has been poor, a press release inviting review and comment on the plan was issued on September 9, 2011. The press release was sent to: Pomeroy Daily Sentinel

A copy of the press release is displayed in Appendix V.

The public was provided an opportunity to review and provide comment on the draft Meigs County All Natural Hazards Mitigation Plan throughout the entire planning process. The Plan was posted on the Meigs County Web site. Meigs County received 3 comments; the Mitigation Core Group reviewed these comments and modified the draft of the plan accordingly.

The public was provided a final opportunity to comment on the draft of the updated plan at public hearing when it was presented to the elected officials of each of the participating jurisdictions in Meigs County for adoption during the months of [*actual dates to be inserted*] 2011.

Other Planning Mechanisms

During the process of updating the plan, URS and the Mitigation Core Group reviewed existing planning mechanisms to ascertain community capabilities and identify opportunities for implementing mitigation actions. These plans are further referenced in the Capability Assessment section of this plan.

Gathering New Data

Gathering and analyzing new data about natural hazards and the community was critical to the process of updating the plan. New data used for the plan are identified throughout the plan; however, because flooding is both the most common and the most costly natural hazard that occurs in Meigs County, particular attention was provided to gathering data about structures that have been damaged repeatedly by flooding. Another hazard that received more attention was the reprioritized hazard of landslides. This hazard was reprioritized to number two due to the amount of occurrences since 2004.

Community Profile

Meigs County is located in southeastern Ohio. It is bounded by Athens and Vinton counties to the north, Vinton and Gallia counties to the west, Gallia County to the south, and the state of West Virginia to the east. The county lies on the north and west shores of the Ohio River. Its river boundary stretches for more than sixty-miles. The county is comprised of 429.5 square miles of land. There are 12 townships in Meigs County.

The county is mostly rural in setting and wooded areas dominate the landscape. It is part of Ohio's Appalachian Region. U.S. Route 33 runs north-south through the county and State Route 124 is the main east-west thoroughfare in the county. The incorporated areas of Meigs County include Middleport, Pomeroy, Racine, Rutland and Syracuse. According to the 2000 Census, the largest areas of population are in Middleport Village (2,530), Chester Township (2,496), and Pomeroy Village (1,852). The entire county population is 23,770. The county seat is located in the Village of Pomeroy.

Jurisdictions

Middleport

The Village of Middleport encompasses 1.8 square miles. It is located in Salisbury Township and located along the Ohio River south of Pomeroy. It is the largest populated village in Meigs County.

As of the Census of 2010, there are 2,530 people, 1,089 households, and 659 families residing in the village.

Pomeroy

The Village of Pomeroy encompasses 3.2 square miles is located in Salisbury Township along the Ohio River. It is the second largest populated village in Meigs County. As of the Census of 2010, there are 1,852 people, 933 households, and 516 families residing in the village.

Pomeroy became the county seat of Meigs County 1841. The original county seat was in Chester which is eight miles north of Pomeroy.

Racine

The Village of Racine encompasses 0.4 square miles in Sutton Township. It is located in the south central portion of Meigs County. Racine Locks and Dams are located upriver of the corporate limits. Forked Run State Park, which is in the Shade River Forest, is located north of Racine. It is the fourth largest village in Meigs County.

The average household size is 2.34 and the average family size is 3.01. As of the census of 2010, there are 675 people, 288 households, and 211 families residing in the village.

Rutland

The Village of Rutland encompasses 0.8 square miles. It is approximately seven miles west of Pomeroy in Rutland Township. It is the smallest village in Meigs County.

As of the Census of 2010, there are 393 people, 161 households, and 109 families residing in the village.

Syracuse

The Village of Syracuse encompasses 0.9 square miles. Syracuse is located in Sutton Township and borders the Ohio River. It is the third largest village in Meigs County. As of the census of 2010, there are 826 people, 360 households, and 258 families residing in the village.

Table 2: Meigs County's Overall Growth Since the 1800's

Year	Total Population	Year	Total Population
1800	N/A	1910	25,594
1810	N/A	1920	26,189
1820	4,480	1930	23,961
1830	6,158	1940	24,104
1840	11,452	1950	23,227
1850	17,971	1960	22,159
1860	26,534	1970	19,799
1870	31,465	1980	23,641
1880	32,325	1990	22,987
1890	29,813	2000	23,072
1900	28,620	2010	23,770

A Meigs County demographic profile is also available on the Ohio Department of Development's website and provides more specific information for Meigs County and its political jurisdictions.

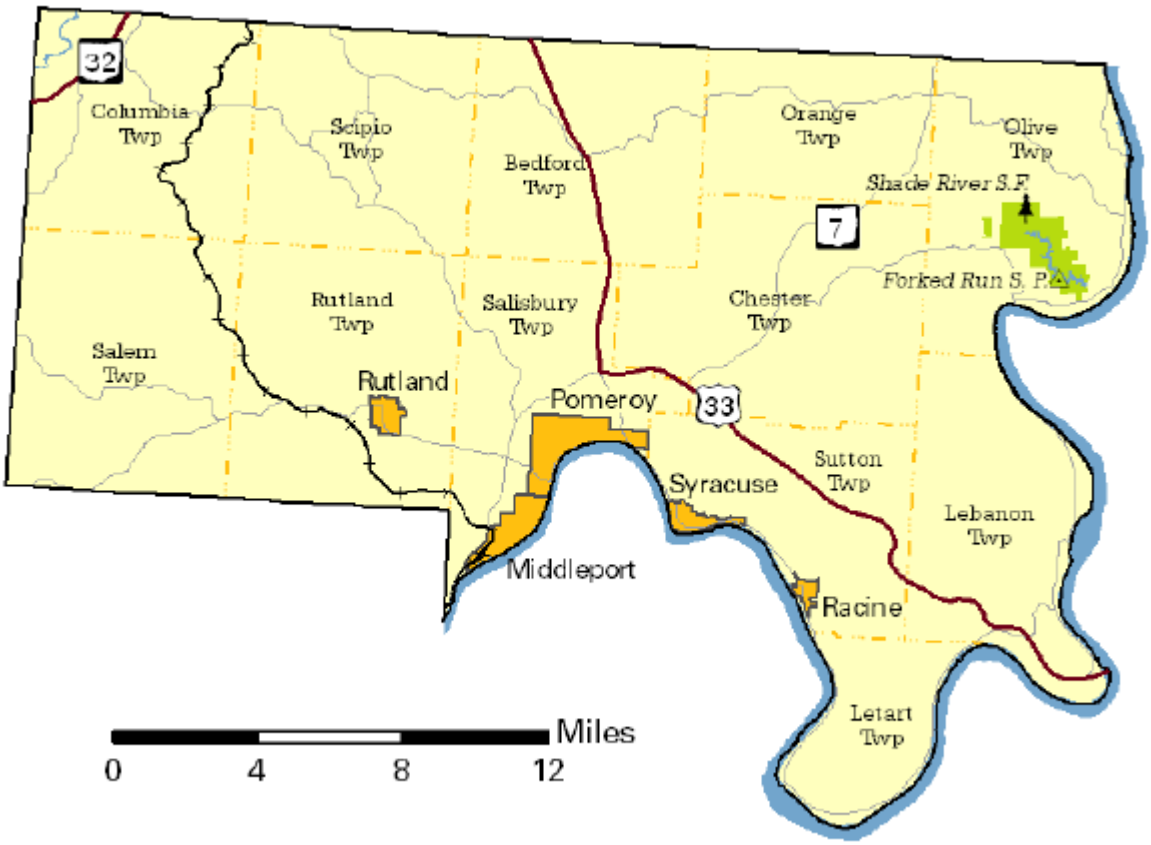


Figure 1: Miegs County Map

Land Use and Development Trends

The purpose of including an analysis of land use and development trends in this mitigation plan is to identify the potential for future structures to be at risk of damage due to natural hazards.

The county contains approximately 276,711 land acres, of which approximately 90,362 acres are farmland. Forty-five percent of farmland is comprised of cropland, 37% is comprised of woodland, 13% is pasture, and 6% is categorized as other uses. Land being used for farmland has decreased 7% from 1997 to 2002. The average size of farms has only slightly decreased from 166 acres in 1997 to 164 acres in 2002. Forked Run State Park encompasses 893 acres of land and 2,602 acres are devoted to Shade River State Forest.

Meigs County currently does not have a Comprehensive Plan in which short-term and long-term goals are typically discussed. The County lacks adequate regulations and planning efforts addressing future land use. However, the need for this type of planning document has been discussed as part of the mitigation planning effort and plans for drafting a Comprehensive Plan have begun.

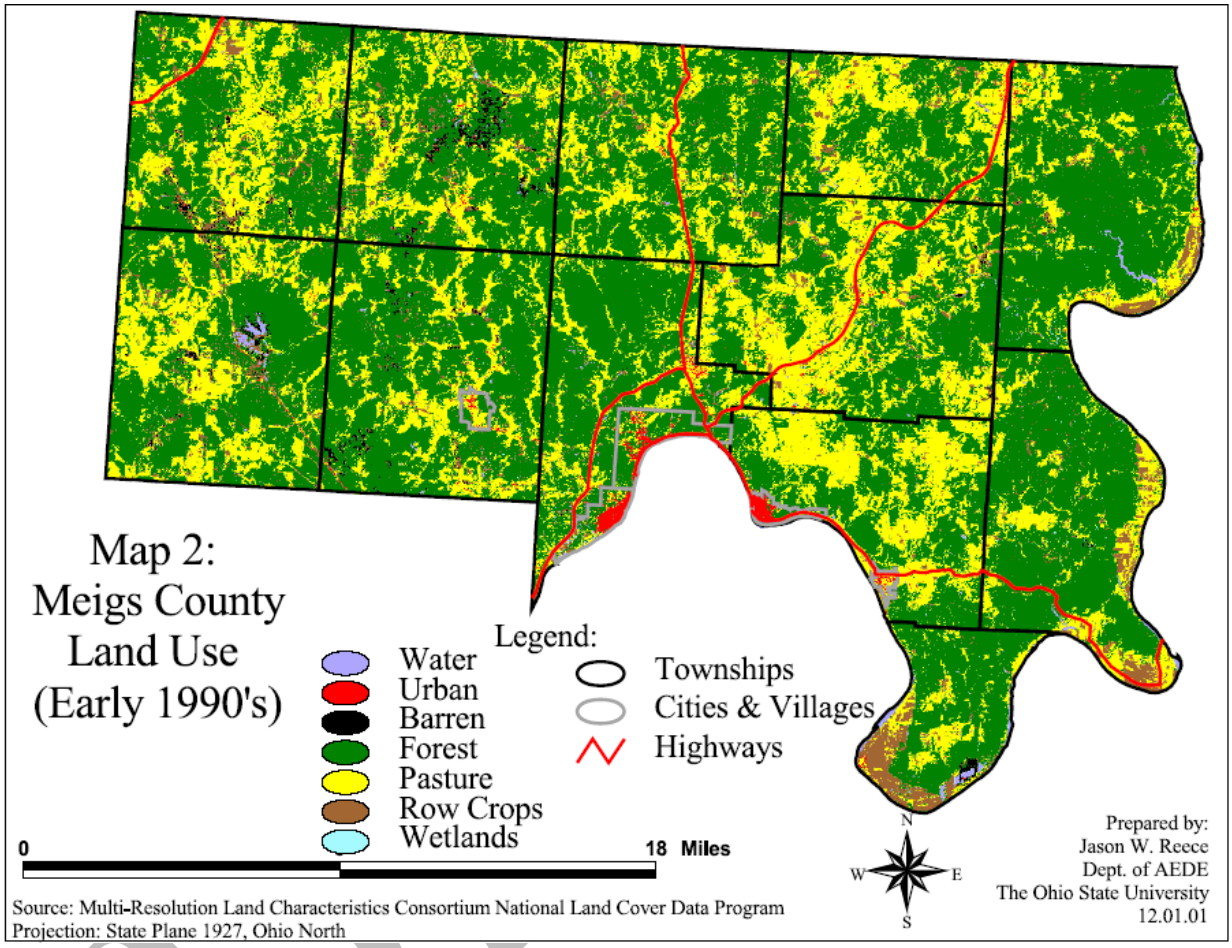


Figure 2: Meigs County Land Use Map

Capability Assessment

The purpose of the Capability Assessment is to identify strengths and weaknesses that will affect the ability of the County and participating jurisdictions to implement mitigation actions. Capabilities include a variety of regulations, existing planning mechanisms, and administrative capabilities provided through established agencies or authorities.

Regulatory Capabilities

Table 3 summarizes the regulatory tools used in Meigs County and participating jurisdictions. These regulations support the goals of this hazard mitigation plan and provide opportunities for further mitigating the potentially negative effects of natural hazards through regulation.

Table 3: Regulatory Capabilities

Jurisdiction	Zoning Ordinances	Development Regulations	Floodplain Regulations	Floodplain Management Regulations	Stormwater Management Regulations	Building Codes
Meigs County		✓	✓	✓		
Village of Middleport	✓		✓	✓		✓
Village of Pomeroy			✓	✓		✓
Village of Racine			✓	✓		*
Village of Rutland			✓	✓		
Village of Syracuse			✓	✓		**

* Permits required for house trailers only.
** Building inspections are arranged through the mayor's office.

Zoning Ordinances: Regulates development by dividing the community into zones or districts and establishing the type of development allowed within each district. The floodplain can be designated as one or more separate zoning districts in which development is prohibited or allowed only if it is not susceptible to flood damage. Some districts that are appropriate for floodplains are those designated for public use, conservation or agriculture. Zoning works best in conjunction with a comprehensive plan or "road map" for future development and building codes. Currently zoning ordinances in Meigs County are regulated by Buckeye Hills-Hocking Valley Regional Development District.

Development Regulations: Further specify how development can occur. Subdivision Regulations govern how land will be broken up into individual lots. These regulations set construction and location standards for the infrastructure built by the developer, including roads, sidewalks, utility lines, storm sewers, stormwater retention or detention basins, and drainage ways. Meigs County's current Subdivision Regulations were adopted in the 1970's and have not been revised since. A copy was not available for review and the Core Group commented that they were outdated and difficult to enforce. The need for new regulations has been acknowledged and plans for implementation have been discussed.

The National Flood Insurance Program (NFIP) is a voluntary program which requires the development of a floodplain ordinance. All municipalities and the Meigs County have an approved **floodplain management ordinance**. On August 8, 2002, Meigs County adopted Flood Damage Prevention Regulations pursuant to authorization contained in Section 307 of the Ohio Revised Code. These regulations apply to all areas of special flood hazard within the jurisdiction of Meigs County.

Incorporated areas are also required to have floodplain regulations pursuant to authorization contained in Section 307 of the Ohio Revised Code. These regulations are the same as the Flood Damage Prevention Regulations described previously. Meigs County and the participating jurisdictions adopted the NFIP regulations in 2002 and are currently in compliance.

Stormwater Management Regulations: Provide for the conveyance of stormwater to decrease flooding. Meigs County currently does not have any drainage regulations in place. However, one of the resulting goals of the Mitigation Plan process is to establish administrative controls for construction practices to promote better drainage to avoid flooding.

Adoption and enforcement of **building codes** ensure that both residential and commercial structures are safe. Building codes provide some of the best methods of addressing all the hazards in this plan. They are the prime measure to protect new property from damage by high winds, tornadoes, earthquakes, hail, and winter storms. When properly designed and constructed according to code, the average building can withstand the impact of most of these forces.

A local **historic district ordinance** enables a community to regulate development in a specific, designated area of historic significance. As of today, no historic district ordinance has been developed in Meigs County.

Currently, Meigs County does not have zoning regulations or building codes in place for the unincorporated areas of the county. The unincorporated areas typically comply with the State of Ohio's codes. Discussion for the need of zoning regulations has started and plans for implementation have begun.

Planning Capabilities

Comprehensive Planning

Comprehensive plans and land use plans specify how a community should be developed (and where development should not occur). Through these plans, uses of land can be tailored to match the land's hazards. Comprehensive planning reflects what a community wants to see happen to their land in the future. A comprehensive plan can look 5, 10, or even 20 years into the future to help a community plan and shape how they envision their community. However, planning is only one part of the puzzle and usually has limited authority. Tied with zoning comprehensive planning can be more effective.

A comprehensive plan has not been completed for Meigs County. Meigs County does not have a planning commission in place to pursue this effort.

Emergency Operations Planning

The Meigs County **Emergency Operations Plan** (EOP) is a requirement of the Ohio Revised Code, Section 5502.271. The purpose of this EOP is to predetermine, to the extent possible, actions to be taken by the governmental jurisdictions of Meigs County to prevent avoidable disasters and respond quickly and adequately to emergencies in order to protect the lives and property of the residents of Meigs County.

The EOP is designed to work for all types of natural and man-made disasters. The document has a Basic Plan which defines and identifies areas of potential risk, lists people and organizations involved in response situations, and discusses plan development and maintenance. The Basic Plan is augmented with annexes that describe the details of various aspects of emergency response. Some examples of these annexes include Direction and Control, Notification and Warning, Law Enforcement, Medical, Anti-Terrorism, and Resource Management.

The plan contains guidelines with respect to roles and responsibilities. The Emergency Operations Center (EOC) is responsible for directing and controlling the conduct of emergency operations from that center, or from an alternate facility during emergencies. The EOC, in coordination with the Incident Commander at the site, will be the point of contact for all operating/responding departments and agencies, other counties and the State.

Watershed Planning

Three different watersheds influence drainage in Meigs County: The Leading River drains the western portions of the county, the Shade River drains the eastern portion of the county and Raccoon Creek drains a northwest portion of the county. All three flow into the Ohio River which is the county's eastern boundary. A minor tributary of the Hocking River flows north-south and is located in the northeast portion of the County.

Currently, Meigs County does not have a watershed management plan enacted.

There are two organized watershed groups in Meigs County, Friends of Hocking River and Leading Creek Watershed Project. The Friends of Hocking River (FOHR) was formed in 1999 by citizens interested in the future of the Hocking River, which runs through Meigs County. The Leading Creek Watershed is located in western Meigs County and parts of Gallia and Athens Counties. It consists of approximately 150 miles of waterways and begins near Albany in Athens County and ends at the Ohio River in Middleport. The watershed consists of other streams including Sisson Run, Little Leading Creek, Mud Fork, Thomas Fork, and Parker Run. Some of the problems identified within the watershed include sediment and acid-mine drainage, sediment and pollution from crop fields and pastures located along the stream, and trash and sewage from humans and animals.

Emergency Action Planning for Dams

In Ohio, most dams are constructed of earth. Dams must have spillway systems to safely convey normal stream and flood flows over, around, or through the dam. Spillways are commonly constructed of non-erosive materials such as concrete. Dams also have a drain or other water-withdrawal facility to control the pool or lake level and to lower or drain the lake for normal maintenance and emergency purposes.

Emergency Action Plans (EAPs) have been prepared for high hazard dams (Class 1) located in Meigs County as well as those for which the inundation area includes part of Meigs County. Each EAP addresses ways to safeguard lives and reduce property damage within the inundation area; procedures for effective dam surveillance; procedures for prompt notification of emergency management officials; warning and evacuation procedures; and emergency response actions that will be taken in the event of potential or imminent failure of the dam. According to Ohio Administrative Code Rule 1501:21-13-01, dams are classified as follows:

Class I: A dam shall be placed in Class I when failure of the dam would result in probable loss of human life. Dams having a storage volume greater than 5,000 acre-feet or a height of greater than 60 feet shall be placed in Class I.

Class II: Dams having a storage volume greater than 500 acre-feet or a height of greater than 40 feet shall be placed in Class II. A dam shall be placed in Class II when failure of the dam would result in at least one of the following conditions, but loss of human life is not envisioned.

Class III: Dams having a height of greater than 25 feet, or a storage volume of greater than 50 acre-feet, shall be placed in Class III. A dam shall be placed in Class III when failure of the dam would result in at least one of the following conditions, but loss of human life or hazard to health is not envisioned.

Class IV: When failure of the dam would result in property losses restricted mainly to the dam and rural lands, and not loss of human life or hazard to health is envisioned, the dam may be placed in Class IV.

According to the ODNR, Meigs County has 39 dams within its boundaries. The number of dams and their classifications are as follows:

- Class 1- 3
- Class II - 4
- Class III - 4
- Class IV-7

In addition, Meigs County has 21 unclassified dams, which have been determined by the ODNR's Chief of the Division of Water to not constitute a hazard to life, health or property in the event of a failure.

Additional Capabilities

A variety of additional capabilities are established in Meigs County. These capabilities can support the implementation of mitigation actions that are proposed in this plan. These capabilities are:

State of Ohio Rain Snow Monitoring System (STORMS)

The State of Ohio Rain/Snow Monitoring System (STORMS) is an automated rain gauge system that monitors an area's snow and rainfall for potential flooding while transmitting current, real-time precipitation data to the State Emergency Operations Center, the ODNR, the NWS and county emergency management agencies. The rain gauges are usually positioned near watersheds and report data 24 hours a day to computers in Columbus and are used by NWS as a prediction tool for flood and flash flood watches and warnings. Local governments are also able to access the data through special computer systems connected to the gauges.

Robert Byer, director of the Meigs County EMA, inspects one of the new automated rain gauge monitoring systems located near the Old Meigs Courthouse in Chester.

In October of 2001, telecommunications technicians from the OEMA recently completed installation of two STORMS rain monitoring gauges in Meigs County. They are monitored by the EMA Director. One is located near the Old Meigs Courthouse in Chester and the other at the Columbia Township Garage.

Other Resources

Support for mitigation planning actions is provided by the State of Ohio and the Federal Government. Programs that complement Meigs County mitigation planning initiatives are:

- Ohio administered programs include the following:
    - **Hazard Mitigation Assistance Programs:** Provide grants for cost-effective mitigation projects either in the absence of a disaster or after a disaster declaration has occurred.
    - **Ohio Department of Development:** Provide grants for job ready sites and community development block for economic development.
    - **Ohio Department of Natural Resources:** Provide support for land and water conservation efforts.
    - **Ohio Environmental Protection Agency:** Provide grants and loans for capital improvements within a community.
- Federal Government programs include the following:
    - **Hazard Mitigation Assistance Programs:** Provide grants for cost-effective mitigation projects either in the absence of a disaster or after a disaster declaration has occurred.
        - Pre-Disaster Mitigation Assistance Program (PDM)
        - Flood Mitigation Assistance Program (FMA)
        - Repetitive Flood Claims Program (RFC)
        - Severe Repetitive Loss Program (SRL)
        - Hazard Mitigation Grant Program (HMGP)
    - **Community Development Block Grants:** Provides funds to address a wide range of community development needs.
    - **Small Communities Program Fund**: Supports water quality infrastructure projects.
    - **Weatherization Assistance Program:** Enables low-income households to make their homes more energy-efficient.
    - **Firewise Communities Program:** Involves homeowners and community leaders in protecting structures from fire damage.

Hazard Identification

Hazard Identification Update

To reduce the potential for damage due to hazards, it is necessary to identify hazards that may affect the County. This process is completed using published information and Web sites that address hazards globally, nationally, within Ohio, or specifically within Meigs County as well as anecdotal information provided by members of the Mitigation Core Group and the public.

Only natural hazards are identified and examined in this plan update as required by the Disaster Mitigation Act of 2000.

Changes found in this update include a 2011 plan reprioritizes the natural hazards affecting Meigs County. This is due to recent events within the County and by the recommendation of the Mitigation Core Group.

Table 4 compares the six hazards identified for the initial plan and the reprioritized six natural hazards identified and analyzed in this update.

Table 4: Identified Hazards

Hazards Identified for 2004 Plan	Hazards Identified for the 2011 Plan
Flooding	Flooding
Winter Storms (Snow and Ice)	Landslides
Severe Storms (Lightning, Hail Tornadoes)	Winter Storms (Snow and Ice)
Landslides	Severe Storms (Lightning, Hail, Tornadoes)
Mine Subsidence	Mine Subsidence
Earthquakes	Earthquakes
Droughts	Droughts

Description of Hazards

The descriptions of hazards included in the 2004 plan were largely based on publicly available data provided by the National Oceanographic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC) and the Ohio Department of Natural Resources. For the 2011 plan update, the hazard data was evaluated by the Mitigation Core Group. The Mitigation Group reprioritized the hazards and this was unanimously agreed upon by all members of the Mitigation Core Group. Table 5 summarizes each natural hazard that may affect Meigs County.

Table 5: Descriptions of Natural Hazards Addressed in This Plan

Hazard	General Description of Hazard
Flooding	A flood is a natural event for rivers and streams. In Meigs County excess water from snowmelt or rainfall accumulates and overflows the stream banks into adjacent floodplains. Floods are considered hazards when people and property are affected. Nationwide, hundreds of floods occur each year, making it one of the most common hazards in all 50 states and U.S. territories. In Ohio, flooding can occur during any season of the year. Serious flooding occurs regularly along one or more of Ohio's major rivers or streams, such as the Ohio River, which is at the southern boundary of Meigs County.
Landslides	A landslide occurs when masses of rock, debris, or earth roll down steep slopes. Contributing causes of landslides include erosion, removal of vegetation cover and ground shaking from earthquakes.
Winter Storms	Heavy snow and ice are caused by winter storms bringing frozen precipitation and cold temperatures to the area. Heavy accumulations of ice can cause extensive damage by bringing down trees and toppling utility poles and communication towers, which disrupts power and communications. Winter storms may also lead to the collapse of roofs in deteriorated structures.
Severe Storms (Lightning, Hail and Tornadoes)	A tornado is an extraordinary feature generally associated with severe thunderstorms or hurricanes. A tornado is characterized by a funnel of violently rotating winds. While the extent of tornado damage is usually localized, the extreme winds of a tornado are among the most destructive and can cause millions of dollars of damage and loss of life when they move through populated, developed areas. Tornadoes can occur at any time but most frequently occur during the late afternoon or early evening, the warmest hours of the day. Peak months for tornado activity are April, May, and June. High winds are the movement of air from areas of higher pressure to areas of lower pressure. The greater the difference in pressure, the stronger the winds. High winds are generally associated with severe thunderstorms or hurricanes.
Mine Subsidence	Mine subsidence happens when the bedrock and unconsolidated materials collapse into underground mined areas. Pit subsidence is the type of subsidence associated with the roof collapse of mines while sag subsidence is a gradual settling of the surface.
Earthquake	Earthquakes are the sudden motion or trembling of the ground caused by the breaking and shifting of rock beneath the surface of the earth. Ground shaking from earthquakes can collapse buildings and bridges and disrupt gas, electric, and phone service.
Drought	A drought is a period of prolonged dryness that contributes to depletion of ground water and surface water. Adverse consequences of drought include insufficient supplies of water for human consumption as well as agricultural and industrial uses and deterioration of water quality. High temperatures, prolonged winds, and low relative humidity can exacerbate the severity of drought.

Flooding Risk Assessment

Flooding Update

The list of previous occurrences in flooding was updated for the 2011 plan update. No substantive changes were made to the descriptions of the location, extent, and probability of flooding in Meigs County; however this section has been rewritten for greater clarity.

For updating the plan, because flooding is a site specific hazard, data about the location and types of structures and infrastructure in the County were reviewed to identify changes in vulnerability. Meigs County is currently in the beginning stages of getting new digital flood insurance rate maps which will result in a more accurate assessment of their vulnerability to flooding. New digital flood maps are based on a revised Flood Insurance Study that used more accurate topographic data than were available in the past and that accounted for additional impervious ground cover due to new development in the townships.

Information about flood loss was augmented in order to comply with the modifications of 44 CFR Part 201.6 that became effective in October 2007. Regulations now require that local hazard mitigation plans place special emphasis on the mitigation of Repetitive Loss Structures, which are structures insured by the NFIP that have had at least two paid flood losses of more than $1,000 each in any 10-year period since 1978.

Hazard Profile – Flooding

Flooding is an important issue for the residents and business owners of Meigs County. Whether it was flash floods or riverine flooding events that have occurred in the past, lives have been disrupted or lost and damage has been extensive. Because the eastern half of the county is situated along the Ohio River, flooding has always been a major concern. Areas that are prone to flooding in Meigs County are along the banks of the Ohio River and the watersheds of Leading Creek and Shade River.

Meigs County has special zone floodplains identified within the county. The best way to combat a disaster happening within these special zone flood hazard areas is through public awareness. All of Meigs County is in compliance with state floodplain management standards and participates in the National Flood Insurance Program (NFIP). The county has been involved since November 16, 1995. The following list gives the incorporated jurisdictions that participate in the NFIP and the date in which they entered the program.

- Middleport - September 29, 1978
- Pomeroy - July 5, 1983
- Racine - August 15, 1983
- Rutland - November 2, 1990
- Syracuse - July 5, 1983

Location

All of Meigs County lies within the drainage basin of the Ohio River, which is the largest tributary, by volume, to the Mississippi River. The villages of Middleport, Pomeroy, Racine, and Syracuse have the Ohio River bordering the south or east side of each village.

The various tributary streams and creeks generally flow north to south, from the foothills of the Appalachian Plateau towards the Ohio River. Leading Creek and Shades River are the largest tributaries in the County and travel in a southeastwardly direction to the Ohio River.

According to the EMA Director and historical data, of the five municipalities with Meigs County, the Village of Pomeroy has suffered the most severe damage from flooding due to extensive development within the floodplain and its proximity to the Ohio River.

Table 6 shows which tributaries have the potential to lead to flooding in particular jurisdictions; there is the potential for flooding due to rivers and streams in each jurisdiction in the County.

Table 6: Rivers and Streams in Meigs County

Municipality	Rivers and Streams			
	Ohio River	Leading Creek	Shade River	Raccoon Creek
Middleport	✓			
Pomeroy	✓	✓	✓	
Racine	✓		✓	
Rutland				✓
Syracuse	✓		✓	

Extent

Flooding is a site-specific hazard. Therefore, floodplains are an important planning consideration. A floodplain is any land area susceptible to inundation by floodwaters from any source. Floodplains are measured in terms of the amount of stormwater that it takes to cover a given area of land. These storm events are measured in frequency of occurrence, such as 5-year, 100-year and 500-year, with the standard measurement being the 100-year storm or floodplain. In Meigs County flooding can happen almost anytime however this number one hazard can be exacerbated when heavy rains occur in late winter and accelerate the melting of snow.

Flooding can also be exacerbated locally by the presence of impermeable surfaces due to buildings and pavement or lack of appropriately sized flood water detention basins.

Flooding in Meigs County can be exacerbated if the flow of water is obstructed in some way such as by an undersized culvert.

Any development within floodplains can impact the direction, flow and level of the watercourse during periods of high water or flooding. In other words, if fill material is placed or a house constructed in a floodplain, it will alter the boundaries of the floodplain downstream of that area. This alteration happens because structures or fill utilize valuable space that would otherwise act as a natural retaining area for floodwaters to spread and slow. Not only does development in the floodplain increase dangers downstream, developments within the floodplain are at higher risk of damage due to flooding. This damage includes fill material and debris from destroyed structures upstream colliding with structures in the floodplain downstream of an affected area. Many bridges are washed out in floods because river borne debris clog their free-flow area.

There are a total of 1,383 structures in Meigs County considered to be at-risk due to flooding. Of this total number, 464 of the structures are located in the unincorporated areas of the county. (This information was collected from the ODNR's Division of Water Floodplain Geographical Information Management System (GIMS) Project.) All the at-risk structures are located on the Multi-Hazard Maps in Appendix VI. These at-risk structures are located within the 100-year floodplain and are therefore susceptible to damage during a flood.

At-risk structures in areas of flash flooding areas, which are not within the 100-year floodplain were not identified by the ODNR's GIMS project and consequently have not been mapped.

Previous Occurrences

Meigs County has a long history of flooding problems. The County has suffered damage from numerous major floods and localized flash flooding. Appendix VII lists all flooding events in Meigs County since 1994; the source of these data is the NCDC website. This data indicates that there have been 40 flooding events in the past 17 years.

Further research through the NCDC shows that there have been four major floods in Meigs County since 2004. All of these recent floods resulted in property damage; the causes and effects of these recent floods are described in Table 7.

Table 7: Recent History of Flooding

Date	Description
1/4/2004	Rains of 1.5 to 3.3 inches fell on saturated ground in the Ohio Valley, during about a 36 hour time span. Down the Ohio River, the crest at Racine was 44.7 feet, plus near 47.3 feet at Pomeroy, both on the 7th.
9/8/2004	The low pressure remains of Hurricane Frances caused about a 30 hour rain event, causing 4 to 7 inches of rain in the Ohio Valley near Meigs County. Shade River near Chester rose from 4.7 feet to 21.5 feet.

Date	Description
9/17/2004	Remnants of Hurricane Ivan dropped 4 to 6 inches of rain over an extended period of four days. The crest was 2 to 4 feet deep inside 40 businesses in Meigs County. Racine crested at 50.2 feet and Pomeroy at 51.2 feet.
1/5/2005	A total of 3 to 5 inches fell across eastern portion of Ohio. Meigs County had 17 homes with minor damage, 2 homes with major damage, and 3 homes destroyed.

Probability of Future Flooding

In this plan, the term special flood hazard area is used in conjunction with floodplain to clarify that the area under consideration is identified on the Flood Insurance Rate Maps as having at least a 1-percent chance of flooding in any given year. Historically, the area with a 1-percent chance of flooding in any given year has been called the "100-year floodplain" and the area with a 0.2-percent chance of flooding in any given year has been called the "500-year floodplain." As these terms can be misleading by suggesting that there will be a flood only every 100 or 500 years respectively they are not used in this plan.

The NCDC data indicates that there have been 40 events in the past 17 years. Therefore, the probability of future events is 40 / 17 = 2.3 or 100 percent chance annually.

Vulnerability Assessment – Flooding

Overview of Vulnerability

Flood vulnerability is described in terms of what community assets, structures, and infrastructure lay in locations where flooding is anticipated.

Table 8: Summary of Past Losses Due to Flooding

	Estimated Property Damages
Total Losses Due to Flooding (1994–2011)	$52,394,000
Average Annual Losses for 17 years	$3,082,000

According to NCDC, estimated significant property damage in Meigs County attributable to flooding during the years 1994 through 2011 is $52,394,000. Thus the average annual loss for these 17 years is $52,394,000 / 17 = $3,082,000.

Potential Impact of Flooding

Flooding can lead to property loss as well as to loss of life. Flooding damages structures, including homes and businesses, vehicles, and infrastructure, including roadways. People who are surrounded by flood waters can require evacuation placing their lives as well as the lives of rescuers in danger. Flooding can disrupt the operation of businesses and schools and recovery from flood damages can be time consuming and costly.

Identifying structures

Plan Update Notes

The initial version of this mitigation plan revealed that 1,383 structures in the County were located in Special Flood Hazard Areas. Current data compiled using the recently updated County GIS database show that 1,380 structures are located in Special Flood Hazard Areas and have at least a 1-percent chance of flooding in any given year.

Exposure of Existing Buildings to Damages Due to Flooding

Some structures and infrastructure in each participating jurisdiction are at risk of flood damage. The total number of at risk structures for each jurisdiction in a 100-year flood is shown on Table 9.

Table 9: Inventory of At-Risk Structures

Jurisdiction	At-Risk Structures
Middleport	405
Pomeroy	156
Racine	117
Rutland	89
Syracuse	152

A number of critical facilities are located in flood-prone areas. These include fire stations, police stations, schools, and office buildings. Other facilities including motels, churches, and retirement facilities that may also require special attention during times of flooding for evacuation purposes are also located in flood-prone areas. Appendix VIII lists critical facilities and which ones are located in Special Flood Hazard Areas.

Repetitive Loss Properties

Some structures in Meigs County have been flooded repeatedly and have received more than one payment through the National Flood Insurance Program (NFIP) for flood damages. A repetitive loss structure is defined as an NFIP-insured structure that has had at least two paid NFIP claims of more than $1,000 each in any 10-year period since 1978. There are twenty-three structures in Meigs County that are defined as repetitive loss structures. Six out of the twenty-three properties have undergone flood control measures, such as retrofitting or waterproofing. Repetitive Loss areas of the County are shown on the Multi-Hazard Maps in Appendix VI.

Exposure of Future Buildings to Damages Due to Flooding

Current zoning and development regulations allow future development to occur within the Special Flood Hazard Area; this suggests that there is potential for additional loss due to flooding in the future. Special Flood Hazard Area development regulations relate to the base flood elevation, which is the estimated level of flooding that has a 1-percent chance of being equaled or exceeded in any given year. Because Special Flood Hazard Area or floodplain development regulations specify that residential structures must be elevated to or above the base flood elevation and commercial structures must either be elevated or flood-proofed to or above this level, the degree to which future structures are exposed to flood damages should be minimal.

However, calculations of base flood elevations are based on models that rely upon data about previous flood events; should future floods be greater than those experienced in the past, the base flood elevation may not provide sufficient protection. Therefore, mitigation strategy of this plan includes that communities adopt more stringent Special Flood Hazard Area or floodplain development regulations causing future structures to be built with freeboard, i.e. above the current base flood elevation.

Estimating Potential Loss

Plan Update Notes

The 2004 plan had a method for estimating potential losses due to flooding using historical data from the NCDC. The method utilized in this update is based upon the same historical data updated to 2011, provided by NCDC.

Methodology

Damages due to one flooding event in the County have varied from no cost for damages to $25.0 million.

According to NCDC, estimated property damage in Meigs County attributable to flooding or flash floods over the period 1994 through 2011 is $52,394,000. Past losses provided in NCDC are used to estimate the potential for annual losses due to flooding.

Estimated Potential Dollar Losses

Since the total loss over these 17 years is $52,394,000, the average annual loss is $52,394,000 / 17 = $3,082,000.

Landslide Risk Assessment

Landslide Update

The discussion of landslide has been re-organized and rewritten; the Mitigation Core Group also reprioritized this hazard as their number two concern. In the previous plan, mine subsidence and landslide were discussed separately. In this updated plan, they are still discussed separately however landslides in Meigs County have become more of a concern mainly due to their increase occurrence. The Mitigation Core Group considers this hazard and its increase in occurrences directly correlated to the increased in flooding events throughout the County. According to the Soil Survey for Meigs County, the steep slopes and the hazard of erosion are the main limitations affecting land use in the County. Other limitations include slippage on hillsides, a high content of clay in the subsoil of the soils create slow permeability and a high potential for shrinking and swelling.

Hazard Profile – Landslide

Location

A landslide is a natural geologic process that has played a large part in shaping the landscape in southeast Ohio. Landslide is a general term for mass movement of soil, rock, or a combination of materials down a slope. A map that shows the potential areas where landslide are a greater risk is shown in Appendix IX and was created by EMA Director of the County. This map illustrates which areas within the County are at higher risk due to steeper slopes and soil conditions.

Extent

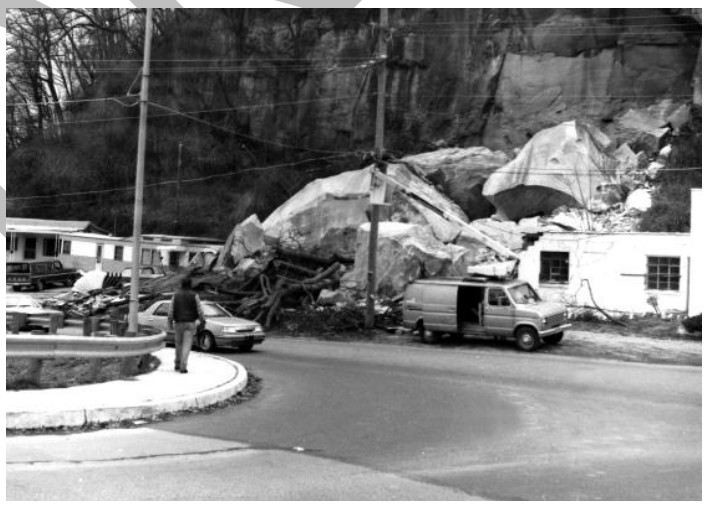


Figure 3: Rock fall in Pomeroy

(Soil Survey for Meigs County NRS USDA)

Landslide velocity can vary from rapid to slow and the amount of material moving in a landslide can range from a relatively small amount to a large amount. Landslides can include falling, sliding, or flowing of rocks and soil or a combination of these different types of motion. Landslides in Meigs County have reportedly involved a small amount of rocks tumbling down a hillside; a small amount means an amount sufficient to fill the shoulder of a road for a linear distance of about 10 feet with rock, but not enough to block the entire roadway.

Meigs County's topographic and soil conditions lend itself to increased landslides along with the fact that flooding is their number one hazard and these two events typically occur at the same time. Based on information received from the ODNR, there are several areas where repetitive slides exist in Meigs County. Most of the landslides are caused from mine drainage, where water is collecting in open pits and saturating the surrounding soils. Occasionally, isolated landslides occur which may block a few roadways with mud and debris. This debris may block traffic but typically does not damage the structure of the road itself. Therefore, the impact to infrastructure is low for landslide hazards.

Previous Occurrences

Historical information was not readily available from the Meigs County Soil and Water Conservation District (SWCD) or the ODNR regarding landslides. Therefore, frequency and probability of future occurrence could not be estimated. Working directly with the Mitigation Core Group, areas within the County that are prone to landslides have been delineated on the map provided within this section.

While the NCDC database does not report any damage due to landslide in Meigs County, representatives of the Meigs County Department of Emergency Management Agency identified two incidents of falling rock that have occurred within the past fifteen years.

Probability of Future Damaging Landslides

Given that no damage due to landslide has been recorded in Meigs County, the probability of a damaging landslide is close to zero. The probability of some rock falling from a steep slope, given that this occurred twice in the past 15 years, is 2/15 = 0.133 or about 13 percent.

Vulnerability Assessment – Landslide

Overview of Vulnerability

The County is located on steep slopes that pose a risk of damage due to landslide. A higher level of vulnerability is given to areas where there has been soil disturbance on steep slopes.

Potential Impact of Landslide

A landslide might cause a structure to collapse or might cause minor damages such as broken windows. A landslide might cause a roadway to be temporarily blocked. Landslides within Meigs County are exacerbated by flooding.

Identifying Structures

Plan Update Notes

The Meigs County Emergency Management Agency along with the Mitigation Core Group recognize the need to coordinate better on identification of landslide prone areas and to work with local jurisdictions on preventing future problems with these designated areas by evaluating various mitigation alternatives such as bank stabilization techniques as well as recognizing the limitations of those areas.

Exposure of Existing Buildings to Landslide Damages

All buildings located on or directly beneath steep slopes a susceptible to a landslide. Any building located near a location where the slope of a hill has been undercut is at an even greater chance of being subject to a landslide occurrence.

Exposure of Future Buildings to Landslide Damages

Future structures on or near steep slopes may be a risk of damage due to landslide. While the potential for damage due to landslide is currently very low in Meigs County, were development on steep slopes to disturb the land and vegetation to an unprecedented degree, the potential for damage due to landslide may increase.

Estimating Potential Loss

Plan Update Notes

The previous plan did not estimate potential loss due to landslide. The estimate of losses presented in this update is based on information from the Mitigation Core Group.

With Meigs County's population remaining stable, the potential for property damage will remain low. According to the ODNR, if the landowner building in known slide prone areas induces landslides in Meigs County, the landowner will not receive funding from ODNR for damages incurred. These landowners may come into financial hardship depending upon the amount of damage incurred. However, much of this issue can be mitigated by landowner education.

Methodology

This updated plan estimates potential annual loss due to landslide using NCDC data, which show a $0.00 loss due to landslide in Meigs County, Ohio.

Historical information was not readily available from the Meigs County Soil and Water Conservation District (SWCD) or the ODNR regarding landslides. Therefore, frequency and probability of future occurrence could not be estimated.

Estimated Potential Dollar Losses

Estimated potential dollar loss is based on previous losses and is $0.00.

Winter Storms Risk Assessment

Winter Storms Update

The list of previous occurrences of winter storms was updated for this 2011 plan update. Changes were made to descriptions of the location, extent, and probability of flooding in Meigs County; as well as this section being rewritten for greater clarity.

In this 2011 update, features of winter storms that may cause damage are treated separately; heavy snow or ice is discussed as one hazard because damage from either of these hazards is due to their weight on power lines and roofs. Damage caused by high winds, another potentially damaging feature of winter weather, is described in the section about severe storms.

Other than the reorganization of the presentation and re-writing for improved clarity, no changes have been made to the profile of winter storms.

Hazard Profile – Winter Storms

Location

Meigs County is located in the southeast portion of the state and is susceptible to winter storms, which encompass snow and ice. All of Meigs County is exposed to this hazard.

Extent

Because the area receives a moderate amount of snowfall and can be stricken by ice storms, all of the structures erected in the county are susceptible to damage if not designed to the proper snow loading parameters.

Anecdotal evidence indicates that ice storms in Gallia County can cause as much damage as traditional winter storms due to the ice built up on trees and utility wires. As recently as 2003, freezing rain resulted in the accumulation of 1to 2 inches of ice on power lines and tree limbs. Roads were blocked for several days.

Since 1994, there have been 26 recorded injuries and 0 recorded deaths due to winter storms. Because the number of winter events affecting Meigs County is relatively small but the intensity tends to be high, the potential for death and injury is moderate. As the population of the County continues to grow, as forecasted by the 2010 census, the more potential there is for injury and/or loss of life. One of the biggest problems associated with winter storms is the lack of public education and awareness. Citizens are not aware of the warnings and dangers associated with severe weather, such as driving on ice and snow and medical conditions relative to frost bite and hypothermia.

Previous Occurrences

According to the NCDC, there have been 21 winter storm events in Meigs County reported since 1994, with total property losses of $12.16 million and crop losses of $500,000. Since 1994 the average annual losses reported for the county have been approximately $1.1 million. This average includes the five years (1997, 1999-2002) in which the NCDC reported no property damage losses. The years 1994 and 2003 proved to be the most costly with losses totaling $11.3 million in property damage and $500,000 in crop damage from ice storms alone.

However, with the exception of the ice storm in February 2003, Meigs County has not suffered any property or crop damage since 1999 due to winter weather. Due to the intensity of the ice storms that hit the area, the susceptibility to property damage due to winter weather is moderate.

Probability of Future Winter Storms

Anecdotal evidence indicates that winter storms typically occur every year in Meigs County. The NCDC data supports this showing that there were two damaging ice storms and 19 damaging snow storms for a total of 21 damaging winter storms over the 17 years between 1994 and 2011. There were other snow storms or ice storms during this period for which no damages were reported. Thus, the average number of damaging winter storms in Meigs County is 1.2 storms per year. So the probability of the occurrence of a winter storms in Meigs County in any given year is 100 percent.

Vulnerability Assessment – Winter Storms

Overview of Vulnerability

The most vulnerable structures are those that were poorly built or are dilapidated. The weight of winter storms may lead to structural collapse or to minor damage. Some shed roofs that protect township and borough road maintenance or firefighting equipment have large span roofs that may collapse under the weight of especially winter storms although none have collapsed due to recent winter storms.

Potential Impact of Winter Storms

Vulnerability to the effects of winter storms on buildings is considered to be somewhat dependent on the age of a building because as building codes become more stringent, buildings are capable of supporting heavier loads and as building age, various factors may deteriorate their structural integrity. Vulnerability also depends upon the type of construction and the degree to which a structure has been maintained.

In Meigs County, accumulations of snow and/or ice during winter months are expected and normal. The most common detrimental effects of snow and/or ice are not collapsed

structures but traffic accidents and interruptions in power supply and communications services.

Identifying Structures

Plan Update Notes

In this 2011 update of the mitigation plan, structures identified as potentially vulnerable to damage from winter storms are structures older than 50 years that may have deteriorated over time. Data on the age of structures was not available when the previous version of this plan was prepared, so an analysis of vulnerability was not completed.

Exposure of Existing Buildings to Winter Storms

Because the area receives a moderate amount of snowfall and can be stricken by ice storms, all of the structures erected in the county are susceptible to damage if not designed to the proper snow loading parameters.

Exposure of Future Buildings to Winter Storms

All structures and infrastructure in Meigs County will be exposed to heavy snow and ice. Yet, because all of Meigs County has adopted and enforced the 2009 International Building Code (IBC) and IRC, building yet to be constructed will be able to withstand the weight of winter storms.

Estimating Potential Loss

Plan Update Notes

The previous plan did not estimate potential loss from winter storms. For this plan, potential loss is estimated using NCDC data.

Methodology

According to NCDC, estimated property damage in Meigs County attributable to major heavy snow and/or ice storms over the period 1994 through 2011 is $12,160,000. Past losses provided in NCDC are used to estimate the potential for annual losses due to winter storms.

Estimated Potential Dollar Losses

Since the total loss over these 17 years is $12,160,000, the average annual loss is $12,160,000 / 17 = $715,294.

Severe Storms Risk Assessment

Severe Storms Update

The discussion about the severe storms hazard has been updated. The list of previous occurrences for severe storms was updated for the 2011 plan update. No substantive changes were made to the descriptions of the location, extent, and probability of severe storms occurring in Meigs County; however this section has been rewritten for greater clarity.

In this update, extent of tornadoes is described using the Enhanced Fujita Scale, which has been used since 2007. New data available through NCDC were incorporated into the hazard profile section. The new data that was incorporated from the NCDC allowed for an estimated potential loss section, which was not available in the old plan.

Hazard Profile – Severe Storms

Location

Tornadoes and potentially damaging high winds occur throughout Ohio. A Severe Storms may be experienced at any location in Meigs County. Because severe storms are random in nature, the entire county population is susceptible and should be prepared. All citizens should become familiar with locations of shelters in which they can seek safety in the event of severe weather.

Since tornadoes typically present localized hazards, several homes may need repair, but typically homeowners will have insurance to cover these expenses and will not suffer any long term financial hardship. The populations located in mobile home parks and campgrounds should take particular care to seek adequate permanent shelter with approaching severe weather.

Extent

Severe storms occur throughout the State of Ohio. All of Meigs County is exposed to the hazards associated with severe storms. Severe storms can occur throughout the year. These storms can contain hail, thunder and lighting, tornadoes, and high wind.

High winds from severe storms that move in a straight line can cause extensive damage, much like a tornado. High winds are defined as sustained wind speeds of 40 mph or greater lasting for 1 hour or more, or winds of 58 mph or greater for any duration.

Since 2007 an Enhanced Fujita Scale (EF Scale) has been used in the United States to describe the magnitude of tornadoes. Prior to 2007, the Fujita Scale was commonly used to describe magnitude. This scale is based on new information about the relationship between wind speed given in miles per hour (mph) and corresponding damages. The EF

Scale categorized tornadoes from EF0 to EF5 with EF0 being the most commonly occurring type of tornado. The most damaging and deadliest tornado recorded in Meigs County was a category 3 or EF3 tornado. Table 10 shows the relationship between the Fujita and the Enhanced Fujita Scales.

Table 10: Enhanced Fujita Scale

Fujita Scale		Enhanced Fujita Scale	
F Number	3-Second Gust (mph)	EF Number	3-Second Gust (mph)
0	45–78	0	65–85
1	79–117	1	86–110
2	118–161	2	111–135
3	162–209	3	136–165
4	210–261	4	166–200
5	262–317	5	Over 200

Table 11 provides a description of the types of damages that can be expected with each category of tornado.

Table 11: Expected Tornado Damages

F or EF Scale	Examples of Possible Damage
0	Light damage. Some damage to chimneys; broken tree branches; shallow-rooted trees pushed over; damage to sign boards.
1	Moderate damage. Surface peeled off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off roads.
2	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated.
3	Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; cars lifted off ground and thrown.
4	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
5	Incredible damage. Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 100 yards; trees debarked.

While tornado winds rotate, high winds that move in a straight line can also be damaging. High winds are defined as sustained wind speeds of 40 mph or greater lasting for 1 hour or more, or winds of 58 mph or greater for any duration.

Previous Occurrences

Meigs County is highly susceptible to severe storms, which encompasses thunderstorms, tornadoes, high winds, and hail.

According to the NCDC, there have been 101 severe storm events in Meigs County reported since 1950, with total property losses of $3.822 million. This data for severe storms is mostly represented by costly tornadoes events. This data demonstrates that severe storms, tornadoes are extremely costly to the County.

Probability of Future Tornadoes and High Winds

There were 59 thunder storm events in Meigs County over 36 years between 1975 and 2011. Thus the probability of a high wind event in the County in any given year is estimated to be 59/36 =1.64 or 100 percent because 59/36 is greater than 1.

Only four damaging tornadoes were reported by NCDC for Meigs County for the entire 1950–2011 period. Thus the calculated probability of a damaging tornado in the County in any given year is 4/61 = 0.066, or 6.6 percent.

The NCDC data lists four high wind events between 1994 and 2011 resulting in property damage is $625,000 in damages. Wind data for the 17-year period 1994 through 2011 are used in this plan to estimate probability of a damaging wind event. Thus the calculated probability of a damaging high winds in the County in any given year is 4/17 = .235, or 23.5 percent.

A total of 34 hail events occurred in the County over 61 years between 1950 and 2011. Thus the probability of a high wind event in the County in any given year is estimated to be 34/61 = 0.557 or 55.7 percent.

Vulnerability Assessment – Severe Storms

Overview of Vulnerability

For severe storms, aged and dilapidated structures or structures not built to applicable building codes are more susceptible to damage. Mobile homes and campgrounds are especially susceptible to damage due to severe storms. Strong winds can rip roofs off of any dilapidated structures and overturn mobile homes. Past experience with tornadoes in Meigs County shows that death and injury are indeed possibilities.

Potential Impact of Severe Storms

Vulnerability to the effects of severe storms is somewhat dependent upon the age of a structure because as building codes become more stringent, buildings are capable of enduring greater wind forces.

In Meigs County, high winds occur annually. The most common detrimental effects are interruptions in power supply and communications services due to downed wires and blocked roadways due to downed trees.

Identifying Structures

Plan Update Note

The methodology for identifying structures potentially at risk of damage due to severe storms is the same as the methodology used for identify structures potentially at risk of damage due to winter storms.

Exposure of Existing Buildings to Severe Storms

All structures and infrastructure might be exposed to the effects of a tornado or other high winds. Depending upon the severity of a severe storm, any existing structures might be damaged to some extent. However, in Meigs County, there are 4,317 structures that were built before 1960. Thus the percentage of existing buildings considered at particular risk of damage due to severe storms is 39.6 percent. The age of structures indicates which structures had building codes in place when built and the amount of potential deterioration it may have. For this example, structures that are 50-years or older are expected to be at a higher risk than structures less than 50-years old.

Exposure of Future Buildings to Severe Storms

Any future structures might be exposed to severe storms as this hazard does not only occur in specific locations. However, future buildings will be somewhat protected from the effects of severe storms as they will meet the most current state building code requirements for bracing and roof design.

Estimating Potential Loss

Plan Update Notes

In the previous plan, estimate potential loss due to severe storms was not evaluated. In this update, NCDC data was used to estimate potential loss.

Methodology

According to the NCDC, estimated property damage in Meigs County attributable to the four hazards associated with severe storms are thunderstorms, hail, high winds, and tornadoes account for $3,822,000 in damage. Damage attributable to thunderstorms from 1975 through 2011 is $715,000. Damage attributable to hail from 1950 through 2011 is $57,000. Damage attributable to high winds from 1993 through 2011 is $625,000. Damage attributable to tornadoes from 1950 through 2011 is $2,425,000. This data is used to estimate potential annual dollar losses due to severe storms.

Estimated Potential Dollar Losses

Due to severe storms having four combined hazards that have been historically documented over different periods of time, potential dollar losses from severe storms will be broken down off each hazard. The total loss for thunderstorms over 36 years is $715,000, the average annual loss is $715,000 / 36 = $19,861. The total loss for hail over 61 years is $57,000, the average annual loss is $57,000 / 61 = $934. The total loss for high winds over 18 years is $625,000, the average annual loss is $625,000 / 18 = $34,722. The total loss for tornadoes over 61 years is $2,426,000, the average annual loss is $2,425,000 / 61 = $39,754. Therefore, to total annual estimated potential dollar losses due to severe storms is $95,271.

Mine Subsidence Risk Assessment

Mine Subsidence Update

The discussion of mine subsidence has been reorganized and re-written, but findings are not different from findings presented in the previous plan.

Mine subsidence, like an earthquake, is a geologic hazard that can strike with little or no warning and can result in very costly damage. However, unlike an earthquake, mine subsidence generally affects very few people. But, if a mine collapses under an interstate highway, many lives and industries are affected. Many underground mines and strip mines are located throughout Meigs County. As a result, the ODNR is part of an active reclamation program throughout the county. The discussion was validated and updated through a review of currently available data.

Hazard Profile – Mine Subsidence

Location

Mine subsidence has the potential to affect utilities, transportation, and all other forms of infrastructure, whether public or private constructed in and around underground mine locations. Since mine subsidence is a site-specific hazard, only infrastructure in areas susceptible to slides or subsidence is at risk.

Locations of underground and strip mines have been mapped throughout Meigs County and are shown on the Abandoned Underground Mines Map and the Surface Mining Map in Appendix X. The infrastructure located around these mine sites will be the most susceptible to any damage.

Extent

Based on information received from the ODNR, mine subsidence is not a major issue throughout Meigs County. Some old air shafts may open up, but typically not creating major subsidence problems. Some residents within Meigs County live above and below the coal seams associated with the old mines and do not suffer hardship from these mines. Therefore, the impact to infrastructure is low for mine subsidence. However, according to the Mitigation Core Group, the northeast portion of the County has had problems relating to subsidence due to Southern Ohio Coal using a long wall which removes all the coal, causing instability. If residents were to build in the area without knowing the dangers of mine subsidence, their property could become compromised.

Previous Occurrences

Since mine subsidence is a site specific hazard, only those populations located in areas of underground and strip mines will be impacted. The Villages of Pomeroy and Syracuse

have been constructed in areas where many underground mines exist. These populations are more susceptible to damage from mine subsidence and collapse than the other incorporated jurisdictions located in the county.

Probability of Future Damaging Mine Subsidence

Because there are no known occurrences of mine subsidence in the County, the probability of mine subsidence occurring in Meigs County is estimated to be less than 1 percent per year.

Vulnerability Assessment – Mine Subsidence

Overview of Vulnerability

This discussion has been reorganized and re-written since the previous plan was developed, but conclusions are not different from those presented in the previous plan. New data about degree to which specific locations within Meigs County have the potential for mine subsidence was the same as the previous plan.

Potential Impact of Mine Subsidence

Mine subsidence can affect the movement of surface water as well as of groundwater and can lead to contamination of water. Mine subsidence may lead to damage of roads or utility lines.

According to ODNR, structural damages due to subsidence range from slight damage requiring cosmetic repairs to severe damage requiring foundation replacement or other high cost repairs. However, because there is no history of mine subsidence in Meigs County, no impacts to structures or infrastructure are anticipated.

Identifying Structures

Plan Update Notes

In the 2011 update, the same data from 2004 was leveraged to determine the susceptibility to mine subsidence.

Exposure of Existing Buildings to Mine Subsidence Damages

The Villages of Pomeroy and Syracuse have been constructed in areas where many underground mines exist. Since these populations are more concentrated than in the townships, these populations are more susceptible to damage from mine subsidence and collapse than the other jurisdictions located in the county.

Exposure of Future Buildings to Mine Subsidence Damages

Future buildings that will be constructed in the Pomeroy and Syracuse will be at risk of damage due to mine subsidence.

Estimating Potential Loss

Plan Update Notes

The previous plan did not estimate potential loss due to mine subsidence. Currently, no records show damages due to mine subsidence.

Methodology

The estimate of potential dollar losses is based on historical data which shows show zero losses in Meigs County for the 51-year period from 1960 through 2011.

Estimated Potential Dollar Losses

Estimate potential annual dollar loss in Meigs County due to mine subsidence is $0.00.

Earthquake Risk Assessment

Earthquake Update

For the 2011 plan update, information about earthquake was re-written to improve clarity and so that the presentation is organized as it is for other hazards. The discussion was validated and updated through a review of currently available data but conclusions have not changed.

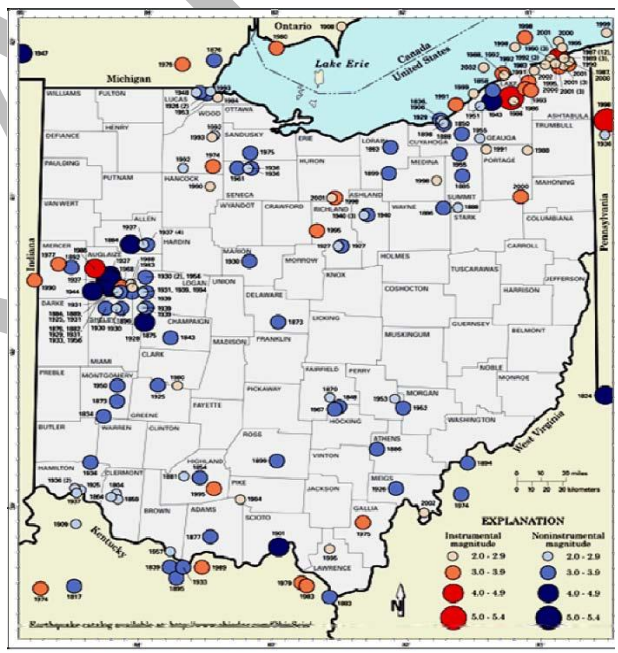
Hazard Profile – Earthquake

Location

As seen in the hazard profile and as determined by the Core Group, Meigs County has a very low risk of incurring damage from earthquakes. The county has had two epicenters within its boundaries; one in 1926 and one in 2002.

Extent

Although Ohio is not thought of as an earthquake-prone state, at least 160 earthquakes with epicenters in Ohio have been felt since 1776. Most have been felt only locally and have caused no damage or injuries. The largest historic earthquake in the state occurred in 1937. This event had an estimated magnitude of 5.4 and caused considerable damage in the town of Anna and in several other western Ohio communities. Ohio is on the periphery of the New Madrid Seismic Zone, an area in Missouri and adjacent states that was the site of the largest earthquake sequence to occur in historical times in the continental United States. In 1980, an earthquake with a magnitude of 5.3 on the Richter Scale and centered in Sharpsburg, Kentucky, was strongly felt throughout Ohio and caused minor damage in communities along the Ohio River in southwestern Ohio. In 1998, a 5.2 magnitude earthquake occurred in western Pennsylvania and caused some damage in the epicentral area. Two regions of the state have been identified as susceptible to seismic activity, however neither Meigs County nor its contiguous counties are included in these regions.



Epicenters of past earthquakes in Ohio.

There are two different ways of describing the magnitude of an earthquake. One way measures peak ground acceleration. Peak ground acceleration is the maximum horizontal ground acceleration measured in centimeters per second per second (cm/sec^2). Peak ground acceleration can range from zero for an earthquake that is noticed by very few people to 350, which would a catastrophic event. A peak ground acceleration of 10 cm/sec^2 means that the shaking is equivalent to about 1 percent of the acceleration due to gravity. Generally, ground acceleration must exceed 15 cm/sec^2 for significant damage to occur. According to the U.S. Geological Survey (USGS) Earthquake Hazard Program and as shown in Figure 4, peak ground acceleration in Meigs County during an earthquake would measure between 4 and 6 cm/sec^2, as it is located to the north of Charleston where the colors in the figure change from light blue to gray.

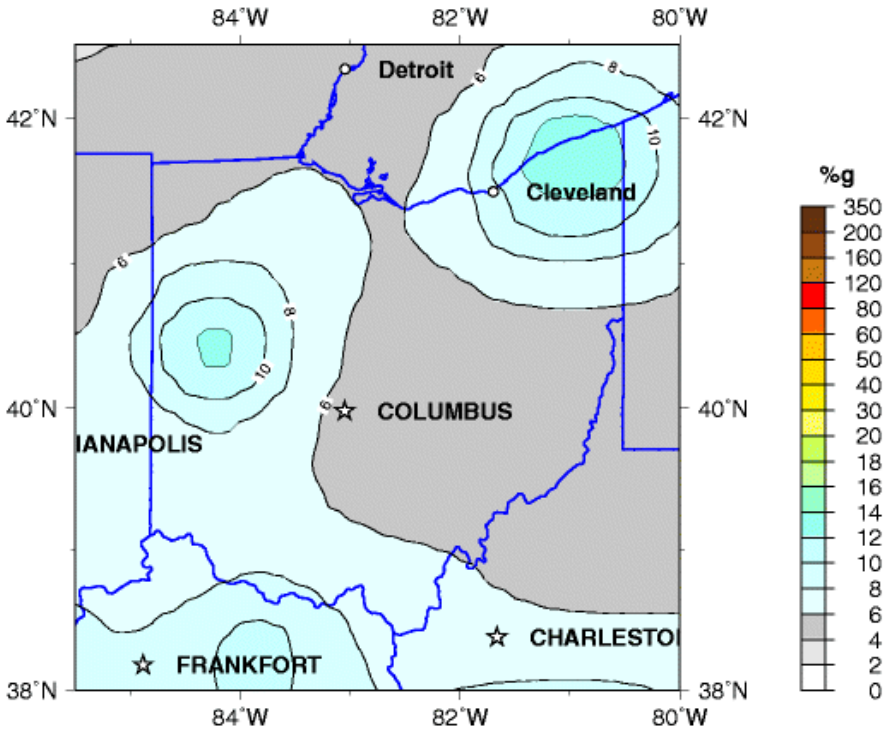


Figure 4: USGS Seismic Hazard Map – Ohio

Another way of measuring the intensity of an earthquake is the Modified Mercalli Intensity Scale. Measures on this scale range from 1, an earthquake that is not generally noticeable, to 12, an earthquake that causes complete destruction. Recent earthquakes in Pennsylvania have been measured from 4 to 6 on the Modified Mercalli Intensity Scale. On the Modified Mercalli Intensity Scale:

- A measure of 4 is a moderate earthquake that is felt indoors by many people and rattles dishes, windows, and doors.

- A measure of 5 is a rather strong earthquake that is felt outdoors by most people and causes some dishes and windows to break.
- A measure of 6 is a strong earthquake that frightens people, causes windows, dishes, and glassware to break, and overturns or moves some heavy furniture but that causes slight structural damage.

Previous Occurrences

The USGS data show no damaging earthquakes in Meigs County since 1776.

Due to the infrequency of earthquakes occurring in Meigs County, the impact on the County's infrastructure is quite low. The two quakes that were recorded registered between 3.0 and 3.9, and 2.0 and 2.9 on the Richter scale, respectively. An earthquake of this magnitude is not expected to cause damage to infrastructure.

Probability of Future Damaging Earthquakes

Given that USGS lists zero damaging earthquakes occurring between 1776 and 2007, one might conclude that the probability of a damaging earthquake is less than 1 percent in any given year.

The level of damage expected from an earthquake in Meigs County is very low. It would be expected to be on the order of a 3.0-3.9 magnitude quake, or lower, as registered on the Richter scale. A quake of this magnitude would be felt by most people and include some breakage of dishes, windows and plasters.

For this plan, the estimated probability of a damaging earthquake affecting Meigs County in any given year is estimated at less than 1 percent per year.

Vulnerability Assessment – Earthquake

Overview of Vulnerability

All structures and infrastructure in Meigs County are equally at risk of experiencing an earthquake. However, in a mild earthquake of the magnitude typically experienced in Ohio, no structural damage is anticipated. In other cases, damages are expected to be limited and examples of anticipated damages are broken dishes and windows and toppled file cabinets.

Potential Impact of Earthquake

Based on historical occurrences of earthquakes in the County, the odds of an earthquake striking Meigs County in any given year would be less than 1% (0.01). Within the past 235 years, there have been two epicenters recorded in Meigs County. The time lapse between the first and second epicenter was 76 years. The first occurred in 1926 and the

second occurred in 2002. However, scientists speculate that the New Madrid Fault line, which runs in close proximity to the State of Ohio, has a high probably of activity within the next 50 years.

A very large earthquake affecting Meigs County might cause structural damage in dilapidated structures or structures that do not meet current building codes. Roads and bridges might be damaged and trees and power lines might fall.

Thus the impact of an earthquake might range from negligible to catastrophic. Based on 300 years' experience in Meigs County, there will most likely be no damage or very slight damage.

Identifying Structures

Plan Update Notes

Structures identified as potentially at risk of damage due to an earthquake are older structures as assumed in the previous plan.

Exposure of Existing Buildings to Earthquake Damages

All existing buildings have the potential to experience an earthquake. Given no history of damage in Meigs County due to earthquake, damages are estimated to be limited to the more dilapidated structures and structures with unreinforced masonry.

Exposure of Future Buildings to Earthquake Damages

All future structures will also have the potential to experience an earthquake. However, some of the jurisdictions have adopted building codes to mitigate the potential for damage from an earthquake.

Estimating Potential Loss

Plan Update Notes

Potential loss estimates for damage due to earthquake have not changed from the previous plan and are very low.

Methodology

USGS data is used to identify losses due to earthquake over the 235 year period from 1776 to 2007, which total $0.00.

Estimated Potential Dollar Losses

Estimated potential dollar losses due to the type of very small earthquake anticipated for Meigs County are $0.00.

Drought Risk Assessment

Drought Update

The assessment of risk of damage due to drought has been re-written for the 2011 plan. This section has been written to follow the same format as other sections for increased clarity.

Hazard Profile – Drought

Location

During an average year in Ohio, an estimated 15,000 wildfires and natural fuel fires occur. Typically, a reported 1,000 wild land fires bum an average between 4,000 to 6,000 acres in Ohio each year. Due to the non-site specific nature of this hazard, the best way to deal with preparing for future events is to consider historical occurrences.

Extent

According to the NCDC, there have been no recorded wild and forest fires in Meigs County from 1950 to 2004.

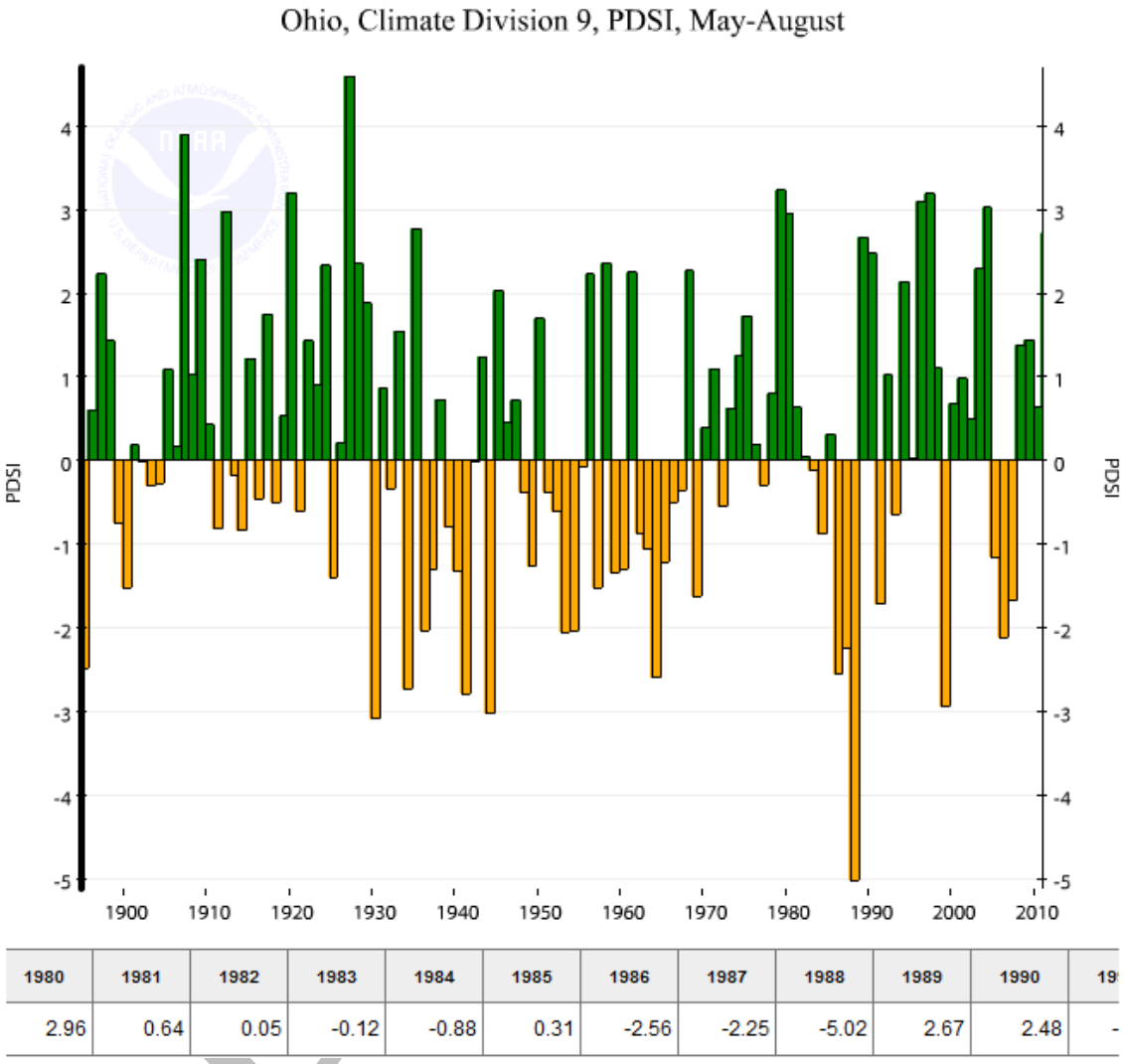
The Palmer Drought Severity Index is used to describe abnormally wet to abnormally dry conditions. Zero represents normal rainfall and temperature conditions; drought condition indices are described in Table 12.

Table 12: Palmer Drought Severity Index

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

Data provided by NCDC show that drought conditions in Ohio Climate Division 9 have resulted in Palmer Drought Severity Index level as low as -5.02 for a four month period by in 1988. Figure 5, shows the PDSI for a four month period May-August between

1895-2011. Ohio has a generally temperate climate and infrequently has a severe drought experience over an extended period of time. Over the summer months when drought conditions are most severe and would have the greatest effect on crops, region 9 in Ohio where Meigs County is located, has only experienced 12 moderate drought conditions, 3 severe drought conditions and 1 of which was categorized as extreme drought.



1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	19
2.96	0.64	0.05	-0.12	-0.88	0.31	-2.56	-2.25	-5.02	2.67	2.48	-

Figure 5: Summer PDSI in Climate Division 9 for the past 115 years

Previous Occurrences

According to the NCDC, Meigs County has experienced three severe droughts of significance in the past 115 years. Drought conditions existed in Meigs County in 1999 from May through October, but only show up as a 2.94 on the PDSI, which classifies the event as a moderate drought. Based on historical information, Meigs County can expect to endure on average a moderate drought every ten years. In 2007, according to the National Resource Inventory, 52% of the land in the County was crop land and 34% was pasture land. The Core Group realized that, unlike other hazards such as flooding or

tornadoes, there is little mitigation that can be preplanned to reduce the amount of agricultural damage caused by a drought.

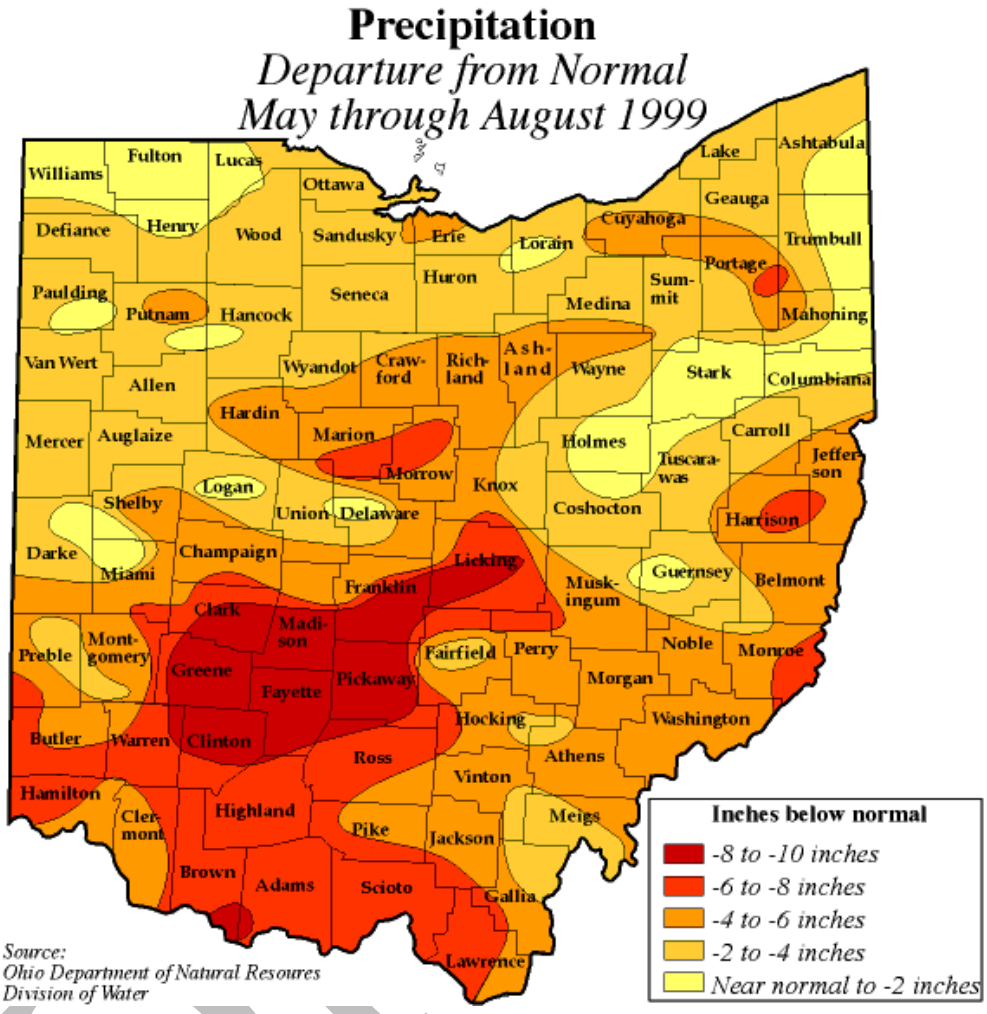


Figure 6: Precipitation for the summer of 1999

Probability of Future Damaging Drought

Having experienced 27 periods of at least mild drought conditions over the course of 115 years from 1896 to 2011, probability of a mild drought in any given year is estimated to be 27/115 = 0.23 or 23 percent. By looking at the 4 events of severe drought conditions over the course of 115 years, probability of a severe drought occurring in any given year is estimated to be 3/115 = 0.026 or 2.6 percent.

However, not all drought periods lasted for a full year. Figure 6 is from the National Drought Mitigation Center at the University of Nebraska Lincoln shows the locations of severe drought conditions between 1895 and 1995. It also shows that severe and extreme drought occurs in the Meigs County area in south Ohio between 5 and 9.99 percent of the

time. For the purpose of this plan, 5 to 9.99 percent chance will be used to evaluate this hazard.

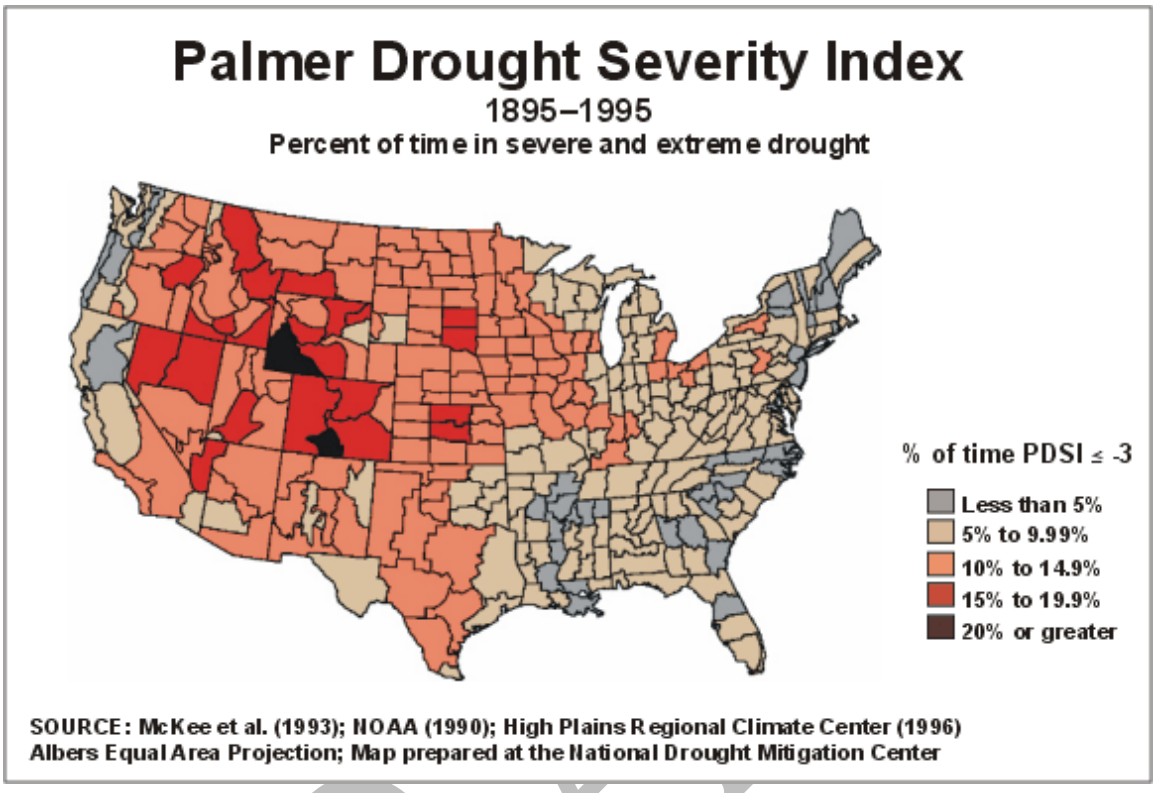


Figure 7: Percent of Time in Severe or Extreme Drought

Vulnerability Assessment – Drought

Overview of Vulnerability

A drought in Meigs County can have significant detrimental effect on the domestic water supply, especially for well-water, agriculture, and water-dependent recreational activities. Economic effects in Meigs County would include crop loss. No structural damage due to drought is anticipated in Meigs County.

Potential Impact of Drought

Negative impacts of drought would be experienced by agricultural interests, and the community would need to reduce its usage of water.

No damage to structures or infrastructure is anticipated due to drought.

Identifying Structures

No structures would experience damage due to drought.

Plan Update Notes

Since no structures would experience damage due to drought, this updated plan, like the previous plan, does not identify existing or future buildings at risk of loss due to drought.

Exposure of Existing Buildings to Damages Due to Drought

No existing buildings are exposed to damage due to drought.

Exposure of Future Buildings to Damages Due to Drought

No future buildings will be exposed to damage due to drought.

Estimating Potential Loss

Plan Update Notes

There is no change in this updated plan in the estimate of loss due to drought.

Methodology

Estimated potential dollar loss due to drought is based on damages provided from NCDC and USGS, which is $0.

Estimated Potential Dollar Losses

The estimate potential dollar loss annually in Meigs County due to structural damage due to drought is $0.

Summary of Risk Assessment Findings

The purpose of completing a rigorous assessment of risk is to inform decision-making about the mitigation actions that are most appropriate for the County. Table 13 shows that Meigs County can expect the greatest losses from flooding. Annualized anticipated losses due to flooding are more than three times the losses anticipated due to all hazards combined. Thus, the majority of actions proposed in this mitigation plan address potential damage due to flooding.

Table 13: Risk Assessment Findings

Hazard	Vulnerable Locations	Annual Probability of Occurrence in Meigs County	Estimated Annual Dollar Loss
Flood	Special Flood Hazard Areas	100%	$3,082,000
Landslide	Localized	13%	$0.00
Winter Storms	Entire County	100%	$715,294
Severe storms	Entire County	100%	$95,271
Mine Subsidence	Localized	<1%	$0.00
Earthquake	Entire County	<1%	$0.00
Drought	Entire County	5-9.9%	$0.00

The conclusion of the risk assessment is that the greatest damages attributable to a single hazard occurring in Meigs County can be expected to be caused by flooding. Since landslides do not have any historical damages record but have anecdotal suggests that there is potential for high losses, landslides should remain a priority for mitigation.

Thus, the hazards that will receive immediate attention and the greatest number of County resources will be flooding and landslides. Fewer resources will be directed toward reducing potential damages due to winter storms, and almost no resources will be used to mitigate the negative effects of the other hazards identified.

Mitigation Goals

Mitigation Goals Update

Goals express aspirations about long-term conditions rather than specific measures. The goals expressed in this plan regarding natural hazards are basically the goals that were established when the plan was initially developed for adoption in 2004, but the presentation of goals, objectives, and actions has been re-written.

Mitigation Planning Principles

Goals were needed for this planning effort to guide the review of the possible mitigation measures. The recommended actions of this plan are consistent with what is appropriate for Meigs County. Mitigation goals reflected community priorities and should be consistent with other plans for the county.

After the determination of the draft problem statements, the Mitigation Core Group agreed to goals that they wanted to achieve for each hazard. These goals are listed in the following section.

Goals

- **Flooding, Overall Goal:** To save lives and property, reduce damage and to increase citizens' awareness of the hazards associated with flooding.
- **Landslides, Overall Goal:** To educate the county's citizens and increase awareness of landslides and to reduce property damage caused by landslides.
- **Severe Storms – Winter, Overall Goal:** To educate the county's citizens to increase awareness of winter storms, to increase coordination between the county and critical utilities and to reduce property damage caused by severe weather.
- **Severe Storms - Thunderstorms, Lightning, Hail, Overall Goal:** To educate the county's citizens to increase awareness of severe storms, to improve the warning system throughout the county and to reduce property damage caused by severe weather.
- **Mine Subsidence:** To educate the county's citizens and increase awareness of mine subsidence, to have existing mine locations mapped by the State and to reduce property damage caused by landslides resulting from mine subsidence.
- **Earthquakes, Overall Goal:** To increase awareness of the hazards of an earthquake event and to establish administrative controls that addresses earthquakes during construction.
- **Droughts (Severe), Overall Goal:** To establish administrative controls and to reduce potential damage through pre-planning.

Alternative Mitigation Actions

Mitigation Alternatives Update

Actions that were proposed in the previous mitigation plan were reviewed by the Meigs County EMA Director and members of the Mitigation Core Group to determine their status. These actions are recorded in this updated plan as having been completed, deleted, deferred, or ongoing.

These actions were part of the review of range of actions suggested for inclusion in this updated plan. Many of the actions proposed by the previous version of the mitigation plan are again proposed for implementation.

Review of Previously Proposed Mitigation Actions

Table 14 lists the 27 mitigation actions that were proposed in the previous version of the Meigs County mitigation plan that relate to natural hazards. Table 14 indicates the status of actions as completed, deleted, deferred, or ongoing.

Table 14: Status of Previously Proposed Mitigation Actions

Hazard	Action Proposed in Previous Mitigation Plan	Status of Action (Completed, Deleted, Deferred, Ongoing)
Flooding	Provide public access messages for broadcasting over all TV stations (Emergency Access System).	Code Red-Reverse 911 – Huntington Station-Ongoing
Flooding	Obtain portable light stands and generators for extended power outages.	Ongoing-have obtained several generators
Flooding	Construct safe shelters on high ground in areas above the floodplains for residents in low lying areas to seek safety in the event of a flood.	Ongoing-re-evaluating shelter locations
Flooding	Provide an alternate power source for wastewater treatment plants and lift stations to avoid sanitary sewers back-ups.	Ongoing
Flooding	Develop and provide outreach program for County residents and those in the sensitive/special needs population covering the dangers associated with flooding.	Deferred
Flooding	Acquire more squads and trained personnel for quicker response and more areas covered.	Deferred
Flooding	Dredge and clear streams and drainage channels to increase flow capacity.	Deferred
Flooding	Remove existing structures in floodplains that have been identified as repetitive loss structures according to FEMA.	Village of Rutland-contact Ohio EMA for more information

Hazard	Action Proposed in Previous Mitigation Plan	Status of Action (Completed, Deleted, Deferred, Ongoing)
Flooding	Modify undersized channels and sewers to increase capacity to alleviate some of the water back up.	Ongoing-Pomeroy critical need
Flooding	Acquire loudspeakers and bull horns for better communication	Deleted
Flooding	Obtaining a bucket truck, shredders, rubber tire end loaders, chain saws, and a vacuum truck, including fuel and spare parts, would speed up the post-disaster clean-up process.	Deferred
Flooding	Acquire back-up generators, for those sensitive populations and critical facilities.	Ongoing
Flooding	Acquire an interoperable warning system for campgrounds and rural locations.	Code Red (Reversed 911)
Flooding	Provide public education of floodplain regulations for new construction through brochures distributed county-wide.	Ongoing
Landslide	Obtain a bucket truck, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post-disaster cleanup process.	Deferred
Landslide	Provide training for personnel who are to be equipment operators throughout the County to educate them on the safe operation of heavy equipment in landslide areas.	Deferred
Landslide	Support pre-designated crews for clean up throughout the County in case of a landslide event.	Deferred
Landslide	Obtain a drilling machine and pile driver to mitigate continued threat of landslides.	Deferred
Landslide	Acquire more squads and trained personnel for quicker response and more areas covered.	Deferred
Landslide	Develop and provide outreach program for County residents and those in the sensitive/special needs population covering the dangers associated with landslides, including flash flooding over roadways, as well as where to go in the event of a flood (i.e. shelter locations).	Ongoing
Winter Storms and Severe Storms	Acquire more squads and trained personnel for quicker response and more areas covered.	Deferred
Winter Storms and Severe Storms	Develop and provide outreach program for County residents and those in the sensitive/special needs population covering the dangers associated with winter storms, including where to go in the event of a winter storm (i.e. shelter locations	Deferred
Winter Storms and Severe Storms	Construct designated safe shelters that would provide protection from severe weather throughout the County.	Ongoing

Hazard	Action Proposed in Previous Mitigation Plan	Status of Action (Completed, Deleted, Deferred, Ongoing)
Winter Storms and Severe Storms	Develop a tree maintenance program to prune or remove those trees recognized to be hazards, including tree removal equipment, training for operators, and fuel and maintenance supplies for equipment.	Ongoing
Winter Storms and Severe Storms	Acquire back-up generators, for those sensitive populations and critical facilities that must have continuous power to preserve and protect human health.	Ongoing
Winter Storms and Severe Storms	Develop and provide public education flyer to distribute to County residents covering dangers of severe storms and how to be prepared for an event, such as having a disaster family plan in place and having a disaster supply kit on hand.	Ongoing
Winter Storms and Severe Storms	Provide public access messages for broadcasting over all TV stations (Emergency Access System).	Code Red (Reverse 911)
Winter Storms and Severe Storms	Install lightning protection at critical communication centers to maintain emergency communications during severe storm events.	Ongoing
Winter Storms and Severe Storms	Obtain portable light stands and generators for these situations for extended power outages.	Ongoing
Winter Storms and Severe Storms	Provide post-hazard mitigation plan training for emergency staff and key personnel throughout the County to educate them on emergency preparedness and the purposes and goals of the County's All Natural Hazard Mitigation Plan.	Ongoing
Winter Storms and Severe Storms	Install an interoperable warning system for campgrounds and rural locations to warn those people outdoors of approaching severe weather so that they may seek safety.	Reverse 911 (Code Red)
Winter Storms and Severe Storms	Acquire more squads and trained personnel for quicker response and more areas covered.	Deferred
Winter Storms and Severe Storms	Develop and provide public education flyer to distribute to County residents covering the use of lightning rods and the benefits of installation.	Ongoing
Winter Storms and Severe Storms	Develop a tree maintenance program to prune or remove those trees recognized to be hazards, including tree removal equipment, training for operators, and fuel and maintenance supplies for equipment.	Ongoing
Winter Storms and Severe Storms	Provide NOAA radios for every household and educate residents on uses of the radios for receipt of potential lifesaving information in the event of severe weather	Deleted

Hazard	Action Proposed in Previous Mitigation Plan	Status of Action (Completed, Deleted, Deferred, Ongoing)
Winter Storms and Severe Storms	Construct concrete safe rooms in new and existing homes, buildings and shelter areas in other vulnerable public areas.	Ongoing
Winter Storms and Severe Storms	Obtain a bucket truck, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post-disaster cleanup process.	Deferred
Earthquakes	Modify critical infrastructure systems such as water plants within the County to make them earthquake-proof.	Deferred
Earthquakes	Interconnect existing water systems to provide an alternate water source if needed.	Ongoing- A water vulnerability study was done. "Meigs County Vulnerability and Needs Assessment, Water Systems at Meigs County, 2010"
Earthquakes	Obtain a bucket truck, track hoe, shredders, rubber tire end loaders, chain saws, and a vacuum truck, including fuel and spare parts, would speed up the post-disaster clean-up process.	Deferred
Earthquakes	Acquire more squads and trained personnel for quicker response and more areas covered.	Deferred
Earthquakes	Develop and enforce appropriate building codes for structures to be constructed in seismic areas.	Deferred
Droughts	Interconnect existing water systems to provide an alternate water source if needed.	Ongoing
Droughts	Develop and enforce water use contingency plans.	Completed –see Water Vulnerability Study 2010
Droughts	Acquire more squads and trained personnel for quicker response and more areas covered.	Deferred
Droughts	Provide additional dry hydrants throughout the County that do not depend on a water source for operability.	Ongoing

Comprehensive Range of Actions for Each Hazard

The following list of mitigation alternatives were approved by the Mitigation Core Group and by participating jurisdictions and considered for inclusion in this plan. Participating jurisdictions evaluated the 2004 Mitigation Plan to determine if the action items were still valid as well as if any corrections, additions or completions of the potential mitigation actions needed to be captured as part of the Mitigation Plan update. Actions in this list are not necessarily proposed for implementation; the purpose of this list is to display the

types of actions considered by the Mitigation Core Group and participating jurisdictions during the planning process.

Range of Alternatives Considered for Inclusion in the Plan

Each of the five participating communities was required to select a mitigation alternative or alternatives for their community to support. Individual communities are responsible for implementing these activities. The alternatives chosen by each community are as follows:

Pomeroy

- **Flooding:** Pomeroy lacks the mechanical equipment necessary for disaster clean up. The County feels that obtaining a truck bucket, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post disaster cleanup process.
- **Winter Storms:** An alternative power source should be provided, such as back-up generators, for those sensitive populations and critical facilities that much have continuous power to preserve and protect human health.
- **Severe Storms:** Pomeroy's critical communication centers are vulnerable to lightning strikes during storm events. The County wants to install lightning protection on these centers to maintain emergency communications during severe storm events.
- **Landslides:** There is a need to develop and provide an outreach program for Meigs County residents and those in sensitive/special needs populations covering the dangers associated with landslides, including flash flooding over roadways, as well as where to go in the event of a flood (Le. shelter locations).
- **Mine Subsidence:** There is a need to develop and provide public education materials to distribute to County residents covering the locations of old mines and the hazards associated with them.
- **Earthquakes:** Many of the County's critical infrastructure systems (i.e. water plant) have not been constructed to any seismic codes. Therefore, the County wants to modify its critical infrastructure systems to make them earthquake-proof.
- **Droughts:** The wet hydrants of Meigs County's Fire Department become inoperable in drought conditions. The County wants to provide additional dry hydrants throughout the county that do not depend on a water source for operability.

Rutland

- **Flooding:** Meigs County suffers from severe flooding in many villages due to drainage channels filled with sediment and debris. Therefore, the County wants to dredge and clear streams and drainage channels to increase flow capacity.

Middleport

- **Flooding:** Meigs County lacks the mechanical equipment necessary for disaster clean up. The County feels that obtaining a truck bucket, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post disaster cleanup process.
- **Winter Storms:** An alternative power source should be provided, such as back-Up generators, for those sensitive populations and critical facilities that much have continuous power to preserve and protect human health.
- **Severe Storms:** Meigs County's critical communication centers are vulnerable to lightning strikes during storm events. The County wants to install lightning protection on these centers to maintain emergency communications during severe storm events.

Syracuse

- **Flooding:** An alternative power source should be provided, such as back-up generators, for those sensitive populations and critical facilities that must have continuous power to preserve and protect human health.
- **Winter Storms:** An alternative power source should be provided, such as back-up generators, for those sensitive populations and critical facilities that must have continuous power to preserve and protect human health.
- **Severe Storms:** Meigs County's critical communication centers are vulnerable to lightning strikes during storm events. The County wants to install lightning protection on these centers to maintain emergency communications during severe storm events.
- **Landslides:** There is a need to develop and provide an outreach program for Meigs County residents and those in sensitive/special needs populations covering the dangers associated with landslides, including flash flooding over roadways, as well as where to go in the event of a flood (i.e. shelter locations).
- **Mine Subsidence:** There is a need to develop and provide public education materials to distribute to County residents covering the locations of old mines and the hazards associated with them.
- **Earthquakes:** Many of the County's critical infrastructure systems (Le. water plant) have not been constructed to any seismic codes. Therefore, the County wants to modify its critical infrastructure systems to make them earthquake-proof.
- **Droughts:** The wet hydrants of Meigs County's Fire Department become inoperable in drought conditions. The County wants to provide additional dry hydrants throughout the county that do not depend on a water source for operability.

- **Flooding:** Meigs County lacks the mechanical equipment necessary for disaster clean up. The County feels that obtaining a truck bucket, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post disaster cleanup process.
- **Winter Storms:** An alternative power source should be provided, such as back-up generators, for those sensitive populations and critical facilities that much have continuous power to preserve and protect human health.
- **Severe Storms:** Meigs County's critical communication centers are vulnerable to lightning strikes during storm events. The County wants to install lightning protection on these centers to maintain emergency communications during severe storm events.
- **Landslides:** Meigs County lacks the mechanical equipment necessary for disaster clean up. The County feels that obtaining a truck bucket, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post disaster cleanup process.
- **Mine Subsidence:** The Meigs County mapping system lacks updated information concerning the locations of mines. Therefore, the County wants to coordinate efforts with ODNR to develop an electronic map illustrating mine locations using state and local sources of information.
- **Earthquakes:** The County lacks the means of notifying the general public of any emergencies or alerts other than with outdoor sirens. Therefore, the County wants to provide public access messages for broadcasting over all TV stations (Emergency Access System).
- **Droughts:** Many communities throughout the County are not prepared for potable water service disruption due to drought conditions and the County wants local jurisdictions to develop and enforce water use contingency plans.

Prioritization Methodology

A number of different criteria were used during plan development to prioritize suggested mitigation actions. The Mitigation Core Group initially evaluated the 2004 mitigation activities. In 2004, the Mitigation Core Group chose a total of 66 potential mitigation activities. Of those 66 activities, 23 were labeled as "prioritized" activities based on the ranking process. The activities were initially ranked first taking into account the risk assessment ranking of hazards the Mitigation Core Group decided to continue to utilize this ranking process. The only difference in the 2011 process was the Mitigation Core Group determined that the hazard of landslides needed to move in the ranking behind their number one hazard of flooding. The various hazards had been ranked according to past historical events and the cumulative costs of each potential disaster. The Mitigation Core Group subjectively prioritized alternatives through an iterative process of document review during 2011 planning process until consensus was reached. The Mitigation Core

Group reached consensus on the prioritization of the Action Items based directly on the prioritized ranking of the hazards themselves. For example, in Meigs County the hazard of flooding is their number one hazard and concern. The Mitigation Core Group felt that prioritizing those action items that fell under flooding should be ranked number one. The same goes for the next re-prioritized hazard Landslides. Landslides are now ranked number two as it relates to their overall effect on the County and its participating jurisdictions so all the Action Items that fall under this hazard are affectively ranked number two. An updated matrix with the 2004 Action Item prioritization will be displayed later on in the Implementation Strategies section.

Proposed Mitigation Actions

Mitigation Actions Update

Mitigation actions that were proposed in the earlier version of this plan and have been completed are not included in this plan. Mitigation actions that were proposed in the earlier version of this plan and have not been completed are once again proposed for implementation. No previously proposed mitigation actions have been deleted from the mitigation plan for the County. There are several mitigation actions that the Mitigation Core Group realized were not implementable on their own such as requesting back-up generators for public facilities. The Mitigation Core Group has decided to keep these mitigation actions as a stand-alone action item but will consider grouping these types of mitigation strategies with other implementable mitigation alternatives. New mitigation actions have also been identified and evaluated, and are proposed for implementation in this plan.

For each hazard, the Mitigation Core Group decided to propose for implementation only the suggested alternatives for each hazard that received higher scores as a result of the prioritization process.

Selected Actions

Actions selected and proposed for implementation are grouped together as:

- Actions that reduce risk to existing structures/infrastructure
- Actions that reduce risk to future structures/infrastructure
- Actions that address continued participation in the NFIP
- Actions that incorporate mitigation into other community plans
- Other proposed actions such as further study or data collection

Some actions fit into more than one of these categories and are listed in more than one of the tables presented below.

Selected Actions Addressing Existing Development

Some mitigation actions will provide further protection to existing structures and infrastructure. The ten actions listed in Table 15 will reduce the likelihood of damage due to natural hazards in existing structures.

Table 15: Actions Addressing Existing Development

Hazard	Proposed Mitigation Action
Flooding	Provide an alternate power source for wastewater treatment plants and lift stations to avoid sanitary sewers back-ups.
Flooding	Dredge and clear streams and drainage channels to increase flow capacity.
Flooding	Modify undersized channels and sewers to increase capacity to alleviate some of the water back up.
Winter Storms and Severe Storms	Provide an alternate power source, such as back-up generators, for those sensitive populations and critical facilities that must have continuous power to preserve and protect human health.
Winter Storms and Severe Storms	Develop a tree maintenance program to prune or remove those trees recognized to be hazards, including tree removal equipment, training for operators, and fuel and maintenance supplies for equipment.
Winter Storms and Severe Storms	Acquire back-up generators, for those sensitive populations and critical facilities that must have continuous power to preserve and protect human health.
Winter Storms and Severe Storms	Install lightning protection at critical communication centers to maintain emergency communications during severe storm events.
Winter Storms and Severe Storms	Develop a tree maintenance program to prune or remove those trees recognized to be hazards, including tree removal equipment, training for operators, and fuel and maintenance supplies for equipment.
Earthquakes	Modify critical infrastructure systems such as water plants within the County to make them earthquake-proof.
Earthquakes	Interconnect existing water systems to provide an alternate water source if needed.
Drought	Interconnect existing water systems to provide an alternate water source if needed.

Selected Actions Addressing Future Development

Some proposed mitigation actions will affect the degree to which future structures and infrastructure are protected against damage due to natural hazards. Table 16 lists the one action in this category.

Table 16: Actions Addressing Future Development

Hazard	Proposed Mitigation Action
Drought	Develop and enforce appropriate building codes for structures to be constructed in seismic areas.

Selected Actions Addressing Continued Participation in the NFIP

All local jurisdictions in Meigs County participate in the NFIP. Nevertheless, flooding continues to threaten the safety and security of County residents. The six mitigation actions displayed in Table 17 address participation in the NFIP beyond meeting the usual minimum NFIP standards.

Table 17: NFIP Continued Participation Proposed Actions

Hazard	Proposed Mitigation Action
Flooding	Construct safe shelters on high ground in areas above the floodplains for residents in low lying areas to seek safety in the event of a flood.
Flooding	Develop and provide outreach program for County residents and those in the sensitive/special needs population covering the dangers associated with flooding.
Flooding	Remove existing structures in floodplains that have been identified as repetitive loss structures according to FEMA.
Flooding	Acquire an interoperable warning system for campgrounds and rural locations.
Flooding	Provide public education of floodplain regulations for new construction through brochures distributed county-wide.
Winter Storms and Severe Storms	Provide NOAA radios for every household and educate residents on uses of the radios for receipt of potential lifesaving information in the event of severe weather.

Selected Actions That Incorporate Mitigation into Other Plans

Some mitigation actions involve the incorporation of mitigation strategies into existing planning mechanisms. Thirteen proposed mitigation actions, not necessarily different from those listed elsewhere in this section, involve such incorporation.

Table 18 lists proposed mitigation actions that will involve the incorporation of hazard mitigation actions into other planning mechanisms.

Table 18: Actions to Incorporate into Other Planning Mechanisms

Hazard	Proposed Mitigation Action	Related Planning Mechanism(s)
Landslides	Provide training for personnel who are to be equipment operators throughout the County to educate them on the safe operation of heavy equipment in landslide areas.	Emergency Operation Plan Meigs County Soil and Water Conservation District Meigs County Engineering Office High Hazard Soil Planning Information
Landslides	Support pre-designated crews for clean up throughout the County in case of a landslide event.	Emergency Operation Plan Meigs County Engineering Office High Hazard Soil Planning Information

Hazard	Proposed Mitigation Action	Related Planning Mechanism(s)
Landslides	Develop and provide outreach program for County residents and those in the sensitive/special needs population covering the dangers associated with landslides, including flash flooding over roadways, as well as where to go in the event of a flood (i.e. shelter locations).	Emergency Operation Plan Meigs County Soil and Water Conservation District
Winter Storms and Severe Storms	Develop and provide outreach program for County residents and those in the sensitive/special needs population covering the dangers associated with winter storms, including where to go in the event of a winter storm (i.e. shelter locations	Emergency Operation Plan Meigs County Chamber of Commerce Outreach Documentation
Winter Storms and Severe Storms	Construct designated safe shelters that would provide protection from severe weather throughout the County.	Emergency Operation Plan Meigs County Red Cross Documentation
Winter Storms and Severe Storms	Develop and provide public education flyer to distribute to County residents covering dangers of severe storms and how to be prepared for an event, such as having a disaster family plan in place and having a disaster supply kit on hand.	Emergency Operation Plan Meigs County Soil and Water Conservation District Meigs County Red Cross
Winter Storms and Severe Storms	Provide post-hazard mitigation plan training for emergency staff and key personnel throughout the County to educate them on emergency preparedness and the purposes and goals of the County's All Natural Hazard Mitigation Plan.	Emergency Operation Plan Meigs County Soil and Water Conservation District Meigs County Engineers Office
Winter Storms and Severe Storms	Install an interoperable warning system for campgrounds and rural locations to warn those people outdoors of approaching severe weather so that they may seek safety.	Emergency Operation Plan State of Ohio Park District Meigs County Soil and Water Conservation District
Winter Storms and Severe Storms	Develop and provide public education flyer to distribute to County residents covering the use of lightning rods and the benefits of installation.	Emergency Operation Plan Meigs County Soil and Water Conservation District State of Ohio Park District
Winter Storms and Severe Storms	Construct concrete safe rooms in new and existing homes, buildings and shelter areas in other vulnerable public areas.	Emergency Operation Plan State of Ohio Park District Meigs County Soil and Water Conservation District

Hazard	Proposed Mitigation Action	Related Planning Mechanism(s)
Drought	Provide additional dry hydrants throughout the County that do not depend on a water source for operability.	Emergency Operation Plan Meigs County Soil and Water Conservation District
Drought	Develop and enforce water use contingency plans.	Emergency Operation Plan Meigs County Soil and Water Conservation District USDA NRCS Agricultural Outreach

Other Selected Mitigation Actions

Some proposed mitigation actions call for further planning or community education efforts. While these may eventually result in actions that will reduce the likelihood of damage due to natural hazards, the 16 actions displayed in Table 19 do not necessarily affect existing or future structures, do not augment participation in the NFIP, and do not involve other planning mechanisms.

Table 19: Additional Mitigation Actions

Hazard	Proposed Mitigation Action
Flooding	Provide public access messages for broadcasting over all TV stations (Emergency Access System).
Flooding	Obtain portable light stands and generators for extended power outages.
Flooding	Acquire more squads and trained personnel for quicker response and more areas covered.
Flooding	Obtaining a bucket truck, shredders, rubber tire end loaders, chain saws, and a vacuum truck, including fuel and spare parts, would speed up the post-disaster clean-up process.
Flooding	Acquire back-up generators, for those sensitive populations and critical facilities.
Landslide	Obtain a bucket truck, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post-disaster cleanup process.
Landslide	Obtain a drilling machine and pile driver to mitigate continued threat of landslides.
Landslide	Acquire more squads and trained personnel for quicker response and more areas covered.
Winter Storms and Severe Storms	Acquire more squads and trained personnel for quicker response and more areas covered.
Winter Storms and Severe Storms	Provide public access messages for broadcasting over all TV stations (Emergency Access System).
Winter Storms and Severe Storms	Obtain portable light stands and generators for these situations for extended power outages.

Hazard	Proposed Mitigation Action
Winter Storms and Severe Storms	Acquire more squads and trained personnel for quicker response and more areas covered.
Winter Storms and Severe Storms	Obtain a bucket truck, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post-disaster cleanup process.
Earthquakes	Obtain a bucket truck, track hoe, shredders, rubber tire end loaders, chain saws, and a vacuum truck, including fuel and spare parts, would speed up the post-disaster clean-up process.
Earthquakes	Acquire more squads and trained personnel for quicker response and more areas covered.
Droughts	Acquire more squads and trained personnel for quicker response and more areas covered.

Implementation Strategies

This section of the plan provides an overview of the strategy that will be utilized in order to implement each of the proposed mitigation actions. For each action listed in Table 19, the associated strategy identifies the agency or job title that will be responsible for initiating the work and potential sources of funding for the work. Each strategy also indicates when the action will happen. Table 20 identifies all of the parties responsible for implementation of each action.

Table 20: Action Implementation

Hazard	Action Proposed in Previous Mitigation Plan	Responsible Agency	Potential Sources of Funding	Timeframe
Flooding	Provide public access messages for broadcasting over all TV stations (Emergency Access System).	EMA/ EMS/ County Commissioners	State or Federal Sources	2 years
Flooding	Obtain portable light stands and generators for extended power outages.	EMA/ EMS/ County Commissioners	State or Federal Sources	2 years
Flooding	Construct safe shelters on high ground in areas above the floodplains for residents in low lying areas to seek safety in the event of a flood.	EMA/County Commissioners	State or Federal Sources	2-3 years
Flooding	Provide an alternate power source for wastewater treatment plants and lift stations to avoid sanitary sewers back-ups.	EMA	State or Federal Sources	2-3 years

Hazard	Action Proposed in Previous Mitigation Plan	Responsible Agency	Potential Sources of Funding	Timeframe
Flooding	Develop and provide outreach program for County residents and those in the sensitive/special needs population covering the dangers associated with flooding.	EMA/ County Commissioners	Existing Budget	3 years
Flooding	Acquire more squads and trained personnel for quicker response and more areas covered.	EMA/ EMS/ County Commissioners	State or Federal Sources	2 years
Flooding	Dredge and clear streams and drainage channels to increase flow capacity.	EMA/ EMS/ County Commissioners	Existing Budget	3 years
Flooding	Remove existing structures in floodplains that have been identified as repetitive loss structures according to FEMA.	EMA/ County Commissioners	State or Federal Sources	3 years
Flooding	Modify undersized channels and sewers to increase capacity to alleviate some of the water back up.	EMA/ County Commissioners	Existing Budget	3 years
Flooding	Obtaining a bucket truck, shredders, rubber tire end loaders, chain saws, and a vacuum truck, including fuel and spare parts, would speed up the post-disaster clean-up process.	EMA	Existing Budget	3 years
Flooding	Acquire back-up generators, for those sensitive populations and critical facilities.	EMA	State or Federal Sources	2 years
Flooding	Provide public education of floodplain regulations for new construction through brochures distributed county-wide.	EMA	Existing Budget	2 years
Landslide	Obtain a bucket truck, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post-disaster cleanup process.	EMA	Existing Budget	3 years
Landslide	Provide training for personnel who are to be equipment operators throughout the County to educate them on the safe operation of heavy equipment in landslide areas.	EMA	Existing Budget	3 years

Hazard	Action Proposed in Previous Mitigation Plan	Responsible Agency	Potential Sources of Funding	Timeframe
Landslide	Support pre-designated crews for clean up throughout the County in case of a landslide event.	EMA/ County Commissioners	Existing Budget	2 years
Landslide	Obtain a drilling machine and pile driver to mitigate continued threat of landslides.	EMA/ County Commissioners	Existing Budget	3 years
Landslide	Acquire more squads and trained personnel for quicker response and more areas covered.	EMA/ EMS/ County Commissioners	State or Federal Sources	2 years
Landslide	Develop and provide outreach program for County residents and those in the sensitive/special needs population covering the dangers associated with landslides, including flash flooding over roadways, as well as where to go in the event of a flood (i.e. shelter locations).	EMA/ County Commissioners	State or Federal Sources	2 years
Winter Storms and Severe Storms	Acquire more squads and trained personnel for quicker response and more areas covered.	EMA/ EMS/ County Commissioners	State or Federal Sources	2 years
Winter Storms and Severe Storms	Develop and provide outreach program for County residents and those in the sensitive/special needs population covering the dangers associated with winter storms, including where to go in the event of a winter storm (i.e. shelter locations	EMA/ County Commissioners	Existing Budget	3 years
Winter Storms and Severe Storms	Construct designated safe shelters that would provide protection from severe weather throughout the County.	EMA/ County Commissioners	State or Federal Sources	2 years
Winter Storms and Severe Storms	Develop a tree maintenance program to prune or remove those trees recognized to be hazards, including tree removal equipment, training for operators, and fuel and maintenance supplies for equipment.	EMA/ County Commissioners	Existing Budget	3 years

Hazard	Action Proposed in Previous Mitigation Plan	Responsible Agency	Potential Sources of Funding	Timeframe
Winter Storms and Severe Storms	Acquire back-up generators, for those sensitive populations and critical facilities that must have continuous power to preserve and protect human health.	EMA	State or Federal Sources	2-3 years
Winter Storms and Severe Storms	Develop and provide public education flyer to distribute to County residents covering dangers of severe storms and how to be prepared for an event, such as having a disaster family plan in place and having a disaster supply kit on hand.	EMA/ County Commissioners	Existing Budget	3 years
Winter Storms and Severe Storms	Install lightning protection at critical communication centers to maintain emergency communications during severe storm events.	EMA	State or Federal Sources	2-3 years
Winter Storms and Severe Storms	Obtain portable light stands and generators for these situations for extended power outages.	EMA/ EMS/ County Commissioners	State or Federal Sources	2 years
Winter Storms and Severe Storms	Provide post-hazard mitigation plan training for emergency staff and key personnel throughout the County to educate them on emergency preparedness and the purposes and goals of the County's All Natural Hazard Mitigation Plan.	EMA	State or Federal Sources	2 years
Winter Storms and Severe Storms	Acquire more squads and trained personnel for quicker response and more areas covered.	EMA/ County Commissioners	Existing Budget	2 years
Winter Storms and Severe Storms	Develop and provide public education flyer to distribute to County residents covering the use of lightning rods and the benefits of installation.	EMA	Existing Budget	2 years
Winter Storms and Severe Storms	Develop a tree maintenance program to prune or remove those trees recognized to be hazards, including tree removal equipment, training for operators, and fuel and maintenance supplies for equipment.	EMA/ Incorporated Jurisdictions	Existing Budget	2-3 years

Hazard	Action Proposed in Previous Mitigation Plan	Responsible Agency	Potential Sources of Funding	Timeframe
Winter Storms and Severe Storms	Construct concrete safe rooms in new and existing homes, buildings and shelter areas in other vulnerable public areas.	EMA	State or Federal Sources	2 years
Winter Storms and Severe Storms	Obtain a bucket truck, shredders, rubber tire end loaders, chain saws and a vacuum truck, including fuel and spare parts, would speed up the post-disaster cleanup process.	EMA	State or Federal Sources	2 years
Earthquakes	Modify critical infrastructure systems such as water plants within the County to make them earthquake-proof.	EMA/ County Commissioners	Existing Budget	3 years
Earthquakes	Interconnect existing water systems to provide an alternate water source if needed.	EMA/ County Commissioners	Existing Budget	2 years
Earthquakes	Obtain a bucket truck, track hoe, shredders, rubber tire end loaders, chain saws, and a vacuum truck, including fuel and spare parts, would speed up the post-disaster clean-up process.	EMA/ County Commissioners	State or Federal Sources	2 years
Earthquakes	Acquire more squads and trained personnel for quicker response and more areas covered.	EMA/ County Commissioners	Existing Budget	2 years
Earthquakes	Develop and enforce appropriate building codes for structures to be constructed in seismic areas.	EMA/ County Commissioners	Existing Budget	2 years
Droughts	Interconnect existing water systems to provide an alternate water source if needed.	EMA/ County Commissioners	Existing Budget	2 years
Droughts	Acquire more squads and trained personnel for quicker response and more areas covered.	EMA/ County Commissioners	Existing Budget	2 years
Droughts	Provide additional dry hydrants throughout the County that do not depend on a water source for operability.	EMA/ County Commissioners	Existing Budget	2 years

Plan Maintenance

Plan Maintenance Update

An annual review of mitigation actions will be conducted. The process for evaluating the plan has been modified slightly from that presented in the previous version of the plan. The protocols for updating the plan and continued public involvement have been elaborated upon in this version of the plan.

Monitoring Mitigation Actions

The Meigs County EMA Director will monitor the progress made on the implementation of the identified action items annually at about the anniversary date of plan adoption. Monitoring will be accomplished by calling or e-mailing each County or municipal agency that, through adoption of the plan, has assumed the responsibility of implementing one or more mitigation actions.

By monitoring mitigation actions, when the plan is next updated, information about the status of proposed mitigation actions will be readily available. The updated plan will include a section explaining if previously proposed mitigation actions have been implemented, completed, or deferred. The updated plan will identify actions that are no longer appropriate for the community and should be deleted. The updated plan will identify obstacles to implementation that caused proposed actions to be deferred and will recommend strategies for overcoming those obstacles.

The Mitigation Core Group will not only monitor the implementation of mitigation actions proposed in this plan, but will also monitor actions of participating jurisdictions and surrounding communities that may affect the ability of Meigs County to withstand the effects of natural hazards or to recover from a disaster in the future. The method for gathering information about actions beyond those proposed in this plan will be informal; as active members of the Meigs County community, Mitigation Core Group members will bring their own knowledge of the area to monitoring meetings to provide information about actions of participating jurisdictions as well as of nearby communities.

Evaluating the Plan

One month after conducting the annual monitoring of mitigation actions, the Meigs County EMA Director will schedule an annual meeting of the Mitigation Core Group to evaluate the mitigation planning process, implementation of the plan, and conditions in Meigs County that suggest the need to modify either planning data or planning actions. Participating incorporated jurisdictions' and townships will be invited to attend the evaluation meetings. The evaluation meeting will include a presentation of the results of the monitoring of mitigation actions and will answer the following questions:

- Do mitigation goals and objectives reflect current community concerns as well as the finding of the risk assessment?
- Have conditions in the County changed so that findings of the risk assessment should be updated?
- What hazards have caused damage in the County since the plan was written? Were these anticipated and evaluated in the plan or should these hazards be added to the plan?
- Have conditions in the County changed so that the magnitude of risk as expressed in this plan has changed?
- Are new sources of data available that will improve the risk assessment?
- Are current resources sufficient for implementing mitigation actions?
- For each mitigation action that has not been completed, what are the obstacles to implementation? What are potential solutions for overcoming these obstacles?
- Is each completed mitigation action effective in reducing risk? What action is required to further reduce the risk addressed by the completed action?
- What mitigation actions should be added to the plan and proposed for implementation?
- Should any proposed mitigation actions be deleted from the plan? What is the rationale for deleting previously proposed actions from the plan?
- Based upon the evaluation, should the plan be updated as soon as possible or should the plan be updated as scheduled 5 years after it was adopted?

The Meigs County EMA Director will document the results of the annual evaluation meeting and submit the findings to each incorporated jurisdiction and townships in the County for review within 2 weeks. If the Mitigation Core Group determined that the plan should be updated as soon as possible, the Meigs County EMA Director will take action to initiate the plan update.

Updating the Plan

This plan must be updated within 5 years and again adopted by the County and participating jurisdictions in order to maintain compliance with the regulations stated in 44 CFR Part 201.6 and ensure eligibility for applying for and receiving certain Federal mitigation grant funds.

Monitoring and evaluation will identify necessary modifications to the plan including changes in mitigation strategies and actions that should be incorporated in the next update.

The update will have more current information about previous occurrences of hazards and improved information about wind speed for high wind events will be sought.

The Meigs County EMA Director will initiate the process of updating the plan no more than 3 years after the plan was adopted, or immediately upon a determination by the Mitigation Core Group that the plan should be updated sooner. This will allow approximately 1 year for securing funding and/or staff for updating the plan and 1 year for conducting research and writing the updated plan.

Continued Public Involvement

The Meigs County EMA Director will provide printed copies of the plan to key Meigs County offices including the public library in the County so that the public has access to printed copies of the plan. A copy of the adopted plan will be posted on the County Web site for 5 years so that the public has electronic access to the plan. The Web site will include contact information for anyone to provide comment so that residents, business owners, and others who read the plan will be able to provide a comment about the plan or about the mitigation strategies. The Meigs County EMA will maintain these comments and will provide them to the Mitigation Core Group for consideration at the annual plan evaluation meetings.

The Meigs County EMA Director will post notices of annual mitigation plan evaluation meetings using the usual methods for posting meeting announcements in the County to invite the public to participate. In addition to posting announcements on the County Web site, at least one newspaper press release will be published at the onset of the process of updating the plan inviting public participation.

The Meigs County EMA Director will document the number of people who participate in the annual meetings and the results of the meeting for inclusion in the plan when it is next updated. In this way, the public will have an opportunity to become involved in the planning process and to influence mitigation planning decisions.

The Meigs County EMA Director will provide a written report and/or make a presentation to the Union County Commissioners to advise them of the status of the plan and of proposed mitigation actions. In this way, the public will have another opportunity to become aware of local mitigation efforts.

List of Sources

- American Association of States Climatologists. (http://www.stateclimate.org/)
- Draft State of Ohio Enhanced Mitigation Plan, Ohio Emergency Management Agency
- FEMA. Community Rating System (CRS) Communities and their Classes (http://www.fema.gov/library/viewRecord.do?id=3629)
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Appendices

Appendix I
Sample Plan Adoption Resolutions

The Meigs County Commissioners as well as the incorporated areas of Pomeroy, Rutland, Middleport, Syracuse, and Racine will be passing a Resolution of Support for the Meigs County countywide Mitigation Plan after contingent approval from the State of Ohio EMA as well as FEMA.

An example of the Resolution of Adoption that will be presented to the Commissioners as well as the participating incorporated jurisdictions is provided on the following pages.

RESOLUTION NO._____

ADOPTION OF THE MEIGSCOUNTY COUNTYWIDE ALL NATURAL HAZARDS MITIGATION PLAN COUNTY NATURAL HAZARDS MITIGATION PLAN AND ESTABLISHMENT OF A MEIGSCOUNTY COUNTYWIDE ALL NATURAL HAZARDS MITIGATION PLAN COUNTY HAZARD MITIGATION CORE GROUP

WHEREAS, on_____, the Meigs County Commissioners passed Resolution No. adopting the MEIGS COUNTY COUNTYWIDE ALL NATURAL HAZARDS MITIGATION PLAN (the Mitigation Plan) pursuant to _____which established goals to minimize and reduce stormwater damages to existing structures and land use in order to maximize the protection of public health, safety, and welfare, and identify and develop revenue sources to complete the goals and objectives; and

WHEREAS, the mission of the Meigs County Countywide All Natural Hazards Mitigation Plan Core Group is: "To develop a working document that fulfills the mandates of the Federal Disaster Mitigation Act of 2000, and satisfies the requirements of FEMA and the Ohio EMA, as well as meets the needs of all of Meigs County. Further, by researching and planning for future natural hazards and implementing appropriate mitigation techniques, all of Meigs County can save lives and protect property, reduce the cost of disasters and provide for a rapid and efficient recovery by coordinating response efforts, and increasing the educational awareness of natural hazard events and their effects on the people, property, and resources of all Meigs County."; and

WHEREAS, on _____, 2011, the Meigs County Emergency Management Agency Director approved the development of a Mitigation Plan on behalf of the Meigs County Board of County Commissioners; and

WHEREAS, a Mitigation Plan for Meigs County will be required beginning in January 1st, 2012 to receive any state or federal mitigation funding such as flood prone property improvement or buyout funds; and

WHEREAS, the County of Meigs County is subject to flooding, tornadoes, winter storms, and other natural hazards that can damage property, close businesses, disrupt traffic, and present a public health and safety hazard; and

WHEREAS the Mitigation Planning Core Group, comprised of representatives from the County, municipalities and stakeholder organizations, has prepared a recommended Mitigation Plan that reviews the options to protect people and reduce damage from these natural hazards; and

WHEREAS, the recommended Mitigation Plan has been widely circulated for review by the County's residents and federal, state and regional agencies and has been supported by those reviewers.

NOW, THEREFORE BE IT RESOLVED by the Meigs County Commissioners that:

1. MEIGSCOUNTY COUNTYWIDE ALL NATURAL HAZARDS MITIGATION PLAN is hereby adopted as an official plan of Meigs County.

2. The Mitigation Planning Core Group is hereby established as a permanent advisory body. It shall be composed of representatives from the existing Mitigation Planning Core Group, as recommended by the MeigsCounty Emergency Management and Homeland Security Office. This includes those municipalities that pass a resolution to adopt for the Mitigation Plan.
3. The Core Group shall meet as often as necessary to prepare or review mitigation activities and progress toward implementing the Mitigation Plan. It shall meet at least once each year to review the status of ongoing projects.
4. The schedule of Core Group meetings shall be posted in appropriate places. All meetings of the Core Group shall be open to the public.
5. By November 30 each year, the Core Group shall prepare an annual evaluation report on the Mitigation Plan for the County Board of Commissioners and the municipalities.

   The report will cover the following points:

   a. A review of the original plan.
   b. A review of any natural disasters that occurred during the previous calendar year.
   c. A review of the action items in the original plan, including how much was accomplished during the previous year.
   d. A discussion of why any action items were not completed or why implementation is behind schedule.
   e. Recommendations for new projects or revised action items. Such recommendations shall be subject to approval by the County Board of Commissioners and the affected municipality's governing boards as amendments to the adopted plan.
6. The director of each County office identified as "responsible agency" for the Mitigation Plan's action items shall ensure that the action item is implemented by the listed deadline subject to fiscal and staff time constraints.

Passed by the MeigsCounty Board of Commissioners on _____.

Vote:

Yes ____

No ____

ORDINANCE NO._____

AN ORDINANCE APPROVING AND ADOPTING THE COUNTYWIDE ALL NATURAL HAZARDS MITIGATION PLAN PREPARED BY EMH&T, INC.

WHEREAS, the _____ County Commissioners have approved the aforementioned plan by resolution, and

WHEREAS, the Plan will fulfill the mandates of the Federal Disaster Mitigation Act of 2000, satisfies the requirements of FEMA and Ohio EMA, and meets the needs of _____ County,

NOW, THEREFORE, Be it ordained by the Council of the City/Village of _____, State of Ohio:

SECTION 1: That the Countywide All Natural Hazards Mitigation Plan as prepared by EMH&T, Inc., and approved by the _____ County Commissioners, is hereby approved and adopted.

SECTION 2: That this Ordinance shall take effect and be enforced from and after the earliest period allowed by law.

ADOPTED: _____, 2011.

ATTEST: _____ _____
Clerk of Council President of Council

Date filed with Mayor: _____, 2011.

Date approved by Mayor: _____, 2011.

_____
Mayor

Approved as to form:

_____
Director of Law

Appendix II
Core Group Meeting

URS
277 W. Nationwide Blvd.
Columbus, OH 43215
Telephone: (614) 464-4500
Facsimile: (614) 464-0588
Architectural & Engineering Services

MEETING MINUTES

LOCATION: Meigs County

BY: Kari Mackenbach

ATTENDEES: Meigs Co. EMA- Robert Byer
Rutland Township- Joe Bolin
Rutland Village- Lowell Vance
Middleport- Mike Gerlach
Syracuse Village- Eric Cunningham
Chester Township- Roy Holter
URS- Kari Mackenbach

COPIES: Attendees (see above), Central Files, Bill Porteus, Racine(*), Pomeroy(*)

MEETING DATE: March 30, 2011 @ 6:00 p.m.

ISSUE DATE: April 7, 2011

PROJECT: Meigs County NHMP

JOB NO.: URS: 14577506

RE: Core Group Meeting

This report will confirm those items discussed and/or reached. Unless information to the contrary is received within five (5) working days, the writer will assume all participants agree with the contents of this memorandum.

The meeting was held at the Meigs County Courthouse Annex. Items discussed were as follows:

1) Middleport- Sewers after flood filled with sediment (ask Greg Otey-URS)
2) 7ft of sediment in Rutland- **Little Leading creek**
3) Consolidation of schools- **(Rutland Area)** 1,000 kids, 90 teachers and no cell phone coverage this could be a good mitigation project.
4) Where is the closest hospital? Gallipolis and Athens
5) Urgent Care- not open 24 hrs.
6) Trauma-laws- have to transport to closest trauma center. Generally by air-med. Very expensive
7) July 24th- a big disaster was averted. Problem locating owner(s)
   a) Oil well collector tanks
   b) Valve broke off
8) Where: Land development for medical clinic and
   a) Communication Center- Grant applied for thru FY-09 Port Security Grants
   b) Portman's Office- stated grant under review by EPA (historical preservation)
9) Food Disasters-consideration of sharing resources such as generators-possibly a project or a sharing plan.
10) Fire Department in floodplain in Rutland-could be a good mitigation project **for new station**
    a) **Had applied for AFG grant but turned down**
11) Sept. 16th-
    a) Tornado Disaster Reedsville (Eden Ridge)
12) Cell Towers- No Coverage on the west end (Big Problem) **(See #3 above)**
13) GIS- Buckeye Hills Planning
    a) Marietta, Ohio- Red Alprin (contact)
    b) Locators for special needs population during emergencies

14) Warning System
- a) Sirens- Two tones
  - i) One for fire that pulses
  - ii) Other hazards Blow continuously for 120 seconds
  - iii) Outdoor sirens to set off from 911 center
  - iv) How many?-Six in most populated areas (Pomeroy, Middleport, Syracuse, Racine, Rutland, Chester) One available for Tuppers Plains but needs reinstalled.
- b) Reverse 911- Code Red Emergency warning system activated
  - i) People call in to register for weather

15) Can highlight areas and for necessary emergency notices (boil orders-missing child/adult)

16) All Call available for entire county
- a) EMA/ 911 Code Red primary call center
- b) One article in the newspaper
- c) 911 Director council meetings to let folks learn about it
- d) EMPG- to get half of it back
- e) "sustainment" thru EMPG only

17) 174 acres Rutland Twp. –possible project for stormwater/floodplain storage.
- a) Flood Control needed for Village of Rutland

END OF MINUTES

Appendix III
Letter to Reviewers

Appendix IV
Public Involvement

Appendix V
Press Release

FOR IMMEDIATE RELEASE:

Meigs County Emergency Management Agency Leading the Way in Updating the Meigs County Natural Hazard Mitigation Plan

Pomeroy, Ohio-Meigs County Officials are taking steps to make their community even disaster resilient by updating the Meigs County Natural Hazard Mitigation Plan (Mitigation Plan) according to the Disaster Mitigation Act of 2000 standards.

This allows Meigs County and its constituents to continue to be eligible for disaster mitigation funds and keeps Meigs County and its incorporated communities in good standing with the Federal Emergency Management Agency.

A Core Group of individuals from several of the incorporated areas of Meigs County have been tasked with leading the way to evaluate the current Mitigation Plan. The planning effort and the draft revised Mitigation Plan is underway and available for review by contacting the Meigs County EMA office.

Contact:

Mr. Robert Byer
Director
Meigs County EMA Office
meigsema@hotmail.com
(740) 992-4541

Appendix VI
Multi Hazard Maps

Insert Maps

Appendix VII
NCDC Historical Events

Flood History

40 Events were reported in Meigs County between 01/01/1994 and 04/30/2011.

Mag - Magnitude, Dth - Deaths, Inj - Injuries, PrD - Property Damage, CrD - Crop Damage

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Countywide	2/11/1994	1108	Flash Flood	N/A	0	0	5K	0
2 Countywide	4/10/1994	1040	Flash Flood	N/A	0	0	50K	0
3 Countywide	1/15/1995	2030	Flash Flood	N/A	0	0	40K	0
4 Countywide	5/14/1995	400	Flash Flood	N/A	0	0	3.0M	0
5 OHZ076 - 085>087	1/20/1996	12:00 PM	Flood	N/A	0	0	1.7M	0
6 Countywide	1/24/1996	1:30 AM	Flash Flood	N/A	0	0	0	0
7 Countywide	5/4/1996	5:00 PM	Flash Flood	N/A	0	0	250K	0
8 Rutland	6/9/1996	8:00 PM	Flash Flood	N/A	0	0	20K	0
9 Carpenter	8/21/1996	7:00 PM	Flash Flood	N/A	0	0	4K	0
10 Snowville	8/23/1996	8:00 PM	Flash Flood	N/A	0	0	3K	0
11 Countywide	3/1/1997	8:00 PM	Flash Flood	N/A	0	0	800K	0
12 OHZ085	3/2/1997	8:00 AM	Flood	N/A	0	0	1.5M	0
13 Countywide	1/7/1998	8:00 PM	Flash Flood	N/A	0	0	10K	0
14 OHZ075 - 085>086	1/9/1998	12:00 AM	Flood	N/A	0	0	120K	0
15 Countywide	1/9/1998	12:30 AM	Flash Flood	N/A	0	0	10K	0
16 Countywide	5/1/1998	7:00 PM	Flash Flood	N/A	0	0	15K	0

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
17 Rutland	6/16/1998	2:30 PM	Flash Flood	N/A	0	0	5K	0
18 Northeast Portion	6/28/1998	5:00 AM	Flash Flood	N/A	1	0	3.0M	0
19 OHZ067 - 076 - 085>086	6/28/1998	7:00 AM	Flood	N/A	0	0	50K	0
20 Countywide	6/29/1998	1:30 AM	Flash Flood	N/A	0	0	15K	0
21 Countywide	2/13/2000	10:30 PM	Flash Flood	N/A	0	0	20K	0
22 Countywide	2/18/2000	4:00 PM	Flash Flood	N/A	0	0	700K	0
23 OHZ075 - 085>087	2/19/2000	11:00 AM	Flood	N/A	1	0	50K	0
24 Carpenter	5/18/2001	6:00 PM	Flash Flood	N/A	0	0	50K	0
25 Countywide	5/21/2001	6:45 PM	Flash Flood	N/A	0	0	150K	0
26 OHZ085>087	3/20/2002	2:00 AM	Flood	N/A	0	0	750K	0
27 OHZ083>087	4/28/2002	3:30 AM	Flood	N/A	0	0	45K	0
28 South Portion	6/19/2003	4:15 PM	Flash Flood	N/A	0	0	200K	0
29 OHZ075>076 - 083>085	11/12/2003	5:00 AM	Flood	N/A	0	0	20K	0
30 OHZ066>067 - 075>076 - 083>085	1/4/2004	11:00 AM	Flood	N/A	0	0	1.7M	0
31 OHZ085>087	3/5/2004	9:00 PM	Flood	N/A	0	0	0	0
32 OHZ066>067 - 075>076 - 083>087	9/8/2004	12:00 PM	Flood	N/A	0	0	3.5M	0
33 OHZ066>067 - 075>076 - 084>087	9/17/2004	8:15 AM	Flood	N/A	0	0	25.5M	0
34 OHZ066>067 - 075>076 - 084>087	1/5/2005	9:30 AM	Flood	N/A	1	0	9.0M	0
35 Reedsville	12/13/2007	16:00 PM	Flood	N/A	0	0	2K	0K
36 Middleport	3/6/2008	12:00 PM	Flood	N/A	0	0	0K	0K
37 Carpenter	3/19/2008	14:00 PM	Flood	N/A	0	0	5K	0K

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
38 Long Bottom	6/4/2008	17:00 PM	Flood	N/A	0	0	10K	0K
39 Long Bottom	5/2/2010	14:00 PM	Flood	N/A	0	0	0K	0K
40 Reedsville	3/11/2011	1:00 AM	Flood	N/A	0	0	75K	0K
				TOTALS:	3	0	52.394M	0

Snow and Ice History

21 Snow and Ice events were reported in Meigs County between 12/01/1993 and 04/30/2011.

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Southeast Ohio	2/11/1994	100	Ice Storm	N/A	0	26	5.0M	500K
2 Southeast Ohio	3/2/1994	1700	Heavy Snow	N/A	0	0	5K	0
3 OHZ070>073 - 075>080 - 082>086	1/28/1995	600	Heavy Snow/ ice	N/A	0	0	600K	0
4 OHZ023 - 033 - 039>041 - 048>050 - 057>059 - 066>069 - 074>076 - 083>088	3/8/1995	600	Heavy Snow	N/A	0	0	50K	0
5 OHZ066>067 - 075>076 - 083>087	1/6/1996	6:00 PM	Heavy Snow	N/A	0	0	5K	0
6 OHZ083>087	1/11/1996	10:00 PM	Heavy Snow	N/A	0	0	0	0
7 OHZ075 - 083>087	2/3/1998	10:00 PM	Winter Storm	N/A	0	0	250K	0
8 OHZ066>067 - 075>076 - 084>085	1/8/1999	4:00 AM	Winter Storm	N/A	0	0	0	0
9 OHZ066>067 - 075>076 - 083>087	2/12/1999	10:00 AM	Snow	N/A	0	0	0	0
10 OHZ066>067 - 075>076 - 083>085	3/9/1999	5:00 AM	Heavy Snow	N/A	0	0	0	0
11 OHZ067 - 075>076 - 083>085	3/14/1999	3:00 AM	Heavy Snow	N/A	0	0	0	0

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
12 OHZ066>067 - 075>076 - 083>087	1/20/2000	12:00 AM	Snow	N/A	0	0	0	0
13 OHZ066>067 - 075>076 - 083>087	1/19/2001	10:00 AM	Snow	N/A	0	0	0	0
14 OHZ066>067 - 075>076 - 084>087	1/6/2002	7:00 AM	Snow	N/A	0	0	0	0
15 OHZ075>076 - 083>086	1/19/2002	5:00 AM	Snow	N/A	0	0	0	0
16 OHZ066>067 - 075>076 - 083>087	12/4/2002	7:00 PM	Snow	N/A	0	0	0	0
17 OHZ083 - 085>087	2/16/2003	2:00 AM	Ice Storm	N/A	0	0	6.3M	0
18 OHZ066>067 - 075>076 - 083>087	1/25/2004	12:00 PM	Winter Storm	N/A	0	0	0	0
19 OHZ083 - 085 - 086	2/20/2008	6:00 AM	Winter Weather	N/A	0	0	0K	0K
20 OHZ076 - 085	1/27/2009	2:00 AM	Winter Storm	N/A	0	0	0K	0K
21 OHZ085	1/20/2011	12:00 PM	Heavy Snow	N/A	0	0	0K	0K
				TOTALS:	0	26	12.160M	500K

Thunderstorm and High Wind History

59 Thunderstorm and High Wind events were reported in Meigs County between 01/01/1975 and 04/30/2011.

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 MEIGS	7/15/1976	1800	Tstm Wind	0 kts.	0	0	0	0
2 MEIGS	8/5/1980	1600	Tstm Wind	0 kts.	0	0	0	0
3 MEIGS	6/21/1981	1505	Tstm Wind	56 kts.	0	0	0	0
4 MEIGS	6/16/1982	1330	Tstm Wind	0 kts.	0	0	0	0
5 MEIGS	6/16/1982	1330	Tstm Wind	0 kts.	0	0	0	0
6 MEIGS	7/4/1983	1630	Tstm Wind	0 kts.	0	0	0	0
7 MEIGS	10/1/1986	1330	Tstm Wind	0 kts.	0	0	0	0
8 MEIGS	8/29/1989	2100	Tstm Wind	0 kts.	0	0	0	0
9 MEIGS	7/5/1990	1755	Tstm Wind	0 kts.	0	0	0	0
10 MEIGS	4/9/1991	1605	Tstm Wind	0 kts.	0	0	0	0

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
11 MEIGS	7/23/1991	1450	Tstm Wind	0 kts.	0	0	0	0
12 MEIGS	9/18/1991	1700	Tstm Wind	0 kts.	0	0	0	0
13 MEIGS	7/18/1992	1450	Tstm Wind	0 kts.	0	0	0	0
14 Western Part	6/21/1994	1833	Tstm Wind	0 kts.	0	0	500K	0
15 Countywide	6/29/1994	436	Tstm Wind	0 kts.	0	0	5K	0
16 Portland	7/29/1994	1640	Tstm Wind	0 kts.	0	0	5K	0
17 Hamden	7/26/1995	1810	Tstm Wind	0 kts.	0	0	2K	0
18 Rutland	7/26/1995	1840	Tstm Wind	0 kts.	0	0	5K	0
19 Pomeroy	7/26/1995	1902	Tstm Wind	0 kts.	0	0	5K	0
20 Ohio. Southwestern	9/12/1995	2000	Tstm Wind	0 kts.	0	0	2	0
21 Middleport	4/23/1996	1:15 PM	Tstm Wind	0 kts.	0	0	3K	0
22 Tuppers Plains	4/23/1996	1:21 PM	Tstm Wind	0 kts.	0	0	10K	0
23 Pomeroy	5/4/1996	4:40 PM	Tstm Wind	0 kts.	0	0	3K	0
24 Pomeroy	6/8/1996	5:10 PM	Tstm Wind	0 kts.	0	0	10K	0
25 Syracuse	6/8/1996	7:40 PM	Tstm Wind	0 kts.	0	0	10K	0
26 Middleport	7/2/1997	8:25 PM	Tstm Wind	0 kts.	0	0	5K	0
27 Rutland	8/17/1997	3:30 PM	Tstm Wind	0 kts.	0	0	2K	0
28 Chester	8/17/1997	12:15 PM	Tstm Wind	0 kts.	0	0	5K	0
29 Darwin	6/12/1998	11:30 PM	Tstm Wind	0 kts.	0	0	2K	0
30 Darwin	8/25/1998	6:00 PM	Tstm Wind	0 kts.	0	0	5K	0
31 Bradbury	8/24/1999	7:10 PM	Tstm Wind	0 kts.	0	0	2K	0
32 Countywide	8/9/2000	6:20 PM	Tstm Wind	0 kts.	0	0	25K	0
33 Rutland	9/20/2000	9:50 PM	Tstm Wind	0 kts.	0	0	2K	0
34 Letart Falls	9/20/2000	10:00 PM	Tstm Wind	0 kts.	0	0	25K	0
35 Harrisonville	5/18/2001	5:00 PM	Tstm Wind	0 kts.	0	0	1K	0
36 Long Bottom	5/18/2001	5:25 PM	Tstm Wind	0 kts.	0	0	2K	0
37 Sumner	10/24/2001	10:25 PM	Tstm Wind	0 kts.	0	0	1K	0
38 Tuppers Plains	10/24/2001	10:32 PM	Tstm Wind	0 kts.	0	0	2K	0
39 Rutland	5/31/2002	8:20 PM	Tstm Wind	0 kts.	0	0	1K	0
40 Burlingham	6/4/2002	6:40 PM	Tstm Wind	0 kts.	0	0	2K	0
41 Rolandus	11/10/2002	10:40 PM	Tstm Wind	0 kts.	0	0	1K	0
42 Pomeroy	5/27/2004	7:40 PM	Tstm Wind	50 kts.	0	0	0	0
43 Countywide	6/1/2004	4:05 PM	Tstm Wind	50 kts.	0	0	0	0
44 Pomeroy	7/25/2005	4:15 PM	Tstm Wind	50 kts.	0	0	2K	0
45 Chester	10/4/2006	20:17 PM	Tstm Wind	50 kts.	0	0	0K	0K
46 Pomeroy	6/8/2007	14:45 PM	Tstm Wind	50 kts.	0	0	0K	0K
47 Rutland	6/13/2007	19:30 PM	Tstm Wind	50 kts.	0	0	0K	0K
48 Letart Falls	6/27/2007	17:35 PM	Tstm Wind	60 kts.	0	0	1K	0K

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
49 Syracuse	8/16/2007	19:00 PM	Tstm Wind	50 kts.	0	0	0K	0K
50 Chester	8/25/2007	16:50 PM	Tstm Wind	50 kts.	0	0	10K	0K
51 Chester	9/26/2007	17:50 PM	Tstm Wind	50 kts.	0	0	10K	0K
52 Chester	6/28/2008	18:00 PM	Tstm Wind	50 kts.	0	0	0K	0K
53 Pomeroy	7/22/2008	3:50 AM	Tstm Wind	50 kts.	0	0	2K	0K
54 Syracuse	2/11/2009	17:55 PM	Tstm Wind	55 kts.	0	0	15K	0K
55 Racine	4/5/2009	22:10 PM	Tstm Wind	50 kts.	0	0	15K	0K
56 MEIGS	8/4/2010	14:40 PM	Tstm Wind	50 kts.	0	0	3K	0K
57 MEIGS	8/4/2010	14:40 PM	Tstm Wind	50 kts.	0	0	5K	0K
58 MEIGS	8/4/2010	15:00 PM	Tstm Wind	50 kts.	0	0	1K	0K
59 MEIGS	8/4/2010	23:30 PM	Tstm Wind	50 kts.	0	0	10K	0K
				TOTALS:	0	0	715K	0

Tornado History

4 Tornado events were reported in Meigs County between 01/01/1950 and 04/30/2011.

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 MEIGS	3/13/1967	2000	Tornado	F2	0	0	25K	0
2 Salem Center	2/21/1993	1810	Tornado	F1	0	3	500K	0
3 Danville	5/21/2001	5:35 PM	Tornado	F1	0	0	400K	0
4 Joppa	9/16/2010	19:00 PM	Tornado	F3	0	6	1.5M	0K
				TOTALS:	0	9	2.425M	0

High Winds History

4 High Winds Events were reported in Meigs County between 01/01/1994 and 04/30/2011.

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 Southern Half	3/18/1994	1155	High Winds	0 kts.	0	2	500K	0
2 Parts Of West Central	11/11/1995	1015	High Winds	0 kts.	0	0	50K	0
3 OHZ066>067 - 075>076 - 083>087	3/9/2002	4:45 PM	High Wind	0 kts.	0	0	75K	0

4 OHZ066 - 075 - 083>086	12/7/2004	12:30 PM	High Wind	50 kts.	0	0	0	0
				TOTALS:	0	2	625K	0

Hail Storm History

34 Hail events were reported in Meigs County between 01/01/1950 and 04/30/2011.

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 MEIGS	4/1/1974	1830	Hail	1.75 in.	0	0	0	0
2 MEIGS	4/3/1974	1740	Hail	1.25 in.	0	0	0	0
3 MEIGS	7/11/1990	1450	Hail	2.00 in.	0	0	0	0
4 Chester	4/10/1995	1038	Hail	0.75 in.	0	0	0	0
5 Langsville	5/10/1995	1700	Hail	0.75 in.	0	0	0	0
6 OHZ066 - 067 - 075 - 076 - 083 - 085 - 086 - 087	8/1/1995	1637	Hail	0.75 in.	0	0	0	0
7 Pomeroy	5/4/1996	4:40 PM	Hail	1.00 in.	0	0	0	0
8 Langsville	8/8/1996	2:43 PM	Hail	0.75 in.	0	0	0	0
9 Carpenter	8/15/1996	2:30 PM	Hail	1.75 in.	0	0	0	0
10 Syracuse	6/16/1998	2:15 PM	Hail	0.75 in.	0	0	0	0
11 Carpenter	4/9/2001	7:25 PM	Hail	0.75 in.	0	0	0	0
12 Pomeroy	6/12/2001	8:12 PM	Hail	0.75 in.	0	0	0	0
13 Burlingham	6/12/2001	8:15 PM	Hail	1.75 in.	0	0	5K	0
14 Darwin	6/4/2002	5:40 PM	Hail	0.88 in.	0	0	0	0
15 Reedsville	7/8/2003	4:45 PM	Hail	0.75 in.	0	0	0	0
16 Pageville	7/12/2003	4:00 PM	Hail	0.88 in.	0	0	0	0
17 Pomeroy	6/4/2006	1:36 PM	Hail	0.75 in.	0	0	0	0
18 Racine	6/4/2006	1:45 PM	Hail	0.75 in.	0	0	0	0
19 Portland	6/22/2006	7:00 PM	Hail	0.75 in.	0	0	0	0
20 Tuppers Plains	6/13/2007	18:03 PM	Hail	0.88 in.	0	0	0K	0K
21 Pomeroy	6/13/2007	18:35 PM	Hail	0.88 in.	0	0	0K	0K
22 Syracuse	6/13/2007	18:57 PM	Hail	0.75 in.	0	0	0K	0K
23 Middleport	7/24/2007	14:21 PM	Hail	0.75 in.	0	0	0K	0K
24 Rutland	9/26/2007	17:32 PM	Hail	0.75 in.	0	0	0K	0K
25 Rutland	9/26/2007	17:36 PM	Hail	0.88 in.	0	0	0K	0K
26 Pomeroy	9/26/2007	17:43 PM	Hail	1.00 in.	0	0	0K	0K
27 Chester	9/26/2007	17:50 PM	Hail	1.75 in.	0	0	50K	0K
28 Pomeroy	6/16/2008	16:58 PM	Hail	0.75 in.	0	0	0K	0K
29 Middleport	6/16/2008	17:00 PM	Hail	0.88 in.	0	0	0K	0K

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
30 Middleport	6/16/2008	17:04 PM	Hail	1.75 in.	0	0	2K	0K
31 Syracuse	6/22/2008	19:45 PM	Hail	0.75 in.	0	0	0K	0K
32 Long Bottom	6/23/2008	14:23 PM	Hail	0.75 in.	0	0	0K	0K
33 Langsville	6/2/2009	16:18 PM	Hail	0.88 in.	0	0	0K	0K
34 Middleport	3/21/2011	16:50 PM	Hail	1.00 in.	0	0	0K	0K
				TOTALS:	0	0	57K	0

Drought History

10 Drought events were reported in Meigs County between 01/01/1994 and 04/30/2011.

Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD
1 OHZ083>087	5/1/1999	12:00 AM	Drought	N/A	0	0	0	0
2 OHZ075>076 - 083>087	6/1/1999	12:00 AM	Drought	N/A	0	0	0	0
3 OHZ066>067 - 075>076 - 083 - 085>087	7/1/1999	12:00 AM	Drought	N/A	0	0	0	0
4 OHZ066>067 - 075>076 - 083>087	8/1/1999	12:00 AM	Drought	N/A	0	0	0	0
5 OHZ066>067 - 075>076 - 083>087	9/1/1999	12:00 AM	Drought	N/A	0	0	0	0
6 OHZ066>067 - 075>076 - 083>087	10/1/1999	12:00 AM	Drought	N/A	0	0	0	0
7 OHZ066>067 - 075>076 - 083>087	9/1/2002	12:00 AM	Drought	N/A	0	0	0	0
8 OHZ083>087	9/1/2007	12:00 AM	Drought	N/A	0	0	0K	0K
9 OHZ083>087	10/1/2007	12:00 AM	Drought	N/A	0	0	0K	0K
10 OHZ083>087	11/1/2007	12:00 AM	Drought	N/A	0	0	0K	0K
				TOTALS:	0	0	0	0

This historical weather data for Meigs County was collected from the national Climatic Data Center. The National Climatic Data Center is the world's largest active archive of weather data. The NCDC is part of the Department of Commerce, National oceanic and Atmospheric Administration (NOAA) and the National Environmental Satellite, Data and Information Services (NESDIS)

Appendix VIII
Critical Facilities

LOCATION	FACILITY	ADDRESS	CITY, STATE, ZIP	Flood Prone
CF-01	State Highway Patrol (Meigs-Gallia)	396 Jackson Pike	Gallipolis, OH 45631	
CF-02	Rutland Sewage Plant	370 Davis Avenue	Rutland, OH 45775	
CF-03	Bradbury Shelter (previously elementary school)	39105 Bradbury Road	Middleport, OH 45760	Yes
CF-04	Lift Station	Corner of Ash St. and Powell St.	Middleport, OH 45760	
CF-05	Lift Station	Corner of Railroad St. and Page St.	Middleport, OH 45760	Yes
CF-06	Lift Station	Corner of Art Lewis and Laurel St.	Middleport, OH 45760	Yes
CF-07	Lift Station	Corner of Park St. and Pearl St.	Middleport, OH 45760	Yes
CF-08	WW Lift Station	1690 Lincoln Heights	Pomeroy, OH 45769	
CF-09	Holzer Clinic	512 Memorial Drive	Pomeroy, OH 45769	
CF-10	Fire Department	286 Race Street	Middleport, OH 45760	Yes
CF-11	Overbrook Rehabilitation	333 Page Street	Middleport, OH 45760	
CF-12	Police Department	237 Race Street	Middleport, OH 45760	
CF-13	Village Hall	237 Race Street	Middleport, OH 45760	Yes
CF-14	Meigs Job & Family Services	175 Race Street	Middleport, OH 45760	Yes
CF-15	Lift Station	Corner of Mill St. and South Second	Middleport, OH 45760	Yes
CF-16	Meigs MES Office	133 Memorial Drive	Pomeroy, OH 45769	
CF-17	Water Storage Tank	599 Hiland Road	Pomeroy, OH 45769	
CF-18	Meigs County EMS Office (Central Dispatch)	119 E Memorial Dr.	Pomeroy, OH 45769	
CF-19	Radio and Cell Phone Towers	119 E Memorial Dr.	Pomeroy, OH 45769	
CF-20	Veterans Memorial Hospital	115 E Memorial Dr.	Pomeroy, OH 45769	
CF-21	Water Pump Station	1121 Lincoln Heights	Pomeroy, OH 45769	
CF-22	Water Pump Station	499 Mulberry Avenue	Pomeroy, OH 45769	
CF-23	WW Lift Station	420 West Main Street	Pomeroy, OH 45769	Yes
CF-24	Bridges (ODOT) Pomeroy-Mason	SR 833 between Middleport & Pomeroy	Pomeroy, OH 45769	
CF-25	Water Pump Station	100 Lincoln Hill Road	Pomeroy, OH 45769	
CF-26	Water Storage Tank	1121 Lincoln Hill Road	Pomeroy, OH 45769	
CF-27	Telephone Office (Switching Station)	238 West Main Street	Pomeroy, OH 45769	Yes
CF-28	WW Lift Station	219 West Main Street	Pomeroy, OH 45769	Yes
CF-29	Water Pump Station	11 Anne Street	Pomeroy, OH 45769	Yes
CF-30	Water Storage Tank	11 Anne Street	Pomeroy, OH 45769	
CF-31	Radio and Cell Phone Towers	48 Anne Street	Pomeroy, OH 45769	
CF-32	Meigs County Health Department	117 W Second Street	Pomeroy, OH 45769	Yes
CF-33	Sheriff's Office	102 Second Street	Pomeroy, OH 45769	
CF-34	Meigs County Sheriff's Department	104 E Second Street	Pomeroy, OH 45769	Yes
CF-35	Pomeroy United Methodist Church	E Second Street	Pomeroy, OH 45769	Yes
CF-36	G&M Fuel Company Bulk Plant (Minersville)	43070 SR 124	Racine, OH 45771	Yes
CF-37	WW Lift Station	500 New Street	Pomeroy, OH 45769	Yes
CF-38	WW Lift Station	100 Old Chester Road	Pomeroy, OH 45769	Yes

LOCATION	FACILITY	ADDRESS	CITY, STATE, ZIP	Flood Prone
CF-39	Police Station	320 East Main Street	Pomeroy, OH 45769	Yes
CF-40	WW Lift Station	325 East Main Street	Pomeroy, OH 45769	Yes
CF-41	Wastewater Plant	500 Spring Valley Lane	Pomeroy, OH 45769	Yes
CF-42	WW Lift Station	632 East Main Street	Pomeroy, OH 45769	Yes
CF-43	Meigs County Highway Department	34110 Fairgrounds Road	Pomeroy, OH 45769	
CF-44	First Southern Baptist Church (Shelter)	41872 Pomeroy Pike	Pomeroy, OH 45769	
CF-45	Asbury Methodist Church	1137 College Street	Syracuse, OH 45779	
CF-46	Nazarene Church	2995 Third Street	Syracuse, OH 45779	
CF-47	Water Plan	2090 Carroll Street	Syracuse, OH 45779	
CF-48	Eastern Bus Garage	38900 SR 7 Behind Eastern H.S.	Reedsville, OH 45772	Yes
CF-49	Racine Municipal Building	Fifth and Main Street	Racine, OH 45771	Yes
CF-50	Racine EMS Building	301 Vine Street	Racine, OH 45771	
CF-51	Syracuse/Racine Sewer Plant	850 Sewer Plant Road	Racine, OH 45771	
CF-52	Racine Locks & Dams (Hydro)	48735 SR 124	Racine, OH 45771	
CF-53	Bridges (WVDOT) Ravenswood	US 33, SR 338 & CR-338A inters.	Ravenswood, WV	Yes
CF-54	Bellville Locks & Hydro	55485 Dam Drive T1027	Reedsville, OH 45772	
CF-55	Tuppers Plains Fire Department	42040 Main Street	Tuppers Plains, OH 45783	
CF-56	Columbia Fire house	29446 SR 143	Albany, OH 45710	
CF-57	Ohio Valley Christian Assembly	39560 Rocksprings Rd	Pomeroy, OH 45769	
CF-58	Scipio Fire House	35575 Firehouse Rd	Harrisonville, OH	
CF-59	Eastern High School	38900 SR 7	Reedsville, OH 45772	
CF-60	Eastern Elementary School	38850 SR 7	Reedsville, OH 45772	
CF-61	Olive Township Fire House	38677 TR 1015	Reedsville, OH 45772	
CF-62	Rocksprings Rehabilitation Center	36759 Rocksprings Rd	Pomeroy, OH 45769	
CF-63	Forked Run State Park	63300 SR 124 (State Park Road)		
CF-64	Chester Fire House	46480 SR 248	Chester, OH 45720	
CF-65	Long Bottom Community Center	6709 TR 275	Long Bottom, OH 45743	Yes
CF-66	Meigs High School	42091 Charles Chancey Dr	Pomeroy, OH 45769	
CF-67	Meigs Middle School	42353 Charles Chancey Dr	Pomeroy, OH 45769	
CF-68	Salem Township Fire House	28854 SR 124	Salem Center, OH	
CF-69	Rutland Fire House	22 Larkin	Rutland, OH 45775	Yes
CF-70	Bashan Fire House	33478 Bashan Rd	Racine, OH 45771	
CF-71	Rutland Community Center	Main Street	Rutland, OH 45775	
CF-72	Meigs Elementary School	36871 SR 124	Rutland, OH 45775	Yes
CF-73	Portland Community Center	56896 SR 124	Portland, OH 45770	
CF-74	Carleton School MR/DD	1310 Carleton Street	Syracuse, OH 45779	
CF-75	Syracuse Community Building	2244 Seventh Street	Syracuse, OH 45779	
CF-76	Syracuse Fire Department			
CF-77	Southern Elementary School	906 Elm Street	Racine, OH 45771	
CF-78	Southern High School	906 Elm Street	Racine, OH 45771	
CF-79	Racine Fire House	Fifth Street & Pearl Street	Racine, OH 45771	Yes
CF-80	Letart Community Building	49380 SR 124		

Appendix IX
Landslide and Mine Subsidence Map

Insert Map

Appendix X
Mine Subsidence Maps

Insert Map