

**Macon County  
Missouri  
Natural Hazard Mitigation Plan  
Five Year Update**

**Section 4**

# Macon County, Missouri Natural Hazard Mitigation Plan Five Year Update

## Section 4

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# Mitigation

## 5 Year Review, Update and Revision Process

All Hazard Mitigation Plans are required to be revised every five years after initial approval by FEMA. The first Macon County Multi-Jurisdiction Natural Hazard Mitigation Plan was finalized in 2006. Macon County and the cities of Atlanta, Bevier, Callao, Elmer, Ethel, La Plata, Macon city, New Cambria, and South Gifford, Atlanta C-3 School District, Bevier C-4 School District, Callao C-8 School District, La Plata R-1 School District, Macon R-1 School District and Macon R-4 School District were contacted to form Hazard Mitigation Committees.

Three committee meetings were held with each jurisdiction to review and update the 2006 plan. These meetings were held in April through December, 2011 and November 2013 through September 2014. A final meeting was held in September 2014 to discuss the plan maintenance and implementation and a review of the entire plan.

At the **initial meeting**, the committee reviewed and discussed the applicability of each section in the original Hazard Mitigation Plan and opted to update all sections of the plan and re-organize and simplify the plan.

**Section 1** will be updated with new dates, new Hazard Mitigation Committee Members, and the process to update and review the original plan for this Five Year Update. Also the committees completely revamped the Goals and Objectives to be met by this plan.

**Section 2** will be updated with the county profile as needed along with storm history updated for the last five years.

**Section 3** will be updated to include the hazards of Levee Failure, and Sinkholes. The original Hazard Profiles Worksheets will be reviewed and updated, new Hazard Profile Worksheets will be created for the three new hazards considered. Also the repetitive losses were updated, and Vulnerability Worksheets will be updated.

**Section 4** contains the Mitigation Action Items that the original Hazard Mitigation Committee developed for the County; these action items will be reviewed in detail and revised and updated as needed.

**Section 5** will be updated with a signed Resolution from the County, each of the cities, and the six school districts.

**Section 6** will be updated with new storm history from the national weather service.

At the **first meeting** the committee members were given a questionnaire and map and asked to provide updated information on critical response capabilities and assets within their communities for the next meeting.

At the **second committee meeting** the committee reviewed the Introduction, Hazard Risk and Assessment, and Profile sections. Utilizing the committee's information and suggestions, these portions of the plan were updated. The hazards of Sinkholes, and Levee Failure were added to the hazards discussion in this revision and this section was updated with historical data as well as the latest storm and hazard records. The Profile section was updated the most recent U.S. Census data. The committee also reviewed and updated the information on all capabilities and vulnerabilities.

The **third meeting and final meeting** was held to discuss the mitigation action items developed in the 2006 plan and if they were completed, needed revision or were to be deleted, and any new action items that the committee felt were needed. The result of those meetings is summarized in the 5 Year Mitigation Action Matrix. The committee was focused on plan maintenance and implementation and review of the entire plan. Annual assessments will be conducted by the County's Emergency

Management Director and will be open to the public. Press releases in local newspapers will encourage public participation in the assessment process. Plan copies will be publicly accessible in each local jurisdiction for review and comment by county citizens.

When the drafts of the final plan was submitted to SEMA November 2014 and FEMA for review the draft of the plan will be posted on the website [www.talleyconsultants.com](http://www.talleyconsultants.com) and each committee was notified by phone and/or additional comments, corrections or additions were solicited.

The 2006 Action Items and the Five Year Update revisions are also analyzed using **STAPLEE** (action items that were **s**ocially acceptable, **t**echnically feasible, **a**dministratively executable by local communities, **p**olitically acceptable, **l**egally implemented by county, **e**conomically feasible and **e**nvironmentally sound (**STAPLEE**)). A summary of the **STAPLEE** guidelines for each action item can be found at the end of this section just before the 5 Year Mitigation Action Matrix. The 2006 action items are listed, and the **Five Year Update revisions and new action items are in bold print.**

## Planning Process

Meetings with the Hazard Mitigation Committees served as the method to obtain input and identify priorities in developing goals for reducing risk and preventing loss from natural hazards in Macon County. Articles in the local papers informed the public that hazard mitigation planning was occurring in their communities and they were invited to let their concerns be known. The Hazard Mitigation Committees met to determine action items that would address each of the plans goals, determine which organizations or groups within the county would be responsible for the action, an estimated timeline for the action, and to prioritize the action items.

In accordance with Missouri's "sunshine law" (RSMo 610.010, 610.020, 610.023, and 610.024), the public was notified each time the Hazard Mitigation Committees met and the plan, or sections of the plan were presented for review. Meeting dates and locations were also posted on [www.talleyconsultants.com](http://www.talleyconsultants.com) Input from the general public was solicited through media outlets and various reminders at public gatherings. Prior to the first meeting with each jurisdiction, an e-mail and an attachment describing the process was sent to commissioner, mayor, chairman of the board or college president. A request was made in that e-mail that a Hazard Mitigation Committee be set up for that jurisdiction, along with a committee chairman who would **send out notices to stakeholders and adjacent communities of all upcoming Hazard Mitigation meetings.** A copy of the e-mail and attachment, "The Process", can be found in Section 6

The planning committee was composed of members drawn from local entities, city and county representatives as well as citizens from each jurisdiction. Representatives worked to provide information about their jurisdictions through worksheets and meeting attendance which was utilized in the plan update. Input from the general public was also solicited prior to each meeting by the committee chairperson. Every effort was made by the Hazard Mitigation committees to include more individuals in the Five Year review and updating process. Meeting sign-in sheets can be found in Section 6.

## Definition of Mitigation

Mitigation is defined as "...sustained (long-termed) 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 our families, homes, communities and economy. (HMP Handbook p.15)

## Mission Statement

The mission of the Macon County Natural Hazards Mitigation Plan is to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards. This can be achieved by increasing public awareness, documenting the resources for risk reduction and loss-prevention, and identifying activities to guide the county towards building a safer, more sustainable community.

## Multi-Hazard Mission, Goals, Objectives, Action Items and Strategies

This section describes the framework that focuses the plan on developing successful mitigation strategies. The framework is made up of four parts: the **Mission, Goals, Objectives and Action Items and Strategies**.

### Mission

The mission of the Macon County Natural Hazards Mitigation Plan is to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards. This plan will work in conjunction with plans in place listed at the end of the community profiles.

### Goals

The plan goals describe the overall direction that Macon County agencies, organizations, and citizens can take to minimize the impacts of natural hazards. The goals are stepping-stones between the broad direction of the mission statement and the specific recommendations that are outlined in the action items.

### Objectives

The plan objectives are significant results that contribute to the achievement of the plan goals. The objectives will be fulfilled by a combination action items and strategies that will be completed within a specific time frame.

### Action Items and Strategies

The action items are a listing of activities in which county agencies and citizens can be engaged to reduce risk. Each action item includes an estimate of the timeline and strategies for implementation. When developing mitigation strategy, the planning committee followed several guidelines for selection of action items. They looked for action items that were **s**ocially acceptable, **t**echnically feasible, **a**dministratively executable by local communities, **p**olitically acceptable, **l**egally implemented by county, **e**conomically feasible and **e**nvironmentally sound (STAPLEE). The planning committee eliminated no action items after the STAPLEE guidelines were followed. A summary of the STAPLEE guidelines for each action item can be found at the end of this section.

## Mitigation Plan Goals/ Objectives

**Goal 1** Public Awareness—Using a variety of communications avenues to increase the citizens' awareness of and promote education about the natural hazards that they may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.

Objective 1 Provide informational brochures, websites and programs to educate the public about hazards that may affect them in the future.

Objective 2 Publicize appropriate mitigation measures for future natural hazards.

Objective 3 Develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards.

**Goal 2** Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effects of future natural hazards.

Objective 1 Build and support local partnerships to lessen the effects of natural hazards.

Objective 2 Encourage active participation and responsibility of elected officials and emergency personnel in mitigation planning and activities.

Objective 3 Balance watershed planning, natural resource management, and land use planning with natural hazard mitigation to protect life, property and the environment.

**Goal 3.** Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.

Objective 1 Incorporate mitigation procedures and planning into the community.

Objective 2 Encourage private involvement in mitigation activities.

Objective 3 Pass and/or adopt ordinances, codes and standards to enforce mitigation activities.

## Organization of the Mitigation Action Items

The mitigation plan identifies action items developed through data collection and research. Action items were determined that pertained to all the natural hazards that face Macon County. To help ensure active implementation, each action item includes information on the timeline and coordinating organizations. Upon implementation, the coordinating organizations may look to partner organizations for resources and technical assistance.

- **Coordinating Organization.** The coordinating organization is the organization that is willing and able to organize resources, find appropriate funding, or oversee activity implementation, monitoring, and evaluation. Coordinating organizations may include local, county, or regional agencies that are capable of or responsible for implementing activities and programs.
- **Timeline.** Action items include both short and long-term activities. Each action item includes an estimate of the timeline for implementation.
- **Funding Sources.** Local funding or Federal or state grants.
- **Priority.** The Mitigation Action Items and Strategies have been assigned a priority based on the STAPLEE analysis and summarized in a Five Year Matrix at the end of this section.

## Participants Five Year Update

Participant	Worksheets/ Mitigation Action Items	Meetings	Email	Meetings with MTRCOG staff
Macon County	Yes	Yes	Yes	Yes
Atlanta	No	No	No	No
Bevier	Yes	Yes	Yes	Yes
Callao	Yes	Yes	Yes	Yes
Elmer	Yes	Yes	Yes	Yes
Ethel	No	No	No	No
La Plata	Yes	Yes	Yes	Yes
Macon	Yes	Yes	Yes	Yes
New Cambria	No	No	No	No
South Gifford	Yes	Yes	Yes	Yes
Atlanta C-3 SD	Yes	Yes	Yes	Yes
Bevier C-4 SD	Yes	Yes	Yes	Yes
Callao C-8 SD	Yes	Yes	Yes	Yes
La Plata R-2 SD	Yes	Yes	Yes	Yes
Macon R-1 SD	Yes	Yes	Yes	Yes
Macon R-4 SD	Yes	Yes	Yes	Yes

Meetings with the Hazard Mitigation Committees served as the method to obtain input and identify priorities in developing goals for reducing risk and preventing loss from natural hazards in Macon County. Articles in the local papers informed the public that hazard mitigation planning was occurring in their communities and they were invited to let their concerns be known. The Hazard Mitigation Committees met to determine action items that would address each of the plans goals, determine which

organizations or groups within the county would be responsible for the action, an estimated timeline for the action, and to prioritize the action items.

In accordance with Missouri's "sunshine law" (RSMo 610.010, 610.020, 610.023, and 610.024), the public was notified each time the Hazard Mitigation Committees met and the plan, or sections of the plan, was presented for review. Input from the general public was solicited through media outlets and various reminders at public gatherings. Prior to the first meeting with each jurisdiction, an e-mail and an attachment describing the process was sent to commissioner, mayor, chairman of the board or school superintendent. A request was made in that e-mail that a Hazard Mitigation Committee be set up for that jurisdiction, along with a committee chairman who would **send out notices to stakeholders and adjacent communities of all upcoming Hazard Mitigation meetings**. A copy of the e-mail and attachment, "The Process", can be found in Section 6

The planning committee was composed of members drawn from local entities, city and county representatives as well as citizens from each jurisdiction. Representatives worked to provide information about their jurisdictions through worksheets and meeting attendance which was utilized in the plan update. Input from the general public was also solicited prior to each meeting by the committee chairperson. Every effort was made by the Hazard Mitigation committees to include more individuals in the Five Year review and updating process. Meeting sign-in sheets can be found in Section 6. The names of committee members and the jurisdictions represented in the planning process are on the following pages.

In addition, the Hazard Mitigation Committees for the cities of Atlanta, Bevier, Callao, Elmer, Ethel, La Plata, Macon city, New Cambria, and South Gifford, Atlanta C-3 School District, Bevier C-4 School District, Callao C-8 School District , La Plata R-1 School District , Macon R-1 School District and Macon R-4 School District determined mitigation items specific to their communities.

## **Macon County---Hazard Mitigation Committees- Five Year Update**

### **Participants and jurisdictions represented.**

#### **Macon County**

Michael Shivley	Emergency Management Director
Joe Ivy	Manager of Operations
Ross Dutton	Fire Chief
Drew Belt	County Commissioner
Alan Wyatt	County Commissioner
Jon Dwiggin	County Commissioner
Michael Pickett	Terminal Manager
Brett Ponting	NEA Operator
Judy Rhuston	Macon County Health Dept.
Cindy Malloy	Macon County Health Dept.
Kevin Shoemaker	Sheriff Dept.

#### **School Districts**

John Dunham	Macon R-4 SD School District Superintendent
Charles M. Stockton	Macon R-1 School District Superintendent
Craig W. Noah	La Plata R-2 School District Superintendent
Pamela Halstead	Callao C-8 SD School District Superintendent
Joan C. Patrick	Bevier C-4 SD School District Superintendent
William W. Perkins	Atlanta C-3 SD School District Superintendent



**Bevier**

Bill Cosby	Mayor
Trinette Paukert	City Clerk
Spencer Hendricks	Street Dept.
Wayne McGee	Supt Water and Sewer

**Callao**

Joyce Snodgrass	Mayor
Amanda Faith	City Clerk
Kathleen Ashenfelter	City Treasurer
Cawin Vose	Maintenance
Jim Walker	Past Mayor
Gayle Craigg	Past Treasurer
Shirley Wright	Business Owner
Tom Summerfeldt	Fire Dept.
Grady Reed	Maintenance.
Cody Blackford	Police Officer

**Elmer**

Robert Aldinger	Fire Marshall
Crystal Allen	City Clerk
John Howe	Citizen
<b>Larry Fletcher</b>	Citizen
Lana Allen	Post master
Cindy Koonce	

**La Plata**

Lois Bragg	Mayor
Bobbie Jacques	City Clerk
Trent Perry	Alderman
Susan Walker	Alderwoman

**Macon**

Dale Begley	Mayor
Allan Muncy	City Administrator
Vicky McLeland	City Clerk
Roger rector	Assistant GM
Stephanie Wilson	General Manager Utilities
Renita Waldron	Office Manager
John Neel	Citizen
Larry Stutler	Environmental Health
Joe Evans	Code Enforcement Officer
Jim Steven	Radio Club
Scott Lucas	MMU
Mike Brittingham	MMU
Corey Blackford	Fire Dept.
Ross Dutton	Fire Dept.
Jeff Brown	Police Dept.
Gerald Pillard	Street Dept.
Jim McCann	Street Dept.
Jerry Chezam	ARES Emergency Coordinator
Mike Chambers	Samaritan Hospital
Olin Roper	Fire Dept.
Greg Young	Community Development
Ronny smith	MMU

Keith Carter	MMU
Steve Olinger	Police Dept.
Barry Perkins	Operator
Benjamin Miles	Operator
<b>Ed Samel</b>	Operator
Jeff Corbin	Operator
Jack Austin	Supervisor Water and Wastewater
Barbara Primm	Loch Haven
Virginia Lucas	NECAC
Mark Truitt	Macon Utility

**South Gifford**

Dean Ahalt	Mayor
Tina Hubbard	Citizen
Larry Cassady	Citizen
Steve Jare	Citizen
Neil Vauhab	Citizen
Neva Attabery	Citizen
Lakota Attebery	Citizen

**Economic Analysis of Mitigation Projects--Cost Benefit Review**

**Cost-Benefit Review** – takes into account the monetary and non-monetary costs and benefits associated with each action. Conducting a benefit/cost review for a mitigation activity can assist communities in determining whether a project is worth undertaking now, in order to avoid disaster-related damages later. Determining the economic feasibility of mitigating natural hazards can provide decision makers with an understanding of the potential benefits and costs of an activity, as well as a basis upon which to compare alternative projects.

Utilizing the previous Natural Hazards Mitigation Plan, the Macon County Hazard Mitigation Committee has a comprehensive list of possible hazards and ways to mitigate their impact. The benefit/cost is determined by considering the number of citizens served by the action, the long-term effects of said action, and a number of other factors.

The Cost-Benefit Review was a very important step in the prioritization of mitigation actions found in this plan. Each jurisdiction looked at each mitigation action they discussed and answered a few questions:

- How many people in various demographics could be affected by the Hazard that the action addresses?
- What is the extent or the degree that a natural hazard event could affect a particular area?
- How much property damage might occur and what will be the resulting monetary cost?
- How many properties or physical assets might have loss of use?
- How many people might lose their life?
- How many people might be injured?
- How can each action item be implemented?
- What are the possible sources of funding available for the implementation?

The information needed to answer these questions effectively can be found throughout the plan. This information assisted each jurisdiction in answering these questions.

## Re-evaluation and Priority of 2006 Action items

All the Mitigation Action Items from the 2006 Plan are listed in this section. Each action item includes an estimate of the timeline for implementation. When developing mitigation strategy, the planning committee followed several guidelines for selection of action items. They looked for action items that were (STAPLEE):

- S** socially acceptable,
- T** technically feasible,
- A** administratively executable by local communities,
- P** politically acceptable,
- L** legally implemented by county,
- E** economically feasible and
- E** environmentally sound (STAPLEE).

However, Five year Update changes to the action items are highlight in **Bold Type**. Each action item from the original 2006 Hazard Mitigation Plan was first updated with any changes, and then discussed if the action item was completed, or needs to be continued, or deleted. Also some new action items were added.

Each of the revised or new action items were then re-evaluated and ranked as High, Medium or Low priority. The Hazard Mitigation committee decided that a more robust and logical approach to determining priority based on costs and benefits. The methodology used for ranking is described below.

The mitigation action items are classified as ongoing or given a specified timeline. The plan covers actions planned for the next five (5) years. The Hazard Mitigation Committees will meet on a regular basis to monitor progress on the Mitigation Actions within their communities. This plan will be updated and re-evaluated again in five years.

## Five-Year Action Plan Matrix

The Mitigation Plan contains a five-year action plan matrix, background on the purpose and methodology used to develop the mitigation plan, a profile of Macon County, sections on the natural hazards that occur within the county, profiles of Atlanta, Bevier, Callao, Elmer, Ethel, La Plata, Macon city, New Cambria, and South Gifford, Atlanta C-3 School District, Bevier C-4 School District, Callao C-8 School District , La Plata R-1 School District , Macon R-1 School District and Macon R-4 School District hazard mitigation actions developed by each of the those incorporated cities.

The Macon County Natural Hazards Mitigation Action Plan includes resources and information to assist county residents, public and private sector organizations, and others interested in participating in planning for natural hazards. The action items address multi-hazard issues, as well as activities for flood, tornadoes and storms, severe winter weather, earthquake, dam failure, heat and drought, levee failure, landslides, sinkholes, and wildfire hazards.

## Significant Mitigation Progress since 2006

The most significant progress in Macon County in mitigation actions since 2006 is the establishment of a full time Emergency Management Director for the county and an emergency manager in all the communities. Also the county has contracted and EAS (Everbridge) to contact all emergency personnel and all citizens in the event of a hazardous event. This contact is made via phone, cell phone, webpage and social media sites. In addition warning sirens have been installed in every community and is test monthly.

## History of Macon County Hazard Mitigation Plan

In 2006, the first Hazard Mitigation Plan was approved by FEMA making Macon County eligible to apply for pre-disaster mitigation grants and the mitigation portion of post-disaster grant funds.

The Macon County Hazard Mitigation Plan 2006 was written to be a working document to guide participating jurisdiction in Macon County to work to mitigate potential hazards. The plan was publically available on two websites; <http://www.marktwaincog.com> and <http://www.talleyconsultants.com>. The maintenance of the original plan called for annual reviews by the Hazard Mitigation Committee. These formal meetings did not take place for various reasons of scheduling, timing, lack of personnel and time. While the annual reviews did not occur, many activities were implemented since the adoption of the original plan. Some of the mitigations actions are listed below are identified as completed. (See Section 4 for a complete listing)

- Warning sirens have been installed in every incorporated city in the county and tested monthly.
- An off-site secure storage was built for county records.
- A second EOC was established and equipped.
- Ordinance was passed to not allow development in floodplains.
- All burning must be coordinated by Fire Departments and/ or 911.
- EAS (Early Alert System) Code Red was established throughout the county.
- Hiring of full time EMD (Emergency Management Direction) to coordinate mitigation activities.

The following are among the mitigation actions due to their nature will continue as ongoing actions:

- Maintain Mutual Aid agreements
- Establish formal agreements with appropriate shelter locations throughout the county
- Participate in Table-top exercises.
- Develop public education with respect to hazard awareness.
- Ensure that all school buses have two-way communication.
- Promote the use of NOAA radios

If an Action Item is classified as “**ONGOING**”, the committee has determined that it was a beneficial mitigation action to continue. Most of the ongoing action items will continue to be beneficial as education and training as new citizens move in to the area and new emergency and governmental personnel are added. Therefore, these actions do not have a “completion” date.

## Incorporation into Existing Planning Mechanisms

Macon County currently utilizes comprehensive land use planning, capital improvements planning to guide and control development within the county. After Macon County officially adopts the Hazard Mitigation Plan, these existing mechanisms will have mitigation strategies integrated into them.

Upon adoption of the Macon County Natural Hazards Mitigation Plan, the plan will serve as a baseline of information on the natural hazards that impact Macon County and the cities of Macon County and the cities of Atlanta, Bevier, Callao, Elmer, Ethel, La Plata, Macon city, and South Gifford, Atlanta C-3 School District, Bevier C-4 School District, Callao C-8 School District, La Plata R-1 School District, Macon R-1 School District and Macon R-4 School District. These mitigation goals and objectives will help local governments and other organizations in the Macon County plan for natural hazard mitigation in their own planning documents. The meetings of the Hazard Mitigation Committees will provide an opportunity for committee members to report back on the progress made on the integration of mitigation planning into the county and city planning documents and procedures.

Below is a listing of some of the current planning documents that will be used:

**Macon County Comprehensive Plan**

**Macon County Local Emergency Operations Plan**

**Macon County Emergency Operations Plan,**

**Hazardous Materials Response, LEPC**

**Building Codes**      City of Macon

**Crisis Management Plan**      Atlanta C-3 School District, Bevier C-4 School District, Callao C-8 School District , La Plata R-1 School District , Macon R-1 School District and Macon R-4 School District

## **Mitigation Programs**

Mitigation entails taking actions to reduce or eliminate injury, loss of life, and property damage from natural hazards. The first Macon County Natural Hazards mitigation plan was implemented in 2006. Through public involvement and planning, the county has adopted this policy. Though the focus remains on rescue and response, a number of mitigation efforts have been implemented.

- Macon County's Emergency Plan and LEPC contain mitigation measures.
- Macon County receives NWS warnings, and the sheriff's office is staffed on a 24-hour basis by dispatch personnel. Additionally, the county has implemented the use of a text messaging warning system through cell phones. For those outside of incorporated areas, this measure has increased both awareness and the effectiveness of the county's warning system. However, large-scale warning equipment (sirens, etc.) is still limited to the county's municipalities and the means used to alert each respective community varies. The use of local media remains prevalent as an effective warning system.
- Macon County works collaboratively with all municipalities in identifying key sites in each incorporated area as well as sharing information regarding any/all natural threats with those entities that are interested in hazard response and mitigation.
- Macon County works conjunctively with local media (newspapers, radio, cable providers, and Internet service providers) to both provide information to the public and highlight mock disasters in an effort to raise public awareness about natural hazards and the planned responses. Various trainings, including weather spotting courses, have been offered to help mitigate the effects of severe weather upon the county's citizenry.
- All Macon County schools have written and compiled an all-hazards plan which includes mitigation measures for natural disasters.
- The Emergency Management Director keeps a working reference library of all materials regarding disaster response, natural hazard mitigation, and rescue/evacuation plans. The reference material is freely shared with the public as well as interested municipal official
- Code Red EAS has been implemented countywide and all citizens are encouraged to sign up for alerts.
- EMDs and emergency personnel, police, and firefighters from all communities are encouraged to participate in the several table-top exercises and drills that the county and state conducts each year

## Prioritization of Actions using STAPLEE and Benefit/Cost Reviews

After reviewing the Hazard Mitigation Plan for Monroe County, Missouri, the committee adopted their approach to prioritization of the Mitigation Action items.

Members of the Hazard Mitigation Committee carried out a STAPLEE review and Benefit/Cost review on the mitigation action items. The following guidelines were used:

### STAPLEE Review

The questions below were used as starting points for evaluating each action according to the STAPLEE criteria. Scoring:

2 = Definitely YES

1 = Maybe YES

- **Social:** Is the action socially acceptable to the community?
- **Technical:** Will the proposed strategy work? Will the action independently solve the problem?
- **Administrative:** Is there someone to coordinate and lead the effort?
- **Political:** Is the action politically acceptable? Is there public support both to implement and to maintain the project?
- **Legal:** Is there legal authority to implement the action?
- **Economic:** Will the action benefit the area economically? Does the cost seem reasonable for the size of the problem and the likely benefits?
- **Environmental:** Is the action consistent with local, state, and federal environmental laws and regulations? Will the project have a positive impact on the environment? Will historic structures be saved or protected?

### Benefit/Cost Review

#### Cost

Points were subtracted according to the following cost scale (-5 points maximum = highest cost)

(-1) = Minimal – little cost to the jurisdiction involved

(-3) = Moderate – definite cost involved but could likely be worked into operating budget

(-5) = Significant – cost above and beyond most operating budgets; would require extra appropriations to finance or to meet matching funds for a grant

Note: For the Benefit/Cost Review, the benefit and cost of actions which used the word “Encourage” were evaluated as if the action or strategy being encouraged was actually to be carried out.

#### Benefit

Two (2) points were added for each of the following avoided damages (8 points maximum = highest benefit)

- Injuries and/or casualties (I,C)
- Property damages (PD)
- Loss-of-function/displacement impacts (LF)
- Emergency management costs/community costs (EMCC)

## **Total Score**

The scores for the STAPLEE Review and Benefit/Cost Review were added to determine a Total Score for each action.

## **Priority Scale**

A sample matrix was filled out for the possible range of ratings an action might receive on both the STAPLEE and Benefit/Cost Review. The possible ratings tested ranged between:

- A hypothetical action with half “YES” answers on STAPLEE (i.e. poor STAPLEE score) and Low Benefit/High Cost: Total Score = 9
- A hypothetical action with “All definitely “YES” on STAPLEE and High Benefit/Little Cost: Total Score = 20

An inspection of the possible scores within this range led to the development of the following Priority Scale based on the Total Score in the STAPLEE-Benefit/Cost Review process:

- 14-21 points = High Priority
- 9-13 points = Medium Priority
- 8 points and below = Low Priority

It should be noted all of the actions attained either High or Medium priority rating. Many of the actions are ongoing and already in place but remain high priorities in the work plans of the jurisdictions.

The STAPLEE Review, Benefit/Cost Review, and Final Priority for each of the mitigation actions are shown below.

Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<p><b>Goal 1</b> Public Awareness—Using a variety of communications avenues to increase the citizens' awareness of and promote education about the natural hazards that they may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.</p> <p><b>Objective 1</b> Provide informational brochures, websites and programs to educate the public about hazards that may affect them in the future.</p>															
1.1.1	Have educational brochures on what to do during a natural disaster available to schools and citizens. <b>Articles in newspapers, county website, social networks, facebook, twitter. Link all official website in the county. Newcomer package. Available at campgrounds</b>	2	2	2	2	2	1	0	11	IC,PD, EMCC C	6	-1	5	16	H
1.1.2	Have informational brochures on retrofitting windows available to distribute to Schools, Day Cares, and Nursing Homes. <b>Also City Hall and Chamber office</b>	2	2	2	1	2	1	0	11	IC,PD	4	-1	3	14	H



Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<p><b>Goal 1</b> Public Awareness—Using a variety of communications avenues to increase the citizens' awareness of and promote education about the natural hazards that they may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.</p> <p><b>Objective 2</b> Publicize appropriate mitigation measures for future potential natural hazards.</p>															
1.2.1	Have educational brochures on what to do during extreme heat conditions and distribute to nursing homes, childcare centers, schools. <b>Articles in newspapers, county website, social networks, facebook, twitter. Link all official website in the county. County Fair will give out information</b>	2	2	2	2	2	2	0	12	IC,PD, EMCC	6	-1	5	17	H
1.2.2	Encourage Drought resistant yard watering practices. City has ordinance regulating water usage.	2	2	2	2	2	2	2	14	IC,PD, EMCC	6	-1	5	19	H
1.2.3	Work with local cable TV company to post severe natural hazards announcements. <b>Delete County now has EAS "Nixle"</b> <b>Sin-up information is on county website</b>	2	2	2	2	2	2	0	12	IC,PD, EMCC	6	-1	5	17	H
1.2.4	Have educational brochures on what to do during a natural disaster available to the public at the police station, fire station, and city hall. Articles published in local newspaper.	2	2	2	2	2	2	0	12	IC,PD, EMCC	6	-1	5	17	H
1.2.5	Distribute Design Construction Awareness Brochures with Building permits.	2	2	2	2	2	2	0	12	IC,PD, EMCC	6	-1	5	17	H

Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<p><b>Goal 1</b> Public Awareness—Using a variety of communications avenues to increase the citizens' awareness of and promote education about the natural hazards that they may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.</p> <p><b>Objective 3</b> Develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards.</p>															
1.3.1	Promote use of NOAA radios in businesses, private homes, and large gatherings. <b>websites encourages purchase of NOAA radios, notice on utility bills</b>	2	2	2	2	2	2	0	12	IC,PD, EMCC	6	-1	5	17	H
1.3.2	Have speaker available to conduct programs on earthquake safety and severe weather safety.	2	2	2	2	2	1	0	11	IC,PD	4	-1	3	14	H

Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<p><b>Goal 2</b> Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effects of future natural hazards.</p> <p><b>Objective 1</b> Build and support local partnerships to lessen the effects of natural hazards.</p>															
2.1.1	Co-op to remove trees from power line easements in addition to current trimming program. Macon Municipal Utilities trims trees in Macon. LaPlata does tree trimming in LaPlata	1	2	2	2	2	2	2	13	IC,PD, LF, EMCC	8	-1	7	20	H
2.1.2	Ensure that county school buses are outfitted with two –way communication	2	2	2	2	2	2	0	12	IC,PD, EMCC	6	-3	3	15	H
2.1.3	Partnership with NECAC for distribution of fans as needed.	2	2	2	2	2	2	0	12	IC, EMCC	4	-1	3	15	H
2.1.4	Obtain sufficient back-up generators for designated shelters as funds become available. "after the event"	2	2	2	2	2	2	0	12	LF, EMCC	4	-3	1	13	M
2.1.5	Maintain Mutual Aid Agreements and update on regular schedule	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-1	7	21	H
2.1.6	Encourage schools to conduct programs on earthquake safety.	2	2	2	2	2	2	2	14	IC,PD, EMCC	6	-1	5	19	H
2.1.7	Spot check of elderly and special needs individuals. Co-op with Health Dept.	2	2	2	2	2	2	0	12	IC, EMCC	4	-1	3	15	H

Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<b>Goal 2</b> Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effects of future natural hazards.															
<b>Objective 2</b> Encourage active participation and responsibility of elected officials and emergency personnel in mitigation planning and activities.															
2.2.1	Conduct regularly scheduled training for weather spotters. <b>Training annually and advertise new classes</b>	2	2	2	2	2	2	0	12	IC,PD	4	-1	3	15	H
2.2.2	Maintain a list of special needs individuals. <b>Neighbors check on neighbors</b>	2	2	2	2	2	2	0	12	IC, EMCC	4	-1	3	15	H
2.2.3	Participate in regularly scheduled Table-top exercises and mock emergency exercises. <b>LEPC and hospital drills also annually</b>	2	2	2	2	2	2	1	13	IC,PD, LF, EMCC	8	-3	5	18	H
2.2.4	Investigate the possibility of obtaining a warning siren as funds become available.	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-5	3	15	H
2.2.5	Maintain and testing on regular schedule of the current warning siren system and upgrade as needed and funds become available. <b>3 additional sirens added in Macon</b>	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-3	5	17	H
2.2.6	Implement bi-annual Weather Spotter training <b>annual</b>	2	2	2	2	2	2	0	12	IC,PD	4	-1	3	15	H

Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<b>Goal 2</b> Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effects of future natural hazards.															
<b>Objective 3</b> Balance watershed planning, natural resource management, and land use planning with natural hazard mitigation to protect life, property and the environment.															
2.3.1	Maintain and clean culverts and storm water drainage system on a regular schedule.	2	2	2	2	2	2	2	14	IC,PD	4	-3	1	15	H
2.3.2	Encourage Drought resistant farming practices	2	2	2	2	2	2	2	14	PD	2	-1	1	15	H
2.3.3	Encourage Landowners to inspect and maintain their dams according to Dept. of Natural Resources standards.	2	2	2	2	2	2	2	14	LF, EMCC	4	-1	3	17	H
2.3.4	Work with Army Corps of Engineers on Dam Safety at Long Branch Lake.	2	2	2	2	2	2	2	14	LF, EMCC	4	-1	3	17	H
2.3.5	Regularly scheduled clean up of Sulfur Creek to mitigate flash flooding. <b>Delete—not in city</b>	2	1	1	2	2	2	2	14	IC,PD	4	-3	1	15	H
2.3.6	Plan for debris removal is in place and a designated location for debris is established.	2	2	2	2	2	2	2	14	IC,PD	4	-3	1	15	H
2.3.7	Engineering study currently in place for drainage patterns. <b>Macon finished phase 3, currently working on phase 4. LaPlata applying for grant to upgrade waste water system.</b>	2	2	2	2	2	2	2	14	LF, EMCC	2	-5	-3	11	M

Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<p><b>Goal 3.</b> Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.</p> <p><b>Objective 1</b> Incorporate mitigation procedures and planning into the community</p>															
3.1.1	Conduct a study on all “at peril” roads and bridges. Make a plan to upgrade the “at peril” roads and bridges as funds become available. <b>County has made significant improvements on bridges and roads to mitigate flooding.</b>	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-3	5	19	H
3.1.2	Establish cooling center at shelter	2	2	2	2	2	2	0	12	IC, EMCC	4	-3	1	13	M
3.1.3	Evaluate and upgrade as needed the current emergency response communication infrastructure	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-3	5	17	H
3.1.4	Maintain transportation infrastructure	2	2	2	2	2	2	2	14	IC,PD, EMCC	6	-5	1	15	H
3.1.5	Update Emergency Operating Plan on a regular schedule.	2	2	2	2	2	2	1	13	LF, EMCC	4	-1	3	16	H
3.1.6	Study of current warning siren system and upgrade as needed and funds become available. <b>Siren obtained in 2008</b>	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-5	3	15	H
3.1.7	Review the storm water drainage system and upgrade as needed and as funds become available. <b>LaPlata applying for grant to upgrade waste water system</b>	2	2	2	2	2	2	2	14	IC,PD, EMCC	6	-3	3	17	H

Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<p><b>Goal 3.</b> Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.</p> <p><b>Objective 1</b> Incorporate mitigation procedures and planning into the community</p>															
3.1.8	Update and maintain list of buildings that are designated as shelters, distribute list "After the event"	2	2	2	2	2	2	0	12	LF, EMCC	4	-1	3	15	H
3.1.9	Macon County 911 has direct notification of severe weather alerts to schools, nursing homes, hospitals, and Fire departments. County has EAS "Nixle"	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-3	5	19	H
3.1.10	Maintain snow plowing and removal equipment. Maintain adequate supply of salt during icy weather.	2	2	2	2	2	2	2	14	PD, LF, EMCC	6	-1	5	19	H
3.1.11	Ensure that "Road Impassable" during high water signs are posted	2	2	2	2	2	2	1	13	LF, EMCC	4	-1	3	16	H
3.1.12	Maintain Road and Bridge Equipment	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-3	5	17	H
3.1.13	Maintain a supply of extra culverts and materials for repairs for emergency use.	2	2	2	2	2	2	2	14	IC,PD, EMCC	6	-3	3	17	H
3.1.14	Maintain, map and update a list of low-lying roads and bridges that are in peril. Sheriff Dept. checks all low lying roads for problems.	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-3	5	19	H
3.1.15	Obtain portable generator to maintain communication infrastructure as funds become available. Additional generators as funds become available	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-5	3	15	H

Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<p><b>Goal 3.</b> Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.</p> <p><b>Objective 1</b> Incorporate mitigation procedures and planning into the community</p>															
3.1.16	Work with FEMA and Army Corp of Engineers to update Floodplain map as needed	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-1	7	21	H
3.1.17	Maintain and replace missing street signs	2	2	2	2	2	2	1	13	LF, EMCC	4	-1	3	16	H
3.1.18	Training and certification of Emergency Management Director	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-5	3	15	H
3.1.19	Partnership with NECAC for distribution of fans as needed.	2	2	2	2	2	2	0	12	PD	2	-1	1	13	M
3.1.20	Have a plan in place for local snow removal as needed in addition to snow removal provided by county on county roads.	2	2	2	2	2	2	2	14	PD, LF, EMCC	6	-1	5	19	H
3.1.22	Utilities are being placed underground in the business districts and new subdivisions <b>All residential areas</b>	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-3	5	19	H
3.1.23	Water meters are being replaced with electronic read devices to eliminate meter breakages and possible water main breakage or damage. <b>Completed- Macon Working-LaPlata</b>	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-5	3	15	H
3.1.24	Maintain capability to generate city's electricity as needed.	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-5	3	15	H



Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<b>Goal 3.</b> Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy. <b>Objective 1</b> Incorporate mitigation procedures and planning into the community															
3.1.25	Develop list of services, contacts for incoming helpers.	2	2	2	2	2	2	0	12	IC,LF EMCC	6	-5	1	13	M
3.1.26	Existing plan in place to have Macon Lake as the back-up water supply for the City of Macon.	2	2	2	2	2	2	0	12	IC,LF EMCC	6	-5	1	13	M
3.1.27	Investigate possibility of obtaining back-up generator (s) for the Water Treatment and Waste Water Treatment Plants as funds become available. <b>completed</b>	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-5	3	15	H
<b>Goal 3.</b> Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy. <b>Objective 2</b> Encourage private involvement in mitigation activities.															
3.2.1	Encourage Drought resistant farming practices <b>NEW</b>	2	2	2	2	2	2	2	14	PD	2	-1	1	15	H
3.2.2	Set up a schedule to publish timely articles in the local papers on safety during natural hazards throughout the year <b>NEW</b>	2	2	2	2	2	2	0	12	IC,PD, EMCC	6	-1	5	17	H

Prioritization of Mitigation Actions		2= Definitely Yes 1= Maybe Yes 0 = N/A or NO													
Action #	Mitigation Actions	S	T	A	P	L	E	E	STAPLEE TOTAL	Losses Avoided 2 pt. each	Benefit	Cost	B/C Total	TOTAL	PRIORITY
<p><b>Goal 3.</b> Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.</p> <p><b>Objective 3</b> Pass and/or adopt ordinances, codes and standards to enforce mitigation activities.</p>															
3.3.1	In Macon County only cities of Macon and Elmer, participate in the NFIP. Macon County and the cities of Macon and Elmer will continue to comply and implement the NFIP requirements and to reduce the flood risks associated with the Flood Hazard Areas <b>Elmer no longer participates in NFIP</b>	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-3	5	19	H
3.3.2	Burning Bans issued by County Commission as needed <b>Also Fire Depts can issue</b>	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-1	7	21	H
3.3.3	Update and maintain the fire suppression emergency plan with the Macon Rural Fire Dept, LEPC, and Northeast Missouri Grain Processors Ethanol Plant	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-1	7	21	H
3.3.4	Enforce Floodplain Ordinance to ensure that no building is built in the floodplain zones.	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-3	5	19	H
3.3.5	Establish an Emergency Management Director position for the city	2	2	2	2	2	2	2	14	IC,PD, LF, EMCC	8	-5	3	16	H
3.3.6	Emergency snow routes are designated by city ordinance.	2	2	2	2	2	2	0	12	PD	2	-1	1	13	M
3.3.7	Enforcement of current building codes, BOCA <del>IIBC</del>	2	2	2	2	2	2	0	12	PD	2	-1	1	13	M
3.3.8	Review of storm water drainage system and capital Improvement plan to upgrade water drainage as needed.	2	2	2	2	2	2	2	14	IC,PD, EMCC	6	-3	3	17	H
3.3.9	Established EOC (Emergency Operations Center) at the Fire/ Police Departments. <b>complete</b>	2	2	2	2	2	2	0	12	IC,PD, LF, EMCC	8	-5	3	15	H

## Five Year Matrix

**Goal 1** Public Awareness—Using a variety of communications avenues to increase the citizens' awareness of and promote education about the natural hazards that they may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.

**Objective 1** Provide informational brochures, websites and programs to educate the public about hazards that may affect them in the future.

Action Item # Priority**	Action Item and Strategy	Coordinating Organization	Time Line	Structures ***	N—New R—Revision O--Ongoing	Funding****	Macon County												Five Year Update Revision	
							Bevier	Callao	Elmer	LaPlata	Macon City	South Gifford	Atlanta C-3 SD	Bevier C-4 SD	Callao C-8 SD	LaPlata R-II SD	Macon R-I SD	Macon R-IV SD		
1.1.1	Have educational brochures on what to do during a natural disaster available to schools and citizens	HMC, EMD, Health Dept, Fire Depts., local media	Ongoing	NA	O	LF	√	√	√	√	√	√								Articles in newspapers, county website, social networks, facebook, twitter. Link all official website in the county. Newcomer package. Available at campgrounds
1.1.2	Have informational brochures on retrofitting windows available to distribute to Schools, Day Cares, and Nursing Homes.	HMC, EMD	6 mo-1yr	E	O	LF							√							Also City Hall and Chamber office

\*\*Priority from STAPLEE analysis      \*\*\* E—Existing    N---New      \*\*\*\* LF—Local Funding    F-S-G Federal / State Grants    N/A Not Applicable  
HMC—Hazard Mitigation Committee    EMD—Emergency Management Director    EOC---Emergency Operations Center    MODOT—Missouri Dept. of Trans

**Goal 1** Public Awareness—Using a variety of communications avenues to increase the citizens' awareness of and promote education about the natural hazards that they may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.

**Objective 2** Publicize appropriate mitigation measures for future potential natural hazards.

Action Item # Priority**	Action Item and Strategy	Coordinating Organization	Time Line	Structures ***	N—New R—Revision O--Ongoing	Funding****													Five Year Update Revision	
							Macon County	Bevier	Callao	Elmer	LaPlata	Macon City	South Gifford	Atlanta C-3 SD	Bevier C-4 SD	Callao C-8 SD	LaPlata R-II SD	Macon R-I SD		Macon R-IV SD
1.2.1	Have educational brochures on what to do during extreme heat conditions and distribute to nursing homes, childcare centers, schools.	HMC, EMD, Health Dept, local media, nursing homes, child care center, schools	Ongoing	NA	O	LF	√	X	X		X									Articles in newspapers, county website, social networks, facebook, twitter. Link all official website in the county. County Fair will give out information
1.2.2	Encourage Drought resistant yard watering practices. City has ordinance regulating water usage.	HMC, City Government	Ongoing	NA	O	LF	√				X		X							
1.2.3	Work with local cable TV company to post severe natural hazards announcements.	HMC, Fire Dept., Police Dept., Cable Companies	1 yr	NA	R	LF	√				√	√								Delete County now has EAS "Nixle" Sin-up information is on county website
1.2.4	Have educational brochures on what to do during a natural disaster available to the public at the police station, fire station, and city hall. Articles published in local newspaper.	HMC, EMD, Fire Dept., media	6 mo-1yr	NA	O	LF					X	√								
1.2.5	Distribute Design Construction Awareness Brochures with Building permits.	HMC, city government	Ongoing	N	O	LF						√								

\*\*Priority from STAPLEE analysis    \*\*\* E—Existing    N--New    \*\*\*\* LF—Local Funding    F-S-G Federal / State Grants    N/A Not Applicable  
HMC—Hazard Mitigation Committee    EMD—Emergency Management Director    EOC---Emergency Operations Center    MODOT—Missouri Dept. of Trans

**Goal 1** Public Awareness—Using a variety of communications avenues to increase the citizens' awareness of and promote education about the natural hazards that they may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.

**Objective 3** Develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards.

Action Item # Priority**	Action Item and Strategy	Coordinating Organization	Time Line	Structures ***	N—New R—Revision O--Ongoing	Funding****	Macon County	Bevier	Callao	Elmer	LaPlata	Macon City	South Gifford	Atlanta C-3 SD	Bevier C-4 SD	Callao C-8 SD	LaPlata R-II SD	Macon R-I SD	Macon R-IV SD	<b>Five Year Update Revision</b>	
1.3.1	Promote use of NOAA radios in businesses, private homes, and large gatherings	HMC	Ongoing	NA	R	LF	√	√	√	√	√	√	√							<b>websites encourages purchase of NOAA radios, notice on utility bills</b>	
1.3.2	Have speaker available to conduct programs on earthquake safety and severe weather safety.	HMC	1-2 yrs	E N	O	LF	X	√			X	√		X	X	X	X	X	X		

\*\*Priority from STAPLEE analysis      \*\*\* E—Existing   N---New      \*\*\*\* LF—Local Funding   F-S-G Federal / State Grants   N/A Not Applicable  
HMC—Hazard Mitigation Committee      EMD—Emergency Management Director      EOC---Emergency Operations Center      MODOT—Missouri Dept. of Trans

**Goal 2** Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effects of future natural hazards.

**Objective 1** Build and support local partnerships to lessen the effects of natural hazards.

Action Item # Priority**	Action Item and Strategy	Coordinating Organization	Time Line	Structures ***	N—New R—Revision O--Ongoing	Funding****	Macon County		Callao	Elmer	LaPlata	Macon City	South Gifford	Atlanta C-3 SD	Bevier C-4 SD	Callao C-8 SD	LaPlata R-II SD	Macon R-I SD	Macon R-IV SD	Five Year Update Revision
							Bevier	Callao												
2.1.1	<b>Co-op</b> to remove trees from power line easements in addition to current trimming program	HMC, Macon Rural Electric Cooper	Ongoing	NA	O	F-S-G	√	√	√	√	√	√								Macon Municipal Utilities trims trees in Macon. LaPlata does tree trimming in LaPlata
2.1.2	Ensure that county school buses are outfitted with two -way communication	HMC, Schools, Health Dept.	Ongoing	NA	O	F-S-G	√	√			√		X	X	X	X	X	X	X	
2.1.3	Partnership with NECAC for distribution of fans as needed.	HMC, NECAC, Health Dept.	6 months	NA	O	LF					√	√	X							
2.1.4	Obtain sufficient back-up generators for designated shelters as funds become available.	HMC, EMD	Ongoing	NA	O	LF	√	X	√	√	√	√								“after the event”
2.1.5	Maintain Mutual Aid Agreements and update on regular schedule	Law enforcement, Emergency OP EMD, Fire Dept. Utility Depts	Ongoing	NA	O	LF	√	√	√	√	√	√								
2.1.6	Encourage schools to conduct programs on earthquake safety.	HMC, EMD	Ongoing	NA	O	LF	√	√	√	√		√	X	√	√	√	√	√	√	
2.1.7	Spot check of elderly and special needs individuals.	HMC, Fire Dept., churches	Ongoing	NA	R	LF		√	X	X										Co-op with Health Dept.

\*\*Priority from STAPLEE analysis  
HMC—Hazard Mitigation Committee  
\*\*\* E—Existing N---New  
EMD—Emergency Management Director  
\*\*\*\* LF—Local Funding F-S-G Federal / State Grants N/A Not Applicable  
EOC---Emergency Operations Center MODOT—Missouri Dept. of Trans

**Goal 2** Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effects of future natural hazards.

**Objective 2** Encourage active participation and responsibility of elected officials and emergency personnel in mitigation planning and activities.

Action Item # Priority**	Action Item and Strategy	Coordinating Organization	Time Line	Structures ***	N—New R—Revision O—Ongoing	Funding****	Macon County	Bevier	Callao	Elmer	LaPlata	Macon City	South Gifford	Atlanta C-3 SD	Bevier C-4 SD	Callao C-8 SD	LaPlata R-II SD	Macon R-I SD	Macon R-IV SD	<b>Five Year Update Revision</b>
							√	√	√	√	√	√								
2.2.1	Conduct regularly scheduled training for weather spotters	HMC, EMD, Weather Bureau, Fire Depts.	Ongoing	NA	R	F-S- G LF	√	√	√	√	√	√								Training annually and advertise new classes
2.2.2	Maintain a list of special needs individuals.	HMC, Highway and Bridge Dept., Health Dept.	Ongoing	NA	R	LF	√	X	X				X							Neighbors check on neighbors
2.2.3	Participate in regularly scheduled Table-top exercises and mock emergency exercises.	Law enforcement, Emergency OP personnel, EMD, Fire Dept.	Ongoing	NA	R	F-S- G LF	√	√	X		√	√								LEPC and hospital drills also annually
2.2.4	Investigate the possibility of obtaining a warning siren as funds become available.	HMC, City Government	1-5 yrs	NA	R	F-S- G LF			√	√	X		√							
2.2.5	Maintain and testing on regular schedule of the current warning siren system and upgrade as needed and funds become available.	HMC, EMD, Fire Dept., 911	Ongoing	NA	R	F-S- G LF		X	X		√	√								3 additional sirens added in Macon
2.2.6	Implement bi-annual Weather Spotter training	HMC, EMD, Fire Dept.	1 yr	NA	R	F-S- G LF						√								annual

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**Goal 2** Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effects of future natural hazards.

**Objective 3** Balance watershed planning, natural resource management, and land use planning with natural hazard mitigation to protect life, property and the environment.

Action Item # Priority**	Action Item and Strategy	Coordinating Organization	Time Line	Structures ***	N—New R—Revision O—Ongoing	Funding****												Five Year Update Revision						
							Macon County	Bevier	Callao	Elmer	LaPlata	Macon City	South Gifford	Atlanta C-3 SD	Bevier C-4 SD	Callao C-8 SD	LaPlata R-II SD		Macon R-I SD	Macon R-IV SD				
2.3.1	Maintain and clean culverts and storm water drainage system on a regular schedule.	HMC, Highway & Bridge Dept, Street Dept.	Ongoing	E	O	LF	√	X	X	√	X	X												
2.3.2	Encourage Drought resistant farming practices	HMC, USDA, media, University Outreach	Ongoing	NA	O	LF	√																	
2.3.3	Encourage Landowners to inspect and maintain their dams according to Dept. of Natural Resources standards.	HMC, MO Dept. of Natural Resources	Ongoing	E	O	LF	√																	
2.3.4	Work with Army Corps of Engineers on Dam Safety at Long Branch Lake.	HMC, Army Corps of Engineers	Ongoing	NA	O	LF							X											
2.3.5	Regularly scheduled clean up of Sulfur Creek to mitigate flash flooding	HMC, Street Dept.	Ongoing	E	O	LF																		Delete—not in city
2.3.6	Plan for debris removal is in place and a designated location for debris is established.	HMC, Street Dept.	Ongoing	E	O	LF		X	X			X												
2.3.7	Engineering study currently in place for drainage patterns.	HMC, MMU	Ongoing	E N	R	F-S- G LF						X	√											Macon finished phase 3, currently working on phase 4. LaPlata applying for grant to upgrade waste water system

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**Goal 3.** Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.

**Objective 1** Incorporate mitigation procedures and planning into the community.

Action Item # Priority**	Action Item and Strategy	Coordinating Organization	Time Line	Structures ***	N—New R—Revision O—Ongoing	Funding****													Five Year Update Revision	
							Macon County	Bevier	Callao	Elmer	LaPlata	Macon City	South Gifford	Atlanta C-3 SD	Bevier C-4 SD	Callao C-8 SD	LaPlata R-II SD	Macon R-I SD		Macon R-IV SD
3.1.1	Conduct a study on all "at peril" roads and bridges. Make a plan to upgrade the "at peril" roads and bridges as funds become available.	HMC, Highway and Bridge Dept.	1-5 yrs	E	R	F-S- G LF	√													County has made significant improvements on bridges and roads to mitigate flooding.
3.1.2	Establish cooling center at shelter	HMC, EMD	Ongoing	NA	O	LF	√	√		√	√	√	√							
3.1.3	Evaluate and upgrade as needed the current emergency response communication infrastructure	HMC, 911, Police, Fire, Sheriff, Ambulance	Ongoing	NA	O	LF	√	√	√		√	√								
3.1.4	Maintain transportation infrastructure	Highway Dept. MODOT	Ongoing	NA	O	F-S- G LF	√	X	X		√	√								
3.1.5	Update Emergency Operating Plan on a regular schedule.	Law enforcement, Emergency OP personnel, EMD, Fire Dept.	Ongoing	NA	O	LF	√	√	√	√	√	√	√	X	X	X	X	X	X	
3.1.6	Study of current warning siren system and upgrade as needed and funds become available.	HMC, Fire Dept.	1-2 yrs	NA	R	F-S- G LF			X		X									Siren obtained in 2008
3.1.7	Review the storm water drainage system and upgrade as needed and as funds become available	HMC, Utility Dept.	3-5 yrs	NA	R	F-S- G LF		X	√		√									LaPlata applying for grant to upgrade waste water system

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							√	√	√	√	√	√	√	√	√	√	√	√	√	
3.1.8	Update and maintain list of buildings that are designated as shelters, distribute list	HMC, EMD, law enforcement	Ongoing	NA	R	F-S-LF	√	√	√	√	√	√								"After the event"
3.1.9	Macon County 911 has direct notification of severe weather alerts to schools, nursing homes, hospitals, and Fire departments.	HMC, 911	Ongoing	NA	R	LF	√													County has EAS "Nixle"
3.1.10	Maintain snow plowing and removal equipment. Maintain adequate supply of salt during icy weather.	Highway Dept. HMC, MODOT	Ongoing	NA	O	LF	√	√	√		√	√								
3.1.11	Ensure that "Road Impassable" during high water signs are posted	HMC, Highway and Bridge Dept.	Ongoing	NA	O	LF	√					X								
3.1.12	Maintain Road and Bridge Equipment	HMC, Highway and Bridge Dept.	Ongoing	NA	O	LF	√					X								
3.1.13	Maintain a supply of extra culverts and materials for repairs for emergency use.	HMC, Highway and Bridge Dept.	Ongoing	NA	O	LF	√	X	X		X	X								
3.1.14	Maintain, map and update a list of low-lying roads and bridges that are in peril. Sheriff Dept. checks all low lying roads for problems.	HMC, Highway & Bridge Dept., Sheriff Dept, County 911	Ongoing	NA	O	LF	√													

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**Goal 3.** Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.

**Objective 1** Incorporate mitigation procedures and planning into the community.

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3.1.15	Obtain portable generator to maintain communication infrastructure as funds become available.	HMC, Police Dept., Fire Dept.	1-2 yrs	NA	R	LF					X	√								Additional generators as funds become available
3.1.16	Work with FEMA and Army Corp of Engineers to update Floodplain map as needed	HMC, City Government	1-5 yrs	NA	N	F-S-G LF			X			√								
3.1.17	Maintain and replace missing street signs	911 Street Dept	Ongoing	NA	O	LF	X	√			X	X	X							
3.1.18	Training and certification of Emergency Management Director	EMD, SEMA, HMC	1-5 yrs	NA	N	F-S-G LF	X	√	X		X	√								
3.1.19	Partnership with NECAC for distribution of fans as needed.	HMC, NECAC, churches	Ongoing	NA	O	LF			√		X	√								
3.1.20	Have a plan in place for local snow removal as needed in addition to snow removal provided by county on county roads.	HMC	Ongoing	NA	O	LF		X		√	X									
3.1.21	Investigate possibility of obtaining chain saws for tree limb trimming and debris clean-up as funds become available.	HMC	1-2 yrs	NA	--	LF														Delete

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**Objective 1** Incorporate mitigation procedures and planning into the community.

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3.1.22	Utilities are being placed underground in the business districts and new subdivisions	MMU (Macon Municipal Utilities), HMC	Ongoing	NA	R	LF						√								All residential areas
3.1.23	Water meters are being replaced with electronic read devices to eliminate meter breakages and possible water main breakage or damage.	MMU, HMC	2 yrs	NA	R	LF					X	√								Completed- Macon Working-LaPlata
3.1.24	Maintain capability to generate city's electricity as needed.	HMC, MMU	Ongoing	NA	O	LF					X	√								
3.1.25	Develop list of services, contacts for incoming helpers.	HMC, EMD	6 mo	NA	O	LF					X	√								
3.1.26	Existing plan in place to have Macon Lake as the back-up water supply for the City of Macon.	MMU	Ongoing	NA	O	LF						√								
3.1.27	Investigate possibility of obtaining back-up generator (s) for the Water Treatment and Waste Water Treatment Plants as funds become available.	HMC, MMU	2-5 yrs	NA	O	LF					X	√								Completed

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**Goal 3.** Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.

**Objective 2** Encourage private involvement in mitigation activities.

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							X													
3.2.1	<b>NEW</b>	HMC, USDA, media, University Outreach	Ongoing	NA	N	LF	X													Encourage Drought resistant farming practices
3.2.2	<b>NEW</b>	HMC, EMD, Health Dept.	6 months -1 year	NA	N	LF	X					X								Set up a schedule to publish timely articles in the local papers on safety during natural hazards throughout the year

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**Goal 3.** Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.

**Objective 3** Pass and/or adopt ordinances, codes and standards to enforce mitigation activities.

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3.3.1	In Macon County only cities of Macon and Elmer, participate in the NFIP. Macon County and the cities of Macon and Elmer will continue to comply and implement the NFIP requirements and to reduce the flood risks associated with the Flood Hazard Areas	HMC, Highway and Bridge Dept., Floodplain Managers	Ongoing	E N	R	F-S- G- LF			X			√								Elmer no longer participates in NFIP	
3.3.2	Burning Bans issued by County Commission as needed	HMC, County Comm.	Ongoing	E	R	LF	√	√	√	√	√	√	√							Also Fire Depts can issue	
3.3.3	Update and maintain the fire suppression emergency plan with the Macon Rural Fire Dept, LEPC, and Northeast Missouri Grain Processors Ethanol Plant	HMC, LEPC, Macon Rural Fire Dept., NEMO Grain Processors Ethanol Plant	6 mo - 1 year	E	O	LF	√														
3.3.4	Enforce Floodplain Ordinance to ensure that no building is built in the floodplain zones.	HMC, floodplain Manager	Ongoing	E N	O	LF			X			X									
3.3.5	Establish an Emergency Management Director position for the city	HMC, City Government	1 yr	NA	O	LF		√	X			X									
3.3.6	Emergency snow routes are designated by city ordinance.	HMC, City Government	Ongoing	E N	O	LF						√									

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3.3.7	Enforcement of current building codes, BOCA	HMC, city government	Ongoing	E N	R	LF						X	√											IIBC
3.3.8	Review of storm water drainage system and capital Improvement plan to upgrade water drainage as needed.	HMC, city government , MMU	1-5 yrs	E N	O	F-S- G LF		X				X	√											
3.3.9	Established EOC (Emergency Operations Center) at the Fire/ Police Departments.	HMC, EMD, Fire Dept., Police Dept.	2-5 yrs	E N	N	F-S- G LF		X	X			X	√											<b>Complete</b>

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