

# Adair County, Missouri

## Natural Hazard Mitigation Plan

Executive Summary

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February 24<sup>th</sup>, 2014

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## **Executive Summary**

Located in Northeast Missouri; Adair County is susceptible to natural hazards from tornadoes, severe thunderstorms, severe winter storms, flood, drought, heat waves, earthquakes and dam failures. This hazard mitigation plan will address these natural hazards. Man-made/technological hazards will not be addressed in this plan except in the context of cascading damages.

Section one of this plan gives general background information for Adair County. Included in this information are; demographic, population, geography, floodplain management and environmental sensitive areas.

Section two gives community profiles for the cities and villages in Adair County.

Section three identifies county and community assets such as telecommunication, transportation network, sewer and water facilities, law enforcement, critical facilities and infrastructure.

Section four identifies the risk assessment of a hazard occurring in Adair County. A general overview will discuss each hazard and its potential impact on the county.

Section five identifies the vulnerability assessment and probability of occurrence of historic and non-historic hazards within the county.

Section six outlines the county's mitigation policies and disaster response procedures. Prevention measures and natural resource protection are discussed.

Section seven establishes the mitigation plans response to each hazard identified in the plan. The hazards are broken down into problems, goals and objectives as well as the implementation process.

Section eight outlines the proposed plan maintenance.

The primary objectives of this hazard mitigation plan are to reduce or eliminate the long term risks to life and property associated with natural hazards. The information contained in this plan will be reviewed and updated as necessary every five years by Adair County.

The Adair County Hazard Mitigation Plan is a multi-jurisdictional plan that represents several local governments and entities within the county.

The following local governments participated in this plan:  
Adair County (Unincorporated areas)

City of Brashear  
City of Gibbs  
City of Kirksville  
City of Millard  
City of Novinger

**PREREQUISITES:**

**Requirement:**

**§201.6(c) (5) for multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.**

The following jurisdictions participated in the planning process and will formally adopt the plan within 90 days after the plan receives —approvable pending adoptionl status from FEMA. (See Appendix A)

Adair County (Unincorporated areas)  
City of Brashear  
City of Gibbs  
City of Kirksville  
City of Millard  
City of Novinger

**Requirement:**

**§201.6(c) (5) Multi-jurisdictional plans may be accepted, as appropriate, as long as each jurisdiction has participated in the process.**

The Northeast Missouri Regional Planning Commission, on behalf of Adair County, invited incorporated cities and school districts in the county as well as interested citizens and area businesses to participate in the Adair County Multi-Jurisdictional Hazard Mitigation Plan Development.

Notice of the meeting to develop the plan was posted in the communities, announced on the radio and posted in local newspapers. In accordance with Missouri's —Sunshine Law (RSMo 610.010, 610.020, 610.023, and 610.024), the public was notified when the plan, was presented for review. Documentation of public meeting notice location is located in the Appendix B.

Jurisdictions that are represented by a multi-jurisdictional plan are required to participate in the planning process and formally adopt the plan. Each jurisdiction participated by meeting minimal requirements of providing information to support plan update via attendance at the meeting and alternately scheduled calls and emails with Northeast Missouri Regional Planning Commission staff for data collection. Each participating jurisdiction will formally adopt the mitigation plan within 90 days of receiving —approvable pending adoption' status by FEMA. Adoption resolutions are included in Appendix A.

All of the jurisdictions listed as participants in the plan preparation met the minimum participation requirements. Each participating jurisdiction was required to meet plan participation requirements as defined by Northeast Missouri Regional Planning Commission at the beginning of the planning process. Minimum participation requirements included:

- Provide information to support plan development by attendance at a public meeting, or answering questions posed by Northeast Missouri Regional Planning Commission staff, alternately scheduled phone calls and emails with Northeast Missouri Regional Planning Commission staff for data collection. Documentation in the form of sign in sheets for attendance at the public group meetings with Northeast Missouri Regional Planning Commission staff is included in Appendix B.
- Formally adopt the mitigation plan.

All of the jurisdictions that participated in the plan development process met the minimum as shown in table below. Final time sheet documentation will be provided in Appendix B after formal adoption of the plan. A list of committee members will be found in Appendix B.

Participant	Meetings	Email	Formal Plan Adoption	Meetings with NEMO RPC Staff	Non-Participating
Adair County (unincorporated)	X	X		X	
City of Brashear	X	X		X	
City of Gibbs	X	X		X	
City of Kirksville	X	X		X	
City of Millard	X	X		X	
City of Novinger	X	X		X	
Adair R-I	X	X		X	X
Adair R-II	X	X		X	X
Kirksville R-III	X	X		X	X
Truman State University	X	X		X	X
Moberly Area Community College	X	X		X	X

Low density population made committee meetings problematic. Small towns often lack the resources for sending representatives to committee meetings.

The representatives for Adair County’s Hazard Mitigation Planning Committee included members of local entities, city and county officials and representatives and also citizens from each jurisdiction. The planning process was a collaborative effort on the part of the planning committee. Appendix B provides the names of the committee members, titles and the jurisdictions represented in the planning process. The following individuals are those who represent each jurisdiction.

- Adair County (Unincorporated areas) – Mark Thompson, Adair County Commissioner
- City of Brashear – Rhoda Branson, Mayor
- City of Gibbs – Pam Pflum, Mayor
- City of Kirksville – Mari Macomber, City Manager
- City of Millard – Felicia C. Scott, Mayor
- City of Novinger – Jeff Dodson, Mayor

Discussions and meetings were held beginning January 23, 2013. The committee reviewed and discussed the plan development process. Utilizing the information gathered, Northeast Missouri Regional Planning Commission began the plan preparations.

During February, March, April, May and June, 2013 sections of the plan were developed. Annual assessments of these goals and objectives will be conducted by the committee in an effort to keep this plan current; any changes that take place will be documented and made available to the public for comment then attached to the current plan by appendix.

## Adair County Hazard Mitigation Plan 2013

Final discussions will be held and copies of the draft will be made available for review and comment by posting on the Northeast Missouri Regional Planning Commission office, 121 S. Cecil Street, Memphis, Missouri, and the Adair County Court House, 106 W. Washington Street, Kirksville, Missouri in August, 2013.

# **Multi – Jurisdictional Hazard Mitigation Plan**

## **Adair County, Missouri**

### **INTRODUCTION**

Following the severe weather, tornado, and flood disaster that was declared in the spring of 2002 (DR-1412), Missouri's State Emergency Management Agency (SEMA) received flood buyout project proposals from 23 communities across the state. Fortunately, they were able to help some of these communities with federal mitigation grant funding provided through the Federal Emergency Management Agency (FEMA).

After November 1, 2004, communities like these will not be eligible for mitigation assistance unless they have a current FEMA approved hazard mitigation plan.

Under the initiative set forth by SEMA, the Missouri Association of Councils of Government (MACOG) agreed to meet the challenge of developing county and municipal plans throughout the state. The 19 regional planning commissions of MACOG provide an effective way for local governments to work together to share technical staff and address common problems in need of an area – wide approach. They also can effectively deliver programs that might be beyond the resources of an individual county or municipal government. The intent of the regional planning commissions in Missouri is to be a service to their member counties and municipalities and to bring an organized approach to addressing a broad cross – section of area – wide issues. They also are available to assist their member entities in coordinating the needs of the area with state and federal agencies or with private companies or other public bodies.

SEMA's initiative further states that, due to time and funding limitations, the plans developed by Missouri's regional planning commissions should cover natural hazards only. Manmade and/or technological hazards are not addressed in this plan, except in the context of cascading damages. Citizens and public organizations have participated in the process. This effort will be sustainable over the long term because it enjoys grassroots support that stems from a sense of local and individual ownership. Through SEMA's Scope of Work, Adair County contracted With Northeast Missouri Regional Planning Commission and participated fully in the preparation of the plan. Once this plan is approved, Adair County and cities within the county will be eligible for future mitigation assistance from FEMA and will be able to more effectively carry out mitigation activities to lessen the adverse impact of future disasters within the county.

Most of the rural regional planning commissions in Missouri were formed under Chapter 251 of the Revised Statutes of the State of Missouri. All regional councils in Missouri operate as —quasi – governmental entities. In Missouri, regional planning commissions are advisory in nature, and county and municipal governments hold membership on a voluntary basis. The role of a regional planning commission varies across the state, depending upon the desires of the member counties and municipalities and their representatives. Nonetheless, the primary role of the regional planning commission is to provide a technical staff capable of providing sound advice to its membership and working coordination of various planning and infrastructure needs among the various counties and municipalities, as appropriate.

The Adair County Multi – Jurisdictional hazard mitigation plan was prepared by the staff of the Northeast Missouri Regional Planning Commission. Governor Warren E. Hearnes created Northeast Missouri Regional Planning Commission, a member of MACOG, in 1967. The Northeast Missouri Regional Planning Commission serves the counties of Adair, Clark, Knox, Lewis, Schuyler, and Scotland counties in —True Northeast Missouri as well as the incorporated municipalities within those counties.

### ***ASSURANCE STATEMENTS OF COMPLIANCE WITH FEMA***

This city/county mitigation plan complies with SEMA’s and FEMA’s planning guidance; FEMA regulations, rules, guidelines, and checklists; Code of Federal Regulations; and existing Federal and State laws; and such other reasonable criterion as the President/Governor, Federal/State congresses and SEMA/FEMA may establish in consultation with City/County governments while the plan is being developed. This plan also meets the minimum planning requirements for all FEMA mitigation programs, such as the Flood Mitigation Assistance (FMA) Program, the Pre – Disaster Mitigation (PDM) Program, and the Hazard Mitigation Grant Program (HMGP), and where appropriate, other FEMA mitigation related programs such as the National Earthquake Hazards Reduction Program (NEHRP), the National Flood Insurance Program (NFIP) and the Community Rating System (CRS).

### ***BASIS FOR PLANNING AUTHORITY***

The basis for authority to create a natural hazard mitigation plan lies in Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. 5165. This act was enacted under Section 104 of the Disaster Mitigation Act of 2000 (DMA 2000), P.L. 106-390. Section 104 is the legal basis for FEMA’s Interim Final Rule for 44 CFR Parts 201 and 206, published in the Federal Register on February 26, 2002.

### ***ADOPTION BY LOCAL GOVERNING BODIES***

Participation of local governing bodies as stakeholders is critical to successful mitigation implementation.

Therefore, Northeast Missouri Regional Planning Commission has collaborated with each local government to assure participation and sense of ownership among local government officials. The plan will be adopted by the participating jurisdictions within ninety (90) days of —approved pending adoption status by FEMA. See Section 8 – Plan Maintenance for the County of Adair and the member cities and school district resolutions for the formal adoption of this plan. (See Appendix A for Adoption Resolutions)

***TIMEFRAME FOR PREPARATION AND PLANNING PROCESS***

The planning process began in January of 2013, that same month an introductory letter was sent out to the potential participating jurisdictions to establish a meeting of county and city elected officials as well as legislators and emergency managers. Notices were also placed in local papers as well as papers in neighboring communities. A planning committee of local officials and emergency managers was established as the update committee group.

# **Multi – Jurisdictional Hazard Mitigation Plan**

## **Adair County, Missouri**

### **SECTION 1**

#### ***ADAIR COUNTY PROFILE***

##### ***HISTORY OF ADAIR COUNTY***

Adair County is located in Northeast Missouri. The first permanent settlement in Adair County began in 1828, only seven years after Missouri was granted statehood. Most of the settlers were from Kentucky. The original settlement was called —Cabins of White Folks, or simply, —The Cabins, and was located six miles west of present – day Kirksville along the Chariton River. This area was named after John Adair who was Governor of Kentucky at the time. Kirksville is the county seat of Adair County.

On the evening of April 27, 1899, a cyclone passing through Adair County cut a path of destruction three blocks wide, killed 32 people, and destroyed hundreds of buildings. On May 13, 2009 Kirksville was again the victim of a large tornado. The tornado struck the northern edge of Kirksville destroying or severely damaging many homes, several businesses, a car dealership, and at least one factory. Two residents living just outside the city limits were killed and as many as a dozen other area residents were injured.

## **SECTION 6**

### ***MITIGATION POLICIES***

#### **COMMITMENTS TO A COMPREHENSIVE MITIGATION PROGRAM**

Adair County's lack of an existing hazard mitigation plan increases its vulnerability to natural disasters. Existing programs, such as the county's Emergency Operations Plan, reduce some of this vulnerability, but a comprehensive mitigation plan may decrease even more the impact of a natural hazard. The county wants to protect residents who live in hazard – prone areas. On a comprehensive basis, the county maintains and regularly updates the Emergency Operations Plan.

#### **COUNTY LAWS, REGULATION AND POLICIES RELATED TO DEVELOPMENT IN HAZARD – PRONE AREAS**

Adair County has not established floodplain management programs or specific ordinances that outline requirements for development in an identified special flood hazard area.

#### **LAWS, REGULATIONS AND POLICIES RELATED TO HAZARD MITIGATION IN GENERAL**

Adair County does not have a master plan, land use plan, or zoning ordinance. As a third-class Missouri County, building regulations are not allowed in unincorporated areas.

#### **HOW LOCAL RISK ASSESSMENTS ARE INCORPORATED AND PRIORITIZED INTO LOCAL PLANNING**

Since flash flooding can have an impact upon the county, determining risk assessments to protect life and property in a floodplain should be included within the planning framework. The county also recognizes the danger and economic impact of severe winter storms. Clearing ice and snow from roadways is the main priority during winter storms. The County Road and Bridge Department clears many secondary roads to reduce accidents and ensure access to employment.

#### **MITIGATION FUNDING OPTIONS**

It is hoped that the county and cities may be able to place mitigation actions in their annual budgets, as funds become available. The program is known as the Hazard Mitigation Grant Program and is available through SEMA. Also available from SEMA is the Pre – Disaster Mitigation Project Impact. Disaster Mitigation Planning and Technical Assistance are also available from the U.S. Department of Commerce and Economic Development Administration. Community Development Block Grants available from the HUD are also available to communities to help low – income residents. USDA Rural Development may be another source of funding for mitigation projects. Properly educating the public regarding hazard mitigation

will be important in encouraging residents to pay for mitigation activities.

## **RECOMMENDATIONS FOR IMPORVEMENT**

Recommended improvements include expanding mutual aid agreements among neighboring jurisdictions, acquiring additional warning sirens, creating storm water regulations, and increasing education for public safety. The county should explore all means to ensure the safety of Adair County residents. As the county and its cities produce planning documents they will hopefully implement mitigation activities into their goals and objectives for community development, economic development, comprehensive planning, etc.

## **DEFINITION OF MITIGATION**

Mitigation is defined by FEMA as "...sustained action that reduces or eliminates long – term risk to people and property from natural hazards and their effects." It describes the ongoing effort at the Federal, State, local, and individual levels to lessen the impact of disasters upon families, homes, communities, and economy. Mitigation includes not only avoiding the development of vulnerable sections of the community, but also making existing development in hazard – prone areas safer.

Mitigation also includes steering growth to less risky areas, through nonstructural measures such as avoiding construction in the most flood – prone areas for example. Keeping buildings and people out of harm's way is the essence of mitigation. In fact, incorporating mitigation into decisions related to the community's growth can result in a safer, more resilient community, and one that is more attractive to new families and businesses. Missouri is subject to many types of natural hazards: floods, tornadoes, winter storms, earthquakes, droughts, winter storms, and occasionally, wildfires. Technological hazards such as chemical explosions, manmade explosions, hazardous material or HAZMAT spills, and terrorism, all of which can have significant economic and social impacts exist also. Some, such as floods and HAZMAT spills, can occur any time of the year and almost anywhere in the state. And as we all know, their occurrence in some places in our state is inevitable. However, due to time and funding limitations, this plan will focus on natural hazards only.

## **CATEGORIES OF MITIGATION**

Mitigation measures may be grouped into six categories.

- Prevention
- Property protection
- Natural resource protection
- Emergency services

- Structural projects
- Public information

## **PREVENTION MEASURES**

Prevention measures are intended to keep a hazard risk problem from getting worse. They ensure that future development does not increase hazard losses. Communities can achieve significant progress toward hazard resistance through prevention measures. This is particularly true in areas that have not been developed or where capital investment has not been substantial.

Using prevention measures, future development can be guided away from hazards, while maintaining other community goals such as economic development and quality of life. Some examples of prevention measures are: Planning and zoning; open space preservation; land development regulations; storm water management.

## **PROPERTY PROTECTION MEASURES**

Property protection measures are used to modify buildings subject to hazard risk, or their surroundings, rather than to prevent the hazard from occurring. A community may find these to be inexpensive measures because often they are implemented or cost – shared with property owners. These measures directly protect people and property at risk. (protecting a building does not have to affect the building's appearance and is therefore a popular measure for historic and cultural sites.) Some examples of property protection measures are:

- Acquisition – public procurement and management of lands that are vulnerable to damage from hazards;
- Relocation – permanent evacuation of hazard – prone areas through movement of existing hazard – prone development and population to safer areas;
- Rebuilding – modifying structures to reduce damage by future hazard events;
- Flood proofing – protecting a flood – prone building using one or more of several different methods.

## **NATURAL RESOURCE PROTECTION MEASURES**

Natural resource protection measures are intended to reduce the intensity of hazard effects as well as to improve the quality of the environment and wildlife habitats. Parks, recreation, or conservation agencies or organizations usually implement these activities. Examples of natural resource protection include: erosion and sediment control and wetlands protection.

## **EMERGENCY SERVICES MEASURES**

Emergency services measures protect people before and after a hazard event. Most counties and many cities have emergency management offices to coordinate warning, response and recovery during a disaster. Emergency services include: warning; capacity of response (not a mitigation measure); and critical facilities protection; health and safety maintenance.

## **STRUCTURAL MITIGATION MEASURES**

Structural measures directly protect people and property at risk. They are called —structural because they involve construction of man – made structures to control hazards. Structural projects for flood control may include: reservoirs; levees and floodwalls; diversions; channel modifications; and storm sewers.

## **PUBLIC INFORMATION MITIGATION MEASURES**

Public information activities inform and remind people about hazardous areas and the measures necessary to avoid potential damage and injury. Public information activities for mitigation are directed toward property owners, potential property owners, business owners and visitors. Public information activities to achieve mitigation are: providing hazard maps and other hazard information; outreach programs that provide hazard and mitigation information to people.

How might outreach programs accomplish this? – Print media; radio/TV spots and interviews; mass mailings; notices to residents and property owners in a specific hazard – prone area; displays in widely used facilities such as public buildings; presentations at meetings of neighborhood groups; information in the public library or a library developed specifically for mitigation information; school age and adult education.

## **HOW DOES MITIGATION DIFFER FROM PREPAREDNESS, RESPONSE, AND RECOVERY?**

Mitigation includes long – term activities that reduce or eliminate a hazard and/or a hazard’s damage. Building codes, floodplain management, tornado safe rooms, flood buyouts and planning are examples of mitigation. Preparedness activities are designed to develop individual and community capabilities to respond to and recover from disasters. Preparedness activities include training, exercises and stocking emergency supplies. Response actions include those immediate activities that save lives, protect property and stabilize the situation when disaster strikes. The activities that return the community to normal, or pre – disaster conditions fall under the heading of recovery.

## **MITIGATION PLAN BENEFITS**

Hazard Mitigation Planning offers many community benefits. Principally, it can:

- Save lives and property – Communities can save lives and reduce property damage from natural hazards through mitigation actions, such as keeping families and homes out of harm’s way;

- Meet the needs of the community – Each community is different in terms of its economics, size, geography, governance, demography, land uses, and hazards. Therefore each community’s mitigation plan will vary to some degree. Mitigation planning identifies problems and solutions that are specific to your community.
- Achieve multiple objectives – Developing a —multi – objective plan that can help the community to better sustain itself: Find the most appropriate solutions; address multiple problems with a single solution; maintain or improve local environmental and economic integrity; demonstrate commitment to improving community health and safety.
- Reduce vulnerability to future hazards – With mitigation strategy in place, the community will be better prepared to take steps that will permanently reduce the risk of future losses for individuals and businesses. Preparing and following a Hazard Mitigation Plan can reduce business disruptions following a disaster. However, even if a business is not directly damaged by a disaster and utilities are not adversely affected, the operations of a business may still be disrupted for some time. For this reason, hazard mitigation planning is important to every stakeholder in the community.
- Guide and speed post – disaster recovery – The planning process guides post – disaster recovery in any ways. By identifying and ranking projects before the next disaster, the community will be in a better position to obtain post – disaster funding because much of the background work necessary for applying for Federal funding will already be done. The Plan:
  - Prepares the community to deal with post – disaster situations by identifying actions that should be done immediately following the disaster;
  - Helps the community to develop policies that promote a rapid and efficient recovery, and capitalize on post – disaster opportunities for safety improvements;
  - Having a plan that includes post – disaster actions will ensure that opportunities for future mitigation are not overlooked in the urgency to rebuild.
- Enhances funding opportunities – The mitigation process works through the use of various possible sources of federal, state, and local project funding. Successful completion of the Hazard Mitigation Plan can also fulfill the planning requirements for several federal programs such as the Hazard Mitigation Grant Program (only post – disaster mitigation grant program), the Pre – Disaster Mitigation (PDM) Grant Program, the Flood Mitigation Assistance (FMA) Program, and the Community Rating System (CRS) Program. The plan also may qualify the community for recognition for other federal programs such as the National Weather Service’s Storm Ready Program.

- Promotes public participation – The planning process promotes public participation by:
  - Helping generate ideas for solutions and ensuring recognition and local ownership of the plan;
  - Providing groups and individuals concerned about the potential effects of disasters many opportunities to participate in problem solving and in plan implementation.

***EXISTING POLICIES AND GOALS***

<b>SOURCE</b>	<b>EXISTING GOAL STATEMENTS</b>	<b>Effective goal for Mitigation?</b>
<p><b>Comprehensive Economic Development Strategy for the Northeast Missouri Region (CEDS)</b></p>	<p>Improve the physical environment by conserving and developing natural resources, improving community facilities and enhancing community appearance. Encourage community planning in the region and work toward quality living conditions for all residents. Continue to improve/modernize local governments through administration/management, community planning, emergency management, law enforcement and fire protection and hazardous materials response planning.</p> <p>Increase housing quality and supply in the region through assessing the need; focusing on programs that increase the number of available housing and improve housing conditions; improving housing planning methods; promoting housing awareness; and addressing regulatory issues.</p> <p>Promote community involvement and communications through administrative and management methods, cooperation, coordination of local, state and federal programs, problem solving and encouragement of citizen</p>	<p>Could be amended to encourage community planning for safety.</p> <p>Add hazard mitigation planning.</p> <p>Modify by discussing protecting housing structures through mitigation.</p> <p>Encourage county and city officials to work together for hazard mitigation planning</p>

	participation.	
<b>Economic Development Plan (CEDs)</b>	<p>Promote economic development/tourism through coordination and cooperation, marketing, information sharing, job development, financial and technical assistance, infrastructure development and quality educational facilities.</p> <p>Develop human resources and increase human services through improved educational, social and health services, employment opportunities, and assistance to children, elderly, persons with disabilities and those moving toward self-sufficiency.</p>	<p>Describe benefit of being a safe community from hazard planning.</p> <p>Develop services by increasing education of natural hazards and mitigation.</p>
<b>Transportation Plan (CEDs)</b>	Maintain, improve and diversify the transportation system by working with local governments and MoDOT in planning and research, promoting improvements, maintenance and new construction of roads, bridges and highways, encouraging all modes of transportation and addressing regulatory issues.	Modify for planning for disasters when designing and building roads; making sure roads address flood-prone areas.
<b>Adair County Emergency Management Plan</b>	This plan will establish policies and procedures that will allow the governments of Adair County and the cities therein to save lives, minimize injuries, protect property, preserve functioning civil government, and maintain economic activities essential to their survival and recovery from natural and technological hazards. It establishes the guidelines for conducting efficient, effective, coordinated emergency operations involving the use of all resources belonging to Adair County and the municipalities or available to them.	Effective for mitigation.

## SECTION 7

### *MITIGATION GOALS AND ACTIONS*

#### **GOAL DEVELOPMENT**

The Adair County Hazard Mitigation Planning Committee established the goals and actions for this Plan. The criteria used for the prioritization of hazard mitigation actions was a combination of need and opportunity for completion. The highest needs and opportunities were ranked as top priority when they coincided. Following this the needs took precedence over opportunity. A key part of this strategy involved the study of economic considerations and how each action would rate on an economic efficiency scale that would provide the best value for the money spent and the best impact on mitigation efforts. Listed below are the goals, objectives and actions for this Plan. The Committee developed the strategy by reviewing a list of needs compiled at previous meetings. Committee members created goals and actions that would best meet the needs of Adair County and reduce hazards by the greatest amount.

The strategy is listed below. In each listed action is a description of the activity, along with a list of the participating jurisdictions that chose to adopt the action. Also listed for each action are the hazards addressed by that action, the participating jurisdictions choosing that action, a cost/benefit discussion that takes into account the financial feasibility of the project versus the benefits from implementation, source of funding, priority level, and responsible agencies. Cost/Benefit definitions are as follows: Low < \$500, Medium \$501 – \$10,000, High > \$10,001. Priority definitions are as follows: low priority means implementation later than 5 years from adoption of the plan, medium is implementation between 3 and 5 years, and high priority is implementation within the next three years.

#### **Goal 1: Reduce risks and vulnerabilities of people in hazard-prone areas.**

##### **Action 1.1** Establish early warning systems and improved communications systems

Hazards Addressed: All hazards.

Adopted by: All Jurisdictions

Cost/Benefit: High Cost that could vary depending on the project, but would benefit most of the residents

Funding Source: Local funding, federal and state grant money

Priority Level: Medium

Responsible Agency or Individual: City and County Emergency Management

##### **Action 1.2** Promote use of weather radios

Hazards Addressed: Potentially all weather related hazards, but most particularly thunderstorms/tornadoes/hail/lightning.

Adopted by: All Jurisdictions

Cost/Benefit: Promotion of their use would be Low Cost as would actual purchase and distribution, but would benefit only those with radios.

Funding Source: Local funding

Priority Level: Medium

Responsible Agency or Individual: City and County Emergency Management

**Action 1.3** Implement tree trimming programs, dead tree removal programs

Hazards Addressed: Ice storms, winter storms, flooding, dam failure

Adopted by: All jurisdictions

Cost/Benefit: Low Cost (administrative or hiring contractors), benefits would not be seen until the next hazard events and could be difficult to measure.

Funding Source: Local funding

Priority Level: Medium

Responsible Agency or Individual: City and County public works departments

**Action 1.4** Road and bridge upgrades that would reduce danger to residents during occurrences of natural disasters

Hazards Addressed: Ice storms, winter storms, flooding, dam breach

Adopted by: Adair County

Cost/Benefit: Funding the improvements would be high cost, but determining where the improvements would be made is Low Cost, with benefit to most residents, improved commerce and access.

Funding Source: Local funding, federal and state grant funding with local match for the upgrading

Priority Level: Medium

Responsible Agency or Individual: City and County public works departments.

**Goal 2: Reduce the potential impact of natural disasters on life, new and existing structures, infrastructure, and the local economy.**

**Action 2.1** Encourage minimum standards for building codes in all cities

Hazards Addressed: Flooding, tornadoes/thunderstorms, hail, high winds, earthquakes

Adopted by: All jurisdictions

Cost/Benefit: Low Cost (administrative only) but benefits all residents in the communities adopting the standards.

Funding Source: Local funding

Priority Level: High

Responsible Agency or Individual: City and County legislative bodies and local public works directors

**Action 2.2** Encourage local governments to develop and implement regulations for securing of hazardous materials tanks and mobile homes

Hazards Addressed: Flooding, tornadoes, high winds, earthquakes, dam failure

Adopted by: Adair County

Cost/Benefit: Low Cost to the communities compared to the population that would benefit from such tie-downs. There might political and public resistance to establishment of regulations.

Funding Source: Local funding

Priority Level: Medium

Responsible Agency or Individual: City and County building officials and local public works

directors

**Goal 3: Promote education, outreach, research and development programs to improve mitigation knowledge.**

**Action 3.1** Establish an education program on emergency procedures and hazard mitigation, and encourage educational emergency management press releases.

Hazards Addressed: All hazards.

Adopted by: All Jurisdictions

Cost/Benefit: Low cost (administrative costs only) and could potentially benefit a very broad range of the population.

Funding Source: Local funding

Priority: Low

Responsible Agency or Individual: City and County Emergency Management Officials, health department and Red Cross officials.

**Action 3.2:** Create and publicize countywide and/or citywide drills

Hazards Addressed: Most immediately addressed hazards are tornadoes, earthquakes, and floods.

Adopted by: All jurisdictions

Cost/Benefit: Low Cost with benefit to all participating, but there could be some resistance to the expenditure of money and time. However, the benefit would not be immediately evident.

Funding Source: Local funding

Priority Level: Medium

Responsible Agency or Individual: City and County emergency management officials.

**Goal 4: Establish and promote reduction of risk to people and their property.**

**Action 4.1** Develop storm water management plans

Hazards Addressed: Flooding, Dam Failure

Adopted by: Adair County

Cost/Benefit: Low Cost if done internally by existing staff, but medium to high cost if done by contractors. Although benefit would be community wide, it is not likely to be seen until the next hazard event. Could be politically unpopular.

Funding Source: Local funding

Priority Level: Medium

Responsible Agency or Individual: City and County public works officials and legislative bodies.

**Action 4.2:** Continue participation in the NFIP for communities already in the program, and explore participation by those communities that do not currently participate.

Hazards Addressed: Flooding, Dam Failure

Adopted by: All participants in the mitigation plan.

Cost/Benefit: Low Cost involving administrative expenses. Although benefit would be community wide, it is not likely to be seen until the next hazard event. Could be politically unpopular.

Funding Source: Local funding

Priority Level: High

Responsible Agency or Individual: City and County public works and building officials, legislative bodies.

**Action 4.3:** Investigate what it would take to participate in the CRS.

Hazards Addressed: Flooding, Dam Failure

Adopted by: All participants in the mitigation plan.

Cost/Benefit: Low Cost involving administrative expenses. Although benefit would be community wide, it is not likely to be seen until the next hazard event. Could be politically unpopular.

Funding Source: Local funding

Priority Level: Low

Responsible Agency or Individual: City and County public works and building officials, legislative bodies.

**Action 4.4:** Structure grant proposals for road/bridge upgrades so that hazard mitigation concerns are also met

Hazards Addressed: Most likely flooding.

Adopted by: Adair County

Cost/Benefit: Low Cost for the investigation phase, but high cost for funding the actual projects.

The benefit would vary depending on the project, but potentially could enhance transportation and accessibility.

Funding Source: Local funding and state/federal grants for the projects

Priority Level: Medium

Responsible Agency or Individual: County public works officials, legislative bodies.

**Incorporation of the 2014 Plan into local planning mechanisms**

It is the intention of the participating jurisdictions to incorporate the Plan into the creation of future storm water regulations. As the county and its cities produce planning documents they will implement mitigation activities into their goals and objectives for community development, economic development, comprehensive planning, etc.

## ADAIR COUNTY Five-Year Matrix

Adair County's goals and objectives are set as guidelines for the mitigation strategies previously discussed. The five-year matrix illustrates the overall mitigation picture by looking at each goal's type, rank, estimated target date and method of evaluation. Specific actions for each goal should be referenced to the mitigation strategies.

Goal	Type of Strategy	Priority Rank	Estimated Target Date	Method of Evaluation
#1 -- Reduce Vulnerability	Outreach, Property Protection	High	2016	Participation statistics from Implemented programs
#2 -- Property and Infrastructure Protection	Property Protection	High	2016	Participation statistics from NFIP. Adoption of ordinances by cities
#3 -- Outreach and Education	Outreach	Medium	2015	Participation statistics from Implemented programs
#4 -- Communication Enhancement	Emergency Services	Medium	2016 Yearly/ongoing	Increased participation in Emergency planning and NIMS
#5 -- Establish priorities	Planning	Medium	2015	Increased mitigation spending. Development of emergency plans
#6 -- Finding Funding	Budgetary Planning	Medium	2016	Increased number of projects that encourage mitigation

## Section 8

### Plan Maintenance

The plan maintenance details the formal process that will be used to ensure that the Adair County Hazard Mitigation Plan remains an active and relevant document. The plan maintenance process includes a schedule for monitoring and evaluation of the plan annually and producing a plan update every five years.

### Plan Adoption

The Adair County Commission and the city councils of Kirksville, Brashear, Novinger, Millard and Gibbs will be responsible for adopting the Adair County Hazard Mitigation Plan. These governing bodies have the authority to promote sound public policy regarding mitigation of natural hazards. Once the plan has been adopted, the Adair County Commissioners will be responsible for submitting it to the State Hazard Mitigation Officer at Missouri State Emergency Management Agency. The Missouri State Emergency Management Agency will then submit the plan to the Federal Emergency Management Agency (FEMA) for review. Upon acceptance by FEMA, Adair County will gain eligibility for Hazard Mitigation Grant Program funds.

### Five-Year Plan Review

The Adair County Hazard Mitigation Plan should be reviewed every five years to determine if there have been any significant changes in Adair County that would affect the hazard mitigation plan. The most recent State of Missouri Hazard Mitigation Plan will also be reviewed for changes. Increased local development, increased exposure to certain hazards, the development of new mitigation capabilities or techniques, and changes to federal or state legislation are examples of changes that may affect the condition of the plan.

If a disaster declaration occurs, the plan can be revised to reflect on lessons learned or to address specific circumstances arising out of the disaster. Should such a revision occur, it will include an evaluation of the effectiveness and appropriateness of the plan, and will recommend, as appropriate, any required changes or amendments to the plan.

The planning committee shall be a standing committee, and shall be composed of representatives from various government agencies, county officials, city employees, utility service employees, emergency responders and planners, regional planners and any concerned county residents. It is the responsibility of the legislative bodies of the participating communities to ensure that the planning committee meets regularly, at a minimum of annually. A committee was established in order to promulgate the 2014 Adair County Hazard Mitigation Plan, and membership of the standing committee can be comprised of the same group. Alternatively, the legislative bodies, at their discretion, and change the membership of the standing committee. The committee shall also meet when the five-year review period. Upon meeting, the committee members will also report on the status of the projects proposed in the previously approved plan. The committee will analyze and make determinations concerning which implementation processes worked well, any difficulties encountered, how coordination efforts were proceeding and which strategies should be revised. The Adair County Commission office will then oversee the planning committee's revision of the previously approved plan in accordance with FEMA guidance. Changes will be made to the plan before submitting it to the planning committee members and state hazard mitigation officer. If no major changes are necessary, the state hazard mitigation officer will be given a justification for this determination.

### **Implementation of Programs**

Through active involvement in the Northeast Missouri Regional Planning Commission, Adair County and its cities address regional planning and economic goals through the region's Comprehensive Economic Development Survey. The hazard mitigation plan provides a series of recommendations—several of which are closely related to the goals and objectives of existing planning programs. Adair County will have the opportunity to implement recommended mitigation action items through existing programs and procedures.

Upon adoption, the Adair County Hazard Mitigation Plan will serve as a baseline of information on the natural hazards that impact the county and each of its cities. These goals and objectives will help local governments and other organizations plan for natural hazard mitigation in their own planning documents.

### **Continued Public Involvement**

Adair County is dedicated to involving the public directly in review and updates of the hazard mitigation plan. The hazard mitigation planning committee members are responsible for the annual review and update of the plan. The public will also have the opportunity to provide feedback about the plan. Copies of the plan will be catalogued and kept at all of the appropriate agencies in the county. A public meeting will also be held after each five-year evaluation or when deemed necessary by the hazard mitigation planning committee. The meetings will provide the public a forum for which they can express its concerns, opinions or ideas about the plan. The county will be responsible for publicizing the meetings and maintaining public involvement through the public access channel, and newspapers.