Natural Hazard Mitigation Plan
Ross County OH

Overview

Ross County has determined that there is a critical need to develop a Natural Disaster Mitigation Plan for the protection of property, and the preservation of life. Such a plan is vital to assure the safety of residents given the historic record of natural hazards in the community.

The need for such a plan is further defined by the Federal Emergency Management Agency (FEMA), who has mandated locally developed natural hazard mitigation plans as a prerequisite to qualify for future mitigation assistance. This requirement is outlined in the Disaster Mitigation Act of 2000.

With this in mind, in 2003 the Ross County Commissioners approved applying for a State of Ohio Department of Natural Resources (ODNR) Appalachian Flood Risk Reduction Initiative (AFRRRI) grant and a Pre-Disaster Mitigation Planning Grant (PDM) from the Ohio Emergency Management Agency (OEMA), to develop an all-natural hazard mitigation plan, consistent with FEMA requirements.

Scope of Plan

This plan is intended to provide a Natural Hazard Mitigation Plan for the unincorporated areas in Ross County as well as for the City of Chillicothe and the villages of Adelphi, Bainbridge, Clarksburg, Frankfort, Kingston, and South Salem.

AFRRRI

ODNR, Division of Water is implementing this two (2) year pilot project made possible through a grant from the U.S. Department of Commerce, Economic Development Administration (EDA) with assistance from the Governor’s Office of Appalachia and the Ohio Emergency Management Agency (OEMA). All of the agencies involved in AFRRI have an interest in ensuring that development in the Appalachian Region is sustainable. Sustainable development enhances the community and protects the environment for future generations.

PDM

OEMA, like ODNR, saw the need to assist local communities to develop Natural Hazard Mitigation Plans, in compliance with the new FEMA regulations. They provided grants and supportive assistance to local communities for this effort under the Predisaster Mitigation Planning (PDM) program.

Fortunately, ODNR and OEMA are coordinating their assistance to assure that the resulting Natural Hazard Mitigation Plans meet the FEMA requirements.
Planning Model

To proceed with the development of a locally initiated Natural Hazard Mitigation Plan, the County selected as a planning model the Ohio Natural Hazard Mitigation Planning Guidebook, which was developed cooperatively by OEMA and ODNR.

This guidebook detailed an eleven (11)-step process to create the Natural Hazard Mitigation Plans. The outline of this plan and the basic structure of the format for this report are as follows:

Section 1 Organize resources to prepare a Plan
Section 2 Identify hazard(s) /conduct hazard analysis
Section 3 Identify the problem(s)
Section 4 Set goals
Section 5 Identify possible activities
Section 6 Select best activities and develop action plans
Section 7 Prepare a Draft Plan
Section 8 Seek public input and state/federal review
Section 9 Prepare the Final Plan
Section 10 Adoption of the Plan
Section 11 Implementation, monitoring, and adjusting the Plan

Section 1 Organize Resources to Prepare a Plan

Organizing the resources involves six (6) steps. The following narrative describes those steps and the actions taken by the County.

Step 1 Secure Local Government Leadership to Support the Planning Effort

The Ross County Commissioners, the Chillicothe City Council and the village councils supported the process to update the plan. In addition to this support, ten representatives from Ross County governmental agencies and one representative from the city and each of the villages serve on the Core Planning Committee.

Step 2 Form the Core Planning Group

Considerable time and effort was invested in identifying the right mix of constituents to serve on the Core Planning Committee. The committee ultimately included residents, political leaders, businesspersons, agency representatives, and other key local stakeholders. This Core Committee includes:

David Duckworth, Ross County Flood Plain, Manager-New Member
David L Bethel, Ross County EMA, Director
Linda Wood, Ross County EMA, Admin. Assist- New Member
John Flowers, Ross County Soil and Water
Devon Shoemaker, Ross County Planning Department, Senior Planner
James Barker, Ross County Twp. Trustee Assoc., President- New member
Step 3 Identify Expertise to Help with the Planning Process

The County identified sources of expertise to assist with the planning process. The first was the NCDC climate report; the second was technical planning support from ODNR; and the third was the Mitigation Planning Branch of Ohio EMA.

Step 4 Involve Other Agencies

The Core Planning Committee identified numerous other community groups, agencies, individuals, and businesses to seek input, data, and participation. This included notification to the six (6) surrounding counties, all Ross County Villages, and all Ross County Townships. Each of these was sent a letter defining the planning project and asking for any supportive information that they had. Specific contacts were made with the following community businesses, organizations, and individuals. Any information or involvement from them is noted.

Fayette County Commissioners-133 South Main St., Suite 401, Washington C.H., OH 43160
Jackson County Commissioners-275 Portsmouth St., Jackson, OH 45640
Highland County Commissioners-114 Governor Foraker Place, Hillsboro, OH 45133
Pike County Commissioners-230 Waverly Place, Suite 1000, Waverly, OH 45690
Pickaway County Commissioners-139 West Franklin St., Circleville, OH 43113
Vinton County Commissioners-100 East Main St., McArthur, OH 45651
Hocking County Commissioners, 1 East Main St., Logan, OH 43138
Ross County Engineer – Base maps provided
Ross County Soil & Water – Soil information provided to ODNR for mapping. A member of soil and water serves on core committee.
Ross County Villages – All villages contacted for informational and planning purposes
Township Trustees – Provided a representative to the Core Committee.
OEMA – Planning and Field Operations support
Local Red Cross Chapter - Provided a representative to the Core Committee.
Ross County Board of Health - Provided a representative to the Core Committee.

Step 5 Choose a Planning Model
For the original development, the County selected the **Ohio Natural Hazard Mitigation Planning Guidebook**, which was developed cooperatively by the OEMA and the ODNR. During the review and update the county used the **FEMA, Local Mitigation Plan Review Guide, dtd Oct 1, 2011**.

**Step 6 Decide How the Public Will Be Informed of the Process**

From the start, the County took an open approach to involve the entire community in the planning process. Under the responsibility of EMA Director, who serves on the Core Planning Committee, the County’s outreach efforts included:

- All meetings were posted at the Ross County Courthouse
- Public hearing announcements were advertised in the Chillicothe Gazette
- The Administrator gave updates to Ross County Commissioners after each meeting
- Public meetings were held in November 2003. A fact sheet was distributed at the 2/11/03 public meeting. Meetings to update the plan were held during 2009 and 2010 with the core group and city/village councils. Two public meetings were held on 23 September 2010, after revisions were made to the plan.

With these six (6) steps in place, the County proceeded to the next step in the review and update process.

**Section 2  
Conduct Hazard Assessment: Ross County OH**

Conducting the Hazard Assessment involves four (4) steps based on the FEMA State and Local Mitigation Planning How-to-Guide Version 1.0 August 2001, Planning Process. These steps include:

- Step 1: Identify the Hazards
- Step 2: Profile each hazard
- Step 3: Develop a Community Profile
- Step 4: Conduct a Vulnerability Analysis; Prioritize Hazards, and Estimate Losses

The following narrative describes those steps and the actions taken by the Ross County Core Committee.

**Step 1 Identify the Hazards**

The Core Committee reviewed all of the potential natural hazards as identified on Worksheet #1 “Identify the Hazards”. The Core Committee initially identified the following natural hazards as having some concern for the City and County: dam failure, drought, earthquake, expansive soils, extreme temperatures, flood, hailstorms, land/mine subsidence, severe winter storms, thunder storms, tornado, wildfire, and windstorms.

Committee members set out to research these hazards to determine their historic frequency and level of damage. Long time local residents were interviewed, Police, Fire, and Street
Department records were reviewed, ODNR records and resources were studied, the National Climate Data Center (NCDC) Climate/Events website (www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent-storms) was searched, and local media/libraries were researched. Committee members also researched local media/press publications including the Chillicothe Gazette.

Following this initial review, even more in-depth research was conducted to expand their profiles and fill in missing pieces of information.

**Step 2 Profile Each Hazard**

Using the listing of potential hazards from the FEMA developed “State and Local Mitigation Planning How-to-Guide: Understanding Your Risks”, natural hazard profiles were developed. Each profile includes a summary of the historical research conducted by the Committee. The profiles include a chronological listing of events, location, documented casualties, injuries, property damage value, property damage value in 2002 dollars, reference to any available maps, additional relevant information, and the source of the profiles data.

A financial damage evaluation of these profiles revealed that 91.8% of all historic natural hazard damage resulted from flooding, 7.2% resulted from tornadoes, and less than .5% resulted from high wind damage. No other hazard cost more than .21% of the total historical losses in the City and County.

Based on the data developed in these profiles, the Committee evaluated the Probability and potential Impact for each profiled hazard. The scores were then tallied to determine a Hazard Prioritization. This process was followed to develop individual Hazard Prioritization charts for Ross County and for the City of Chillicothe.

The methodology used for this process was developed by the Red Cross for use by local Chapters as a guidance document for local preparedness planning. Scores of 1-5 were awarded for Probability of Occurrence, with the higher number indicating a higher probability of occurrence. A similar 1-5 scale was used to rate Impact, with the higher numbers indicating a greater potential for loss of life, major property damage, and Federal Disaster Declarations. Rating criteria for both factors is as follows:

**Defining Probability of Occurrence:**

- **5** There is a record in the past 100 years of at least one occurrence of this hazard that caused a disaster.

- **4** There is a record in the past 100 years of frequent occurrences of this hazard that could have escalated to the level of a disaster if the event or incident had not been brought under control, or if the event had persisted over a longer period of time.

- **3** There is a record in the past 100 years of only periodic occurrences of this hazard or there is a history in the past 100 years of frequent occurrences of this event but only under extraordinary circumstances could a disaster have occurred.
2 There is a record in the past 100 years of periodic occurrences of this hazard but at no time did the event escalate to the level of a disaster, and only with extraordinary circumstances could a disaster occur.

1 There has been one occurrence or less in the past 100 years and this hazard has not caused any disasters.

0 Physical or other conditions make it improbable or impossible that such an event or incident would ever occur.

**Defining Impact:**

5 An event has met the requirements for a federal disaster declaration. Casualties, including deaths and injuries, and/or extensive property damage in the millions of dollars occur throughout the area, and the community will need outside assistance to recover from this event. There is potential for critical facilities to be affected that could trigger additional hazards. The disaster will affect a large proportion of the population.

4 Casualties, including deaths and injuries, and/or extensive property damage in the millions could occur throughout the area and critical facilities could be affected. The community would need outside assistance to recover from the event. An event has met the requirements for a state disaster declaration.

3 Casualties may occur and extensive property damage would probably occur to specific target groups, or this hazard could cause injuries and property damage that requires local multi-agency and multi-jurisdictional response and for recovery.

2 No casualties will occur and property damage from this hazard would occur as a local emergency. The event would be treated as a local emergency but would not escalate to a disaster.

1 No casualties will occur and property damages will be minimal or unlikely. The incident would be treated as a local emergency but would not escalate to a disaster.

0 Physical or other conditions make it highly improbable that this event or incident would occur, or cause casualties or property damage.

**Revising the Plan:**

The “Core Group” was up-dated to reflect personnel changes due to attrition. A meeting was held to allow public input. It was advertised in the local paper and posted at the public library. A meeting was held with the “core group” to review the hazard priorities, impacts and mitigation activities. The incorporated jurisdictions were contacted further and ask to have their jurisdictions to review the plan and add mitigation activities as needed. Statistical data was provided by the Ross County Planning Department, Flood Plains Administrator. Ross County Auditor and each incorporated jurisdiction. The revised plan was then posted to the Ross County Planning Department web site for public comment.

Illustrations I and II show the Hazard Prioritizations for Ross County and the City of Chillicothe respectively.
Ross County Hazard Prioritization

Prioritization Formula: Probability X Impact = Hazard Risk
(High 17-25; Medium 9-16; Low 1-8; N/A 0)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Probability</th>
<th>Impact</th>
<th>Priority Score</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avalanche</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Coastal Erosion</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Coastal Storm</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Dam Failure</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>LOW</td>
</tr>
<tr>
<td>Drought</td>
<td>5</td>
<td>3</td>
<td>15</td>
<td>MED</td>
</tr>
<tr>
<td>Earthquake</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>LOW</td>
</tr>
<tr>
<td>Expansive Soils</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>LOW</td>
</tr>
<tr>
<td>Extreme Temperatures</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>MED</td>
</tr>
<tr>
<td>Flood</td>
<td>5</td>
<td>5</td>
<td>25</td>
<td>HIGH</td>
</tr>
<tr>
<td>Hailstorm</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>LOW</td>
</tr>
<tr>
<td>Hurricane</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Land Subsidence</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>LOW</td>
</tr>
<tr>
<td>Landslide</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>LOW</td>
</tr>
<tr>
<td>Severe Winter Storm</td>
<td>5</td>
<td>5</td>
<td>25</td>
<td>HIGH</td>
</tr>
<tr>
<td>Thunder Storm</td>
<td>4</td>
<td>3</td>
<td>12</td>
<td>MED</td>
</tr>
<tr>
<td>Tornado</td>
<td>5</td>
<td>4</td>
<td>20</td>
<td>HIGH</td>
</tr>
<tr>
<td>Tsunami</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Volcano</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Wildfire</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>LOW</td>
</tr>
<tr>
<td>Windstorm</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>LOW</td>
</tr>
</tbody>
</table>

Illustration I

The above Hazard Prioritization Matrix was based on hazard profile data, committee members’ personal experience and intuition and input from the ODNR and Ohio EMA.

Some Natural Hazards are not relevant to the County. These low risk and low probability natural hazards, which require no additional discussion, include avalanche, coastal erosion, coastal storm, hurricanes, tsunami, and volcanoes.

A risk and vulnerability review of the remaining natural hazards follows.

**Dam Failure:** ODNR records revealed that there are eight Class I dams in Ross County. A dam is considered Class I if it is greater than 60 feet, and/or has a storage volume greater than 5000 acre-feet, and/or probable loss of life, serious hazard to health, or structural damage to high value property (i.e., homes, industries, major public utilities) would occur if the dam failed. The multi-hazard map shows the location of Class I, II, and III dams in Ross
The inset map shows the location of Class I dams in surrounding counties in watersheds that drain toward Ross County. The following table lists the Class I dams in Ross County.

<table>
<thead>
<tr>
<th>NAME</th>
<th>OWNER</th>
<th>OWNERTYPE</th>
<th>STREAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Hill Dam</td>
<td>Paul &amp; Julie Welcome</td>
<td>Private</td>
<td>Tributary to Paint Creek</td>
</tr>
<tr>
<td>Brown and Haskins Lake Dam</td>
<td>Opal Brown &amp; Wm Haskins, M.D.</td>
<td>Private</td>
<td>Tributary to Paint Creek</td>
</tr>
<tr>
<td>Ross Lake Dam</td>
<td>ODNR, Division of Wildlife</td>
<td>Public, State</td>
<td>Lick Run</td>
</tr>
<tr>
<td>Southern Silica Pond No. 2 Dam</td>
<td>Best Sand Corporation</td>
<td>Industrial</td>
<td>Tributary to Whiskey Run</td>
</tr>
<tr>
<td>Caldwell Lake Dam</td>
<td>ODNR, Division of Parks &amp; Recreation</td>
<td>Public, State</td>
<td>Tributary to Stony Creek</td>
</tr>
<tr>
<td>Stewart Lake Dam</td>
<td>ODNR, Division of Parks &amp; Recreation</td>
<td>Public, State</td>
<td>Tributary to Stony Creek</td>
</tr>
<tr>
<td>Southern Silica Pond No. 1 Dam</td>
<td>Best Sand Corporation</td>
<td>Industrial</td>
<td>Tributary to Whiskey Run</td>
</tr>
<tr>
<td>White turkey Lake Dam</td>
<td>Country Tyme ALC</td>
<td>Private</td>
<td>Tributary to Crooked Creek</td>
</tr>
</tbody>
</table>

A search of the National Inventory of Dams database revealed no documented downstream damage caused by dam failure in Ross County. It did note that several Class I dams have been identified by ODNR Dam Safety Inspectors as needing maintenance, repair, or spillway improvements.

**Drought:** Major drought, based on the profile occur about once per decade. They tend to effect regions of Ohio, or the entire state. Based on the likely hood that drought will occur, but that its impact will not cause injury or damage, the committee rated this as a medium risk natural hazard.

**Earthquake:** A single event was documented in November 1899. No injuries or property damage resulted. There is no known scientific methodology to accurately predict future earthquakes. With a PGA value of 2.494609 there is some concern about a magnitude 6 earthquake in the future. Such a quake would have minimal impact. Resulting, the committee considered earthquakes as a low risk natural hazard.

**Expansive Soils/ Land Subsidence:** With only five (5) historic incidents in isolated areas, the committee rated this as a low risk natural hazard. The south western portion of the county has documented Karst areas. These locations are characterized by sink holes, caverns, closed surface depressions, subsurface voids, and subsurface drainage. Since these areas are very rural and underdeveloped, the committee felt confident with the low risk/vulnerability rating.

**Extreme Temperatures:** Much like drought, these events occur over larger areas. There is no known scientific methodology to accurately predict future events resulting from extreme temperatures. Given the potential for loss of life during these events, the committee rated this as a medium natural hazard.

**Flood:** The profile clearly documents a frequency and loss of property resulting from flooding. The vulnerability and future risk in flood hazard areas is high. Resulting, flood tied as one of the highest risk natural hazards in the County. The 1% annual chance floodplain (100-year flood) for Ross County and incorporated area’s is shown on the Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Map (FIRM) dated 7/22/2010. The countywide FIRM uses aerial photography as a base layer making flood hazard determinations less difficult and more accurate. Copies of these maps can be obtained
by contacting the Ross County Floodplain Administrator at (740) 773-7200 or FEMA at 1-877-FEMA MAP (336-2627).

**Hailstorm:** While the profile documented 18 hail events, property damage was minimal. This hazard was rated as low by the committee.

**Landslide:** The profile documented three (3) incidents of landslides along state routes. Because these events have been isolated to roadways, and no other properties are affected, the committee rated landslides as a low risk hazard.

**Severe Winter Storms:** There is a high likelihood of future major winter storms. Events of recent years weighed heavily with the committee. The cost of clean up, potential risk of loss of life due to poor road conditions, and the disruption of daily life, led the committee to rate severe winter storms as the highest risk/vulnerability natural hazard, tied with flooding.

**Thunder storms:** The hazard profile documented multiple events almost annually. Further, wind damage from these storms ran in the thousands of dollars per event. This frequency and property damage resulted in the committee rating this as a medium risk/vulnerability hazard. No injuries or loss of life has resulted from these storms.

**Tornado:** Since 1954, nine (9) tornadoes have been reported in the County based on ncdc.noaa.gov records. Each resulted in significant property damage and three (3) tornadoes caused injuries. Based on these facts, the committee considered tornadoes a high risk natural hazard, with the probability of an event every five (5) years.

**Wildfire:** ODNR records indicated 284 wildfires occurred in Ross County between 1/1/97 and 11/20/07. Each of these fires resulted in minimal property damage and no documented injuries or loss of life. The committee considered wildfires as a low risk natural hazard.

**Windstorms:** There are only a few documented windstorm events in the County. Since event frequency and damage favor tornadoes, and thunderstorms, windstorms as an isolated hazard was rated as a low natural hazard by the committee.
City of Chillicothe Hazard Prioritization

Prioritization Formula: Probability X Impact = Hazard Risk
(High 17-25; Medium 9-16; Low 1-8; N/A 0)

<table>
<thead>
<tr>
<th>Hazard</th>
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<tr>
<td>Avalanche</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
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<tr>
<td>Coastal Erosion</td>
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<td>0</td>
<td>N/A</td>
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<tr>
<td>Coastal Storm</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Dam Failure</td>
<td>2</td>
<td>1</td>
<td>2/13</td>
<td>LOW</td>
</tr>
<tr>
<td>Drought</td>
<td>5</td>
<td>2</td>
<td>10/6</td>
<td>MED</td>
</tr>
<tr>
<td>Earthquake</td>
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<td>4</td>
<td>4/10</td>
<td>LOW</td>
</tr>
<tr>
<td>Expansive Soils</td>
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<td>2</td>
<td>2/14</td>
<td>LOW</td>
</tr>
<tr>
<td>Extreme Temperatures</td>
<td>3</td>
<td>2</td>
<td>6/8</td>
<td>LOW</td>
</tr>
<tr>
<td>Flood</td>
<td>5</td>
<td>5</td>
<td>25/1</td>
<td>HIGH</td>
</tr>
<tr>
<td>Hailstorm</td>
<td>4</td>
<td>3</td>
<td>12/5</td>
<td>MED</td>
</tr>
<tr>
<td>Hurricane</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Land Subsidence</td>
<td>2</td>
<td>2</td>
<td>4/11</td>
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</tr>
<tr>
<td>Landslide</td>
<td>3</td>
<td>2</td>
<td>6/7</td>
<td>LOW</td>
</tr>
<tr>
<td>Severe Winter Storm</td>
<td>5</td>
<td>3</td>
<td>15/3</td>
<td>MED</td>
</tr>
<tr>
<td>Thunder Storm</td>
<td>4</td>
<td>3</td>
<td>12/4</td>
<td>MED</td>
</tr>
<tr>
<td>Tornado</td>
<td>5</td>
<td>5</td>
<td>25/2</td>
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<td>Tsunami</td>
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<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Volcano</td>
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<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Wildfire</td>
<td>2</td>
<td>2</td>
<td>4/12</td>
<td>LOW</td>
</tr>
<tr>
<td>Windstorm</td>
<td>2</td>
<td>2</td>
<td>4/9</td>
<td>LOW</td>
</tr>
</tbody>
</table>

Illustration II

Since the City of Chillicothe prioritization is almost identical to the Counties; the risk/vulnerability analysis for each hazard does not need to be repeated.

Step 3 Develop a Community Profile

The Community Profile for the unincorporated areas of Ross County and the City of Chillicothe identify community demographics, present and future land uses, existing community regulations, natural hazards prioritizations, an inventory of residential/commercial and industrial property and their values, and critical facilities.

Demographics: Ross County

The 2008 US Census has recorded the complete demographics of Ross County. This information includes population, income, employment, education, housing, and other demographic statistics. Specific demographics for the County include:
Population: 75,972
Median Age: 36.9
Population over 65 years of age: 8,894
Average Household Size: 2.50
Median Household Income: $37,117
Population Below Poverty: 1741 families
Education Level: 6.1% less than 9th grade, 17.7% 9th-12th grade no diploma,
42.2% HS diploma, 5.0% Associate Degree, 7.4% BA, and 4.0% Graduate degree
Median Home Value: $87,000

Demographics: City of Chillicothe

The 2008 US Census has recorded the complete demographics of the City. This information includes population, income, employment, education, housing, and other demographic statistics. Specific demographics for the City include:

Population: 22,193
Median Age: 40.3
Population over 65 years of age: 3,893
Average Household Size: 2.43
Median Household Income: $38,432
Population Below Poverty: 584 families
Education Level: 3.9% less than 9th grade, 10.5% 9th-12th grade no diploma,
42.1% HS diploma, 5.5% Associate Degree, 10.1% BA, and 5.9% Graduate degree
Median Home Value: $100,500

Present and Future Land Uses: Ross County

Based on an evaluation of land use from the Ross County Planning and Building Department, Ross County land use is as follows:

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Acres</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cropland</td>
<td>176,235</td>
<td>41%</td>
</tr>
<tr>
<td>Forestland</td>
<td>170,134</td>
<td>39%</td>
</tr>
<tr>
<td>Other Land</td>
<td>39,264</td>
<td>9%</td>
</tr>
<tr>
<td>Urban &amp; Built-up land</td>
<td>26,173</td>
<td>6%</td>
</tr>
<tr>
<td>Pastureland</td>
<td>22,368</td>
<td>5%</td>
</tr>
</tbody>
</table>

Present and Future Land Uses: City of Chillicothe

The City has no immediate or long-range plans to change the current usage of City lands. The annexation of commercial property west of the City in the Sunrush development is the only planned expansion of City lands, with no other formal annexation plans. Based on the
City zoning map, the Committee estimated that 68% of the City is residential, 20% is commercial, 8% is industrial, and 4% is park/public and open space.

**Critical Facilities for Ross County**

There are 59 Critical Facilities located in Ross County. The value of these facilities (not including land value), based upon County Auditor records, is $444,339,129.

**Critical Facilities for City of Chillicothe**

There are 36 Critical Facilities located in the City of Chillicothe. The value of these facilities (not including land value), based upon County Auditor records, is $134,621,220.

**Inventory and Values: Unincorporated Areas of Ross County**

Unincorporated County Residential Values:

Research based on 2000 US Census, County Auditor records, and aerial photos of the County, identified 29,461 homes Countywide, less 10,312 residential units in the City of Chillicothe, and the 1,863 homes in the six (6) County Villages, leaves 17,286 homes in the unincorporated area of the County. These 17,286 homes have a total value of $1,503,882,000 or $87,000 median value per home. These figures include land values. Assuming that land represents 20% of the total valuation, a recalculation figures improved value at $1,203,105,600, or $69,600 per home.

Unincorporated County Commercial and Industrial Values:

There are a total of 718 commercial/industrial businesses in the unincorporated area of Ross County. These businesses, based on Ross County Auditor records, have a total improved property value of $55,464,110, or $77,248 per business.

The following chart shows the valuations of property within the unincorporated areas of Ross County.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Or Value</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial &amp; Industrial</th>
<th>Commercial &amp; Industrial Values</th>
<th># Crit Facilities</th>
<th>Value Crit.Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16,385</td>
<td></td>
<td>$1,140,093,660</td>
<td>718</td>
<td>$55,464,110</td>
<td>59</td>
<td>$397,375,640</td>
</tr>
</tbody>
</table>

**Illustration III**

**Inventory and Values: City of Chillicothe**

City of Chillicothe Residential Values:

Research based on 2010 US Census, County Auditor records, and aerial photos of the City, identified 9,782 homes with a total value of $869,125,956, or $96,000 per home. These figures include land values. Assuming that land represents 20% of the total valuation, a recalculation figures improved value at $791,961,600, or $88,850 per home.
City of Chillicothe Commercial Values:

There are a total of 1,230 commercial businesses in the City of Chillicothe. These businesses (not including land value), based on Ross County Auditor records, have a total improved property value of $111,484,540, or $90,456 per business.

City of Chillicothe Industrial Values:

There are a total of 84 industries in the City of Chillicothe. These industries (not including land value), based on Ross County Auditor records, have a total improved property value of $19,778,314, or $235,456 per industry.

The following chart shows the valuations of property within the City of Chillicothe.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Or Value</th>
<th>Res. Value</th>
<th>Commercial</th>
<th>Commercial Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9,782</td>
<td>$869,125,956</td>
<td>1230</td>
<td>$111,484,540</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># or Value</th>
<th>Value Indust.</th>
<th># Crit Facilities</th>
<th>Value Crit. Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>84</td>
<td>$19,778,314</td>
<td>36</td>
<td>$134,621,220</td>
</tr>
</tbody>
</table>

Illustration IV

Existing Community Regulations: Ross County

The County currently has a Subdivision Regulation, which applies, to the unincorporated areas of the County. There is zoning at the following locations within the county; Meryl Shoemaker Air(Ross County Airport), Buckskin Township and Deerfield Township. The County has a Flood Plain Ordinance. The county is a member in good standing in the NFIP. Any commercial or industrial construction or renovation projects are subject to permits from the Ross County Building Department. Further, plumbing/septic permits must be secured from the Ross County Health Department prior to any residential, commercial, or industrial construction. The County has also worked on a comprehensive Smart Growth concept, but has yet to adopt the plan. The County is more likely to implement portions of the concept after further review and discussion.

Existing Community Regulations: City of Chillicothe

There are several City ordinances relating to land use, flood plain, and development in the City. The city is a member in good standing in the NFIP In addition there is a Board of Zoning Appeals, which reviews requests for zoning changes as they affect land usage and flood plain potential.

Step 4  Conduct a Vulnerability Analysis and Estimate Losses

Vulnerability Analysis
This step was accomplished by using the Red Cross methodology for Probability and potential Impact for each profiled hazard. The scores were then tallied to determine a Hazard Prioritization. This process was followed to develop individual Hazard Prioritization charts for Ross County and for the City of Chillicothe.

Illustrations I and II show the Hazard Prioritizations for Ross County and the City of Chillicothe respectively.

Based on total scores, the Core Committee ranked the Natural Hazards as High Priority (score 17-25), Medium Priority (score 9-16), and Low Priority (score 1-8), or not applicable N/A (score 0).

**Ross County**

Ross County Hazards were rated as follows:

*High Priority*
- Flood
- Severe Winter Storms

*Medium Priority*
- Drought
- Tornado
- Thunder Storms
- Extreme Temperatures

*Low Priority*
- Dam Failure
- Earthquake
- Expansive Soils
- Hail Storms
- Land Subsidence
- Landslide
- Wildfire
- Windstorms

*Not Applicable*
- Avalanche
- Costal Erosion
- Coastal Storm
- Hurricane
- Tsunami
- Volcano

To properly calculate potential losses from natural hazard damage, two (2) key factors must be considered.

1. What property may be affected by the hazard?
2. What is the intensity of the hazard?

The following Illustration V shows how natural hazards were grouped for the purpose of calculating potential losses.

- Group A are those hazards that can only occur in a specific geographic location.
- Group B hazards are those that can cause County-wide catastrophic damage.
- Group C are those hazards that could occur anywhere in the County, but are not likely to cause serious damage or injury.

The Committee decided to calculate losses only for identified “High” and “Medium” Natural Hazard Priorities.

<table>
<thead>
<tr>
<th>Natural Hazards</th>
<th>Group A Geographic Specific Hazards</th>
<th>Group B Potential Countywide Hazards (Catastrophic Losses)</th>
<th>Group C Countywide Hazards (Non-Catastrophic Losses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe Winter Storms</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Drought</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tornado</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thunder Storms</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extreme Temps</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Illustration V

Each potential hazard, or hazard set, will be evaluated individually using the following format:

A. Methodology
B. Inventory Assessment/Valuations
C. Calculated Losses

For Groups A and B hazards, potential loss valuations will be calculated at 100%, 50%, 25%, and 10%. The difference is that Group A hazards will be calculated over the property value of a defined area. Group B hazards will be calculated over the unincorporated County area total valuation. Potential loss values for Group C hazards will be calculated at 25%, 10%, 5%, and 1% over the entire County valuation.

**Group A Specific Geographic Natural Hazards**

Group A natural hazards are those hazards, which can only occur in a geographically specific area. Resulting, the area affected is known, and more detailed valuations can be developed. Damage, as a percentage of property valuation, is calculated uniquely for each of these hazards, based on the potential severity of the hazard.
Flooding

A. Methodology

The 1% annual chance floodplain (100-year flood) for Ross County and incorporated area’s is shown on the Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Map (FIRM) dated 7/22/2010. The countywide FIRM uses aerial photography as a base layer making flood hazard determinations less difficult and more accurate. Copies of these maps can be obtained by contacting the City of Chillicothe Floodplain Administrator at (740) 773-8980 or FEMA at 1-877-FEMA MAP (336-2627).

Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data researched property Values of all residential, commercial, and industrial properties in the defined area. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

County records indicate that of the 390 homes in the floodplain, 103 of the homes are trailers. For the purpose of this report, trailers are valued at a replacement value of $15,000/home. An average residential property value of $43,900 is used for all other homes in the following calculations. The calculation for these units is included on Illustration VI below.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Res Homes</td>
<td>287</td>
<td>$12,599,300</td>
<td>35</td>
<td>$3,362,556</td>
<td>1</td>
<td>$54,970</td>
</tr>
<tr>
<td>Res Trailers</td>
<td>103</td>
<td>$1,545,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>390</td>
<td>$14,144,300</td>
<td>35</td>
<td>$3,362,556</td>
<td>1</td>
<td>$54,970</td>
</tr>
</tbody>
</table>

Illustration VI

B. Inventory Assessment/Valuations

In total, the flood risk area includes 390 residential homes (total improved value $14,144,163, average of $43,900/residence), 35 commercial and industrial properties (total improved value $3,362,556 average of $96,073/business). Further, there is only one (1) Critical Facility in the flood plain area, Franklin Township Fire and Rescue Station on Stoney Creek Road.

C. Calculated Losses

Since it is not possible to link any building elevation data with water flow/flooding calculations (because the data does not exist), our most pragmatic loss projection model is to use a loss factor to represent different flooding scenarios. Further, for calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial
properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to flooding are calculated using the following loss factors of 10%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration VII.

The number of people effected is calculated by the average household size (2000 Census) times the number of households i.e. 390 homes x 2.50 persons/household = 975 persons.

<table>
<thead>
<tr>
<th></th>
<th># Units</th>
<th># People</th>
<th>Value&amp;100% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
<th>50% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>390</td>
<td>975</td>
<td>$14,144,300</td>
<td>$1,414,430</td>
<td>$3,536,075</td>
<td>$7,072,150</td>
</tr>
<tr>
<td>Residential Contents</td>
<td>N/A</td>
<td>@20K each</td>
<td>$7,800,000</td>
<td>$780,000</td>
<td>$1,950,000</td>
<td>$3,900,000</td>
</tr>
<tr>
<td>Commercial/ Industrial</td>
<td>35</td>
<td>N/A</td>
<td>$3,362,556</td>
<td>$336,256</td>
<td>$840,639</td>
<td>$1,681,278</td>
</tr>
<tr>
<td>Commercial/ Industrial Contents</td>
<td>N/A</td>
<td>@100K each</td>
<td>$3,500,000</td>
<td>$350,000</td>
<td>$875,000</td>
<td>$1,750,000</td>
</tr>
<tr>
<td>Critical Facilities</td>
<td>1</td>
<td>N/A</td>
<td>$54,970</td>
<td>$5,497</td>
<td>$13,743</td>
<td>$27,485</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>426</td>
<td>975</td>
<td><strong>$28,861,826</strong></td>
<td><strong>$2,886,183</strong></td>
<td><strong>$7,215,457</strong></td>
<td><strong>$14,430,913</strong></td>
</tr>
</tbody>
</table>

Illustration VII

The value of homes in the floodplain represents approximately 1.1% of the total County residential value ($1,203,105,600). The county floodplains administrator maintains a file/list of properties with reoccurring flood damage claims. There were 21(with a total value of $1,277,903) structures in the county with repetitive loss claims. Ten(with a total value of $275,450) of these have been removed during a mitigation project in 2005.

**Group B Potentially Catastrophic County Wide Hazards**

**Tornado**

Natural hazard events in this category are those that can cause catastrophic damage anywhere or everywhere in the County. These events are also more difficult to predict. A brief overview of the vulnerability each of these hazards pose follows.

**Tornados**

It is not currently possible to forecast where a tornado may strike. Since most of the buildings in the County were not built to withstand strong wind speeds, the damage to effected properties could be devastating. While it is unlikely that a tornado would destroy the entire County, the percentages used to determine vulnerability reflect the Core Committees best estimates based on the developed profile and other currently available data.
A. Methodology

Property Values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>17,286</td>
<td>$1,203,105,600</td>
<td>368</td>
<td>$45,540,380</td>
<td>59</td>
<td>$444,339,129</td>
</tr>
</tbody>
</table>

Illustration III

B. Inventory Assessment/Valuations

In total, the Group B risk area (County wide) includes 17,268 residential homes (total improved value $1,203,105,600, average of $69,600), and 368 commercial and industrial properties (total improved value $45,540,380, average of $123,751/business). Further, there are 59 Critical Facilities County wide, with a total improved value of $444,339,129.

C. Calculated Losses

These Group B natural hazards have the potential for complete devastation to the County. For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group B hazards (tornados) are calculated using the following loss factors of 10%, 15%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration VIII.

The number of people effected is calculated by the average household size (2000 Census) times the number of households i.e. 17,286 homes x 2.50 persons/household = 43,215 persons.
Illustration VIII

Group C  County wide Non Specific Hazards

Severe Winter Storms, Drought, Thunder Storms, and Extreme Temperatures

Group C natural hazards represent those hazards, which can cause damage anywhere in the County, but not typically severe damage. Further, there is no way to predict where or when these specific hazard events will occur. Resulting, the potential loss for these hazards is calculated at much lower percentages of the overall property valuation.

Severe Winter Storms
The profile on winter storms indicated fairly frequent occurrence every one (1) to two (2) years. The recent winter storm of February 2003, complete with Disaster Declaration, weighed heavily on the Committee members during the hazard ranking process.

Drought
Drought occurs over a prolong period of time. It is unlikely to cause serious structural damage, but there is the potential for infrastructure damage (collapsing water/sewer lines) and street failures. Resulting, the Committee anticipates any drought damage to be in the lowest range of the following loss calculations.

Thunder Storms
There is a consistent history of lightning/thunder storms in the area based on profile research. Damage has been limited, and we currently have no ability to locate a specific lightning strike.

Extreme Temperatures
Extreme temperatures, as defined in this plan, involve extreme heat and cold in the region. Limited extreme temperature events are unlikely to cause any major damage (broken water lines etc), but longer events can pose serious health threats to the population, especially to high at-risk residents including the elderly. Based on National Climatic Data Center (NCDC) extreme temperature records from 1950 to present, there were a number of extreme temperature events, which caused statewide damage and fatalities. None of the NCDC data identified an individual county or city, but rather a regional of the state. An extreme cold weather event affecting the entire state occurred on February 11, 1995, causing four (4) deaths and over $100,000 in damage. The coldest day recorded in Ohio history was –39 degrees F, on February 10, 1899 in Milligan, Perry County. The hottest day on record was 113 degrees F, near Gallipolis, Gallia County, on July 21, 1934. In addition to the above, two (2) extreme weather incidents which affected Ross and surrounding counties, are as follows: February 1, 1996, extreme cold caused $1.3 million damage. July 20, 1999, excessive heat caused 13 deaths in Southwestern Ohio. No other reports of property damage, injuries, or deaths were found on the NCDC website.
A. Methodology

Property Values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record. Ross County does not have a GIS system at this time.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Value</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial &amp; Industrial</th>
<th>Commercial &amp; Industrial Values</th>
<th># Crit Facilities</th>
<th>Value Crit. Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>17,286</td>
<td>$1,203,105,600</td>
<td>368</td>
<td>$45,540,380</td>
<td>59</td>
<td>$444,339,129</td>
<td></td>
</tr>
</tbody>
</table>

Illustration III

B. Inventory Assessment/Valuations

In total, the Group C risk area (County wide) includes 17,286 residential homes (total improved value $1,203,105,600, average of $69,600), and 368 commercial and industrial properties (total improved value $45,540,380, average of $123,751/business). Further, there are 59 Critical Facilities county-wide, with a total improved value of $444,339,129.

C. Calculated Losses

These Group C natural hazards have the potential for some property losses to the County. The historic review of Hazard Profiles for this group found historic damage, but at minimum value levels. Further, no loss of life has been attributed to any of these hazards in the County.

For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group C hazards (Severe Winter Storms, Drought, Thunder Storms, and Extreme Temperatures) are calculated using the following loss factors of 1%, 5%, 10%, and 25%. Again, based on the Hazard Profiles, it is unlikely that any of these hazards would result in losses exceeding 25% of valuation. These loss calculations are shown on Illustration IX.

<table>
<thead>
<tr>
<th></th>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>1% Loss</th>
<th>5% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>17,286</td>
<td>43,215</td>
<td>$1,203,105,600</td>
<td>$12,031,056</td>
<td>$60,155,280</td>
<td>$120,310,560</td>
<td>$300,776,400</td>
</tr>
<tr>
<td>Residential Contents</td>
<td>@ 20K each</td>
<td>N/A</td>
<td>$345,720,000</td>
<td>$3,457,200</td>
<td>$17,286,000</td>
<td>$34,572,000</td>
<td>$86,430,000</td>
</tr>
<tr>
<td>Commercial/Industrial</td>
<td>368</td>
<td>N/A</td>
<td>$82,250,000</td>
<td>$822,500</td>
<td>$4,112,500</td>
<td>$8,225,000</td>
<td>$20,562,500</td>
</tr>
</tbody>
</table>
Illustration IX

City of Chillicothe
The City of Chillicothe Hazards were rated as follows:

High Priority
- Flood
- Tornado

Medium Priority
- Severe Winter Storms
- Thunder Storms
- Hail Storms
- Drought

Low Priority
- Landslide
- Extreme Temperatures
- Hail Storms
- Earthquakes
- Land Subsidence
- Wildfire
- Windstorms
- Expansive Soils
- Dam Failure

Not Applicable
- Avalanche
- Costal Erosion
- Coastal Storm
- Hurricane
- Tsunami
- Volcano

To properly calculate potential losses from natural hazard damage, two (2) key factors must be considered.
1. What property may be affected by the hazard?
2. What is the intensity of the hazard?

The following Illustration X shows how natural hazards were grouped for the purpose of calculating potential losses.
• Group A are those hazards that can only occur in a specific geographic location.
• Group B hazards are those that can cause City-wide catastrophic damage.
• Group C are those hazards that could occur anywhere in the City, but are not likely to cause serious damage or injury.

The Committee decided to calculate losses only for identified High and Medium Natural Hazard Priorities.

<table>
<thead>
<tr>
<th>Natural Hazards</th>
<th>Group A Geographic Specific Hazards</th>
<th>Group B Potential City wide Hazards (Catastrophic Losses)</th>
<th>Group C City wide Hazards (Non-Catastrophic Losses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tornados</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe Winter Storms</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thunder Storms</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hail</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drought</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Illustration X

Each potential hazard, or hazard set, will be evaluated individually using the following format:

D. Methodology
E. Inventory Assessment/Valuations
F. Calculated Losses

For Groups A and B hazards, potential loss valuations will be calculated at 100%, 50%, 25%, and 10%. The difference is that Group A hazards will be calculated over the property value of a defined area. Group B hazards will be calculated over the City area total valuation. Potential loss values for Group C hazards will be calculated at 25%, 10%, 5%, and 1% over the entire City valuation.

**Group A Specific Geographic Natural Hazards**

Group A natural hazards are those hazards, which can only occur in a geographically specific area. Resulting, the area affected is known, and more detailed valuations can be developed. Damage, as a percentage of property valuation, is calculated uniquely for each of these hazards, based on the potential severity of the hazard.

**Flooding**

_A. Methodology_
The 1% annual chance floodplain (100-year flood) for Ross County and incorporated area’s is shown on the Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Map (FIRM) dated 7/22/2010. The countywide FIRM uses aerial photography as a base layer making flood hazard determinations less difficult and more accurate. Copies of these maps can be obtained by contacting the City of Chillicothe Floodplain Administrator at (740) 773-8980 or FEMA at 1-877-FEMA MAP (336-2627).

Property values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

City and County records indicate that 250 of the homes in the floodplain are trailers. For the purpose of this report, trailers are valued at a replacement value of $15,000/home. The calculations for these units are included on Illustration XI.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Res Homes</td>
<td>133</td>
<td>$8,383,329</td>
<td>110</td>
<td>$77,126,453</td>
<td>8</td>
<td>$8,657,699</td>
<td>1</td>
</tr>
<tr>
<td>Res Trailers</td>
<td>250</td>
<td>$3,825,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>383</td>
<td>$12,208,329</td>
<td>110</td>
<td>$77,126,453</td>
<td>8</td>
<td>$8,657,699</td>
<td>1</td>
</tr>
</tbody>
</table>

Illustration XI

B. Inventory Assessment/Valuations

In total, the flood risk area includes 383 residential homes (total value $11,968,950), 110 commercial properties (total improved value $75,614,170, average of $687,402/business) and 8 industrial properties (total improved value $8,487,940, average of $1,060,993/industry). Further, there is 1 Critical Facilities in the flood plain area, including the City of Chillicothe Waste Water Treatment Plant.

C. Calculated Losses

Since it is not possible to link any building elevation data with water flow/flooding calculations (because the data does not exist), our most pragmatic loss projection model is to use a loss factor to represent different flooding scenarios. Further, for calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.
Based on the above valuations, assumptions of losses due to flooding are calculated using the following loss factors of 10%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration XII.

The number of people effected is calculated by the average household size (2000 Census) times the number of households i.e. 383 homes x 2.48 persons/household = 858 persons.

**Illustration XII**

<table>
<thead>
<tr>
<th>Units</th>
<th>Number People Affected</th>
<th>100% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
<th>50% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>383</td>
<td>858</td>
<td>$11,968,950.00</td>
<td>1,196,895.00</td>
<td>2,992,237.50</td>
</tr>
<tr>
<td>Residential Contents @ $20K each</td>
<td>-</td>
<td>7,660,000.00</td>
<td>766,000.00</td>
<td>1,915,000.00</td>
<td>3,830,000.00</td>
</tr>
<tr>
<td>Commercial</td>
<td>110</td>
<td>-</td>
<td>75,614,170.00</td>
<td>7,561,417.00</td>
<td>18,903,542.50</td>
</tr>
<tr>
<td>Commercial Contents @100K each</td>
<td>-</td>
<td>11,000,000.00</td>
<td>1,100,000.00</td>
<td>2,750,000.00</td>
<td>5,500,000.00</td>
</tr>
<tr>
<td>Industrial</td>
<td>5</td>
<td>-</td>
<td>8,487,940.00</td>
<td>848,794.00</td>
<td>2,121,985.00</td>
</tr>
<tr>
<td>Industrial Contents @100K each</td>
<td>-</td>
<td>500,000.00</td>
<td>50,000.00</td>
<td>125,000.00</td>
<td>250,000.00</td>
</tr>
<tr>
<td>Critical Facility</td>
<td>1</td>
<td>-</td>
<td>14,000,000.00</td>
<td>1,400,000.00</td>
<td>3,500,000.00</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>499</strong></td>
<td><strong>858</strong></td>
<td><strong>$103,262,110.00</strong></td>
<td><strong>$10,326,211.00</strong></td>
<td><strong>$25,815,527.50</strong></td>
</tr>
</tbody>
</table>

The value of homes in the floodplain represents approximately 1.5% of the total City residential value ($791,961,600 ).

**Group B Potentially Catastrophic City Wide Hazards**

**Tornados**

Natural hazard events in this category are those that can cause catastrophic damage anywhere or everywhere in the City. These events are also more difficult to predict. A brief overview of the vulnerability each of these hazards pose follows.

**A. Methodology**
Property Values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record. The number of residents is calculated by the # of units times 2.48. (i.e. 10,312 homes times 2.24 equals 22,300 people)

<table>
<thead>
<tr>
<th>Property Type</th>
<th># or Value</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>9,782</td>
<td>$724,271,630</td>
<td>1230</td>
<td>$111,484,540</td>
</tr>
</tbody>
</table>

Illustration IV

B. Inventory Assessment/Valuations

In total, the Group B risk area (City wide) includes 9,782 residential homes (total improved value $869,125,956, average of $88,850/home), 1230 commercial properties (total improved value $111,484,540, average of $90,637/business) and 84 industrial properties (total improved value $19,778,314, average of $235,456/industry). Further, there are 36 Critical Facilities County wide with a total improved value of $134,621,220.

C. Calculated Losses

These Group B natural hazards have the potential for complete devastation to the City. For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group B hazards (tornados, earthquakes, wildfires, or dam failure) are calculated using the following loss factors of 10%, 15%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration XIII.
<table>
<thead>
<tr>
<th>Units</th>
<th>Number People Affected</th>
<th>100% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
<th>50% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>383</td>
<td>858</td>
<td>$12,208,329</td>
<td>1,220,832</td>
<td>3,052,082</td>
</tr>
<tr>
<td>Residential Contents</td>
<td>@ $20K each</td>
<td>-</td>
<td>7,660,000.00</td>
<td>766,000.00</td>
<td>1,915,000.00</td>
</tr>
<tr>
<td>Commercial</td>
<td>110</td>
<td>-</td>
<td>77,126,453.00</td>
<td>7,712,645.00</td>
<td>19,281,613.00</td>
</tr>
<tr>
<td>Commercial Contents</td>
<td>@100K each</td>
<td>-</td>
<td>11,000,000.00</td>
<td>1,100,000.00</td>
<td>2,750,000.00</td>
</tr>
<tr>
<td>Industrial</td>
<td>5</td>
<td>-</td>
<td>8,487,940.00</td>
<td>848,794.00</td>
<td>2,121,985.00</td>
</tr>
<tr>
<td>Industrial Contents</td>
<td>@100K each</td>
<td>-</td>
<td>500,000.00</td>
<td>50,000.00</td>
<td>125,000.00</td>
</tr>
<tr>
<td>Critical Facility</td>
<td>1</td>
<td>-</td>
<td>14,280,000.00</td>
<td>1,428,000.00</td>
<td>3,570,000.00</td>
</tr>
<tr>
<td>Totals</td>
<td>499</td>
<td>858</td>
<td>$131,262,722.00</td>
<td>$13,126,271.00</td>
<td>$32,815,680.00</td>
</tr>
</tbody>
</table>

Illustration XIII

**Group C  City wide Non Specific Hazards**

**Severe Winter Storms, Thunder Storms, Hail, and Drought**

Group C natural hazards represent those hazards, which can cause damage anywhere in the City, but not typically damage of any significance. Further, there is no way to predict where or when these specific hazard events will occur. Resulting, the potential loss for these hazards is calculated at much lower percentages of the overall property valuation.

**Severe Winter Storms**
The profile on windstorms indicated fairly frequent occurrence, but minimum damage per event. Further, windstorms tend to impact the entire City.

**Thunder Storms**
There is a consistent history of lightning/thunder storms in the area based on profile research. Damage has been limited, and we currently have no ability to locate a specific lightning strike.

**Hail**
Again, like many of the other hazards in this category, the hail profile found little damage and randomness to the location of these events. No one can currently predict precisely where hail will fall.

**Drought**
Drought occurs over a prolong period of time. It is unlikely to cause serious structural damage, but there is the potential for infrastructure damage (collapsing water/sewer lines) and street failures. Resulting, the Committee anticipates any drought damage to be in the lowest range of the following loss calculations.
A. Methodology

Property values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Or Value</td>
<td>9,782</td>
<td>$724,271,630</td>
<td>1230</td>
<td>$111,484,540</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Indust.</th>
<th>Value Indust.</th>
<th># Crit Facilities</th>
<th>Value Crit.Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>84</td>
<td>$19,778,314</td>
<td>36</td>
<td>$134,621,220</td>
</tr>
</tbody>
</table>

Illustration IV

B. Inventory Assessment/Valuations

In total, the Group C risk area (City wide) includes 9,782 residential homes (total improved value $869,125,956 average of $88,850/home), 1230 commercial properties (total value $111,484,540, average of $90,637/business) and 84 industrial properties (total improved value $19,778,314, average of $235,456/industry). Further, there are 36 Critical Facilities County wide with a total improved value of $134,621,220.

C. Calculated Losses

These Group C natural hazards have the potential for some property losses to the City. The historic review of Hazard Profiles for this group found historic damage, but at minimum value levels. Further, no loss of life has been attributed to any of these hazards in the City.

For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group C hazards (severe winter storms, thunder storms, hail, and drought) are calculated using the following loss factors of 1%, 5%, 10%, and 25%. Again, based on the Hazard Profiles, it is unlikely that any of these hazards would result in losses exceeding 25% of valuation. These loss calculations are shown on Illustration XIV.
<table>
<thead>
<tr>
<th>Units</th>
<th>Number People Affected</th>
<th>100% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
<th>50% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>383</td>
<td>858</td>
<td>12,208,329</td>
<td>1,220,832</td>
<td>3,052,082</td>
</tr>
<tr>
<td>Residential Contents</td>
<td>$20K each</td>
<td>-</td>
<td>7,660,000.00</td>
<td>766,000.00</td>
<td>1,915,000.00</td>
</tr>
<tr>
<td>Commercial</td>
<td>110</td>
<td>-</td>
<td>77,126,453</td>
<td>7,712,645</td>
<td>19,281,613</td>
</tr>
<tr>
<td>Commercial Contents</td>
<td>@100K each</td>
<td>-</td>
<td>11,000,000.00</td>
<td>1,100,000.00</td>
<td>2,750,000.00</td>
</tr>
<tr>
<td>Industrial</td>
<td>5</td>
<td>-</td>
<td>8,487,940</td>
<td>848,794</td>
<td>2,121,985</td>
</tr>
<tr>
<td>Industrial Contents</td>
<td>@100K each</td>
<td>-</td>
<td>500,000.00</td>
<td>50,000.00</td>
<td>125,000.00</td>
</tr>
<tr>
<td>Critical Facility</td>
<td>1</td>
<td>-</td>
<td>14,280,000</td>
<td>1,428,000</td>
<td>3,570,000</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>499</strong></td>
<td><strong>858</strong></td>
<td><strong>131,262,722</strong></td>
<td><strong>13,126,271</strong></td>
<td><strong>32,815,680</strong></td>
</tr>
</tbody>
</table>

Illustration XIV

Village of Adelphi
The Village of Adelphi Hazards have been rated as follows:

**High Priority**
- Tornado
- Severe Winter Storms

**Medium Priority**
- Floods
- Thunder Storms
- Hail Storms
- Drought

**Low Priority**
- Landslide
- Extreme Temperatures
- Hail Storms
- Earthquakes
- Land Subsidence
- Wildfire
- Windstorms
- Expansive Soils
- Dam Failure

**Not Applicable**
- Avalanche
• Costal Erosion
• Coastal Storm
• Hurricane
• Tsunami
• Volcano

To properly calculate potential losses from natural hazard damage, two (2) key factors must be considered.
1. What property may be affected by the hazard?
2. What is the intensity of the hazard?

The following Illustration X shows how natural hazards were grouped for the purpose of calculating potential losses.
- Group A are those hazards that can only occur in a specific geographic location.
- Group B hazards are those that can cause Village-wide catastrophic damage.
- Group C are those hazards that could occur anywhere in the Village, but are not likely to cause serious damage or injury.

The Committee decided to calculate losses only for identified High and Medium Natural Hazard Priorities.

<table>
<thead>
<tr>
<th>Natural Hazards</th>
<th>Group A Geographic Specific Hazards</th>
<th>Group B Potential City wide Hazards (Catastrophic Losses)</th>
<th>Group C City wide Hazards (Non-Catastrophic Losses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tornados</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Severe Winter Storms</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Thunder Storms</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Hail</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Drought</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**Illustration X**

Each potential hazard, or hazard set, will be evaluated individually using the following format:

- G. Methodology
- H. Inventory Assessment/Valuations
- I. Calculated Losses

For Groups A and B hazards, potential loss valuations will be calculated at 100%, 50%, 25%, and 10%. The difference is that Group A hazards will be calculated over the property value of a defined area. Group B hazards will be calculated over the Village area total valuation. Potential loss values for Group C hazards will be calculated at 25%, 10%, 5%, and 1% over the entire City valuation.
Group A Specific Geographic Natural Hazards

Group A natural hazards are those hazards, which can only occur in a geographically specific area. Resulting, the area affected is known, and more detailed valuations can be developed. Damage, as a percentage of property valuation, is calculated uniquely for each of these hazards, based on the potential severity of the hazard.

Flooding

The Village of Adelphi has no identified Flood Zone Hazards based on the FIRM maps dated 7/22/2010. The village is a member of the National Flood Insurance Program.

Group B Potentially Catastrophic Village Wide Hazards

Tornados

Natural hazard events in this category are those that can cause catastrophic damage anywhere or everywhere in the Village. These events are also more difficult to predict. A brief overview of the vulnerability each of these hazards pose follows.

Tornados

It is not currently possible to forecast where a tornado may strike. Since most of the buildings in the Village were not built to withstand strong wind speeds, the damage to effected properties could be devastating. While it is unlikely that a tornado would destroy the entire Village, the percentages used to determine vulnerability reflect the Core Committees best estimates based on the developed profile and other currently available data.

A. Methodology

Property Values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record. The number of residents is calculated by the # of units times 2.48. (i.e. 10,312 homes times 2.48 equals 25,574 people)

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>185</td>
<td>$3,722,625</td>
<td>6</td>
<td>$291,141</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Indust.</th>
<th>Value Indust.</th>
<th># Crit Facilities</th>
<th>Value Crit.Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Illustration IV


B. Inventory Assessment/Valuations

In total, the Group B risk area (Village wide) includes 185 residential homes (total improved value $3,722,625, average of $20,123/home), 6 commercial properties (total improved value $291,141, average of $48,524/business) and no industrial properties. Further, there are no Critical Facilities in the village.

C. Calculated Losses

These Group B natural hazards have the potential for complete devastation to the Village. For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group B hazards (tornados, earthquakes, wildfires, or dam failure) are calculated using the following loss factors of 10%, 15%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration XIII.

<table>
<thead>
<tr>
<th></th>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>10% Loss</th>
<th>15% Loss</th>
<th>25% Loss</th>
<th>50% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>185</td>
<td>390</td>
<td>$3,722,625</td>
<td>$372,263</td>
<td>$558,393</td>
<td>$930,656</td>
<td>$1,861,312</td>
</tr>
<tr>
<td>Residential</td>
<td>@ 20K each</td>
<td>N/A</td>
<td>$3,700,000</td>
<td>$370,000</td>
<td>$555,000</td>
<td>$925,000</td>
<td>$1,850,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>6</td>
<td>N/A</td>
<td>$600,000</td>
<td>$60,000</td>
<td>$90,000</td>
<td>$150,000</td>
<td>$300,000</td>
</tr>
<tr>
<td>Critical</td>
<td>NA</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td>NA</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Illustration XIII

Group C Village wide Non Specific Hazards

Severe Winter Storms, Thunder Storms, Hail, and Drought

Group C natural hazards represent those hazards, which can cause damage anywhere in the Village, but not typically damage of any significance. Further, there is no way to predict where or when these specific hazard events will occur. Resulting, the potential loss for these hazards is calculated at much lower percentages of the overall property valuation.

Severe Winter Storms
The profile on windstorms indicated fairly frequent occurrence, but minimum damage per event. Further, windstorms tend to impact the entire Village.

Thunder Storms
There is a consistent history of lightning/thunder storms in the area based on profile research. Damage has been limited, and we currently have no ability to locate a specific lightning strike.

**Hail**
Again, like many of the other hazards in this category, the hail profile found little damage and randomness to the location of these events. No one can currently predict precisely where hail will fall.

**Drought**
Drought occurs over a prolonged period of time. It is unlikely to cause serious structural damage, but there is the potential for infrastructure damage (collapsing water/sewer lines) and street failures. Resulting, the Committee anticipates any drought damage to be in the lowest range of the following loss calculations.

**A. Methodology**

Property values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Or Value</td>
<td>185</td>
<td>$3,722,625</td>
<td>6</td>
<td>$291,141</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Indust.</th>
<th>Value Indust.</th>
<th># Crit Facilities</th>
<th>Value Crit.Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Illustration IV**

**B. Inventory Assessment/Valuations**

In total, the Group C risk area (Village wide) includes 185 residential homes (total improved value $3,722,625, average of $20,123/home), 6 commercial properties (total improved value $291,141, average of $48,524/business). Further, there are no Critical Facilities in the village.

**C. Calculated Losses**

These Group C natural hazards have the potential for some property losses to the Village. The historic review of Hazard Profiles for this group found historic damage, but at minimum value levels. Further, no loss of life has been attributed to any of these hazards in the Village.
For calculating losses, residential properties are assumed to have, on average $20,000 of
contents, while commercial properties are estimated to have $100,000 in contents. Industrial
and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group C hazards (severe winter
storms, thunder storms, hail, and drought) are calculated using the following loss factors of
1%, 5%, 10%, and 25%. Again, based on the Hazard Profiles, it is unlikely that any of these
hazards would result in losses exceeding 25% of valuation. These loss calculations are shown
on Illustration XIV.

<table>
<thead>
<tr>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>1% Loss</th>
<th>5% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>185</td>
<td>390</td>
<td>$3,700,000</td>
<td>$37,000</td>
<td>$185,000</td>
<td>$370,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>6</td>
<td>N/A</td>
<td>$600,000</td>
<td>$6,000</td>
<td>$30,000</td>
<td>$60,000</td>
</tr>
<tr>
<td>Industrial</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Critical Facilities</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td>$4,300,000</td>
<td>$43,000</td>
<td>$215,000</td>
<td>$430,000</td>
</tr>
</tbody>
</table>

Illustration XIV

Village of Bainbridge
The Village of Bainbridge Hazards were rated as follows:

High Priority
- Flood
- Tornado

Medium Priority
- Severe Winter Storms
- Thunder Storms
- Hail Storms
- Drought

Low Priority
- Landslide
- Extreme Temperatures
- Hail Storms
- Earthquakes
- Land Subsidence
- Wildfire
- Windstorms
- Expansive Soils

33
• Dam Failure

Not Applicable
• Avalanche
• Costal Erosion
• Coastal Storm
• Hurricane
• Tsunami
• Volcano

To properly calculate potential losses from natural hazard damage, two (2) key factors must be considered.
1. What property may be affected by the hazard?
2. What is the intensity of the hazard?

The following Illustration X shows how natural hazards were grouped for the purpose of calculating potential losses.

- Group A are those hazards that can only occur in a specific geographic location.
- Group B hazards are those that can cause Village-wide catastrophic damage.
- Group C are those hazards that could occur anywhere in the Village, but are not likely to cause serious damage or injury.

The Committee decided to calculate losses only for identified High and Medium Natural Hazard Priorities.

<table>
<thead>
<tr>
<th>Natural Hazards</th>
<th>Group A Geographic Specific Hazards</th>
<th>Group B Potential City wide Hazards (Catastrophic Losses)</th>
<th>Group C City wide Hazards (Non-Catastrophic Losses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tornados</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe Winter Storms</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Thunder Storms</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Hail</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Drought</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Illustration X

Each potential hazard, or hazard set, will be evaluated individually using the following format:

J. Methodology
K. Inventory Assessment/Valuations
L. Calculated Losses
For Groups A and B hazards, potential loss valuations will be calculated at 100%, 50%, 25%, and 10%. The difference is that Group A hazards will be calculated over the property value of a defined area. Group B hazards will be calculated over the Village area total valuation. Potential loss values for Group C hazards will be calculated at 25%, 10%, 5%, and 1% over the entire City valuation.

**Group A Specific Geographic Natural Hazards**

Group A natural hazards are those hazards, which can only occur in a geographically specific area. Resulting, the area affected is known, and more detailed valuations can be developed. Damage, as a percentage of property valuation, is calculated uniquely for each of these hazards, based on the potential severity of the hazard.

**Flooding**

The Village of Bainbridge has no identified Flood Zone Hazards based on the FIRM maps dated 7/22/2010. The village is a member of the National Flood Insurance Program.

**Group B Potentially Catastrophic Village Wide Hazards**

**Tornados**

Natural hazard events in this category are those that can cause catastrophic damage anywhere or everywhere in the Village. These events are also more difficult to predict. A brief overview of the vulnerability each of these hazards pose follows.

**Tornados**

It is not currently possible to forecast where a tornado may strike. Since most of the buildings in the Village were not built to withstand strong wind speeds, the damage to effected properties could be devastating. While it is unlikely that a tornado would destroy the entire Village, the percentages used to determine vulnerability reflect the Core Committees best estimates based on the developed profile and other currently available data.

**A. Methodology**

Property Values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record. The number of residents is calculated by the # of units times 2.48. (i.e. 10,312 homes times 2.48 equals 25,574 people)

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Or Value</td>
<td>436</td>
<td>$8,309,830</td>
<td>46</td>
<td>$2,608,537</td>
</tr>
</tbody>
</table>

|----------|-----------|---------------|-------------------|----------------|

35
### Illustration IV

#### B. Inventory Assessment/Valuations

In total, the Group B risk area (Village wide) includes 436 residential homes (total improved value $8,309,830, average of $19,060/home), 46 commercial properties (total improved value $2,608,537, average of $56,707/business) and 0 industrial properties. Further, there are 0 Critical Facilities Village wide with a total improved value of $0.

#### C. Calculated Losses

These Group B natural hazards have the potential for complete devastation to the Village. For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group B hazards (tornados, earthquakes, wildfires, or dam failure) are calculated using the following loss factors of 10%, 15%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration XIII.

<table>
<thead>
<tr>
<th>Type</th>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>10% Loss</th>
<th>15% Loss</th>
<th>25% Loss</th>
<th>50% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>436</td>
<td>1082</td>
<td>$8,309,830</td>
<td>$930,983</td>
<td>$1,246,475</td>
<td>$2,077,458</td>
<td>$4,154,915</td>
</tr>
<tr>
<td>Residential</td>
<td>@ 20K each</td>
<td></td>
<td>$8,720,000</td>
<td>$872,000</td>
<td>$1,308,000</td>
<td>$2,180,000</td>
<td>$4,360,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>46</td>
<td></td>
<td>$2,608,537</td>
<td>$260,854</td>
<td>$391,281</td>
<td>$652,134</td>
<td>$1,304,267</td>
</tr>
<tr>
<td>Commercial</td>
<td>@ 100K each</td>
<td></td>
<td>$4,600,000</td>
<td>$460,000</td>
<td>$690,000</td>
<td>$1,150,000</td>
<td>$2,300,000</td>
</tr>
<tr>
<td>Industrial</td>
<td>0</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Critical</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilities</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Illustration XIII

### Group C Village wide Non Specific Hazards

#### Severe Winter Storms, Thunder Storms, Hail, and Drought

Group C natural hazards represent those hazards, which can cause damage anywhere in the Village, but not typically damage of any significance. Further, there is no way to predict where or when these specific hazard events will occur. Resulting, the potential loss for these hazards is calculated at much lower percentages of the overall property valuation.

#### Severe Winter Storms

The profile on windstorms indicated fairly frequent occurrence, but minimum damage per event. Further, windstorms tend to impact the entire Village.
**Thunder Storms**
There is a consistent history of lightning/thunder storms in the area based on profile research. Damage has been limited, and we currently have no ability to locate a specific lightning strike.

**Hail**
Again, like many of the other hazards in this category, the hail profile found little damage and randomness to the location of these events. No one can currently predict precisely where hail will fall.

**Drought**
Drought occurs over a prolonged period of time. It is unlikely to cause serious structural damage, but there is the potential for infrastructure damage (collapsing water/sewer lines) and street failures. Resulting, the Committee anticipates any drought damage to be in the lowest range of the following loss calculations.

**A. Methodology**

Property values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Or Value</td>
<td>436</td>
<td>$8,309,830</td>
<td>46</td>
<td>$2,608,537</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Indus.</th>
<th>Value Indus.</th>
<th># Crit Facilities</th>
<th>Value Crit.Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>NA</td>
<td></td>
<td></td>
<td>NA</td>
</tr>
</tbody>
</table>

**Illustration IV**

**B. Inventory Assessment/Valuations**

In total, the Group C risk area (Village wide) includes 436 residential homes (total improved value $8,309,830, average of $19,060/home), 46 commercial properties (total improved value $2,608,537, average of $56,707/business) and 0 industrial properties. Further, there are 0 Critical Facilities County wide with a total improved value of $0.

**C. Calculated Losses**

These Group C natural hazards have the potential for some property losses to the Village.
The historic review of Hazard Profiles for this group found historic damage, but at minimum value levels. Further, no loss of life has been attributed to any of these hazards in the Village.

For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group C hazards (severe winter storms, thunder storms, hail, and drought) are calculated using the following loss factors of 1%, 5%, 10%, and 25%. Again, based on the Hazard Profiles, it is unlikely that any of these hazards would result in losses exceeding 25% of valuation. These loss calculations are shown on Illustration XIV.

<table>
<thead>
<tr>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>1% Loss</th>
<th>5% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>436</td>
<td>1082</td>
<td>$8,309,830</td>
<td>$83,098</td>
<td>$415,419</td>
<td>$830,983</td>
</tr>
<tr>
<td>Residential Contents @ 20K each</td>
<td>N/A</td>
<td>$8,720,000</td>
<td>$87,200</td>
<td>$436,000</td>
<td>$872,000</td>
<td>$2,180,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>46</td>
<td>N/A</td>
<td>$2,608,830</td>
<td>$26088</td>
<td>$130,441</td>
<td>$260,883</td>
</tr>
<tr>
<td>Commercial Contents @100K each</td>
<td>N/A</td>
<td>$4,600,000</td>
<td>$46,000</td>
<td>$2150000</td>
<td>$460,000</td>
<td>$1,150,000</td>
</tr>
<tr>
<td>Industrial</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Critical Facilities</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CF Contents @100K each</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td>$24,238,660</td>
<td>$242,386</td>
<td>$1,196,860</td>
<td>$2,424,532</td>
</tr>
</tbody>
</table>

Illustration XIV

Village of Clarksburg
The Village of Clarksburg Hazards were rated as follows:

High Priority
- Tornado
- Severe Winter Storms

Medium Priority
- Thunder Storms
- Hail Storms
- Floods
- Drought

Low Priority
- Landslide
- Extreme Temperatures
- Earthquakes
- Land Subsidence
• Wildfire
• Windstorms
• Expansive Soils
• Dam Failure

*Not Applicable*
• Avalanche
• Costal Erosion
• Coastal Storm
• Hurricane
• Tsunami
• Volcano

To properly calculate potential losses from natural hazard damage, two (2) key factors must be considered.
1. What property may be affected by the hazard?
2. What is the intensity of the hazard?

The following Illustration X shows how natural hazards were grouped for the purpose of calculating potential losses.
- Group A are those hazards that can only occur in a specific geographic location.
- Group B hazards are those that can cause Village-wide catastrophic damage.
- Group C are those hazards that could occur anywhere in the Village, but are not likely to cause serious damage or injury.

The Committee decided to calculate losses only for identified High and Medium Natural Hazard Priorities.

<table>
<thead>
<tr>
<th>Natural Hazards</th>
<th>Group A Geographic Specific Hazards</th>
<th>Group B Potential City wide Hazards (Catastrophic Losses)</th>
<th>Group C City wide Hazards (Non-Catastrophic Losses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tornados</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe Winter Storms</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Thunder Storms</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Hail</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Drought</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**Illustration X**

Each potential hazard, or hazard set, will be evaluated individually using the following format:

M. Methodology
N. Inventory Assessment/Valuations
O. Calculated Losses

For Groups A and B hazards, potential loss valuations will be calculated at 100%, 50%, 25%, and 10%. The difference is that Group A hazards will be calculated over the property value of a defined area. Group B hazards will be calculated over the Village area total valuation. Potential loss values for Group C hazards will be calculated at 25%, 10%, 5%, and 1% over the entire City valuation.

**Group A Specific Geographic Natural Hazards**

Group A natural hazards are those hazards, which can only occur in a geographically specific area. Resulting, the area affected is known, and more detailed valuations can be developed. Damage, as a percentage of property valuation, is calculated uniquely for each of these hazards, based on the potential severity of the hazard.

**Flooding**

The Village of Clarksburg has no identified Flood Zone Hazards based on the FIRM maps dated 7/22/2010. The village is a member of the National Flood Insurance Program.

**Group B Potentially Catastrophic Village Wide Hazards**

**Tornados**

Natural hazard events in this category are those that can cause catastrophic damage anywhere or everywhere in the Village. These events are also more difficult to predict. A brief overview of the vulnerability each of these hazards pose follows.

**Tornados**

It is not currently possible to forecast where a tornado may strike. Since most of the buildings in the Village were not built to withstand strong wind speeds, the damage to effected properties could be devastating. While it is unlikely that a tornado would destroy the entire Village, the percentages used to determine vulnerability reflect the Core Committees best estimates based on the developed profile and other currently available data.

*A. Methodology*

Property Values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record. The number of residents is calculated by the # of units times 2.48. (i.e. 10,312 homes times 2.48 equals 25,574 people)

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
</table>

40
Illustration IV

B. Inventory Assessment/Valuations

In total, the Group B risk area (Village wide) includes 190 residential homes (total improved value $134,142,907 average of $21,804/home), 8 commercial properties (total improved value $410,818 average of $51,352/business) and 3 other properties( Total improved value $309,680 average of $103,226). Further, there are 5 Critical Facilities in the village with a total improved value of $1,397,530.

C. Calculated Losses

These Group B natural hazards have the potential for complete devastation to the Village. For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group B hazards (tornados, earthquakes, wildfires, or dam failure) are calculated using the following loss factors of 10%, 15%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration XIII.

Illustration XIII

Group C Village wide Non Specific Hazards

Severe Winter Storms, Thunder Storms, Hail, and Drought

Group C natural hazards represent those hazards, which can cause damage anywhere in the Village, but not typically damage of any significance. Further, there is no way to predict where or when these specific hazard events will occur. Resulting, the potential loss for these hazards is calculated at much lower percentages of the overall property valuation.
**Severe Winter Storms**  
The profile on windstorms indicated fairly frequent occurrence, but minimum damage per event. Further, windstorms tend to impact the entire Village.

**Thunder Storms**  
There is a consistent history of lightning/thunder storms in the area based on profile research. Damage has been limited, and we currently have no ability to locate a specific lightning strike. For more detail, please refer to the county wide hazard profile.

**Hail**  
Again, like many of the other hazards in this category, the hail profile found little damage and randomness to the location of these events. No one can currently predict precisely where hail will fall.

**Drought**  
Drought occurs over a prolonged period of time. It is unlikely to cause serious structural damage, but there is the potential for infrastructure damage (collapsing water/sewer lines) and street failures. Resulting, the Committee anticipates any drought damage to be in the lowest range of the following loss calculations.

*A. Methodology*

Property values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Other</td>
<td>190</td>
<td>$4,142,907</td>
<td>8</td>
<td>$410,818</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Other.</th>
<th>Value Other.</th>
<th># Crit Facilities</th>
<th>Value Crit.Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># Other</td>
<td>3</td>
<td>$309,680</td>
<td>5</td>
<td>$1,397,530</td>
</tr>
</tbody>
</table>

**Illustration IV**

*B. Inventory Assessment/Valuations*

In total, the Group C risk area (Village wide) includes 190 residential homes (total improved value $134,142,907 average of $21,804/home), 8 commercial properties (total improved value $410,818 average of $51,352/business) and 3 other properties( Total improved value
$309,680 average of $103,226). Further, there are 5 Critical Facilities in the village with a total improved value of $1,397,530.

C. Calculated Losses

These Group C natural hazards have the potential for some property losses to the Village. The historic review of Hazard Profiles for this group found historic damage, but at minimum value levels. Further, no loss of life has been attributed to any of these hazards in the Village.

For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group C hazards (severe winter storms, thunder storms, hail, and drought) are calculated using the following loss factors of 1%, 5%, 10%, and 25%. Again, based on the Hazard Profiles, it is unlikely that any of these hazards would result in losses exceeding 25% of valuation. These loss calculations are shown on Illustration XIV.

<table>
<thead>
<tr>
<th></th>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>1% Loss</th>
<th>5% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>190</td>
<td>472</td>
<td>$4,142,907</td>
<td>$41429</td>
<td>$207,145</td>
<td>$414290</td>
<td>$1,035,726</td>
</tr>
<tr>
<td>Residential Contents</td>
<td>@ 20K each</td>
<td>N/A</td>
<td>$380,000</td>
<td>$3,800</td>
<td>$19,000</td>
<td>$38,000</td>
<td>$95,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>8</td>
<td>N/A</td>
<td>$410,818</td>
<td>$4,108</td>
<td>$20,540</td>
<td>$41081</td>
<td>$102,704</td>
</tr>
<tr>
<td>Commercial Contents</td>
<td>@100K each</td>
<td>N/A</td>
<td>$800,000</td>
<td>$8,000</td>
<td>$12,000</td>
<td>$80,000</td>
<td>$400,000</td>
</tr>
<tr>
<td>Industrial</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Contents</td>
<td>@ 100K each</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Facilities</td>
<td>5</td>
<td>N/A</td>
<td>$1,397,530</td>
<td>$13,975</td>
<td>$69,876</td>
<td>$139,753</td>
<td>$349,382</td>
</tr>
<tr>
<td>CF Contents</td>
<td>@ 100K each</td>
<td>N/A</td>
<td>$500,000</td>
<td>$5000</td>
<td>$25,000</td>
<td>$50,000</td>
<td>$125,000</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td>$7,631,255</td>
<td>$76,312</td>
<td>$353,124</td>
<td>$763,124</td>
<td>$2,107,812</td>
</tr>
</tbody>
</table>

Illustration XIV

Village of Frankfort
The Village of Frankfort Hazards were rated as follows:

High Priority
- Flood
- Tornado

Medium Priority
- Severe Winter Storms
- Thunder Storms
To properly calculate potential losses from natural hazard damage, two (2) key factors must be considered.
1. What property may be affected by the hazard?
2. What is the intensity of the hazard?

The following Illustration X shows how natural hazards were grouped for the purpose of calculating potential losses.

- **Group A** are those hazards that can only occur in a specific geographic location.
- **Group B** hazards are those that can cause Village-wide catastrophic damage.
- **Group C** are those hazards that could occur anywhere in the Village, but are not likely to cause serious damage or injury.

The Committee decided to calculate losses only for identified High and Medium Natural Hazard Priorities.

<table>
<thead>
<tr>
<th>Natural Hazards</th>
<th>Group A Geographic Specific Hazards</th>
<th>Group B Potential City wide Hazards (Catastrophic Losses)</th>
<th>Group C City wide Hazards (Non-Catastrophic Losses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tornados</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe Winter Storms</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Hazard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Thunder Storms</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hail</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drought</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Illustration X**

Each potential hazard, or hazard set, will be evaluated individually using the following format:

P. Methodology  
Q. Inventory Assessment/Valuations  
R. Calculated Losses

For Groups A and B hazards, potential loss valuations will be calculated at 100%, 50%, 25%, and 10%. The difference is that Group A hazards will be calculated over the property value of a defined area. Group B hazards will be calculated over the Village area total valuation. Potential loss values for Group C hazards will be calculated at 25%, 10%, 5%, and 1% over the entire City valuation.

**Group A Specific Geographic Natural Hazards**

Group A natural hazards are those hazards, which can only occur in a geographically specific area. Resulting, the area affected is known, and more detailed valuations can be developed. Damage, as a percentage of property valuation, is calculated uniquely for each of these hazards, based on the potential severity of the hazard.

**Flooding**

*A. Methodology*

The 1% annual chance floodplain (100-year flood) for Ross County and incorporated area’s is shown on the Federal Emergency Management Agency’s (FEMA) Flood Insurance Rate Map (FIRM) dated 7/22/2010. The countywide FIRM uses aerial photography as a base layer making flood hazard determinations less difficult and more accurate. Copies of these maps can be obtained by contacting the Ross County Floodplain Administrator at (740) 773-7200 or FEMA at 1-877-FEMA MAP (336-2627).

Property values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

Village records indicate that none of the homes in the floodplain are trailers. For the purpose of this report, trailers are valued at a replacement value of $15,000/home. The calculations for these units are included on Illustration XI. The village is a member of the National Flood Insurance Program.
Illustration XI

B. Inventory Assessment/Valuations

In total, the flood risk area includes 21 residential homes (total value $507,853), 1 commercial properties (total improved value $26230, average of $26230/business) and 0 industrial properties (total improved value $0, average of $0/industry). Further, there is 1 Critical Facilities in the flood plain area, including the $1,971,310

Illustration XII

C. Calculated Losses

Since it is not possible to link any building elevation data with water flow/flooding calculations (because the data does not exist), our most pragmatic loss projection model is to use a loss factor to represent different flooding scenarios. Further, for calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to flooding are calculated using the following loss factors of 10%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration XII.

The number of people effected is calculated by the average household size (2000 Census) times the number of households i.e. 21 homes x 2.48 persons/household = 52.08 persons.

Illustration XII
The value of homes in the floodplain represents approximately 1.5% of the total Village residential value ($507,853).

**Group B Potentially Catastrophic Village Wide Hazards**

**Tornados**

Natural hazard events in this category are those that can cause catastrophic damage anywhere or everywhere in the Village. These events are also more difficult to predict. A brief overview of the vulnerability each of these hazards pose follows.

**Tornados**

It is not currently possible to forecast where a tornado may strike. Since most of the buildings in the Village were not built to withstand strong wind speeds, the damage to effected properties could be devastating. While it is unlikely that a tornado would destroy the entire Village, the percentages used to determine vulnerability reflect the Core Committees best estimates based on the developed profile and other currently available data.

**A. Methodology**

Property Values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record. The number of residents is calculated by the # of units times 2.48. (i.e. 10,312 homes times 2.48 equals 25,574 people)

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>477</td>
<td>$15,572,965</td>
<td>39</td>
<td>$2,549,340</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Indus.</th>
<th>Value Indust.</th>
<th># Crit Facilities</th>
<th>Value Crit. Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>1</td>
<td>$1,053,283</td>
<td>1</td>
<td>$1,971,310</td>
</tr>
</tbody>
</table>

**Illustration IV**

**B. Inventory Assessment/Valuations**

In total, the Group B risk area (Village wide) includes 477 residential homes (total improved value $134,142,907 average of $21,804/home), 8 commercial properties (total improved value $410,818 average of $51,352/business) and 3 other properties (Total improved value $309,680 average of $103,226). Further, there are 1 Critical Facilities in the village with a total improved value of $1,971,310.
C. Calculated Losses

These Group B natural hazards have the potential for complete devastation to the Village. For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group B hazards (tornados, earthquakes, wildfires, or dam failure) are calculated using the following loss factors of 10%, 15%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration XIII.

<table>
<thead>
<tr>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>10% Loss</th>
<th>15% Loss</th>
<th>25% Loss</th>
<th>50% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>477</td>
<td>1183</td>
<td>$15,572,965</td>
<td>$1,557,296</td>
<td>$2,335,944</td>
<td>$3,893,074</td>
</tr>
<tr>
<td>Residential Contents</td>
<td>20K each</td>
<td>N/A</td>
<td>$9,540,000</td>
<td>$954,000</td>
<td>$1,431,000</td>
<td>$2,385,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>39</td>
<td>N/A</td>
<td>$2,549,340</td>
<td>$254,934</td>
<td>$382,401</td>
<td>$637,335</td>
</tr>
<tr>
<td>Commercial Contents</td>
<td>100K each</td>
<td>N/A</td>
<td>$3,900,000</td>
<td>$390,000</td>
<td>$585,000</td>
<td>$975,000</td>
</tr>
<tr>
<td>Industrial</td>
<td>1</td>
<td>N/A</td>
<td>$1,053,283</td>
<td>$105,328</td>
<td>$157,992</td>
<td>$263,320</td>
</tr>
<tr>
<td>Industrial Contents</td>
<td>100K each</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Critical Facilities</td>
<td>1</td>
<td>N/A</td>
<td>$1,971,310</td>
<td>$197,131</td>
<td>$295,696</td>
<td>$492,827</td>
</tr>
</tbody>
</table>

Illustration XIII

Group C Village wide Non Specific Hazards

Severe Winter Storms, Thunder Storms, Hail, and Drought

Group C natural hazards represent those hazards, which can cause damage anywhere in the Village, but not typically damage of any significance. Further, there is no way to predict where or when these specific hazard events will occur. Resulting, the potential loss for these hazards is calculated at much lower percentages of the overall property valuation.

Severe Winter Storms

The profile on windstorms indicated fairly frequent occurrence, but minimum damage per event. Further, windstorms tend to impact the entire Village.

Thunder Storms

There is a consistent history of lightning/thunder storms in the area based on profile research. Damage has been limited, and we currently have no ability to locate a specific lightning strike.

Hail
Again, like many of the other hazards in this category, the hail profile found little damage and randomness to the location of these events. No one can currently predict precisely where hail will fall.

**Drought**

Drought occurs over a prolonged period of time. It is unlikely to cause serious structural damage, but there is the potential for infrastructure damage (collapsing water/sewer lines) and street failures. Resulting, the Committee anticipates any drought damage to be in the lowest range of the following loss calculations.

**A. Methodology**

Property values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Or Value</td>
<td>477</td>
<td>$15,572,965</td>
<td>39</td>
<td>$2,549,340</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Indust.</th>
<th>Value Indust.</th>
<th># Crit Facilities</th>
<th>Value Crit.Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>1</td>
<td>$1,053,283</td>
<td>1</td>
<td>$1,971,310</td>
</tr>
</tbody>
</table>

**Illustration IV**

**B. Inventory Assessment/Valuations**

In total, the Group C risk area (Village wide) includes 477 residential homes (total improved value $134,142,907 average of $21,804/home), 8 commercial properties (total improved value $410,818 average of $51,352/business) and 3 other properties (total improved value $309,680 average of $103,226). Further, there are 1 Critical Facilities in the village with a total improved value of $1,971,310.

**C. Calculated Losses**

These Group C natural hazards have the potential for some property losses to the Village. The historic review of Hazard Profiles for this group found historic damage, but at minimum value levels. Further, no loss of life has been attributed to any of these hazards in the Village.
For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group C hazards (severe winter storms, thunder storms, hail, and drought) are calculated using the following loss factors of 1%, 5%, 10%, and 25%. Again, based on the Hazard Profiles, it is unlikely that any of these hazards would result in losses exceeding 25% of valuation. These loss calculations are shown on Illustration XIV.

<table>
<thead>
<tr>
<th></th>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>1% Loss</th>
<th>5% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>477</td>
<td>1183</td>
<td>$15,572,965</td>
<td>$155,729</td>
<td>$1,645,650</td>
<td>$1,557,296</td>
<td>$3,893,074</td>
</tr>
<tr>
<td>Residential Contents @ 20K each</td>
<td>NA</td>
<td></td>
<td>$9,540,000</td>
<td>$95,400</td>
<td>$190,800</td>
<td>$954,000</td>
<td>$2,385,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>39</td>
<td>NA</td>
<td>$2,549,340</td>
<td>$25,493</td>
<td>$127,467</td>
<td>$254,934</td>
<td>$637,335</td>
</tr>
<tr>
<td>Commercial Contents @100K each</td>
<td>NA</td>
<td></td>
<td>$3,900,000</td>
<td>$39,000</td>
<td>$195,000</td>
<td>$390,000</td>
<td>$975,000</td>
</tr>
<tr>
<td>Industrial</td>
<td>1</td>
<td>NA</td>
<td>$1,053,283</td>
<td>$10,532</td>
<td>$52664</td>
<td>$105,328</td>
<td>$263,320</td>
</tr>
<tr>
<td>Industrial Contents @ 100K each</td>
<td>NA</td>
<td></td>
<td>$100,000</td>
<td>$1,000</td>
<td>$5,000</td>
<td>$10,000</td>
<td>$25,000</td>
</tr>
<tr>
<td>Critical Facilities</td>
<td>1</td>
<td>NA</td>
<td>$1,971,310</td>
<td>$19,713</td>
<td>$98,565</td>
<td>$197,131</td>
<td>$492,827</td>
</tr>
<tr>
<td>CF Contents @ 100K each</td>
<td>NA</td>
<td></td>
<td>$100,000</td>
<td>$1,000</td>
<td>$5,000</td>
<td>$10,000</td>
<td>$25,000</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
<td><strong>$34,786,898</strong></td>
<td><strong>$347,867</strong></td>
<td><strong>$2,320,146</strong></td>
<td><strong>$3,478,689</strong></td>
<td><strong>$8,696,556</strong></td>
</tr>
</tbody>
</table>

**Illustration XIV**

**Village of Kingston**
The Village of Kingston Hazards were rated as follows:

*High Priority*
- Tornado
- Severe Winter Storms

*Medium Priority*
- Floods
- Thunder Storms
- Hail Storms
- Drought

*Low Priority*
- Landslide
- Extreme Temperatures
- Hail Storms
- Earthquakes
- Land Subsidence
- Wildfire
- Windstorms
- Expansive Soils
- Dam Failure

Not Applicable
- Avalanche
- Coastal Erosion
- Coastal Storm
- Hurricane
- Tsunami
- Volcano

To properly calculate potential losses from natural hazard damage, two (2) key factors must be considered.
1. What property may be affected by the hazard?
2. What is the intensity of the hazard?

The following Illustration X shows how natural hazards were grouped for the purpose of calculating potential losses.
- Group A are those hazards that can only occur in a specific geographic location.
- Group B hazards are those that can cause Village-wide catastrophic damage.
- Group C are those hazards that could occur anywhere in the Village, but are not likely to cause serious damage or injury.

The Committee decided to calculate losses only for identified High and Medium Natural Hazard Priorities.

<table>
<thead>
<tr>
<th>Natural Hazards</th>
<th>Group A Geographic Specific Hazards</th>
<th>Group B City wide Potential Hazards (Catastrophic Losses)</th>
<th>Group C City wide Hazards (Non-Catastrophic Losses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Tornados</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Severe Winter Storms</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Thunder Storms</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Hail</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Drought</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Illustration X

Each potential hazard, or hazard set, will be evaluated individually using the following format:

S. Methodology
T. Inventory Assessment/Valuations
U. Calculated Losses
For Groups A and B hazards, potential loss valuations will be calculated at 100%, 50%, 25%, and 10%. The difference is that Group A hazards will be calculated over the property value of a defined area. Group B hazards will be calculated over the Village area total valuation. Potential loss values for Group C hazards will be calculated at 25%, 10%, 5%, and 1% over the entire City valuation.

**Group A Specific Geographic Natural Hazards**

Group A natural hazards are those hazards, which can only occur in a geographically specific area. Resulting, the area affected is known, and more detailed valuations can be developed. Damage, as a percentage of property valuation, is calculated uniquely for each of these hazards, based on the potential severity of the hazard.

**Flooding**

The Village of Kingston has no identified Flood Zone Hazards based on the FIRM maps dated 7/22/2010. The village is a member of the National Flood Insurance Program.

**Group B Potentially Catastrophic Village Wide Hazards**

**Tornados**

Natural hazard events in this category are those that can cause catastrophic damage anywhere or everywhere in the Village. These events are also more difficult to predict. A brief overview of the vulnerability each of these hazards pose follows.

**Tornados**

It is not currently possible to forecast where a tornado may strike. Since most of the buildings in the Village were not built to withstand strong wind speeds, the damage to effected properties could be devastating. While it is unlikely that a tornado would destroy the entire Village, the percentages used to determine vulnerability reflect the Core Committees best estimates based on the developed profile and other currently available data.

A. Methodology

Property Values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record. The number of residents is calculated by the # of units times 2.48. (i.e. 10,312 homes times 2.48 equals 25,574 people)

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Or Value</td>
<td>494</td>
<td>$14,465,209</td>
<td>18</td>
<td>$2,016,144</td>
</tr>
<tr>
<td>Property Type</td>
<td># Indust.</td>
<td>Value Indust.</td>
<td># Crit Facilities</td>
<td>Value Crit.Fac.</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
<td>---------------</td>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td># or Value</td>
<td>1</td>
<td>$337,230</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Illustration IV**

**B. Inventory Assessment/Valuations**

In total, the Group B risk area (Village wide) includes 494 residential homes (total improved value $14,465,209 average of $29,281/home), 18 commercial properties (total improved value $2,016,144, average of $112,008/business) and no industrial properties (total improved value $337,230, average of $337,230/ industry). Further, there are 0 Critical Facilities County wide with a total improved value of $0.

**C. Calculated Losses**

These Group B natural hazards have the potential for complete devastation to the Village. For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group B hazards (tornados, earthquakes, wildfires, or dam failure) are calculated using the following loss factors of 10%, 15%, 25%, 50%, and 100% (total loss). These loss calculations are shown on Illustration XIII.

<table>
<thead>
<tr>
<th></th>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>10% Loss</th>
<th>15% Loss</th>
<th>25% Loss</th>
<th>50% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>494</td>
<td>1226</td>
<td>$14,465,209</td>
<td>$1,446,520</td>
<td>$2,169,828</td>
<td>$3,616,302</td>
<td>$7,232,604</td>
</tr>
<tr>
<td>Residential Contents @ 20K each</td>
<td>N/A</td>
<td>$9,880,000</td>
<td>$988,000</td>
<td>$1,482,000</td>
<td>$2,470,000</td>
<td>$4,940,000</td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td>18</td>
<td>N/A</td>
<td>$2,016,144</td>
<td>$201,614</td>
<td>$302,421</td>
<td>$504,036</td>
<td>$1,008,072</td>
</tr>
<tr>
<td>Commercial Contents @100K each</td>
<td>N/A</td>
<td>$1,800,000</td>
<td>$180,000</td>
<td>$270,000</td>
<td>$450,000</td>
<td>$900,000</td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td>1</td>
<td>N/A</td>
<td>$332,230</td>
<td>$33,223</td>
<td>$49,834</td>
<td>$83,057</td>
<td>$166,115</td>
</tr>
<tr>
<td>Industrial Contents @ 100K each</td>
<td>N/A</td>
<td>$100,000</td>
<td>$10,000</td>
<td>$15,000</td>
<td>$25,000</td>
<td>$50,000</td>
<td></td>
</tr>
<tr>
<td>Critical Facilities</td>
<td>N/A</td>
<td>$28,593,583</td>
<td>$2,859,357</td>
<td>$4,289,083</td>
<td>$7,148,395</td>
<td>$14,296,791</td>
<td></td>
</tr>
</tbody>
</table>

**Illustration XIII**

**Group C Village wide Non Specific Hazards**

Severe Winter Storms, Thunder Storms, Hail, and Drought

Group C natural hazards represent those hazards, which can cause damage anywhere in the Village, but not typically damage of any significance. Further, there is no way to predict where or when these specific hazard events will occur. Resulting, the potential loss for these hazards is calculated at much lower percentages of the overall property valuation.
Severe Winter Storms
The profile on windstorms indicated fairly frequent occurrence, but minimum damage per event. Further, windstorms tend to impact the entire Village.

Thunder Storms
There is a consistent history of lightning/thunder storms in the area based on profile research. Damage has been limited, and we currently have no ability to locate a specific lightning strike.

Hail
Again, like many of the other hazards in this category, the hail profile found little damage and randomness to the location of these events. No one can currently predict precisely where hail will fall.

Drought
Drought occurs over a prolong period of time. It is unlikely to cause serious structural damage, but there is the potential for infrastructure damage (collapsing water/sewer lines) and street failures. Resulting, the Committee anticipates any drought damage to be in the lowest range of the following loss calculations.

A. Methodology

Property values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Or Value</td>
<td>494</td>
<td>$14,465,209</td>
<td>18</td>
<td>$2,016,144</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Indus.</th>
<th>Value Indus.</th>
<th># Crit Facilities</th>
<th>Value Crit.Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>1</td>
<td>$337,230</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Illustration IV

B. Inventory Assessment/Valuations

In total, the Group C risk area (Village wide) includes 494 residential homes (total improved value $14,465,209 average of $29,281/home), 18 commercial properties (total improved value $2,016,144, average of $112,008/business) and no industrial properties (total improved value $337,230, average of $337,230/ industry). Further, there are 0 Critical Facilities Village wide with a total improved value of $0.
C. Calculated Losses

These Group C natural hazards have the potential for some property losses to the Village. The historic review of Hazard Profiles for this group found historic damage, but at minimum value levels. Further, no loss of life has been attributed to any of these hazards in the Village.

For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group C hazards (severe winter storms, thunder storms, hail, and drought) are calculated using the following loss factors of 1%, 5%, 10%, and 25%. Again, based on the Hazard Profiles, it is unlikely that any of these hazards would result in losses exceeding 25% of valuation. These loss calculations are shown on Illustration XIV.

<table>
<thead>
<tr>
<th></th>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>1% Loss</th>
<th>5% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>494</td>
<td>1226</td>
<td>$14,465,209</td>
<td>$144,652</td>
<td>$723,260</td>
<td>$1,446,520</td>
<td>$3,616,302</td>
</tr>
<tr>
<td>Residential Contents</td>
<td>@ 20K each</td>
<td>N/A</td>
<td>$9,880,000</td>
<td>$98,800</td>
<td>$494,000</td>
<td>$988,000</td>
<td>$2,470,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>18</td>
<td>N/A</td>
<td>$2,016,144</td>
<td>$20,164</td>
<td>$100,807</td>
<td>$201,614</td>
<td>$504,036</td>
</tr>
<tr>
<td>Commercial Contents</td>
<td>@100K each</td>
<td>N/A</td>
<td>$1,800,000</td>
<td>$18,000</td>
<td>$90,000</td>
<td>$180,000</td>
<td>$450,000</td>
</tr>
<tr>
<td>Industrial</td>
<td>1</td>
<td>N/A</td>
<td>$332,230</td>
<td>$3,322</td>
<td>$16,611</td>
<td>$33,223</td>
<td>$83,057</td>
</tr>
<tr>
<td>Industrial Contents</td>
<td>@ 100K each</td>
<td>N/A</td>
<td>$100,000</td>
<td>$1,000</td>
<td>$5,000</td>
<td>$10,000</td>
<td>$25,000</td>
</tr>
<tr>
<td>Critical Facilities</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CF Contents</td>
<td>@ 100K each</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
<td>$28,593,593</td>
<td>$285,938</td>
<td>$1,429,678</td>
<td>$2,859,357</td>
<td>#7,148,395</td>
</tr>
</tbody>
</table>

Illustration XIV

Village of South Salem

The Village of South Salem Hazards were rated as follows:

**High Priority**
- Flood
- Tornado

**Medium Priority**
- Severe Winter Storms
- Thunder Storms
- Hail Storms
- Drought

**Low Priority**
• Landslide
• Extreme Temperatures
• Hail Storms
• Earthquakes
• Land Subsidence
• Wildfire
• Windstorms
• Expansive Soils
• Dam Failure

Not Applicable
• Avalanche
• Costal Erosion
• Coastal Storm
• Hurricane
• Tsunami
• Volcano

To properly calculate potential losses from natural hazard damage, two (2) key factors must be considered.
1. What property may be affected by the hazard?
2. What is the intensity of the hazard?

The following Illustration X shows how natural hazards were grouped for the purpose of calculating potential losses.
• Group A are those hazards that can only occur in a specific geographic location.
• Group B hazards are those that can cause Village-wide catastrophic damage.
• Group C are those hazards that could occur anywhere in the Village, but are not likely to cause serious damage or injury.

The Committee decided to calculate losses only for identified High and Medium Natural Hazard Priorities.

<table>
<thead>
<tr>
<th>Natural Hazards</th>
<th>Group A Geographic Specific Hazards</th>
<th>Group B Potential City wide Hazards (Catastrophic Losses)</th>
<th>Group C City wide Hazards (Non-Catastrophic Losses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tornados</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe Winter</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storms</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thunder Storms</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hail</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drought</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Illustration X
Each potential hazard, or hazard set, will be evaluated individually using the following format:

V. Methodology
W. Inventory Assessment/Valuations
X. Calculated Losses

For Groups A and B hazards, potential loss valuations will be calculated at 100%, 50%, 25%, and 10%. The difference is that Group A hazards will be calculated over the property value of a defined area. Group B hazards will be calculated over the Village area total valuation. Potential loss values for Group C hazards will be calculated at 25%, 10%, 5%, and 1% over the entire City valuation.

**Group A Specific Geographic Natural Hazards**

Group A natural hazards are those hazards, which can only occur in a geographically specific area. Resulting, the area affected is known, and more detailed valuations can be developed. Damage, as a percentage of property valuation, is calculated uniquely for each of these hazards, based on the potential severity of the hazard.

**Flooding**

The Village of South Salem has a Flood Hazard Zone. The hazard zone only affects three small parcels in the jurisdiction. There are no structures in the Flood Hazard Zone. The Village has adopted Flood Plain Regulations for future use should FIRM mapping change the areas within the jurisdiction. The village is a member of the National Flood Insurance Program.

**Group B Potentially Catastrophic Village Wide Hazards**

**Tornados**

Natural hazard events in this category are those that can cause catastrophic damage anywhere or everywhere in the Village. These events are also more difficult to predict. A brief overview of the vulnerability each of these hazards pose follows.

**Tornados**

It is not currently possible to forecast where a tornado may strike. Since most of the buildings in the Village were not built to withstand strong wind speeds, the damage to effected properties could be devastating. While it is unlikely that a tornado would destroy the entire Village, the percentages used to determine vulnerability reflect the Core Committees best estimates based on the developed profile and other currently available data.

*A. Methodology*
Property Values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included.

While property values were obtainable, little additional data was available. No building elevation data or contents value were on record. The number of residents is calculated by the # of units times 2.48. (i.e. 10,312 homes times 2.48 equals 25,574 people)

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Or Value</td>
<td>81</td>
<td>$2,156,490</td>
<td>2</td>
<td>$28,890</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Indust.</th>
<th>Value Indust.</th>
<th># Other</th>
<th>Value Other.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>N/A</td>
<td></td>
<td>3</td>
<td>$4,192,128</td>
</tr>
</tbody>
</table>

**Illustration IV**

**B. Inventory Assessment/Valuations**

In total, the Group B risk area (Village wide) includes 81 residential homes (total improved value $2,156,490, average of $26,623/home), 2 commercial properties (total improved value $28,890 average of $18,445/business) and 3 Other( churches and school properties (total improved value $4,192,128 average of $1,397,376). Further, there are 0 Critical Facilities County wide with a total improved value of $00.

**C. Calculated Losses**

These Group B natural hazards have the potential for complete devastation to the Village. For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group B hazards (tornados, earthquakes, wildfires, or dam failure) are calculated using the following loss factors of 10%, 15%, 25%, 50%, and 100% ( total loss). These loss calculations are shown on Illustration XIII.

<table>
<thead>
<tr>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>10% Loss</th>
<th>15% Loss</th>
<th>25% Loss</th>
<th>50% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>81</td>
<td>201</td>
<td>$2,156,490</td>
<td>$215,649</td>
<td>$323,473</td>
<td>$539,122</td>
</tr>
<tr>
<td>Residential Contents</td>
<td>20K each</td>
<td>N/A</td>
<td>$1,620,000</td>
<td>$162,000</td>
<td>$243,000</td>
<td>$405,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>2</td>
<td>N/A</td>
<td>$28,890</td>
<td>$2889</td>
<td>$4333</td>
<td>$7222</td>
</tr>
<tr>
<td>Commercial Contents</td>
<td>100K each</td>
<td>N/A</td>
<td>$200,000</td>
<td>$20,000</td>
<td>$30,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>N/A</td>
<td>$4,192,128</td>
<td>$419,212</td>
<td>$628,819</td>
<td>$1,048,032</td>
</tr>
<tr>
<td>Critical Facilities</td>
<td>100K each</td>
<td>N/A</td>
<td>$300,000</td>
<td>$30,000</td>
<td>$45,000</td>
<td>$75,000</td>
</tr>
</tbody>
</table>

**Illustration XIII**
Group C  Village wide Non Specific Hazards

Severe Winter Storms, Thunder Storms, Hail, and Drought

Group C natural hazards represent those hazards, which can cause damage anywhere in the Village, but not typically damage of any significance. Further, there is no way to predict where or when these specific hazard events will occur. Resulting, the potential loss for these hazards is calculated at much lower percentages of the overall property valuation.

Severe Winter Storms
The profile on windstorms indicated fairly frequent occurrence, but minimum damage per event. Further, windstorms tend to impact the entire Village.

Thunder Storms
There is a consistent history of lightning/thunder storms in the area based on profile research. Damage has been limited, and we currently have no ability to locate a specific lightning strike.

Hail
Again, like many of the other hazards in this category, the hail profile found little damage and randomness to the location of these events. No one can currently predict precisely where hail will fall.

Drought
Drought occurs over a prolonged period of time. It is unlikely to cause serious structural damage, but there is the potential for infrastructure damage (collapsing water/sewer lines) and street failures. Resulting, the Committee anticipates any drought damage to be in the lowest range of the following loss calculations.

A. Methodology

Property values of all residential, commercial, and industrial properties in the defined area were researched by Planning Committee members using Ross County Auditor Records at the Courthouse and 2000 US Census data. All values are tax value of building and improvements only, based on most recent records. No land values are included. While property values were obtainable, little additional data was available. No building elevation data or contents value were on record.

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Res.</th>
<th>Res. Values</th>
<th># Commercial</th>
<th>Commercial Values</th>
</tr>
</thead>
<tbody>
<tr>
<td># Or Value</td>
<td>81</td>
<td>$2,156,490</td>
<td>2</td>
<td>$28,890</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property Type</th>
<th># Indus.</th>
<th>Value Indus.</th>
<th># Other</th>
<th>Other Fac.</th>
</tr>
</thead>
<tbody>
<tr>
<td># or Value</td>
<td>NA</td>
<td></td>
<td>3</td>
<td>$4,192,128</td>
</tr>
</tbody>
</table>

Illustration IV
B. Inventory Assessment/Valuations

In total, the Group C risk area (Village wide) includes 81 residential homes (total improved value $2,156,490, average of $26,623/home), 2 commercial properties (total improved value $28,890 average of $14,445/business) and 3 Other (churches and school properties) (total improved value $4,192,128, average of $1,397,376). Further, there are 0 Critical Facilities Village wide with a total improved value of $00.

C. Calculated Losses

These Group C natural hazards have the potential for some property losses to the Village. The historic review of Hazard Profiles for this group found historic damage, but at minimum value levels. Further, no loss of life has been attributed to any of these hazards in the Village.

For calculating losses, residential properties are assumed to have, on average $20,000 of contents, while commercial properties are estimated to have $100,000 in contents. Industrial and critical facilities are assessed individually based on Committee member research.

Based on the above valuations, assumptions of losses due to Group C hazards (severe winter storms, thunder storms, hail, and drought) are calculated using the following loss factors of 1%, 5%, 10%, and 25%. Again, based on the Hazard Profiles, it is unlikely that any of these hazards would result in losses exceeding 25% of valuation. These loss calculations are shown on Illustration XIV.

<table>
<thead>
<tr>
<th></th>
<th># of Units</th>
<th># of People</th>
<th>Value &amp; 100% Loss</th>
<th>1% Loss</th>
<th>5% Loss</th>
<th>10% Loss</th>
<th>25% Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>81</td>
<td>201</td>
<td>$2,156,490</td>
<td>$21,564</td>
<td>$107,824</td>
<td>$215,649</td>
<td>$539,122</td>
</tr>
<tr>
<td>Residential Contents</td>
<td>@ 20K each</td>
<td>N/A</td>
<td>$1,620,000</td>
<td>$16,200</td>
<td>$81,000</td>
<td>$162,000</td>
<td>$405,000</td>
</tr>
<tr>
<td>Commercial</td>
<td>2</td>
<td>N/A</td>
<td>$28,890</td>
<td>$289</td>
<td>$1,445</td>
<td>$2,889</td>
<td>$7222</td>
</tr>
<tr>
<td>Commercial Contents</td>
<td>@100K each</td>
<td>N/A</td>
<td>$200,000</td>
<td>$2,000</td>
<td>$10,000</td>
<td>$20,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Industrial</td>
<td>0</td>
<td>N/A</td>
<td>$300,000</td>
<td>$3,000</td>
<td>$15,000</td>
<td>$30,000</td>
<td>$75,000</td>
</tr>
<tr>
<td>Other Contents</td>
<td>@ 100K each</td>
<td>N/A</td>
<td>$4,192,128</td>
<td>$41,921</td>
<td>$209,606</td>
<td>$419,212</td>
<td>$1,048,032</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td>$8,497,508</td>
<td>$84,974</td>
<td>$424,875</td>
<td>$849,750</td>
<td>$2,124,376</td>
</tr>
</tbody>
</table>

Illustration XIV

Section 3  Problem Identification

Using the prioritized listing of natural hazards developed by the Core Committee, the group developed Problem Statements for each identified natural hazard. In general, these problem
statements address concerns regarding warning time, educational issues, and physical damage concerns.

**Windstorm Problem Statements**
- Lack of public education to promote safety during thunderstorm events (lectures, seminars, power point, video tapes brochures, pamphlets)
- Roads closed and damaged
- Community warning system only radio/TV
- NOAA radios not available to everyone, with antennas for hilly topography
- Damage to power and communications lines and towers from flying debris
- Wind damage to roofs not designed to withstand wind speeds
- Lack local residential building codes, as related to natural hazards for county areas.
- Need for tree maintenance program for city, county and townships
- Isolated property damage
- Communication systems off the air for several hours
- Public events delayed or postponed, lost income and expenses
- Local resources may be limited (volunteers, first responders, traffic control)
- Wind chill during winter time could affect people and animals
- Economic loss if businesses are destroyed

**Thunderstorm Problem Statements**
- Lack of public education to promote safety during thunderstorm events (lectures, seminars, power point, video tapes brochures, pamphlets)
- Damage from lightening strikes, injured people and animals
- Heavy rain and flash flooding
- Roads closed and damaged
- Community warning system only radio/TV
- NOAA radios not available to everyone, with antennas for hilly topography
- Not enough “weather spotters” trained
- Hail damage to vehicles, roofs, building glass, etc.
- Wind damage to roofs and buildings
- Forest fires started
- Isolated property damage and debris clean-up
- Utility services lost for extended time (A/C, heating, refrigeration)
- Disabled citizens need aid quickly if support equipment disabled
- Communication systems off the air for several hours
- Outside events delayed or postponed, lost income and expenses
- Local resources may be limited (volunteers, first responders, traffic control, debris pickup equipment, communication and power line repairs)
- Lack of tree maintenance plans and activity in County Areas. (City has tree ordinance and tree commission)

**Extreme Temperature Problem Statements**
- All citizens, but especially children and the elderly are susceptible to injury and death from extreme temperatures.
- Possible disruption in utility service during an extreme temperature event.
• Media may not be aware of the dangers that are caused by extreme temperatures
• Media does not have the information to relay to the public to keep them safe during an extreme temperature event.
• Families do not have disaster kits with a 3-day supply of food and water.
• Many families do not have adequate home heating/cooling
• Water line breakage could occur with extremely low temperatures
• Emergency County and City Dispatch would need to be informed of road closures due to icy conditions
• May be inappropriate hazard materials storage, causing container failure during extreme temps.
• Extreme temperatures have adverse effect on roofing materials.

Landslide Problem Statements
• There is a lack of knowledge of this hazard among the public.
• There is no real way to warn people of impending landslides.
• Prediction of this type of event is problematic due to its random nature.
• Loss of property and potential loss of life in areas identified as “low to moderate incidence” on the multi-hazard map.
• Damage to roads and utilities have occurred in multiple areas in the county including Cooks Hill Road, S.R. 772 (2 places), S.R 41 (at Tong Hollow road), Watson Road, and Honey Creek.
• Transportation and emergency medical services could be delayed or stopped.
• There is a lack of building or zoning codes in Ross County to ensure safe development of residential structures in landslide prone areas.

Drought Problem Statements
• Household water limitations do occur. Private wells and springs do become depleted, some beyond use; and county water customers’ supply may become limited.
• Some water pumping sites for fire departments, such as dry hydrants, become unusable due to low levels of water.
• Diminished pasture and water supply adversely affect livestock production.
• Agricultural crops become damaged or destroyed from poor growing conditions.
• High risk of grass and forest fires occurs due to the dry conditions.
• Dust becomes a big problem in areas where there is construction and agricultural practices taking place, along with dirt or gravel roads and any other heavy use areas. Dust is not just be a nuisance, it causes health problems related to air quality and at the same time the loss of topsoil affects the quality of the land.

Flood Problem Statements
• There are no stream gauges in any of the smaller flashflood type streams in Ross County
• Roads that are not elevated may prevent Fire & EMS from reaching flood prone areas
• Substantial road and bridge damage could isolate small areas of the population
• On site septic systems should be designed to prevent infiltration and back flow of flood waters
Flooding may disrupt utility services
Property owners in the Floodzone areas of Ross County need to be educated about the regulations, permit process and other issues related of Floodzone management
Coordinate early warning, evacuation and post flood response efforts with EMA, EMS, Fire & Law Enforcement
Regulations should be adopted to restrict critical facility development in the Floodzone
A study should be completed of the areas in Ross County that are susceptible to repeat flooding
Due to topography parts of the county do not receive weather alert radio signals

Severe Winter Storm Problem Statements
- Lack of public education to promote safety during severe winter storm events (lectures, seminars, power point, video tapes, brochures, pamphlets)
- Damage from Blizzards, injured people and animals
- Heavy rain and flash flooding potential
- Roads closed and damaged
- Community relies mostly on the warning system of radio/TV
- NOAA radios not available to everyone, with antennas for hilly topography
- Ice damage to transportation services, power and communications
- Snow removal equipment maintenance (for extended periods), and employee fatigue
- Wind damage to roofs and buildings
- Isolated property damage and debris clean-up
- Utility services lost for extended time (heating, refrigeration, water pumps, personal home service equipment)
- Disabled citizens need aid quickly when stranded
- Communication systems off the air for several hours
- Public events delayed or postponed, lost income and expenses
- Local resources may be limited (volunteers, first responders, traffic control)
- Public buildings closed, infrastructure damage highways and bridges, road maintenance for “pot holes” from freezing and thawing
- Removal of dead farm animals

Tornado Problem Statements
- Lack of public education to promote safety during thunderstorm events (lectures, seminars, power point, video tapes brochures, pamphlets)
- Heavy rain, flash flooding and hail damage
- Roads closed and damaged
- Community warning system only radio/TV, inadequate siren coverage
- NOAA radios not available to everyone, with antennas for hilly topography
- Not enough “weather spotters” trained
- Hail damage to vehicles, roofs, building glass, debris etc.
- Wind damage to older and exposed roofs and buildings
- Tornado path will have extensive property damage, destroyed structures, weakened infrastructure, vehicle totaled, people/animals killed (deaths reported) and debris
clean-up (designate “spoils” site and operating equipment necessary for city, county or township)

- Utility services lost for extended time, rescue will be more demanding
- Shelters inadequately supplied for county wide emergency (people, food, power, clothes, communications)
- Disabled citizens need aid quickly, need for trained responders
- Communication systems off the air for several hours
- Outside events delayed or postponed, lost income and expenses
- Local resources may be limited (volunteers, first responders, traffic control, debris pickup equipment, communication and power line repairs)
- Major economic loss if businesses destroyed

Sections 4-6 Planning: Ross Co. OH
Set Goals, Identify Possible Activities, Select the Best Activities, and Develop Action Plans

Now that the Committee has identified Problem Statements, the next step in the natural hazard mitigation planning process is to develop solutions to minimize or eliminate these problems.

The selected methodology to complete this planning involves a process of going from the general to the more specific. An outline of our planning methodology follows.

Goals - Broad statements that reflect the community’s desired state

- Goals can be stated as lofty aspirations or realistic targets, the community will probably have a mix
- The community may want look for themes common in the problem statements for many hazards to develop common goal(s)

Objectives - Describe measurable outcomes and help achieve a community goal

- Objectives can be measured in lives, dollars, percentages or some other method
- The community should draft objectives that address:
  - Hazard warning systems
  - Hazard education
  - Physical damages and hazard reductions

Activity – Actions that the community will take to mitigate hazards
This step is accomplished through a brainstorming process.

- Activities generally fall into six categories
  - Preventative - keep problems from getting worse i.e. building & zoning codes
Property protection – usually undertaken by property owners on a building-by-building basis
Emergency service measures – actions taken during a disaster that minimize their impact
Structural projects – keep hazards away from an area
Natural resource protection – preserves or restores natural areas or the natural function of hazard areas
Public information – activities that increase awareness of risk, vulnerability and/or advises further action

Core group may want to evaluate activities based on:
- Cost effectiveness
- Technical feasibility
- Environmental soundness
- Social impacts
- Does the activity reduce risk?
- Applicable federal, state, and local regulations
- Political acceptability

Reach consensus on the activities that the core group will undertake

**Action Plan** – Identifies a lead person for the activity, start and finish dates, estimated cost, possible funding sources, and the tasks required to successfully complete the activity. The Action Plans have been developed using a matrix format which allows for tracking the completion of each task, and the overall success/impact of the Action. In the end, implementation of these Action Plans should mitigate the issues initially identified in the Problem Statements.

The Core Committee held several meetings to develop the Goals and Objectives. An additional meeting was held to Brainstorm Activities. Based on this Brainstorming session, Committee members researched each Activity to develop the details contained in the Action Plans. The Committee met together to prioritize these Activities.

The final Natural Hazard Mitigation Plan, from Goals to specific Action Plans, is included on the following matrix tables, which immediately follow this narrative.

Since the priority of Natural Hazards for the County and City were similar and problem statements were jointly developed.

Resulting, Goals and Objectives for the unincorporated area of Ross County, the City of Chillicothe and the villages of Adelphi, Bainbridge, Clarksburg, Frankfort, Kingston, and South Salem follow.
Ross County Natural Hazard Mitigation Plan

Goals, Objectives, and Activities

The Core Committee held several meetings to develop the Goals and Objectives. An additional meeting was held to Brainstorm Activities. Based on this Brainstorming session, Committee members researched each Activity to develop the details contained in the Action Plans. The Committee met together to prioritize these Activities. This prioritization is noted on each Activity sheet. During the update of the plan, the Core Group reviewed the strategies used to develop the plan. They found that the strategies and processes used are still valid. The Goals and Objectives in the Action Plan were validated and prioritized by their pros and cons. The group used a benefit cost review to achieve this prioritization.

The Natural Hazard Mitigation Plan for Ross County, including Goals, Objectives, and Activities follows.

GOAL #1 – Eliminate loss of life and reduce damages caused by high and medium risk natural hazards, including flooding, windstorms, landslides, extreme temperatures, thunderstorms, drought, tornadoes and severe winter storms.

Objective 1.1 - Implement and revise laws and regulations
   Activity 1.1.1: Integrate natural hazard mitigation plan into ongoing and future land use planning
   Activity 1.1.2: Adopt and enforce Flood Plain Regulations
   Activity 1.1.3: Participate in the NFIP

Objective 1.2 - Obtain mitigation funding for Public Improvement Project(s)
   Activity 1.2.1: Construct safe rooms at various locations and emergency shelters in the County as funding becomes available
   Activity 1.2.2: Repair landslide hazards as funding becomes available
   Activity 1.2.3: Perform stream maintenance as funding becomes available

Objective 1.3 – Improve hazard monitoring
   Activity 1.3.1: Organize a weather spotter training class in Ross County

Objective 1.4 - Pursue mitigation funding opportunities that will help achieve the goals of this plan
   Activity 1.4.1: Develop a mitigation project that addresses identified NFIP repetitive loss properties and other frequently flooded structures

Goal # 2 – Increase Public Awareness of risks, precautions, and mitigation measures.

Objective 2.1 – Inform every citizen of Natural Hazards Risks
   Activity 2.1.1: Distribute brochures that describe the natural hazard mitigation plan
   Activity 2.1.2: Offer curriculum to schools (Red Cross)
   Activity 2.1.3: Promote the use of FEMA for Kids program
Activity 2.1.4: Make presentations about natural hazards to nursing homes staff and senior citizens
Activity 2.1.5: Hold public meetings
Activity 2.1.6: Deliver Public Service Announcements (PSA’s)

ADD city and villages
Activity 2.1.6 Conduct flood gate drills and training
Activity 2.1.7 Educate residents about safe rooms
Activity 2.1.8 Educate residents about Warning systems

Objective 2.2 – Inform every citizen of appropriate natural hazards precautions
Activity 2.2.1: Construct a media campaign to educate the public regarding the existing early warning system(s)
Activity 2.2.2: Hold public meetings
Activity 2.2.3: Deliver Public Service Announcements (PSA’s) for evacuation procedures, shelter locations, emergency kits, and natural hazard awareness
Activity 2.2.4: Enlist the help of insurance providers, volunteers, first responders, and businesses to distribute OEMA, NOAA, FEMA, ARC, and ODNR brochures
Activity 2.2.5: Evacuation routes and ARC contact person for open sites.

Objective 2.3 – Inform every citizen of Natural Hazards Mitigation measures.
Activity 2.3.1: Promote and provide technical support for the development of emergency planning, response, and recovery plans for all local businesses
Activity 2.3.2: Prepare a summary of available FEMA, OEMA, and other natural hazard mitigation funding

Goal #3 – Timely Warning

Objective 3.1 - Coordinate rain and stream gauges.
Activity 3.1.1: Develop a coordinated plan using existing gauges and identify additional needs.
Activity 3.1.2: Secure funding to implement and operate system.
Activity 3.1.3: Implement/construct system
Activity 3.1.4: Data collected is analyzed and distributed through program administration.
Activity 3.1.5: Link data to early warning system.

Objective 3.2 – Coordinate siren system.
Activity 3.2.1: Upgrade and expand City and County siren systems with technology to permit seamless operations between both. Plan shall include growth areas of the county.
Activity 3.2.2: Link warning siren system to Emergency Alert System (EAS) and provide NOAA to the Sheriff’s Department.
Activity 3.2.3: Investigate integrating all school buildings with siren system.
Activity 3.2.4: Secure funding to implement and operate system.
Activity 3.2.5: Plan for future system administration.
Section 11 Implementation, Monitoring, and Adjusting the Plan

With the goals, objectives and activities defined, specific Action Plans were developed, by the Committee for each activity. Small teams developed some of the Action Plans.

These Action Plans identify who is responsible for the activity, anticipated months to complete, anticipated funding or resources needed, and some step-by-step detail as to the sequence of individual items needed to successfully complete the activity.

These Action Plans immediately follow this narrative.

The Core Committee provides oversight over the next 60 months to encourage, facilitate, and monitor the implementation of the Action Plans/Activities described in this Plan.

To achieve as many of the Activities as possible, the Core Committee:

- 1. Reevaluates its members and add/delete members based on level of commitment, knowledge base, and scope of responsibilities, with final appointments made by the Ross County Commissioners and/or Chillicothe Mayor.
- 2. Meets at least annually to monitor plan implementation progress. These meeting shall be advertised and open to the public.
- 3. Works aggressively to disseminate the Plan in the community and to solicit new people to assist in its implementation.
- 4. Makes recommendation to the legislative body regarding actions, professional service contracts, grant/funding requests, and other matters, which require legislative action.
- 5. Recommends individuals, organizations, and other resources to the responsible leader of each Activity to help them assemble the appropriate team to achieve their desired outcomes.
- 6. Reviews and analyzes the Natural Hazard Mitigation Plan annually for adjustments/updates, and comprehensively evaluate and revise the plan prior to the end of the 60 month process. An annual report shall be prepared, documenting mitigation activity progress, by the Core Group. This annual report will be presented to the County Commissioners and all participating jurisdictions.
- 7. Ross County EMA is the lead agency to enter revisions and updates to the master copy of the plan.

Ross County also works to integrate the Natural Hazard Mitigation Action Plans and implementation activities into other existing and new county planning efforts. This will specifically include all EMA planning activities, new Access Management regulations under development, Flood Plain Regulations, The Ross County and City of Chillicothe Through Fare Plan, the Residential Permitting process under consideration and agency response plans. While no comprehensive county plan currently exists, if such an activity is pursued, National Hazard Mitigation will be an integral part of the planning process.

The original Natural Hazard Mitigation Plan was formally approved by the Ross County Commissioners on April 26, 2004.
The original Plan was approved by OEMA on April 2, 2004 (provisional).

Documentation of local adoption will be provided after State and FEMA approval.
Ross County Natural Hazards
Mitigation Plan
Action Plan 2010
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 1: Eliminate loss of life and reduce damages caused by high and medium risk natural hazards, including windstorms, landslides, extreme temperatures, thunderstorms, drought, tornados, and severe winter storms

Objective: # 1.1: Implement and revise laws & regulations

Priority: # 10: 2004

Activity: # 1.1.1: Integrate natural hazard mitigation plan into ongoing & future land use planning

Lead Person: Planning Administrator
Start Date: Jan 2004
Est. Total Cost: $1200.00
Finish Date: Jan 2006
Funding Source: Ross County

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form a group to study the integration process</td>
<td>12</td>
<td>Staff time</td>
<td>Planning Administration</td>
<td>NOT COMPLETED</td>
</tr>
<tr>
<td>2. Solicit public input</td>
<td></td>
<td>$200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Make recommendations</td>
<td>2</td>
<td>Staff time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Begin regulation update process</td>
<td>6</td>
<td>$500</td>
<td></td>
<td>PARTIAL COMPLETION JANUARY 2006</td>
</tr>
<tr>
<td>5. Publicize results</td>
<td>1</td>
<td>$500</td>
<td></td>
<td>100% complete</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>23</td>
<td>$1200.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SEE ATTACHED SHEET FOR DETAILS OF ACTIVITY.
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal #: 1: Eliminate loss of life and reduce damages caused by high and medium risk natural hazards, including windstorms, landslides, extreme temperatures, thunderstorms, drought, tornadoes, and severe winter storms

Objective #: 11: Implement and revise laws & regulations

Priority: # 10: 2004

Activity #: 11.2: Adopt and Enforce Flood Plain Regulations

Lead Person: Flood Plains Administrator Start Date: Jan 2004 Est. Total Cost: $1200.00
Finish Date: Jan 2012 Funding Source: Local Jurisdiction

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop Flood Plain Regulations</td>
<td>6</td>
<td>Staff time In-kind match</td>
<td>Flood Plains Administrator for each Jurisdiction</td>
<td></td>
</tr>
<tr>
<td>2. Hold Public Meetings</td>
<td></td>
<td>Staff time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Adopt Flood Plain Regulations</td>
<td>2</td>
<td>Staff time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Begin enforcement of Regulations</td>
<td>6</td>
<td>$500</td>
<td></td>
<td>× PARTIAL COMPLETION JANUARY 2010</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td>For affected jurisdictions</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td>83% complete</td>
<td></td>
</tr>
</tbody>
</table>

Total: 14 $500.00
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal # 1: Eliminate loss of life and reduce damages caused by high and medium risk natural hazards, including windstorms, landslides, extreme temperatures, thunderstorms, drought, tornadoes, and severe winter storms.

Objective: Implement and revise laws & regulations.

Priority: 2004

Activity: Participate in the National Flood Insurance Program.

Lead Person: Flood Plain Administrator
Start Date: Jan 2004
Est. Total Cost: $1200.00
Finish Date: Jan 2012
Funding Source: Local Funding

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Review the process to be a member of the NFIP</td>
<td></td>
<td>Staff time In-kind</td>
<td>Flood Plain Administration</td>
<td></td>
</tr>
<tr>
<td>2. Hold public meetings</td>
<td></td>
<td>$200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Join NFIP</td>
<td></td>
<td>Staff time</td>
<td>&quot; &quot;</td>
<td></td>
</tr>
<tr>
<td>4. Provide information to citizens</td>
<td></td>
<td>$500</td>
<td>&quot; &quot;</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td>62% complete</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>23</td>
<td>$1200.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal # 1: Eliminate loss of life and reduce damages caused by high and medium risk natural hazards, including windstorms, landslides, extreme temperatures, thunderstorms, drought, tornadoes & severe winter storms

Objective: 1.2: Obtain mitigation funding for Public Improvement Projects

Priority: # 13: 2004

Activity: # 1.2.1: Construct safe rooms at various locations & emergency shelters in the County as funding becomes available

Lead Person: EMA Administrator

Start Date: July 2004
Finish Date: 2014

Est. Total Cost: $ Unknown
Funding Source: HMGP or PDM

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form a committee to study feasibility</td>
<td>3</td>
<td>Staff time</td>
<td>EMA Admin.</td>
<td>FUNDING NOT AVAILABLE</td>
</tr>
<tr>
<td>2. Identify best locations &amp; criteria</td>
<td>3</td>
<td>Staff time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Research funding sources</td>
<td>12</td>
<td>@ 75-100 per hour</td>
<td></td>
<td>No funding Source to date</td>
</tr>
<tr>
<td>4. Acquire sites through donation/purchase/lease</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Contract work</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Maintain rooms and shelters</td>
<td></td>
<td>Continuing</td>
<td></td>
<td>0% complete no funding</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Ross County Natural Hazard Mitigation Plan

**Goal:** # _1_. Eliminate loss of life and reduce damages caused by high and medium risk natural hazards, including windstorms, landslides, extreme temperatures, thunderstorms, drought, tornadoes & severe winter storms

**Objective:** # _1.2_. Obtain mitigation funding for Public Improvement Projects

**Priority:** # _3_. 2005

**Activity:** # _1.2.2_. Repair landslide hazards as funding becomes available

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form Committee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Identify and map active landslides and potential landslide areas (in-house)</td>
<td>1</td>
<td>$150</td>
<td>GIS COORDINATOR/PLANNING DEPT.</td>
<td>× ONGOING 01/23/2007</td>
</tr>
<tr>
<td>3. Research funding availability</td>
<td>2</td>
<td>Stafftime</td>
<td>Committee</td>
<td>× FEMA &amp; LOCAL FUNDING</td>
</tr>
<tr>
<td>4. Develop remediation plan/construction drawings</td>
<td>2</td>
<td>$2,000 to $10,000</td>
<td>An Engineer</td>
<td>×</td>
</tr>
<tr>
<td>5. Implement plan</td>
<td>12</td>
<td>Unknown</td>
<td>Committee</td>
<td></td>
</tr>
<tr>
<td>6. Maintain landslide hazard sites</td>
<td>Ongoing</td>
<td>Unknown</td>
<td>Contractor/Co/Township</td>
<td></td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>17</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: #1: Eliminate loss of life and reduce damages caused by high and medium risk natural hazards, including windstorms, landslides, extreme temperatures, thunderstorms, drought, tornados & severe winter storms

Objective: #12: Obtain mitigation funding for Public Improvement Projects

Priority: 2005

Activity: 1, 2, 3: Perform stream maintenance as funding becomes available

Lead Person: Floodplain Admin.

Start Date: Jan 2005

Finish Date: Ongoing

Est. Total Cost: $150

Funding Source: CORP & ODNR

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form Committee</td>
<td>12</td>
<td>$None</td>
<td>Floodplain Admin</td>
<td>✓</td>
</tr>
<tr>
<td>2. Map &amp; rank segments of streams where maintenance is crucial</td>
<td>12</td>
<td>$150 Man hours</td>
<td>Committee</td>
<td>In Progress</td>
</tr>
<tr>
<td>3. Research funding</td>
<td>12</td>
<td>Man hours</td>
<td>RCSWCD</td>
<td>X</td>
</tr>
<tr>
<td>4. Obtain proper permits</td>
<td>12</td>
<td></td>
<td>Floodplain Admin</td>
<td></td>
</tr>
<tr>
<td>5. Perform maintenance</td>
<td>2</td>
<td></td>
<td>Floodplain Admin</td>
<td></td>
</tr>
<tr>
<td>6. Publish results</td>
<td>Ongoing</td>
<td>Man hours</td>
<td>Committee</td>
<td></td>
</tr>
</tbody>
</table>

Total: Total: 12 $150

APPLIED FOR FUNDING MAY 2005 - Denied - APPLIED FOR FUNDING August 2006 - Denied

Stream realignment & bridge replacement - Yellowbud & Mooresville - Increased flow & reduction of flood elevations.

01/23/2007

Revised on 8/30/2016
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 1: Eliminate loss of life and reduce damages caused by high and medium risk natural hazards, including windstorms, landslides, extreme temperatures, thunderstorms, drought, tornadoes & severe winter storms.

Objective: # 1.3: Improve hazard monitoring
Priority: # 11: 2004
Activity: # 1.3.1: Organize a weather spotter training class in Ross County

Lead Person: EMA Director  Start Date: Feb 2004  Est. Total Cost: $ 250.00
Finish Date: Feb 2014  Funding Source: Budget

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contact NOAA to request training</td>
<td>12</td>
<td></td>
<td>EMA Director</td>
<td>APRIL 2004</td>
</tr>
<tr>
<td>2. Advertise training schedule</td>
<td>3</td>
<td>$250.00</td>
<td>EMA Director</td>
<td>04/2004</td>
</tr>
<tr>
<td>3. Conduct training for 20 persons</td>
<td>1 day</td>
<td>None</td>
<td>NOAA</td>
<td>APRIL 2004</td>
</tr>
<tr>
<td>4. Write report about activity</td>
<td>1</td>
<td>Staff time</td>
<td>EMA Director</td>
<td>04/2004</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>$250.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ongoing Activity 01/23/2010, classes scheduled in the county annually
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: #1: Eliminate loss of life and reduce damages caused by high and medium risk natural hazards, including windstorms, landslides, extreme temperatures, thunderstorms, drought, tornados & severe winter storms.

Objective #1.4: Pursue mitigation funding opportunities that will help achieve the goals of this plan
Priority: #11: 2004
Activity: #1.4.1: Develop a mitigation project that addresses identified NFIP repetitive loss properties and other frequently flooded properties.

Lead Person: Flood Plains Administrator  
Start Date: Feb 2004  
Finish Date: Feb 2014  
Est. Total Cost: $1,500,000  
Funding Source: Mitigation Fund

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contact DDNR to request RFC list of structures</td>
<td>12</td>
<td></td>
<td>Flood Plains Administrator</td>
<td>X APRIL 2004</td>
</tr>
<tr>
<td>2. Seek Funds for Mitigation Project</td>
<td>On going</td>
<td>$500</td>
<td>Flood Plains Administrator</td>
<td>On Going</td>
</tr>
<tr>
<td>3. Remove RFC structures from hazards zones</td>
<td>60</td>
<td>$1,500,000</td>
<td>Flood Plains Administrator</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>48% Complete</td>
</tr>
</tbody>
</table>

Total: $1,500,000

Ongoing Activity 01/23/2010, structure removal as funding is available

Revised on 8/30/2016
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 2: Increase Public Awareness of Risks, Precautions, and Mitigation Measures

Objective: # 2.1: Inform every citizen of Natural Hazard Risks

Priority: # 1: 2003

Activity: # 2.1.1: Distribute brochures that describe the natural hazard mitigation plan

Lead Person: EMA DIRECTOR
Start Date: Oct 2003
Finish Date: MARCH 2014
Est. Total Cost: $1,200.00
Funding Source: Ross Co.

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coordinate the responsible group/individual</td>
<td>1</td>
<td>Staff time</td>
<td>EMA Director</td>
<td>X</td>
</tr>
<tr>
<td>2. Develop draft brochure</td>
<td>4</td>
<td>Staff time</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3. Peer review draft</td>
<td>2</td>
<td>Staff time</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4. Print final brochure</td>
<td>1 week</td>
<td>2000 copies = $1,000</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5. Distribute brochures to local businesses &amp; public agencies (method not determined)</td>
<td>1</td>
<td>$200</td>
<td></td>
<td>X MARCH 2005 ONGOING</td>
</tr>
</tbody>
</table>

Total: 8 months $1200.00

Brochures have been printed & distributed at various locations & events. The Natural Hazards Mitigation Plan is available in the county EMA and Building Department offices.
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 2: Increase Public Awareness of Risks, Precautions, and Mitigation measures

Objective: # 2.1: Inform every citizen of Natural Hazards risks

Priority: # 1: 2005

Activity: # 2.1.2: Offer curriculum - Masters of Disasters to schools

Lead Person: ARC Executive Dir. Start Date: 2005 Est. Total Cost: $3000

Finish Date: Ongoing Funding Source: Local Grant

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Research info to make presentation to school board</td>
<td>1</td>
<td></td>
<td>Executive Director ARC</td>
<td>X ONGOING</td>
</tr>
<tr>
<td>2. Purchase curriculum</td>
<td>1</td>
<td>$3000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Meet w/ individual teachers or principals</td>
<td>24</td>
<td>Staff time</td>
<td>ARC Disaster Services</td>
<td></td>
</tr>
<tr>
<td>4. Teachers to instruct</td>
<td>9 mths yearly</td>
<td>None</td>
<td>ARC DS</td>
<td></td>
</tr>
<tr>
<td>5. Gather information yearly</td>
<td>1</td>
<td>Staff time</td>
<td>ARC DS</td>
<td></td>
</tr>
<tr>
<td>6. Write brief report</td>
<td>1</td>
<td>Staff time</td>
<td>ARC ED</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>28</strong></td>
<td><strong>$3000.00</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THE ROSS COUNTY RED CROSS COMPLETED THIS IN SEPTEMBER 2006 & WILL CONTINUE ON A YEARLY BASIS.

01/29/2010
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 2 : Increase Public Awareness of Risks, Precautions, and Mitigation measures

Objective: # 2.1 : Inform every citizen of Natural Hazards risks

Priority: # 12: 2004
Activity: # 2.1.3: Promote the use of FEMA for kids

Lead Person: EMA

Start Date: April 2004
Finish Date: April 2014
Est. Total Cost: $1000.00
Funding Source: Ross Co.

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form committee</td>
<td>2</td>
<td>Staff time</td>
<td>EMA Director</td>
<td>X 11/2005</td>
</tr>
<tr>
<td>2. Acquire FEMA for kids material</td>
<td>2</td>
<td>1000.00</td>
<td>&quot; &quot;</td>
<td>X 11/2005</td>
</tr>
<tr>
<td>3. Schedule presentations at public venues</td>
<td>1</td>
<td>Volunteer</td>
<td>&quot; &quot;</td>
<td>X 11/2005</td>
</tr>
<tr>
<td>4. Make presentations</td>
<td>6</td>
<td>Volunteer</td>
<td>&quot; &quot;</td>
<td>X 11/2005</td>
</tr>
<tr>
<td>5. Continue over time</td>
<td>11</td>
<td>$1000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THE ABOVE ITEMS WERE COMPLETED BY THE RED CROSS. ALL COUNTY AND CITY SCHOOLS WERE ADVISED TO DOWNLOAD BROCHURES & OTHER MATERIALS FROM THE FEMA WEB SITE.

ONGOING 01/23/2010
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 2: Increase Public Awareness of Risks, Precautions, and Mitigation measures

Objective: # 2.1: Inform every citizen of Natural Hazards Risks

Priority: # 5: 2005

Activity: # 2.1.4: Make presentations about natural hazards to nursing home staff & senior citizens

Lead Person: EMA

Start Date: Jan 2005
Finish Date: Dec 2014
Est. Total Cost: $ 200.00
Funding Source: Ross Co.

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form committee</td>
<td>2</td>
<td></td>
<td>Staff</td>
<td>x</td>
</tr>
<tr>
<td>2. Create presentation</td>
<td>2</td>
<td></td>
<td>Staff</td>
<td>x</td>
</tr>
<tr>
<td>3. Schedule visit</td>
<td>3</td>
<td></td>
<td>Staff</td>
<td>x</td>
</tr>
<tr>
<td>4. Make presentation</td>
<td>3</td>
<td></td>
<td>Staff</td>
<td>x</td>
</tr>
<tr>
<td>5. Publicize results</td>
<td>6</td>
<td>200</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

Total: 16 200.00

These items were completed by Ross County EMA and will be presented on a yearly basis.

ONGOING ACTIVITY 01/23/2018
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 2: Increase Public Awareness of Risks, Precautions, and Mitigation Measures

Objective: # 2.1: Inform all of the public of Natural Hazard Risks

Priority: # 6: 2005

Activity: # 2.1.5: Hold public meetings

Lead Person: EMA Director

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reserve meeting room</td>
<td>2</td>
<td>Staff Time</td>
<td>EMA Director</td>
<td>X NOVEMBER 2005</td>
</tr>
<tr>
<td>2. Advertise one month in advance-legal notice</td>
<td>2</td>
<td>$200.00</td>
<td>&quot; &quot;</td>
<td></td>
</tr>
<tr>
<td>3. Hold public meeting</td>
<td>3</td>
<td>Staff Time</td>
<td>&quot; &quot;</td>
<td>ONGOING</td>
</tr>
<tr>
<td>4. Address issues raised by public</td>
<td>1</td>
<td>Staff Time</td>
<td>&quot; &quot;</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>8</td>
<td>$200.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LEPC III - MONTHLY MEETINGS ARE OPEN TO THE PUBLIC & DISASTER TRAINING IS COMPLETED ANNUALLY.

01/23/2010

Revised on 8/30/2016
Goal: #2: Increase Public Awareness of Risks, Precautions, and Mitigation Measures

Objective: #21: Inform every citizen of Natural Hazard Risks

Priority: #7 2005

Activity: #21.6: Deliver Public Service Announcements

Lead Person: EMA Director

Start Date: January 2005

Finish Date: December 2014

Est. Total Cost: $unknown

Funding Source: Budget

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form Committee</td>
<td>2</td>
<td>Staff Time</td>
<td>EMA Director</td>
<td>X</td>
</tr>
<tr>
<td>2. Write Announcements</td>
<td>2</td>
<td></td>
<td></td>
<td>ONGOING</td>
</tr>
<tr>
<td>3. Deliver to Local Media</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Continue process</td>
<td>Ongoing</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: ?

No end date for this project has been established. The local newspaper & radio are used on an as needed basis.
Goal: # 2: Increase Public Awareness of Risks, Precautions, and Mitigation measures

Objective: # 2.2: Inform every citizen of appropriate natural hazards precautions

Priority: # 4: 2005

Activity: # 2.2.1: Construct a media campaign to educate the public regarding the existing early warning systems

Lead Person: EMA Director
Start Date: Jan 2005
Finish Date: Oct 2014
Est. Total Cost: $ 500.00
Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form committee</td>
<td>1</td>
<td>N/A</td>
<td>EMA Director</td>
<td>✓</td>
</tr>
<tr>
<td>2. Develop media materials</td>
<td>6</td>
<td>250.00</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>3. Commissioners review materials</td>
<td>1</td>
<td>N/A</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>4. Distribute materials</td>
<td>2</td>
<td>250.00</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>5. Write summary</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: 11 500.00

MONTHLY PSA PROVIDED VIA RADIO & AS NEEDED BY NEWSPAPER.
BROCHURES WERE ADDED IN 2006, COUNTY & LOCAL COMMUNITY WEB PAGES, & SCHOOL PRESENTATIONS 01/23/2007
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 2: Increase Public Awareness of Risks, Precautions, and Mitigation measures

Objective: # 2.2: Inform every citizen of appropriate natural hazards precautions

Activity: # 2.2.2: Hold public meetings

Lead Person: EMA Director
Start Date: Sept 2005
Finish Date: Feb 2014
Est. Total Cost: $100.00
Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reserve meeting room</td>
<td>1</td>
<td>N/A</td>
<td>EMA Director</td>
<td></td>
</tr>
<tr>
<td>2. Advertise one month in advance—legal notice</td>
<td>1</td>
<td>100.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Hold public meetings</td>
<td>3</td>
<td>Staff time</td>
<td></td>
<td>X 04/2005</td>
</tr>
<tr>
<td>4. Write summary</td>
<td>1</td>
<td>Staff time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>$100.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THIS IS AN ONGOING PROJECT. MEETINGS HAVE BEEN HELD WITH CHILlicothe CITY COUNCIL, ROSS COUNTY COMMISSIONERS, ROSS COUNTY TOWNSHIP TRUSTEES, ROSS COUNTY SCHOOL BOARDS, & LERC.

ONGOING ACTIVITY 01/23/2010
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 2: Increase Public Awareness of Risks, Precautions, and Mitigation measures

Objective: # 2.2: Inform every citizen of appropriate natural hazards precautions

Activity: # 2.2.3: Deliver Public Service Announcements for evacuation procedures, shelter locations, emergency kits, and natural hazard awareness.

Lead Person: EMA Director

Start Date: NOVEMBER 2002

Est. Total Cost: $ Staff time

Finish Date: Feb 2014

Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form committee</td>
<td>1</td>
<td>Staff time</td>
<td>EMA Director</td>
<td></td>
</tr>
<tr>
<td>2. Write announcements</td>
<td>8</td>
<td>&quot; &quot;</td>
<td>&quot; &quot;</td>
<td></td>
</tr>
<tr>
<td>3. Commissioner review</td>
<td>1</td>
<td>&quot; &quot;</td>
<td>&quot; &quot;</td>
<td></td>
</tr>
<tr>
<td>4. Deliver to local media</td>
<td>1</td>
<td>&quot; &quot;</td>
<td>&quot; &quot;</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>Staff time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PUBLIC SERVICE ANNOUNCEMENTS ARE DELIVERED TO THE PUBLIC VIA RADIO MONTHLY, REGARDING THE EARLY WARNING SYSTEM. SHELTER LOCATIONS HAVE BEEN UPDATED BY THE RED CROSS AND THEY ARE IN CHARGE OF EMERGENCY KITS. NATURAL HAZARD AWARENESS HAS BEEN ADDRESSED BY PSA'S AND THE ROSS COUNTY WEB PAGE.

ONGOING ACTIVITY 01/23/2010 & AS NEEDED WHEN A DISASTER THREAT EXIST.
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 2: Increase Public Awareness of Risks, Precautions, and Mitigation measures

Objective: # 2.2: Inform every citizen of appropriate natural hazards

Priority: # 9
Activity: # 2.2.4: Enlist the help of Insurance providers, volunteers, first responders, and businesses to distribute OEMA, NOAA, FEMA, ARC, DNR brochures

Lead Person: EMA Director

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop a list of entities that may be interested</td>
<td>1</td>
<td>Staff Time</td>
<td>EMA Director</td>
<td>√ August 2004</td>
</tr>
<tr>
<td>2. Draft a cover letter soliciting help</td>
<td>1</td>
<td>Staff Time</td>
<td>EMA Director</td>
<td>√ August 2005</td>
</tr>
<tr>
<td>3. Decide how the brochures will be distributed</td>
<td>1</td>
<td>$500.00</td>
<td>EMA Director</td>
<td>√ August 2005</td>
</tr>
<tr>
<td>4. Organize and execute the distribution method</td>
<td>1</td>
<td>Staff Time</td>
<td>EMA Director</td>
<td>√ August 2005</td>
</tr>
<tr>
<td>5. Draft a report summarizing the activity</td>
<td>1</td>
<td>Staff Time</td>
<td>EMA Director</td>
<td>√ August 2005</td>
</tr>
</tbody>
</table>

Total: 5 |
Total: $500.00

The above items are available in literature racks at various public locations & the post office. 01/23/2010
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal # 2: Increase Public Awareness of Risks, precautions, and Mitigation measures

Objective: # 2.2: Inform all of the public of appropriate natural hazard precautions

Activity: # 2.2.5: Create a PSA that describes the need for emergency kits and where to get a list of items

Lead Person: EMA Director
Start Date: 01/01/2004
Est. Total Cost: $ __________
Finish Date: 01/01/2014
Funding Source: __________

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form committee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Make contacts for delivery of PSA</td>
<td></td>
<td></td>
<td></td>
<td>INCOMPLETE</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>×</td>
</tr>
</tbody>
</table>

04/2005

This activity is now being completed on an as needed basis by the Ross County EMA Office & The Red Cross. 01/23/2010 Information is provided to the public in the form of literature on emergency kits.
**ROSS COUNTY NATURAL HAZARD MITIGATION PLAN**

**Goal # 2:** Increase Public Awareness of Risks, Precautions, and mitigation measures

**Objective: # 2.2:** inform all of the public of appropriate natural hazards precautions

**Activity: # 2.2.6:** Develop a PSA for evacuation procedures and shelter locations

**Lead Person:** EMA Director and the Red Cross Director

**Start Date:** 01/01/2004  
**Est. Total Cost:** $ ________  
**Finish Date:** 01/01/2014  
**Funding Source:** __________

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Form committee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Arrange for Public Service Announcements to be made during emergencies</td>
<td></td>
<td></td>
<td></td>
<td>ONGOING</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total:**

**This activity is now being completed on an as needed basis by the Ross County EMA Office & The Red Cross. 01/23/2010**
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 2: Increase Public Awareness of Risks, Precautions, and Mitigation measures

Objective: # 2.3: Inform every citizen of Natural Hazards Mitigation measures

Priority: # 8: 2004

Activity: # 2.3.1: Promote the development of emergency planning, response, and recovery plans to all local businesses

Lead Person: EMA

Start Date: Jan 2004
Finish Date: Jan 2015
Est. Total Cost: $3000.00
Funding Source: OU-C work study program

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify group/person that will assist businesses that request help</td>
<td>2</td>
<td>Staff time</td>
<td>EMA</td>
<td>x</td>
</tr>
<tr>
<td>2. Research incentives that can be given to businesses (tax or insurance)</td>
<td>4</td>
<td>2500.00</td>
<td>EMA</td>
<td>x</td>
</tr>
<tr>
<td>3. Draft a letter describing the need for these plans, incentives, FEMA publication 141, and where to get help</td>
<td>1</td>
<td></td>
<td>EMA</td>
<td>x</td>
</tr>
<tr>
<td>4. Contact the local Chamber of Commerce for an address list</td>
<td>1</td>
<td></td>
<td>EMA</td>
<td>x</td>
</tr>
<tr>
<td>5. Mail the cover letter</td>
<td>1</td>
<td></td>
<td>EMA</td>
<td>x</td>
</tr>
<tr>
<td>6. Track responses</td>
<td>3</td>
<td></td>
<td>EMA</td>
<td>x</td>
</tr>
<tr>
<td>7. Write brief report on this activity</td>
<td>2</td>
<td>500.00</td>
<td>EMA</td>
<td>x</td>
</tr>
</tbody>
</table>

Total: 14 $3000.00

LEPC MEETINGS ARE HELD BI - MONTHLY AND ARE OPEN TO THE PUBLIC. 01/23/2010
# ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

**Goal: # 2:** Increase public awareness of risks, precaution, and mitigation measures

**Objective: # 2.3:** Inform all of the public of Natural Hazards Mitigation measures

**Activity: # 2.3.2:** Prepare a summary of available FEMA, OEMA, and other funds

**Lead Person:** EMA DIRECTOR  
**Start Date:** AUGUST 2004  
**Est. Total Cost:** $__________  
**Finish Date:** ONGOING

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Contact FEMA-OEMA &amp; others for fund availability.</td>
<td>ONGOING</td>
<td></td>
<td>EMA</td>
<td>X</td>
</tr>
<tr>
<td>2. Distribute findings to public &amp; proper agencies.</td>
<td>ONGOING</td>
<td></td>
<td>EMA</td>
<td>X</td>
</tr>
</tbody>
</table>

**Total:**

The Ross County EMA Director has an ongoing search for funding related to mitigation projects. The all natural hazards mitigation plan was placed on the Ross County Web page in March 2005. **ONGOING ACTIVITY. 01/23/2010**
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: 3: TIMELY WARNING

Objective: 3.1: COORDINATE RAIN & STREAM GAUGES

Priority: 2

Activity: 3.1.1: DEVELOP A COORDINATED PLAN USING EXISTING GAUGES AND IDENTIFY ADDITIONAL NEEDS.

Lead Person: Floodplain Administrator

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establish five (5) new stream gauges at the following locations: Indian Creek at Rozel &amp; Trego Creek Intersection, Paint Creek at SR 772 Intersection, Salt Creek in Richmond Dale, North Fork Creek near Skae Mills</td>
<td>12</td>
<td>$1250.00 @ $250 each</td>
<td>Floodplain Adm.</td>
<td>FUNDING NOT AVAILABLE</td>
</tr>
<tr>
<td>2. Research and secure funding for gauges</td>
<td>18-24 months</td>
<td></td>
<td>Floodplain Adm.</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>3. Purchase a &quot;steno&quot; reporting rain gauge at the head of the Indian Creek Watershed</td>
<td>36 months</td>
<td>$10,000 each</td>
<td>Floodplain Adm.</td>
<td>FUNDING NOT AVAILABLE</td>
</tr>
<tr>
<td>4. Existing stream gauges may be viewed at <a href="http://waternet.oh.gov/nws/water">http://waternet.oh.gov/nws/water</a></td>
<td>Current</td>
<td></td>
<td>Staff Time</td>
<td>&quot; &quot;</td>
</tr>
<tr>
<td>5. Establish Coordination of rain and stream gauges at Sheriff's Office</td>
<td>36 months</td>
<td>Staff Time</td>
<td>&quot; &quot;</td>
<td>N/A</td>
</tr>
<tr>
<td>6. Secure funding to maintain the system</td>
<td>36 months</td>
<td>Staff Time</td>
<td>&quot; &quot;</td>
<td>N/A</td>
</tr>
<tr>
<td>7. Investigate other sites for additional rain gauges.</td>
<td>36 months</td>
<td>Staff Time</td>
<td>&quot; &quot;</td>
<td>SPRING 2004</td>
</tr>
</tbody>
</table>

Total: 174-180 months $112,500

FLOOD ZONE ELEVATIONS VERIFIED BY SURVEYOR, RON DONAHUE, VARIOUS LOCATIONS IN ROSS COUNTY. IDENTIFIED THE NEED FOR A NEW FLOOD LEVEL GAUGE ON THE BRIDGE STREET BRIDGE, JANUARY 2003. ODOT AGREED TO SUPPLY THIS LEVEL GAUGE.

ONGOING ACTIVITY UNSUCCESSFUL IN LOCATING A FUNDING SOURCE. 01/23/2007
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 3: _TIMELY WARNING_

Objective: # 3.1: _COORDINATE RAIN & STREAM GAUGES_

Priority: # 1: 2004

Activity: # 3.1.2: _SECURE FUNDING TO IMPLEMENT AND OPERATE THE SYSTEM_

Lead Person: Flood Plain Admin.  Start Date: January 2004  Est. Total Cost: $ 5,000.00
Finish Date: December 2014  Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Write a proposal for Mitigation funding through the appropriate agencies.</td>
<td>36 to 48</td>
<td>$5,000</td>
<td>Floodplain Adm.</td>
<td>FUNDING NOT AVAILABLE</td>
</tr>
<tr>
<td>2.</td>
<td></td>
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<td>3.</td>
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<td>5.</td>
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<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong>:</td>
<td>36 to 48</td>
<td>$5,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CONTACTED OHIO STORMS NETWORK & THE NATIONAL WEATHER SERVICE IN AN EFFORT TO GENERATE FUNDING AND SUPPORT FOR THIS PROJECT. THEY FAILED TO SEE THE NEED & OFFERED NO SUPPORT. FALL 2004

ONGOING ACTIVITY UNSUCCESSFUL IN LOCATING A FUNDING SOURCE. 01/23/2010
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 3 : TIMELY WARNING

Objective: # 3.1 : COORDINATE RAIN & STREAM GAUGES
Priority: # 4 2004
Activity: #313 : IMPLEMENT / CONSTRUCT SYSTEM

Lead Person: Floodplain Admin.  Start Date: January 2004  Est. Total Cost: $11,250.00
Finish Date: ONGOING  Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Purchase a reporting rain gauge</td>
<td>24 to 36</td>
<td>$10,000 each</td>
<td>Floodplain Adm.</td>
<td>FUND NOT AVAILABLE</td>
</tr>
<tr>
<td>2. Purchase 5 stream gauges</td>
<td>12</td>
<td>$1250.00, $250 each</td>
<td>Floodplain Adm.</td>
<td>SEE 3.1.2</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total: 36 to 48 months  $11,250.00

ONGOING ACTIVITY UNSUCCESSFUL IN LOCATING A FUNDING SOURCE. 01/23/2010
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal # _3_ : TIMELY WARNING

Objective: # 3.1 : COORDINATE RAIN & STREAM GAUGES

Priority: # 3: 2004

Activity: # 3.1.4 : DATA COLLECTED IS ANALYZED AND DISTRIBUTED THROUGH PROGRAM ADMINISTRATION

Lead Person: Floodplain Admin.  Start Date: January 2004  Est. Total Cost: $ 2,250.00
   Finish Date: December 2014  Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop an Excel database to record significant rain events &amp; their relation to downstream water elevations in areas of repetitive flood history.</td>
<td>36</td>
<td>$1,000</td>
<td>Floodplain Adm.</td>
<td>INCOMPLETE</td>
</tr>
<tr>
<td>2. Conduct engineering analysis</td>
<td>60</td>
<td>TBD</td>
<td>&quot; &quot;</td>
<td></td>
</tr>
<tr>
<td>3. Distribute Study</td>
<td>36</td>
<td>50 copies @ $25 each = 1,250</td>
<td>&quot; &quot;</td>
<td></td>
</tr>
</tbody>
</table>

Total: 132 months $2,250

THIS INFORMATION IS AVAILABLE ON THE WEB. NWS, CORPS, ODNR DIVISION OF WATER FOR EXISTING GAUGES.

LOCAL IMPLEMENTATION NOT FEASIBLE DUE TO LACK OF STATE & FEDERAL SUPPORT. 01/23/2010
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 3 : TIMELY WARNING

Objective: # 3.1 : COORDINATE RAIN & STREAM GAUGES

Priority: # 5 2004

Activity: # 3.1.5 : LINK DATA TO EARLY WARNING SYSTEM

Lead Person: Sheriff Dept.

Start Date: January 2004

Finish Date: December 2004

Est. Total Cost: $ Staff Time

Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reporting rain gauge would notify the Sheriff's Office of any significant rainfall and they would in turn notify the appropriate agencies.</td>
<td>36</td>
<td>Staff Time</td>
<td>S.O. Dispatch for the notification process.</td>
<td>N/A FUNDING</td>
</tr>
<tr>
<td>2. Develop an S.O.P. for the notification of various agencies.</td>
<td>24 to 36</td>
<td>Staff Time</td>
<td>Floodplain Adm. E.M.A. Director Red Cross Board of Health County Engineer TWP. Trustees Fire &amp; E.M.S.</td>
<td>X September 2006</td>
</tr>
</tbody>
</table>

Total: 60 to 72 months Staff Time

CURRENT GAUGE DATA & ANY KNOWN AREAS OF HAZARDOUS CONDITIONS ARE RELAYED TO THE SHERIFF'S OFFICE. ONGOING ACTIVITY 01/23/2010
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 3 : TIMELY WARNING

Objective: # 3.2 : COORDINATE SIREN SYSTEM

Priority: # 6 2004

Activity: # 3.2.1 : Upgrade and expand City and County siren system with latest technology to permit seamless operations between both. Plan shall include growth areas of the County.

Lead Person: Ross Co. EMA Director  
Start Date: January 2004  
Finish Date: APRIL 2007  
Est. Total Cost: $1,005,500.00  
Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establish type of sirens that include &quot;voice announcements&quot;</td>
<td>6</td>
<td>$500</td>
<td>EMA</td>
<td>NOVEMBER 2004</td>
</tr>
<tr>
<td>2. Estimate siren system that could be initiated from the Sheriffs Office or local areas</td>
<td>6</td>
<td>$500</td>
<td>EMA</td>
<td>NOVEMBER 2004</td>
</tr>
<tr>
<td>3. Get approval for additional city sirens</td>
<td>9</td>
<td>$1,000</td>
<td>EMA</td>
<td>NOVEMBER 2004</td>
</tr>
<tr>
<td>4. Get approval for county replacements and new sirens (with growth areas included)</td>
<td>12</td>
<td>$1,000</td>
<td>EMA</td>
<td>NOVEMBER 2004</td>
</tr>
<tr>
<td>5. Generate Project Schedule, prelim engineering, prepare and submit grant requests</td>
<td>23</td>
<td>$2,500</td>
<td>EMA</td>
<td>ONGOING</td>
</tr>
<tr>
<td>6. Begin the project with funding projections (35 additional sirens)</td>
<td>48-60</td>
<td>$1 million or + $28,500 each</td>
<td></td>
<td>SEPTEMBER 2005</td>
</tr>
</tbody>
</table>

Total: 104 to 116 months  
$1,005,500
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 3: TIMELY WARNING

Objective: # 3.2: COORDINATE SIREN SYSTEM

Priority: # 7

2004

Activity: # 3.2.2: Link warning siren system to Emergency Alert System (EAS) and provide NOAA to the Sheriff's Department.

Lead Person: Ross Co. EMA Director
And Sheriff

Start Date: January 2004

Finish Date: JANUARY 2007

Est. Total Cost: $10,500.00

Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify Systems (hardware/software)</td>
<td>12</td>
<td>$500</td>
<td>EMA</td>
<td>NOVEMBER 2004</td>
</tr>
<tr>
<td>2. Gain approval for project</td>
<td>24</td>
<td>0</td>
<td>EMA Law Enforcement</td>
<td>NOVEMBER 2004</td>
</tr>
<tr>
<td>3. Develop SOP</td>
<td>36</td>
<td>Staff Time</td>
<td>EMA Law Enforcement</td>
<td>11/2004</td>
</tr>
<tr>
<td>4. Establish procedures for radio and TV cable broadcasts in Ross County</td>
<td>36</td>
<td>Staff Time</td>
<td>EMA Law Enforcement</td>
<td>NOVEMBER 2004</td>
</tr>
<tr>
<td>5. Conduct Sheriff personnel training</td>
<td>40</td>
<td>Staff Time</td>
<td>EMA Law Enforcement</td>
<td>NOVEMBER 2004</td>
</tr>
<tr>
<td>6. Implement coordination of the early warning system</td>
<td>48</td>
<td>$10,000</td>
<td>Law Enforcement</td>
<td>SEPTEMBER 2005</td>
</tr>
</tbody>
</table>

Total: 196 months $10,500.00

THIS ACTIVITY IS COMPLETED VIA THE SHERIFFS OFFICE DISPATCH. 01/23/2007

Revised on 8/30/2016
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 3 : TIMELY WARNING
Objective: # 3.2 : COORDINATE SIREN SYSTEM

Priority: # 2006
Activity: # 3.2.3 : Investigate integrating all School Buildings with Siren System
Lead Person: Ross Co. EMA Director
Start Date: January 2005
Finish Date: JANUARY 2007
Est. Total Cost: $ 2,500.00
Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify city and county schools to be coordinated to siren system</td>
<td>6</td>
<td>$500</td>
<td>EMA</td>
<td>X     SEPTEMBER 2005</td>
</tr>
<tr>
<td>2. Study best system for coordination based on existing school systems</td>
<td>6</td>
<td>$1,000</td>
<td>EMA contractor</td>
<td>X</td>
</tr>
<tr>
<td>3. Get approval from city and county school administrations for coordinating system</td>
<td>12</td>
<td>$1,000</td>
<td>EMA contractor</td>
<td>X</td>
</tr>
<tr>
<td>4. Complete estimate for expense coordinating siren project</td>
<td>24</td>
<td>See 3.2.1</td>
<td>EMA contractor</td>
<td>X</td>
</tr>
<tr>
<td>5. Initiate and complete installation project coordinated system</td>
<td>48-60</td>
<td>See 3.2.1</td>
<td>EMA Contractor</td>
<td>X</td>
</tr>
<tr>
<td>6. Training staff, admin, and students on early warning system</td>
<td>96 to 108 months</td>
<td>$2,500.00</td>
<td>Staff Time</td>
<td>X     Sep 2005</td>
</tr>
</tbody>
</table>

Total: 96 to 108 months $2,500.00

All County & City schools have sirens co-located at their sites or are within the primary warning zone of a siren. All school administrations have been provided handouts on the siren system and a NOAA weather radio.
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: #3: TIMELY WARNING

Objective: #3.2: COORDINATE SIREN SYSTEM

Priority: #2 2006

Activity: #3.2.4: Secure funding to maintain and administer operating siren system

Lead Person: Ross Co. EMA Director
And Sheriffs Office

Start Date: January 2006
Finish Date: JANUARY 2014

Est. Total Cost: $0

Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify total cost of maintenance needs</td>
<td>36</td>
<td>TBD</td>
<td>Law Enforcement</td>
<td>X JUNE 2006</td>
</tr>
<tr>
<td>2. Identify administration system needs</td>
<td>36</td>
<td>TBD</td>
<td>Law Enforcement</td>
<td>EMA BUDGET ITEM</td>
</tr>
<tr>
<td>3. Generate SOP for entire system (sirens and EAS)</td>
<td>48</td>
<td>TBD</td>
<td>EMA</td>
<td>X JANUARY 2007</td>
</tr>
<tr>
<td>Total:</td>
<td>120 months</td>
<td>TBD</td>
<td></td>
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</tr>
</tbody>
</table>

ONGOING ACTIVITY 01/23/2010

103
ROSS COUNTY NATURAL HAZARD MITIGATION PLAN

Goal: # 3: TIMELY WARNING

Objective: # 3.2: COORDINATE SIREN SYSTEM

Priority: # 2

Activity: # 3.2.5: Plan for future system administration

Lead Person: EMA DIRECTOR

Start Date: January 2006

Est. Total Cost: $75,000

Finish Date: December 2014

Funding Source: Local

<table>
<thead>
<tr>
<th>Action Plan</th>
<th># of Months Needed</th>
<th>Estimated Cost</th>
<th>Person Responsible</th>
<th>Accomplished Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provide training procedures and upgrades to community where sirens are located</td>
<td>48</td>
<td>$75,000</td>
<td>EMA</td>
<td>X</td>
</tr>
<tr>
<td>2. Monitor systems in place and test regularly (include with Life Safety System Testing)</td>
<td>48</td>
<td>TBD</td>
<td>Local Fire Depts</td>
<td>X</td>
</tr>
<tr>
<td>Total:</td>
<td>96 months</td>
<td>$75,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MONTHLY TEST OF ALL SIRENS & PSA DELIVERED VIA RADIO.

ONGOING ACTIVITY 01/23/2010