

4 MITIGATION STRATEGY

44 CFR Requirement 201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

This section presents the mitigation strategy developed by the Phelps County Hazard Mitigation Planning Committee (HMPC) based on the risk assessment. The mitigation strategy was developed by the HMPC. The group first agreed on general goal statements that would guide the jurisdictions in their efforts to reduce the impact of disasters in Phelps County. Then the group looked at developing and prioritizing a list of specific mitigation actions that could be taken to further the overall goals and directly reduce the County's vulnerability to hazards.

Introduction to Mitigation

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. For example, identifying areas in the community that are susceptible to damage from natural hazards and taking steps to make these areas less vulnerable, through flood buyouts.

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
- 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)
- 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
- Storm sewers
- A structural solution for landslides is the construction of a debris basin

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.

A few examples of public information activities to achieve mitigation are:

- Providing hazard maps and other hazard information
- Outreach programs that provide hazard and mitigation information to people when they have not asked for it

- How might outreach programs accomplish this?
- Print media
- Radio/TV spots and interviews
- Videotape
- Mass mailings
- Notices to residents and property owners in a specific, hazard-prone area
- Displays in widely used facilities such as public buildings and malls
- Presentations at meetings of neighborhood groups
- Real estate disclosure
- Information in the public library or a library developed specifically for mitigation information
- Available technical assistance
- 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/storm shelters, 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

Multi-objective planning creates opportunities to develop a broader resource support base that no longer relies solely upon disaster programs to resolve disaster problems. The solutions may be imbedded in other projects such as transportation, economic development, recreation and environmental enhancements.

• **Reduce vulnerability to future hazards** - With a 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. Usually it is assumed that business disruptions stem from direct building damages or from infrastructure damages such as a lengthy utility outage. Sometimes, these damages are the result of building a business in a hazardous location (the floodplain for example), and sometimes, the damages may be caused by poor construction, especially in the absence of building codes. 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 should something like flooding or debris block customer and/or supplier access to the business. For this reason, hazard mitigation planning is important to every stakeholder in the community.
- Building a community without regard to natural hazards or rebuilding one after a disaster “just like it was before” eradicates the community’s power to reduce its vulnerability to natural hazards.
- While it is natural to want to return things to the way they were after a disaster, it is important to remember that, in many cases, the disaster damage will not be as severe if a mitigation plan is developed and implemented before a disaster occurs.

• **Guide & Speed Post-Disaster Recovery** - The planning process guides post-disaster recovery in many 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. This plan also may qualify the community for recognition for other federal programs such as the National Weather Service’s StormReady 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.

Goal & Objective Development

The Phelps County Hazard Mitigation Planning Committee developed the goals and objectives by reviewing a list of needs compiled at previous meetings. Committee members created goals and objectives that would meet the needs of Phelps County and reduce hazards by the greatest amount. During the 2009 update, the advisory committee reviewed all the goals and objectives and provided input on what had been accomplished in the last five years.

4.1 Goals

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

The HMPC developed goals to provide direction for reducing hazard-related losses in Phelps County. These were based upon the results of the risk assessment and a review of mitigation goals from other state and local plans. These included the Missouri State Hazard Mitigation Plan, and local hazard mitigation plans from adjoining counties as well as the Phelps County Local Emergency Operations Plan.

The following overall goals and mitigation objectives were reviewed and accepted by the HMPC as best reflecting the needs of Phelps County, and were reconfirmed at the five-year review.

Goal 1: Reduce risks and vulnerabilities of people in hazard-prone areas through current technology, better planning and hazard mitigation activities.

Goal 2: Reduce the potential impact of natural disasters on new and existing properties and infrastructure and the local economy.

Goal 3: Promote education, outreach, research and development programs to improve the knowledge and awareness among the citizens and industry about hazards they may face, their vulnerability to identified hazards, and hazard mitigation alternatives that can reduce their vulnerabilities.

Goal 4: Strengthen communication and coordinate participation between public agencies, citizens, non-profit organizations, business, and industry to create a widespread interest in mitigation.

Goal 5: Establish priorities for reducing risks to the people and their property with emphasis on long-term and maximum benefits to the public rather than short-term benefit of special interests.

Goal 6: Secure resources for investment in hazard mitigation.

4.2 Identification and Analysis of Mitigation Measures

44 CFR Requirement 201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

At the first HMPC meeting information was distributed defining mitigation and the differences between mitigation and response activities to help the committee better define needs and action items. The following mitigation needs were developed by the Phelps County hazard mitigation planning committee during the first committee meeting. Each mitigation need was posted on the wall and committee members then discussed possible action items that could be included in the plan to address each of the identified needs.

1. Need road and bridge upgrades to improve drainage and reduce flooding.
2. Need locator/address information on 9-1-1 calls faster than it occurs now.
3. Need trees trimmed near lines.
4. Need trees trimmed and dead ones removed along streets/roads.
5. Need all house addresses posted, especially in rural areas.
6. Need alternative/temporary housing/designated shelters for a variety of disasters.
7. Need alternative/temporary mobile triage unit.
8. Improve emergency services/response in rural areas.
9. Need early warning system in Doolittle, Edgar Springs, the county areas and improved/expanded system in St. James.
10. Need local agreements between public agencies and private contractors to work together.
11. Need to develop CERT program.
12. Need to encourage earthquake-proof equipment in hospital, 9-1-1 center, nursing homes, EEOC.
13. Need to encourage citizens to have weather radio, emergency medical kit, water, flashlights, blankets, medicine, etc. to have if evacuated or have to endure without utilities.
14. Need countywide drill for disaster.
15. Need more training (fire drills, evacuation drills, participation in statewide drills, incident command, etc.
16. Need to encourage business/government to have a disaster plan and implement it.
17. Need to address flood-prone areas (Beaver Creek, Gale Bullman Auditorium).
18. Need storm water drainage plan in Rolla (currently in works).
19. Need stronger floodplain permit enforcement outside city of Rolla.
20. Need to develop evacuation plans and procedures (consider school buses).
21. Need stronger water conservation plans.
22. Need early warning system for homes below dams.
23. Need monitoring systems for dams.
24. Need to make residents aware of fire hazards (fire prevention).
25. Need to educate residents on how to shut down utilities, use fire extinguishers.

26. Need to secure propane tanks in flood prone areas.
27. Communication between agencies (designated frequency, coordinating alternative communication methods like ham radios).
28. Need to improve public media communications for warnings, updates (radio, cable stations, local channels).
29. Emergency backup power for water systems (drinking and wastewater).

4.2.1 STAPLEE Scoring

When developing the mitigation strategy, the planning committee followed several guidelines for selection of action items. According to the STAPLEE criteria, the committee looked for action items that were socially acceptable, technically feasible, executable by local communities, politically acceptable, legal, economically feasible and environmentally sound. Each action item was rated, as illustrated in Table 4.1.

To assist with the prioritization of mitigation actions, the STAPLEE prioritization, criteria recommended by FEMA, was used. STAPLEE is a tool used to assess the costs and benefits and overall feasibility of mitigation actions. STAPLEE stands for the following:

- **Social:** Will the action be acceptable to the community? Could it have an unfair effect on a particular segment of the population?
- **Technical:** is the action technically feasible? Are there secondary impacts? Does it offer a long-term solution?
- **Administrative:** Are there adequate staffing, funding and maintenance capabilities to implement the project?
- **Political:** Will there be adequate political and public support for the project?
- **Legal:** Does your jurisdiction have the legal authority to implement the action?
- **Economic:** is the action cost-beneficial? Is there funding available: Will the action contribute to the local economy?
- **Environmental:** Will there be negative environmental consequences from the action? Does it comply with environmental regulations? Is it consistent with community environmental goals?

The HMPC was asked to review the STAPLEE score sheet and list of mitigation actions and assign a High, Medium or Low score to each item to help determine the item's priority. Each action item was discussed and a consensus reached by the group on the importance of each item.

Table 4.1 STAPLEE Evaluation	Socially Acceptable	Technically Feasible	Administrative	Politically Acceptable	Legal	Economically Feasible	Environmentally Sound
Action 1: Need road and bridge upgrades to improve drainage and reduce flooding	•	•	•	•	•		•
Action 2: Need locator/address information on 9-1-1 calls faster than it occurs now.	•	•	•	•	•	•	•
Action 3: Need trees trimmed near power lines	•	•	•	•	•	•	•
Action 4: Need trees trimmed & dead ones removed along streets/roads	•	•	•	•	•	•	•
Action 5: Need all house addresses posted, especially in rural areas.	•	•	•	•	•	•	•
Action 6: Need alternative/temporary housing/designated shelters for a variety of disasters.	•			•	•		•
Action 7: Need alternative/temporary mobile triage unit.	•	•	•	•	•		•
Action 8: Improve emergency services/response in rural areas	•			•	•		•
Action 9: Need early warning systems in Doolittle, Edgar Springs, the county areas and improved/expanded system in St. James.	•	•		•	•		•
Action 10: Need local agreements between public agencies and private contractors to work together.	•	•		•	•	•	•
Action 11: Need to develop CERT program.	•	•	•	•	•	•	•
Action 12: Need to encourage earthquake-proof equipment in hospital, 9-1-1 center, nursing homes, EEOC.	•	•	•	•	•		•
Action 13: Need to encourage citizens to have weather radio, emergency medical kit, water, flashlights, blankets, medicine, etc. to have if evacuated or have to endure without utilities.	•	•	•	•	•	•	•
Action 14: Need countywide drill for disaster.	•	•		•	•		•
Action 15: Need more training (fire drills, evacuation drills, participation in statewide drills, incident command, etc.)	•	•	•	•	•		•
Action 16: Need to encourage business/government to have a disaster plan and implement it	•	•		•	•		•
Action 17: Need to address flood-prone areas (Beaver Creek, Gale Bullman Auditorium)	•	•	•	•	•		•
Action 18: Need storm water drainage plan in Rolla (currently in works).	•	•	•	•	•	•	•
Action 19: Need stronger floodplain permit enforcement outside city of Rolla.				•	•		•

Table 4.1 STAPLEE Evaluation	Socially Acceptable	Technically Feasible	Administrative	Politically Acceptable	Legal	Economically Feasible	Environmentally Sound
Action 20: Need to develop evacuation plans and procedures (consider school buses)	•	•		•	•	•	•
Action 21: Need stronger water conservation plans.	•	•	•	•	•		•
Action 22: Need early warning system for homes below dams.	•			•	•		•
Action 23: Need to monitoring systems for dams.	•			•	•		•
Action 24: Need to make residents aware of fire hazards (fire prevention).	•	•	•	•	•	•	•
Action 25: Need to educate residents on how to shut down utilities, use fire extinguishers.	•	•	•	•	•	•	•
Action 26: Need to secure propane tanks in flood prone areas.	•	•		•	•		•
Action 27: Communication between agencies (designated frequency, coordinating alternative communication methods like ham radios).	•	•		•	•	•	•
Action 28: Need to improve public media communications for warnings, updates (radio, cable stations, local channels).	•	•	•	•	•	•	•
Action 29: Emergency backup power for water systems (drinking & wastewater).	•	•	•	•			•

Following the STAPLEE scoring, the action items were reviewed again to determine if any could be combined or if any were not mitigation actions. The results of that review were:

- Action items 2, 6, 7, 8 and 20 were discarded because they were designated as response or preparedness instead of mitigation.
- Action item 22, “Need early warning system for homes below dams”, though important, was not addressed due to the costliness of implementing such a program. This item will be further examined in the five-year review.
- Action item 23, “Need monitoring system for dams” was brought up after the announcement that MDNR would no longer monitor private dams throughout Missouri. Self-inspection through the hiring of private entity seemed the only alternative at the time and too costly for most landowners. This action will be examined during the five-year review, at which time a solution may be arranged with MDNR for dam inspection.
- All other needs created during the needs assessment were converted to hazard mitigation action items and integrated into the mitigation strategy that follows.

After the planning committee decided on which needs to address in the mitigation strategy, the committee prioritized the needs and discussed action items that could address those needs. HMPC members reviewed and discussed each need and assigned either High, Medium or Low priority to each item. In addition the committee discussed who the responsible party or parties should be for each mitigation measure. The results of that prioritization process are described below in Table 4.2.

Table 4.2 Phelps County Mitigation Action Item Prioritization

Mitigation Measure	Possible Action Items	Actions Taken Since 2005	Priority	Responsible Party
Improve low water crossings and upgrade bridges on county roads that are prone to flooding.	Seek funding and/or budget for improving low water crossings.		High	County Commission and city govt. where applicable
Minimum standards for building codes.	Encourage communities to adopt building codes		Medium	Local Government
Improve floodplain management through better monitoring, education/awareness and additional buyouts.	Adopt more aggressive methods for monitoring. Develop & disseminate outreach programs to educate key groups.			Local Government flood plain managers
Early warning systems	Promotional campaign by all local governments to encourage citizens to purchase weather radios. St. James should work to expand its existing warning siren system. The cities of Doolittle and Edgar Springs should work toward establishing a siren system. Local government to check into USDA grants for sirens.	Newburg has upgraded siren systems.	High	Local Government Local EMDs
More cooperation and collaboration between agencies, local governments and businesses.	Hold annual meeting of responders/local govt/businesses/utilities, etc. to discuss issues, network.		High	Local Government EMDs
Shelters	Pre-designate shelters with adequate facilities. Increase public	The Phelps County Disaster Committee	High	Public Health Red Cross Schools

Mitigation Measure	Possible Action Items	Actions Taken Since 2005	Priority	Responsible Party
	awareness of where shelters are and when they are open. Provide training for shelter workers. Provide basic equipment & funding.	established shelters in St. James, Edgar Springs and Rosati and provided basic supplies.		
Maintain tree trimming programs.		Following ice storms of recent years, utilities have adopted much more aggressive tree trimming programs and most communities have followed suit.	Medium	Utilities Local Government
Insure that all schools have certified safe rooms or adequate storm shelter areas.	Have a professional safety assessment done of all schools to determine what areas of the schools are "safe" for sheltering. Seek methods of funding the construction of safe rooms where needed.		High	Local Schools
Provide training/information for residents on emergency basics, such as how to use fire extinguishers, shut off utilities, what should be in a home emergency kit,	Develop and train CERT team. Provide classes on specific subjects for the public. Provide press releases, brochures	There have been two CERT trainings in Phelps County. Individual preparedness info is distributed thru City of Rolla's website – has links to state websites with preparedness info. "Ready in 3" information is distributed to the public through	Medium	EMD Local Emergency Response Agencies Public Health

Mitigation Measure	Possible Action Items	Actions Taken Since 2005	Priority	Responsible Party
		radio programs and local media. Brochures for "Ready in 3" are available at local public offices. Press releases are regularly printed in local newspapers and the Rolla city newsletter.		

Source: Phelps County Hazard Mitigation Planning Committee

All other needs created during the needs assessment were converted to hazard mitigation action items and integrated into the mitigation strategy that follows. More details on actions taken since 2005 are also included in the following strategy.

4.2.2 Mitigation Goals and Objectives

The Phelps County hazard mitigation planning committee asked MRPC staff to further develop the goals by adding objectives and recommendations based on the committee’s discussions. The following goals and objectives were reviewed and approved by the Phelps County hazard mitigation planning committee as best reflecting and addressing the needs of Phelps County and were reconfirmed at the five-year review.

Goal 1: Reduce risks and vulnerabilities of people in hazard-prone areas through current technology, better planning and hazard mitigation activities.

Objectives

- 1.1 Advise the public about health and safety precautions to guard against injury and loss of life from natural hazards.

Recommendation: Education program on personal emergency preparedness (turning off utilities, preparing emergency survival kits that include water, blankets, flashlights, etc).

Recommendation: Promote development of emergency plans by businesses.

- 1.2 Use the latest technology to provide adequate warning, communication, and mitigation of hazard events.

Recommendation: Encourage cities to obtain early warning systems and improved communications systems.

Recommendation: Promote use of weather radios by local residents and schools to ensure advanced warning about threatening weather.

Recommendation: Partner with local radio stations to ensure that appropriate warning is provided to county residents of impending disasters.

1.3 Reduce the danger to, and enhance protection of, dangerous areas during hazard events.

Recommendation: Enact tree trimming programs, dead tree removal programs.

Recommendation: Examine potential road and bridge upgrades that would reduce danger to residents during occurrences of natural disasters.

Goal 2: Reduce the potential impact of natural disasters on new and existing properties and infrastructure and the local economy.

Objectives

2.1 Implement cost-effective activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to natural hazards.

Recommendation: Encourage a self-inspection program at critical facilities to assure that the building infrastructure is earthquake and tornado resistant.

Recommendation: Encourage businesses to develop and implement emergency plans.

2.2 Discourage new development and encourage preventive measures for existing development in areas vulnerable to natural hazards, thereby reducing repetitive losses to the National Flood Insurance Program.

Recommendation: Educate residents about the dangers of floodplain development and the benefits of the National Flood Insurance Program

2.3 Use regulations to ensure that development will not put people in harm's way or increase threats to existing properties.

Recommendation: Encourage minimum standards for building codes in all cities.

Recommendation: Encourage local governments to develop and implement regulations for the securing of hazardous materials tanks and mobile homes to reduce hazards during flooding and high winds.

Goal 3: Promote education, outreach, research and development programs to improve the knowledge and awareness among the citizens and industry about hazards they may face, their vulnerability to identified hazards, and hazard mitigation alternatives that can reduce their vulnerabilities.

Objectives

3.1 Heighten public awareness of the full range of natural hazards by developing education and outreach programs.

Recommendation: Distribute SEMA brochures at public facilities and events.

Recommendation: Regular press releases from county and city EMD offices concerning hazards, where they strike, frequency and preparation.

- 3.2 Provide information on tools, partnership opportunities, and funding resources to assist in implementing mitigation activities.

Recommendation: Encourage local residents to purchase weather radios through press releases and brochures.

Recommendation: Ask SEMA mitigation specialists to present information to city councils, county commission, Meramec Regional Planning Commission, Meramec Regional Emergency Planning Committee.

- 3.3 Publicize and encourage the adoption of appropriate hazard mitigation measures by county and city governments.

Recommendation: Cities/county should continually re-evaluate hazard mitigation plan and merge with other community planning.

Recommendation: Press releases by cities/county regarding adopted mitigation measures to keep public abreast of changes and/or new regulations.

- 3.4 Educate the public on actions they can take to prevent or reduce the loss of life or property from all natural hazards.

Recommendation: Encourage county health department and local American Red Cross chapter to use publicity campaigns that make residents aware of proper measures to take during times of threatening conditions(e.g. drought, heat wave)

Recommendation: Publicize county or citywide drills.

Goal 4: Strengthen communication and coordinate participation between public agencies, citizens, non-profit organizations, business, and industry to create a widespread interest in mitigation.

Objectives

- 4.1 Build and support local partnerships to continuously become less vulnerable to hazards.

Recommendation: Encourage joint meetings of different organizations/agencies for mitigation planning.

Recommendation: Joint training (and drills) between agencies, public & private entities (including schools/businesses).

Recommendation: Pool different agency resources to achieve widespread mitigation planning results.

- 4.2 Encourage active participation and responsibility of chief elected officials in mitigation planning and activities.

Recommendation: Encourage meetings between EMD, city/county, and SEMA to

familiarize officials with mitigation planning and implementation and budgeting for mitigation projects.

Goal 5: Establish priorities for reducing risks to the people and their property with emphasis on long-term and maximum benefits to the public rather than short-term benefit of special interests.

Objectives

5.1 Incorporate hazard mitigation into the long-range planning and development activities of the county and each jurisdiction.

Recommendation: Encourage communities to budget for enhanced warning systems.

Recommendation: Encourage all communities to develop stormwater management plans.

Recommendation: Coordinate and integrate hazard mitigation activities, where appropriate, with emergency operations plans and procedures.

Recommendation: Encourage cities to require contractor stormwater management plans in all new development—both residential and commercial properties.

5.2 Promote beneficial uses of hazardous areas while expanding open space and recreational opportunities.

Recommendation: Encourage local governments to purchase properties in the floodplain as funds become available and convert that land into public space/recreation area.

Recommendation: Encourage communities to discuss zoning repetitive loss properties in the floodplain as open space.

Goal 6: Secure resources for investment in hazard mitigation

Objectives

6.1 Research the use of local and outside sources of funding

Recommendation: Work with SEMA Region I coordinator to learn about new mitigation funding opportunities.

Recommendation: Structure grant proposals for road/bridge upgrades so that hazard mitigation concerns are also met.

Recommendation: Work with state/local/federal agencies to include mitigation in all economic and community development projects.

Recommendation: Encourage local governments to budget for mitigation projects.

6.2 Encourage participation of property owners in investing in hazard mitigation projects on their own property.

Recommendation: Encourage cities and counties to implement cost-share programs with private property owners for hazard mitigation projects that benefit the community as a whole.

Recommendation: Implement public awareness program about the benefits of hazard mitigation projects, both public and private.

6.3 In the event of a disaster declaration, be prepared to apply for hazard mitigation grants for prioritized projects.

Recommendation: Prioritize mitigation projects, based on cost-effectiveness and starting with those sites facing the greatest threat to life, health and property.

4.3 Implementation of Mitigation Actions

44 CFR Requirement 201.6(c)(3)(ii): The mitigation strategy shall include an action strategy describing how the actions identified in paragraph (c)(2)(ii) will be prioritized, implemented and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefits review of the proposed projects and their associated costs.

After determining which action items to include in the mitigation strategy, the committee asked MRPC staff to complete the following tasks:

- Develop an outline for programs to address each planning goal;
- Assign the action items to the appropriate goals and objectives;
- Identify other local plans that would need to be coordinated with the specific action items;
- Organize action items into each of these overarching programs
- Outline a strategy for each program;
- Develop a timeline to accomplish each action item;
- Identify potential partners;
- Assign responsibility for the identified actions
- Estimate costs for implementing programs
- Identify possible funding sources

The following section outlines the six over arching programs that were developed to implement the mitigation strategy developed for Phelps County. Those programs include:

1. Reducing Vulnerability of the People;
2. Property and Infrastructure Protection;
3. Outreach and Education;
4. Communication Enhancement;
5. Long-Term Planning; and
6. Finding Funding for Mitigation Projects

For each program the following information is provided:

- Ties the program to one of the adopted mitigation goals and related objectives;
- Lists the community programs or plans that should be cross-coordinated with the program;

- Lists the actions/measures to be taken;
- Provides a short narrative on the strategy;
- Provides a timeline, divided by phases, of milestones and target dates to reach those milestones;
- The acceptance or approval that needs to be accomplished in order for the program to be successful
- A list of potential partners
- Assignment of general responsibility for the program and action items contained within It;
- A list of each action within the program including the responsible party for that action and the estimated cost of completing the action; and
- Potential sources for funding the program.

A summary of the hazard mitigation programs developed for Phelps County can be found at the end of this section in Figure 4.4. Summary of Mitigation Programs and Action Items Developed for Phelps County and All Jurisdictions. This table shows each program and action item and to which jurisdictions each action item applies. It also lists the action item's priority ranking, the goal it applies to and what hazards it addresses.

In addition, at the end of this section is Table 4.3 which summarizes the mitigation strategy and includes which programs and action items are applicable to which jurisdictions, goals, hazards and their priority. In addition Tables 4.4 through 4.8 summarize each program and action item and the estimated costs, responsible parties for each and potential sources of funding. And lastly, Figure 4.9 which illustrates which action items address and support the National Flood Insurance Program.

Those areas where progress has been made are noted in the following narrative as Achievements 2004-2009. Those action items with no achievements listed have been deferred due to lack of funding or administrative support. The HMPC has reviewed the action items and renewed their commitment to move forward with those action items that have been deferred to this point and the participating jurisdictions, by adopting the plan, are making the commitment to continue to work toward accomplishing the goals and actions as outlined in this plan.

Program Title: Reducing Vulnerability of the People

Goal: Reduce risks and vulnerabilities of people in hazard-prone areas through current technology, better planning and hazard mitigation activities through the following objectives:

1. Advise the public about health and safety precautions to guard against injury and loss of life from natural hazards.
2. Use the latest technology to provide adequate warning, communication and mitigation of hazard events.
3. Reduce the danger to, and enhance protection of, dangerous areas during hazard events.

Necessary Community Program/Plan Cross-Coordination

Local Emergency Operations Plans

Comprehensive Economic Development Strategy for the Meramec Region

Rolla Open Channel Capital Improvements Program

Rolla Area Community Housing Assessment

Ordinance to Establish Regulations for the Construction of Roads and For Road Use

Ordinance Establishing the Procedure for Accepting and Approving a Subdivision Plat Within the County, Establishing Subdivision Public Road Dedication and Accepting a Road into the County Road System for Maintenance

Actions/Measures to be Taken and Progress Made 2004-2009

Action 1: Implement an education program on personal emergency preparedness that teaches residents how to prepare emergency medical kits that include water, blankets, flashlights, etc. and how to shut off their home utilities in times of emergency.

Achievements 2004-2009: The City of Rolla’s website (www.rollacity.org/emergency) provides information on the individual preparedness program “Ready in 3” as well as links to state websites with preparedness information. In addition to the website, “Ready in 3” information is distributed to the public through radio programs (Morning Mayor Show) and local media. Brochures for “Ready in 3” are available at local public offices including Rolla City Hall, Phelps County Courthouse and MRPC. Press releases on disaster related information are regularly disseminated by SEMA and printed in local newspapers and the Rolla city newsletter.

Action 2: Promote the development of emergency plans by businesses.

Achievements 2004-2009: The Rolla Area Chamber of Commerce promotes the development of emergency plans by local businesses.

Action 3: Encourage cities to obtain early warning systems and improved communications systems to minimize loss of life.

Achievements 2004-2009: A number of improvements have been made to warning systems and emergency communications in Phelps County over the past five years. The City of Rolla now has 10 warning sirens and is in the process of adding repeaters. Newburg, with grant funds provided

by USDA Rural Development, has installed a second warning siren. The City of St. James is currently discussing adding additional sirens to its warning system.

In regards to enhanced communications, the Region I Homeland Security Oversight Committee (HSOC) has made interoperable communications a priority for its grant program. The HSOC conducted a needs assessment of all the emergency response agencies in the six-county region to determine their interoperable communications capabilities and then used grant funds to purchase handheld radios for those agencies that demonstrated the greatest need. Recipients in Phelps County include Rolla Rural Fire Department, Edgar Springs Fire Department, Doolittle Rural Fire Department, Missouri University of Science and Technology Police and the Region I HSRT. In addition, HSOC purchased satellite telephone systems for each of the six counties, including Phelps County. Rolla Fire & Rescue, with financial assistance from SEMA and FEMA, has developed a regional Homeland Security Response Team for Region I. The HSRT has a new mobile command center. This vehicle is designed for the use as a command post, rehabilitation center (heating and cooling center), and communications. The unit can serve as a backup 9-1-1 center as all phone lines are capable of transferring 9-1-1 calls through the communications system. The unit is equipped with satellite communications with four phone lines, computer system, internet connectivity, dual “on the run” televisions for news and weather, two UHF programmable mobile radios, one VHF programmable mobile radio, one 800/900 programmable mobile radio, ACU 1000 – communications, a lighting system, meeting space with food and supplies and restroom facilities. In 2009, the command post will be updated with eight additional phone lines and a dispatch console which will allow the dispatcher to communicate through all radio channels and all 12 phone lines from one central location, much like a 9-1-1 console.

Action 4: Promote the use of weather radios by local residents and schools to ensure advanced warning about threatening weather.

Action 5: Partner with local radio stations to assure that appropriate warning of impending disasters is provided to all residents in the countywide listening area.

Achievements 2004-2009: Contacts have been made with the local radio station to work with local emergency management personnel during severe weather and disasters to provide assistance in warning the public and providing preparedness information.

Action 6: Encourage the county’s tree trimming programs that reduce damages during high winds and severe winter storms while also encouraging the dead tree removal program implemented by Mark Twain National Forest.

Achievements 2004-2009: Although local jurisdictions, electric co-ops and utility companies did have tree trimming programs in place, those activities were stepped up and intensified following the ice storm of 2006. These programs are now more comprehensive and aggressive than they were prior to that event. Trimming distances have been increased from six feet to 10 feet.

Action 7: Examine potential road and bridge upgrades that would reduce danger to residents during occurrences of natural disasters.

Achievements 2004-2009: Phelps County continues to review roads and bridges and work to make this infrastructure less vulnerable to disasters. The County has made improvements to one bridge on the Dry Fork, County Road 8010. The county widened the throat the bridge and

reduced problems with flooding in the area that was caused by constriction of water flowing under the bridge.

Action 8: Encourage the construction of storm shelters, especially tornado safe rooms, near schools & large employment centers.

Strategy: Establish a mitigation planning committee comprised of emergency response agencies, health department officials, Red Cross employees, CERT teams, local businesses, schools and citizens, who will plan for and implement the activities and projects necessary to accomplish the stated mitigation goal. A second partnership comprised of all EMD directors from the various jurisdictions in the county should be established to meet once each year to discuss emergency planning and mitigation issues and share ideas.

Achievements 2004-2009: Although a separate mitigation planning committee has not been formed, the Phelps County Disaster Committee (PCDC) provides a forum for representatives of local response agencies, not-for-profits, elected officials, concerned citizens, health department, hospital and the university to meet on a regular basis and work on disaster preparedness. The PCDC has formed a Medical Reserve Corps, distributed family preparedness materials through local schools and senior centers, provided basic startup kits to local short-term shelters and sponsored CERT training in Phelps County.

In addition, the Region I HSOC, of which Phelps County is a member, has provided a regional forum for disaster planning and preparedness. The HSOC is also providing training for CERT teams in each of the region's six counties. There is also a program to establish enough shelters to house 10 percent of the region's population and to train shelter volunteers. The HSOC has funded mass care shelter trailers for each county as well as a mass casualty trailer and an agricultural emergency response trailer. The HSOC grant program has also funded a generator and oxygen transfill system for the St. James Ambulance District that provides oxygen refill services for county residents during power outages.

In 2008 SEMA implemented a Faith Based Initiative where trainings were held around the state, including in Rolla, to provide information to churches on how they can better prepare their membership for disasters and provide support for local communities during disaster events.

Phase 1: Within six months, with the committee's assistance:

1. Form a committee of emergency response agencies, health department officials, Red Cross employees, CERT team members, local businesses, schools, chamber of commerce members and citizens who will review current education programs—if any—and design and implement a comprehensive program.
2. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and arrange for possible joint purchases of equipment or the sale of older equipment to smaller cities.
3. Meet with local radio station personnel to determine and implement the best means of providing up to date information and warnings to the public.

4. Begin working with local utilities to make sure that power lines are regularly inspected and tree limbs and dead trees are removed.

Phase 2: Within one year, with the committee's assistance:

1. Send press releases to local media discussing self-readiness and promoting the importance of preparing emergency medical kits.
2. Partner with local businesses to display sample kits or items that would be useful in such kits.
3. Work with local businesses to educate on the importance of development and implementing emergency plans.
4. Invite SEMA representatives to attend and speak at local meetings of businesspersons (chamber of commerce, Rotary, Kiwanis, etc.)
5. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and arrange for possible joint purchases of equipment or the sale of older equipment to smaller cities.
6. Research new techniques in early warning and communication technology.
7. Establish a schedule to regularly upgrade warning and communications equipment.
8. Work with NOAA to develop a promotional campaign to encourage the purchase of weather radios.
9. Work with weather radio manufacturers and/or retailers to arrange bulk purchasing to lower costs for county/city residents.
10. Encourage schools, daycares, nursing homes and other vulnerable facilities to purchase weather radios to improve their warning capabilities.
11. Establish and practice procedures for communication between the EMD and emergency operations center during incidents.
12. Promote to the public what stations to tune into for weather advisories and information during emergencies.
13. Continue working with local utilities to make sure that power lines are regularly inspected and tree limbs and dead trees are removed.
14. Maintain a list of road and bridge-related mitigation projects that can be implemented as funds become available.

Phase 3: Within three years, with the committee's assistance:

1. Continue sending press releases to local media discussing self-readiness and promoting the importance of preparing emergency medical kits.
2. Work with city utilities and rural electric cooperatives to develop and implement an education and awareness program on shutting off utilities (water, electric, gas) through mailings, articles in industry publications or newsletters.
3. Provide technical assistance through local and state resources to businesses.
4. Invite local businesses to participate in drills and exercises.
5. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and arrange for possible joint purchases of equipment or the sale of older equipment to smaller cities.
6. Continue researching new techniques in early warning and communication technology.

7. Review the schedule of regularly upgrading warning and communications equipment and implement appropriately.
8. Incorporate hazard mitigation considerations into infrastructure upgrades.
9. Continue working with local utilities to make sure that power lines are regularly inspected and tree limbs and dead trees are removed.
10. Review list of road and bridge-related mitigation projects that can be implemented as funds become available.
11. Promote to the public what stations to tune into for weather advisories and information during emergencies.

Phase 4: Within five years, with the committee's assistance:

1. Continue sending press releases to local media discussing self-readiness and promoting the importance of preparing emergency medical kits.
2. Continue working with city utilities and rural electric cooperatives to develop and implement an education and awareness program on shutting off utilities (water, electric, gas) through mailings, articles in industry publications or newsletters.
3. Continue providing technical assistance through local and state resources to businesses.
4. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and arrange for possible joint purchases of equipment or the sale of older equipment to smaller cities.
5. Continue researching new techniques in early warning and communication technology.
6. Review the schedule of regularly upgrading warning and communications equipment and implement appropriately.
7. Promote to the public what stations to tune into for weather advisories and information during emergencies.
8. Continue working with local utilities to make sure that power lines are regularly inspected and tree limbs and dead trees are removed.
9. Incorporate hazard mitigation considerations into infrastructure upgrades.
10. Review list of road and bridge-related mitigation projects that can be implemented as funds become available.

Acceptance and Approval: Local government acceptance and approval through local government resolution of the details of this mitigation program document in no way obligates the local government to actually carry out its provisions. Each individual action contained in this document that incurs a cost and/or liability must still be approved by separate governmental actions commensurate with the normal governmental proceedings for approving such actions, in accordance with local ordinances, laws and regulations.

Potential Partners:

City Government
County Government
Emergency Management Directors
Mitigation Planning Committee
Phelps County Disaster Committee
Region I Homeland Security Oversight Committee

Area churches
 Phelps/Maries County Health Department
 Local Emergency Response Agencies (Fire, Emergency Medical, Law Enforcement)
 Phelps/Pulaski Chapter of the American Red Cross
 Missouri State Emergency Management Agency
 National Weather Service/NOAA
 Local radio stations, newspapers and public access television
 Phelps County School Districts

General Responsibility: It is recommended that the county and city emergency management directors and the Mitigation Planning committee accept general responsibility to steer the development and execution of the activities and projects required to accomplish the goals, objectives and strategies identified in this program document. With the exception of normal responsibility of local governmental agents, this is a voluntary participation that in no way states nor implies the acceptance of any liability for the success or failure of the program, activities, events or projects undertaken to complete the program or any portions thereof.

Potential Lead Responsibility by Action	Estimated Cost
Action 1: All EMDs, Co. Health Dept.	\$1,500
Action 2: County EMD, Co. Health Dept.	\$2,500
Action 3: All EMDs and city/county government	\$1,500
Action 4: All EMDs, Local Government, Emergency Responders, School Districts	\$500
Action 5: All EMDs	\$500
Action 6: Local government, utilities, MTNF	Unknown
Action 7: Local Government	\$5,000
Total Estimated Cost:	\$11,500

Sources of Funding: Grants, local general revenue funds, private financial donations and private donations of goods and services.

Summary of Actions/Measures Achieved 2004-2009:

In the five year interim since the hazard mitigation plan was adopted, Phelps County and the communities within the county have made good progress in making the county’s population less vulnerable to disasters. Activities have included improving early warning systems in Rolla and Newburg; providing education/awareness materials to the public on preparedness; providing training on CERT and encouraging CERT members to become more involved in emergency preparedness and their local emergency response agencies; working with local radio stations to improve communication leading up to and during disaster events; providing training to volunteers on establishing and operating shelters; initiated more aggressive tree trimming programs; established an oxygen transfill station with generator backup to refill oxygen bottles during a power outage; acquired a trailer with shelter supplies that can be moved around the county and region to support shelters during disasters; established a Medical Reserve Corps; replacing a low water crossing with a bridge; and improving communications with the

distribution of 15 interoperable handheld radios to five agencies in Phelps County as well as a satellite phone system, and the acquisition of and upgrades to a mobile command center. All of these activities have lessened the vulnerability of the County's residents and businesses in disasters.

Program Title: Property and Infrastructure Protection

Goal: Reduce the potential impact of natural disasters on new and existing properties and infrastructure and the local economy through the following objectives:

1. Implement cost-effective activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities and other property more resistant to natural hazards.
2. Discourage new development and encourage preventive measures for existing development in areas vulnerable to natural hazards, thereby reducing repetitive losses to the National Flood Insurance Program.
3. Use regulation to ensure that development will not put people in harm's way or increase threats to existing properties.

Necessary Community Program/Plan Cross-Coordination

Local Emergency Operations Plans

Comprehensive Economic Development Strategy for the Meramec Region

Rolla Open Channel Capital Improvements Program

Rolla Area Community Housing Assessment

Ordinance to Establish Regulations for the Construction of Roads and For Road Use

Ordinance Establishing the Procedure for Accepting and Approving a Subdivision Plat Within the County, Establishing Subdivision Public Road Dedication and Accepting a Road into the County Road System for Maintenance

Actions/Measures to be Taken

Action 1: Encourage a self-inspection program at critical facilities to assure that the building infrastructure is earthquake and tornado resistant.

Action 2: Educate residents about the dangers of floodplain development and the benefits of the National Flood Insurance Program

Achievements 2004-2009: Press releases on the NFIP and the dangers of floodplain development are released to area news media on a regular basis to raise awareness of the general public on floodplain issues.

Action 3: Encourage minimum standards for building codes in all cities.

Action 4: Encourage local governments to develop and implement regulations for the securing of hazardous material tanks and mobile homes to reduce hazards during flooding and high winds.

Achievements 2004-2009: In June 2007, the Phelps County Commission adopted a set of regulations on the following activities:

- location and relocation of utility facilities on county roadways and right of ways; providing for uniform location, surface and underground requirements
- construction of roads that are to become part of the county road system which includes a requirement for a stormwater plan within new subdivisions being planned in the county

Strategy: Establish a mitigation planning committee comprised of emergency response agencies, health department officials, Red Cross employees, CERT teams, local businesses, schools and citizens, who will plan for and implement the activities and projects necessary to accomplish the stated mitigation goal. A second partnership comprised of all EMD directors from the various jurisdictions in the county should be established to meet once each year to discuss emergency planning and mitigation issues and share ideas.

Achievements 2004-2009: Although a separate mitigation planning committee has not been formed, the Phelps County Disaster Committee (PCDC) provides a forum for representatives of local response agencies, not-for-profits, elected officials, concerned citizens, health department, hospital and the university to meet on a regular basis and work on disaster preparedness. The PCDC has formed a Medical Reserve Corps, distributed family preparedness materials through local schools and senior centers, provided basic startup kits to local short-term shelters and sponsored CERT training in Phelps County.

In addition, the Region I HSOC, of which Phelps County is a member, has provided a regional forum for disaster planning and preparedness. The HSOC is also providing training for CERT teams in each of the region's six counties. There is also a program to establish enough shelters to house 10 percent of the region's population and to train shelter volunteers. The HSOC has funded mass care shelter trailers for each county as well as a mass casualty trailer and an agricultural emergency response trailer. The HSOC grant program has also funded a generator and oxygen transfill system for the St. James Ambulance District that provides oxygen refill services for county residents during power outages.

In 2008 SEMA implemented a Faith Based Initiative where trainings were held around the state, including in Rolla, to provide information to churches on how they can better prepare their membership for disasters and provide support for local communities during disaster events.

Phase 1: Within six months, with the committee's assistance:

1. Distribute floodplain development brochures at public buildings, real estate offices and banks.
2. Develop and send press releases to local media regarding the dangers of developing in the floodplain, current county floodplain regulations and information about the National Flood Insurance Program.

Phase 2: Within one year, with the committee's assistance:

1. City engineer/building inspector and EMD develop guidelines for what should be included when examining critical facilities.

2. Floodplain administrators make presentations at chamber of commerce meetings on floodplain issues.
3. Provide sample minimum standard building codes to all communities.
4. Provide sample ordinances regarding the securing of hazardous material tanks and trailers to all communities.
5. Research new methods of securing hazardous material tanks and mobile homes.
6. Continue distributing floodplain development brochures at public buildings, real estate offices and banks.
7. Continue to develop and send press releases to local media regarding the dangers of developing in the floodplain, current county floodplain regulations and information about the National Flood Insurance Program.

Phase 3: Within three years, with the committee's assistance:

1. Invite SEMA representative to attend city council meeting to promote benefits of adopting and enforcing citywide building codes.
2. Launch promotional campaign on the hazards of not securing propane tanks and the solutions to this dilemma.
3. Mitigation planning committee should develop and implement a program to work with local businesses and critical facility operators to encourage annual self-inspections.
4. Local governments develop a certification/awards program to recognize businesses/facilities that participate in an annual self-inspection program that ensures their building/infrastructure is earthquake and tornado resistant.
5. City engineer/building inspector and EMD meet to re-examine guidelines for what should be included when examining critical facilities.
6. Continue distributing floodplain development brochures at public buildings, real estate offices and banks.
7. Floodplain administrators make presentations at chamber of commerce meetings on floodplain issues.
8. Continue to develop and send press releases to local media regarding the dangers of developing in the floodplain, current county floodplain regulations and information about the National Flood Insurance Program.
9. Continue researching new methods of securing hazardous material tanks and mobile homes.

Phase 4: Within five years, with the committee's assistance:

1. Work with propane companies and mobile home sales/installers to encourage them to adopt minimum standards for securing their products.
2. Continue with promotional campaign on the hazards of not securing propane tanks and the solutions to this dilemma.
3. Mitigation planning committee continues working with local businesses and critical facility operators to encourage annual self-inspections of buildings.

4. Local governments should continue to give certification/awards that recognize businesses/facilities that participate in an annual self-inspection program that ensures their building/infrastructure is earthquake and tornado resistant.
5. City engineer/building inspector and EMD should meet to re-examine guidelines for what should be included when examining critical facilities.
6. Continue distributing floodplain development brochures at public buildings, real estate offices and banks.
7. Floodplain administrators continue making annual presentations at chamber of commerce meetings on floodplain issues.
8. Continue to develop and send press releases to local media regarding the dangers of developing in the floodplain, current county floodplain regulations and information about the National Flood Insurance Program.
9. Continue researching new methods of securing hazardous material tanks and mobile homes.

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Potential Partners:

- City Engineers
- Emergency Management Directors
- Mitigation Planning Committee
- Floodplain Administrator
- Missouri State Emergency Management Agency
- Corps of Engineers
- Propane trade association
- Mobile home trade association
- Local radio stations, newspapers and public access television

General Responsibility: It is recommended that the county and city emergency management directors and the Mitigation Planning committee accept general responsibility to steer the development and execution of the activities and projects required to accomplish the goals, objectives and strategies identified in this program document. With the exception of normal responsibility of local governmental agents, this is a voluntary participation that in no way states nor implies the acceptance of any liability for the success or failure of the program, activities, events or projects undertaken to complete the program or any portions thereof.

Potential Lead Responsibility by Action		Estimated Cost
Action 1:	All EMDs	\$1,500
Action 2:	Floodplain Administrator, City Engineers, County EMD	\$1,500

Action 3:	County EMD and Local Government	\$1,500
Action 4:	County EMD, Trade Associations and Local Government	\$3,000
Total Estimated Cost:		\$7,500

Sources of Funding: Grants, local general revenue funds, private financial donations and private donations of goods and services.

Summary of Actions/Measures Achieved 2004-2009:

In the five year interim since the hazard mitigation plan was adopted, Phelps County and the communities within the county have made good progress in making the county’s infrastructure and property less vulnerable to disasters. Activities have included regularly distributing press releases on floodplain issues and guidelines as well as the development and adoption of County regulations that include standardizing the location and relocation of utilities in county right of ways and the requirement of all proposed subdivisions to have stormwater plans.

Program Title: Outreach and Education

Goal: Promote education, outreach, research and development programs to improve the knowledge and awareness among the citizens and industry about hazards they may face, their vulnerability to identified hazards and hazard mitigation alternatives that can reduce their vulnerabilities through the following objectives:

1. Heighten public awareness of the full range of natural hazards by developing education and outreach programs.
2. Provide information on tools, partnership opportunities and funding resources to assist in implementing mitigation activities.
3. Publicize and encourage the adoption of appropriate hazard mitigation measures by county and city governments.
4. Educate the public on actions they can take to prevent or reduce the loss of life or property from all natural hazards.

Necessary Community Program/Plan Cross-Coordination

Local Emergency Operations Plans
 Comprehensive Economic Development Strategy for the Meramec Region
 Rolla Open Channel Capital Improvements Program

Actions/Measures to be Taken

Action 1: Distribute SEMA brochures at public facilities and events.

Achievements 2004-2009: “Ready in 3” brochures are available at several local public facilities including Rolla City Hall, Phelps County Courthouse and MRPC office. These materials are also routinely distributed by fire departments and the health department at community events.

Action 2: Distribute regular press releases from county and city EMD offices concerning hazards, where they strike, frequency and preparation.

Achievements 2004-2009: Press releases on disaster preparedness provided by SEMA are regularly distributed to area media and included in city newsletters and on local websites.

Action 3: Encourage local residents to purchase weather radios through press releases and brochures.

Action 4: Ask SEMA mitigation specialists to present information to city councils, county commission, and local planning organizations.

Achievements 2004-2009: SEMA representatives have participated in meetings following local disasters such as the ice storm and tornados. In addition, the Region I area coordinator holds quarterly meetings in the region to share information and encourage networking between agencies.

Action 5: Re-evaluate the hazard mitigation plan and merge with other community planning.

Achievements 2004-2009: Planning organizations such as the MRPC work to integrate mitigation objectives into planning documents that are developed or updated on a regular basis such as the Community Economic Development Strategy.

Action 6: Distribute press releases by cities/county regarding adopted mitigation measures to keep public abreast of changes and/or new regulations.

Achievements 2004-2009: The County publicized the regulations passed in 2007 that included requirements for stormwater plans in new subdivisions.

Action 7: Encourage county health department and local American Red Cross chapter to use publicity campaigns that make residents aware of proper measures to take during times of threatening conditions (e.g. drought or heat wave).

Achievements 2004-2009: The Phelps County Health Department and local not-for-profit organizations such as the Red Cross, Salvation Army and GRACE provide information on preparedness to the community. SEMA's Faith Based Initiative also encourages local churches to help their members be more informed and prepared for disasters.

Action 8: Publicize county or citywide drills.

Achievements 2004-2009: Local jurisdictions regularly participate in statewide tornado and severe weather drills. Local media, especially radio stations, publicize upcoming drills.

Strategy: Establish a mitigation planning committee comprised of emergency response agencies, health department officials, Red Cross employees, CERT teams, local businesses, schools and citizens, who will plan for and implement the activities and projects necessary to accomplish the stated mitigation goal. A second partnership comprised of all EMD directors from the various jurisdictions in the county should be established to meet once each year to discuss emergency planning and mitigation issues and share ideas.

Achievements 2004-2009: Local organizations, such as the Phelps County Disaster Committee, fire departments, Red Cross, city and county government and Phelps County Health Department

all provide programs to raise awareness and educate the public on disaster preparedness and hazard mitigation. Red Cross and several local fire departments regularly provide programs on safety and disaster preparedness for local schools and civic organizations. The Phelps County Health Department and many local fire departments provide brochures such as “Ready in 3” at local events such as home shows and health fairs. Local media, including community websites and newsletters regularly include information on preparedness and related activities in the county. The Region I HSOC does regular press releases on its activities and promotes CERT and shelter related training. The City of Rolla public relations specialist is involved with the PCDC and hazard mitigation advisory group and regularly writes and distributes articles related to hazard mitigation.

Phase 1: Within six months, with the committee’s assistance:

1. Distribute SEMA brochures related to hazard mitigation at government buildings, fairs, festivals and other public events or facilities.
2. Write and distribute regular press releases to local media regarding hazards and hazard preparation.
3. Write and distribute press releases that encourage local residents to purchase weather radios.
4. Request city council/county commission to meet once each year with SEMA representative(s) to discuss emergency management and mitigation.
5. Write and distribute press releases when changing mitigation plan to encourage public support and inform the public about new regulations or regulation changes related to mitigation.
6. Make brochures about heat and cold related illnesses available in public facilities (e.g. city hall, county courthouse, health department office).
7. Write and distribute press releases prior to and during seasonal events (e.g. summer heat season, winter storms/cold).
8. Distribute press releases from EMDs regarding upcoming drills/exercises that emergency responders will be participating in to encourage public interest and participation in drills.

Phase 2: Within one year, with the committee’s assistance:

1. Distribute SEMA brochures related to hazard mitigation at government buildings, fairs, festivals and other public events or facilities.
2. Write and distribute regular press releases to local media regarding hazards and hazard preparation.
3. Work with NOAA to develop a promotional campaign to encourage the purchase of weather radios. Look for grants and ways to purchase weather radios in bulk and distribute to agencies that need them; schools, nursing homes, shelters, etc.
4. Work with weather radio manufacturers and/or retailers to arrange bulk purchasing to lower costs for county/city residents.
5. Write and distribute press releases that encourage local residents to purchase weather radios.

6. Request city council/county commission to meet once each year with SEMA representative(s) to discuss emergency management and mitigation.
7. Inform planning organizations and planners of the existence of the hazard mitigation plan and the need to incorporate it into future planning processes.
8. Provide copies of hazard mitigation plan to planning groups.
9. Write and distribute press releases when changing mitigation plan to encourage public support and inform the public about new regulations or regulation changes related to mitigation.
10. Make brochures about heat and cold related illnesses available in public facilities (e.g. city hall, county courthouse, health department office).
11. Write and distribute press releases prior to and during seasonal events (e.g. summer heat season, winter storms/cold).
12. Distribute press releases from EMDs regarding upcoming drills/exercises that emergency responders will be participating in to encourage public interest and participation in drills.

Phase 3: Within three years, with the committee's assistance:

1. Distribute SEMA brochures related to hazard mitigation at government buildings, fairs, festivals and other public events or facilities.
2. Write and distribute regular press releases to local media regarding hazards and hazard preparation.
3. Write and distribute press releases that encourage local residents to purchase weather radios.
4. Request city council/county commission to meet once each year with SEMA representative(s) to discuss emergency management and mitigation.
5. Inform planning organizations and planners of the existence of hazard mitigation plan and the need to incorporate it into future planning processes.
6. Write and distribute press releases when changing mitigation plan to encourage public support and inform the public about new regulations or regulation changes related to mitigation.
7. Make brochures about heat and cold related illnesses available in public facilities (e.g. city hall, county courthouse, health department office).
8. Write and distribute press releases prior to and during seasonal events (e.g. summer heat season, winter storms/cold).
9. Distribute press releases from EMDs regarding upcoming drills/exercises that emergency responders will be participating in to encourage public interest and participation in drills.
10. Discuss the inclusion of public participation into emergency drills during annual EMD meeting.

Phase 4: Within five years, with the committee's assistance:

1. Distribute SEMA brochures related to hazard mitigation at government buildings, fairs, festivals and other public events or facilities.

2. Write and distribute regular press releases to local media regarding hazards and hazard preparation.
3. Write and distribute press releases that encourage local residents to purchase weather radios.
4. Request city council/county commission to meet once each year with SEMA representative(s) to discuss emergency management and mitigation.
5. Inform planning organizations and planners of the existence of hazard mitigation plan and the need to incorporate it into future planning processes.
6. Write and distribute press releases when changing mitigation plan to encourage public support and inform the public about new regulations or regulation changes related to mitigation.
7. Make brochures about heat and cold related illnesses available in public facilities (e.g. city hall, county courthouse, health department office).
8. Write and distribute press releases prior to and during seasonal events (e.g. summer heat season, winter storms/cold).
9. Press releases from EMDs regarding upcoming drills/exercises that emergency responders will be participating in to encourage public interest and participation in drills.
10. Discuss inclusion of public participation into emergency drills during annual EMD meeting.

Acceptance and Approval: Local government acceptance and approval through local government resolution of the details of this mitigation program document in no way obligates the local government to actually carry out its provisions. Each individual action contained in this document that incurs a cost and/or liability must still be approved by separate governmental actions commensurate with the normal governmental proceedings for approving such actions, in accordance with local ordinance, laws and regulations.

Potential Partners:

Emergency Management Directors
 Mitigation Planning Committee
 Missouri State Emergency Management Agency
 Federal Emergency Management Agency
 Phelps County Disaster Committee
 Local Utilities
 Region I Homeland Security Oversight Committee
 Local emergency response agencies
 Phelps County Health Department
 Red Cross
 Local churches
 Local radio stations, newspapers and public access television

General Responsibility: It is recommended that the county and city emergency management directors and the Mitigation Planning committee accept general responsibility to steer the development and execution of the activities and projects required to accomplish the goals, objectives and strategies identified in this program document. With the exception of normal

responsibility of local governmental agents, this is a voluntary participation that in no way states nor implies the acceptance of any liability for the success or failure of the program, activities, events or projects undertaken to complete the program or any portions thereof.

Potential Lead Responsibility by Action	Estimated Cost
Action 1: County and city EMDs	\$500
Action 2: County and city EMDs, SEMA	\$500
Action 3: County and City EMDs	\$500
Action 4: County and city EMDs, Local Governments	-0-
Action 5: County and city EMDs and Administrators, Local Planners, HMPC	\$3,500
Action 6: County and city EMDs, Local Governments	\$700
Action 7: County EMD, County Health Department, American Red Cross	\$1,000
Action 8: County and city EMDs	\$250
Total Estimated Cost:	\$6,950

Sources of Funding: Grants, local general revenue funds, private financial donations and private donations of goods and services.

Summary of Actions/Measures Achieved 2004-2009:

In the five year interim since the hazard mitigation plan was adopted, Phelps County and the communities within the county have made good progress in public outreach and education in the area of disaster preparedness and hazard mitigation. Information is disseminated through local newspapers, radio, websites and newsletters. Multiple local agencies participate in outreach programs by providing educational materials and presentations to the public. Faith based initiatives have encouraged the participation of local churches in public outreach on disaster preparedness.

Program Title: Communication Enhancement

Goal: Strengthen communication and coordinate participation between public agencies, citizens, non-profit organizations, business and industry to create a widespread interest in mitigation through the following objectives:

1. Build and support local partnerships to continuously become less vulnerable to hazards.
2. Encourage active participation and responsibility of chief elected officials in mitigation planning and activities.

Necessary Community Program/Plan Cross-Coordination

Local Emergency Operations Plans
 Comprehensive Economic Development Strategy for the Meramec Region
 Rolla Open Channel Capital Improvements Program

Actions/Measures to be Taken

Action 1: Encourage joint meetings of different organizations/agencies for mitigation planning.

Achievements 2004-2009: The SEMA Region I area coordinator holds quarterly meetings in Phelps County to share information with local response agencies and elected officials. In addition, the Maries/Phelps County Health Department has worked with the MRPC for the past two years to develop and initiate a Region I tabletop exercise on pandemic flu. Participants include representatives from a broad spectrum of groups including school districts, businesses, public health, nursing homes emergency responders and elected officials. These exercises have proven to be an excellent forum for these diverse groups to communicate, network and conduct planning activities in preparation of a disaster. The Region I HSOC also meets quarterly in Phelps County. This organization also provides an excellent forum for representatives from various disciplines to work together on homeland security issues and preparedness. Representatives on the HSOC include police chief, sheriff, fire chief, 9-1-1, school, hospital, emergency medical, volunteer, county commission, mayor, public utility, county health, public works, HSRT and emergency management director. The Phelps County Disaster Committee provides much the same forum on a county rather than regional level with representatives from various organizations around the county that have mutual interests in planning for disasters. The PCDC also meets quarterly at the Phelps County Courthouse.

Action 2: Joint training (or drills) between agencies, public and private entities (including schools and businesses).

Achievements 2004-2009: A number of opportunities for joint exercises/drills occur in Phelps County each year. The Maries/Phelps County Health Department, with assistance from MRPC, has hosted a tabletop exercise on pandemic flu in 2007 and 2008. Participants included representatives from schools, businesses, hospitals, emergency responders, local elected officials, SEMA and public health. The Phelps County Volunteer Medical Corps, an outgrowth of the PCDC, has held joint drills with the Phelps County Regional Medical Center in 2008. Region I hospitals have held exercises for mass casualty incidents in the last two years and invited other agencies and organizations to participate. A statewide drill of emergency response agencies was held two years ago in Phelps County. Rolla Fire & Rescue hold exercises with the HSRT on at least an annual basis and invites other response agencies and local businesses to participate in those live exercises. The local ham radio operators club holds a 24 hour emergency communications exercise every summer in Rolla.

Action 3: Pool different agency resources to achieve widespread mitigation results.

Achievements 2004-2009: The most significant result in this action item is the development of the regionalization of homeland security planning and funding. Region I Homeland Security Oversight Committee (HSOC) includes six counties – Crawford, Dent, Maries, Phelps, Pulaski and Laclede. In 2007 and 2008, the Region I HSOC granted out more than \$800,000 in homeland security grants. The assets purchased with these grant funds are considered regional assets. Some examples of purchases made so far include: trailers stocked with sheltering supplies for each county; generators and oxygen transfill systems for each county; triage tag and

tracking systems for each county; interoperable communications equipment for each county; an agricultural emergency response trailer for the region; trucks to move assets around the region; CERT training in each county and a mass casualty trailer for the region. The purchase and deployment of each of these resources strengthens the resources of everyone in the region.

A mutual aid coordinator has been appointed by the state for each region to facilitate mutual aid agreements between fire departments throughout the region and the state to improve the pooling of resources during a disaster.

The Faith Based Initiative sponsored by SEMA provides an opportunity for local churches to work and train with emergency planners to develop and host additional shelters in the region.

Action 4: Encourage meetings between EMD, city/county officials and SEMA to familiarize officials with mitigation planning and implementation and budgeting for mitigation projects.

Achievements 2004-2009: Phelps County has made progress in this area as well. An assumed terrorist incident at the Missouri S&T campus that appeared to be an anthrax attack brought local and state officials together to not only deal with the incident at hand, but to follow up and plan for possible future attacks. SEMA and local emergency response agencies have also done exercises together to train the HSRT and other emergency response agencies in the county.

Strategy: Establish a mitigation planning committee comprised of emergency response agencies, health department officials, Red Cross employees, CERT teams, local businesses, schools and citizens, who will plan for and implement the activities and projects necessary to accomplish the stated mitigation goal. A second partnership comprised of all EMD directors from the various jurisdictions in the county should be established to meet once each year to discuss emergency planning and mitigation issues and share ideas.

Achievements 2004-2009: Local organizations and State organizations such as the Phelps County Disaster Committee, HSRT, Region I HSOC, Phelps/Maries County Health Department and SEMA all coordinate efforts to enhance communications at the local, regional and state level. A number of forums now exist within the county that facilitate better communication and networking between individuals and agencies at all levels.

Phase 1: Within six months, with the committee's assistance:

1. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and arrange for possible joint purchases of equipment or the sale of older equipment to smaller cities.
2. Form a committee of emergency response agencies, health department officials, Red Cross employees, CERT team members, local businesses, schools, chamber of commerce members and citizens who will encourage community partnerships among businesses, schools, organizations, churches, other government agencies, etc.
3. Request city council/county commission to meet once each year with SEMA representative(s) to discuss and mitigation project implementation and budgeting.

Phase 2: Within one year, with the committee's assistance:

1. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and arrange for possible joint purchases of equipment or the sale of older equipment to smaller cities.
2. Schedule an annual meeting of the committee of emergency response agencies, health department officials, Red Cross employees, CERT team members, local businesses, schools, chamber of commerce members and citizens who will encourage community partnerships among businesses, schools, organizations, churches, other government agencies, etc.
3. Work with local emergency responders to develop and implement an annual drill program for the county and pursue joint training opportunities.
4. Work with Phelps County amateur radio operators organization to encourage participation in countywide drills.
5. Partnership committee of businesses, agencies, organizations, churches, schools visits other businesses, agencies, organizations, churches and presents information about mitigation planning, forming partnerships/alliances and pooling resources.
6. Request city council/county commission to meet once each year with SEMA representative(s) to discuss and mitigation project implementation and budgeting.

Phase 3: Within three years, with the committee's assistance:

1. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and arrange for possible joint purchases of equipment or the sale of older equipment to smaller cities.
2. Schedule an annual meeting of the committee of emergency response agencies, health department officials, Red Cross employees, CERT team members, local businesses, schools, chamber of commerce members and citizens who will encourage community partnerships among businesses, schools, organizations, churches, other government agencies, etc.
3. Work with local emergency responders to develop and implement an annual drill program for the county and pursue joint training opportunities.
4. Work with Phelps County amateur radio operators organization to encourage participation in countywide drills.
5. Partnership committee of businesses, agencies, organizations, churches, schools visits other businesses, agencies, organizations, churches and presents information about mitigation planning, forming partnerships/alliances and pooling resources.
6. Request city council/county commission to meet once each year with SEMA representative(s) to discuss and mitigation project implementation and budgeting.
7. Partnership committee raises funds for community mitigation projects and/or education programs.

Phase 4: Within five years, with the committee's assistance:

1. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and arrange for possible joint purchases of equipment or the sale of older equipment to smaller cities.

2. Schedule an annual meeting of the committee of emergency response agencies, health department officials, Red Cross employees, CERT team members, local businesses, schools, chamber of commerce members and citizens who will encourage community partnerships among businesses, schools, organizations, churches, other government agencies, etc.
3. Work with local emergency responders to develop and implement an annual drill program for the county and pursue joint training opportunities.
4. Work with Phelps County amateur radio operators organization to encourage participation in countywide drills.
5. Community Partnership committee of businesses, agencies, organizations, churches, schools visits other businesses, agencies, organizations, churches and presents information about mitigation planning, forming partnerships/alliances and pooling resources.
6. Request city council/county commission to meet once each year with SEMA representative(s) to discuss and mitigation project implementation and budgeting.
7. Community Partnership committee raises funds for community mitigation projects and/or education programs.
8. Community Partnership committee becomes involved in drills, trainings and review of the hazard mitigation plan.

Acceptance and Approval: Local government acceptance and approval through local government resolution of the details of this mitigation program document in no way obligates the local government to actually carry out its provisions. Each individual action contained in this document that incurs a cost and/or liability must still be approved by separate governmental actions commensurate with the normal governmental proceedings for approving such actions, in accordance with local ordinance, laws and regulations.

Potential Partners:

City Government
 County Government
 Emergency Management Directors
 Mitigation Planning Committee
 Phelps/Pulaski Chapter of the American Red Cross
 Missouri State Emergency Management Agency
 Region I Homeland Security Oversight Committee
 Phelps County Disaster Committee
 Region I Homeland Security Response Team
 Phelps/Maries County Health Department
 Region I Medical Reserve Corps
 Local ham radio clubs
 USDA Rural Development
 Local schools, churches, non-profit organizations, government agencies and businesses
 Local radio stations, newspapers and public access television

General Responsibility: It is recommended that the county and city emergency management directors and the Mitigation Planning committee accept general responsibility to steer the

development and execution of the activities and projects required to accomplish the goals, objectives and strategies identified in this program document. With the exception of normal responsibility of local governmental agents, this is a voluntary participation that in no way states nor implies the acceptance of any liability for the success or failure of the program, activities, events or projects undertaken to complete the program or any portions thereof.

Potential Lead Responsibility by Action		Estimated Cost
Action 1:	County and city EMDs	\$500
Action 2:	County and city EMDs and Emergency Response Agencies	\$10,000
Action 3:	County and city EMDs, Local Government	\$1,000
Action 4:	County and city EMDs and Local Government	\$500
Total Estimated Cost:		\$12,000

Sources of Funding: Grants, local general revenue funds, private financial donations and private donations of goods and services.

Summary of Actions/Measures Achieved 2004-2009:

In the five year interim since the hazard mitigation plan was adopted, Phelps County and the communities within the county have made good progress in enhancing communications in the county and throughout the region. There are now several opportunities for agencies to network and work together on planning, training, exercises and sharing assets. PCDC, Region I HSOC, public health planning, Medical Reserve Corps, Region I HSRT and SEMA all hold meetings and/or training events where a broad spectrum of agencies and organizations can share information and improve communication.

Program Title: Long-Term Planning

Goal: Establish priorities for reducing risks to the people and their property with emphasis on long-term and maximum benefits to the public rather than short-term benefit of special interests through the following objectives:

1. Incorporate hazard mitigation into the long-range planning and development activities of the county and each jurisdiction.
2. Promote beneficial uses of hazardous areas while expanding open space and recreational opportunities.

Necessary Community Program/Plan Cross-Coordination

Local Emergency Operations Plans
 Comprehensive Economic Development Strategy for the Meramec Region
 Rolla Open Channel Capital Improvements Program
 Rolla Area Community Housing Assessment

Actions/Measures to be Taken

Action 1: Encourage communities to budget for enhanced warning systems.

Achievements 2004-2009: Newburg received a grant through Rural Development for an additional warning siren. The City of Rolla has made improvements to its existing sirens. The City of St. James is currently developing a comprehensive plan. The addition of three more warning sirens will be included in the capital improvements plan for the city.

Action 2: Encourage all communities to develop stormwater management plans.

Achievements 2004-2009: The City of Rolla has a stormwater management plan. Phelps County now requires new subdivisions to have certified stormwater management plans in place. The advisory committee also stated that Phase II of the federal Clean Water Act will require smaller communities to have stormwater management plans. So additional small communities in the county may be forced to meet this requirement in the next few years.

Action 3: Coordinate and integrate hazard mitigation activities, where appropriate, with emergency operations plans and procedures.

Action 4: Encourage cities to require contractor stormwater management plans in all new development—both residential and commercial properties.

Achievements 2004-2009: Phelps County Commission passed a requirement that all new subdivisions must have certified stormwater design plans in place on June 1, 2007.

Action 5: Encourage local government to purchase properties in the floodplain as funds become available and convert that land into public space/recreation area.

Achievements 2004-2009: Phelps County applied for hazard mitigation grant funds to purchase two properties located in the flood plain in Jerome, which sustained damage during the spring floods of 2008.

Action 6: Encourage communities to discuss zoning repetitive loss properties in the floodplain as open space

Strategy: Establish a mitigation planning committee comprised of emergency response agencies, health department officials, Red Cross employees, CERT teams, local businesses, schools and citizens, who will plan for and implement the activities and projects necessary to accomplish the stated mitigation goal. A second partnership comprised of all EMD directors from the various jurisdictions in the county should be established to meet once each year to discuss emergency planning and mitigation issues and share ideas.

Achievements 2004-2009: Local organizations, such as the Phelps County Disaster Committee, as well as city and county government have all taken steps to do long-term planning on hazard mitigation as is evidenced by regulations developed and passed by the county and floodplain buyouts, as well as efforts to improve early warning systems in the county.

Phase 1: Within six months, with the committee’s assistance:

1. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and discuss potential funding sources for advanced warning systems. EMDs would then take back this information to their respective communities.
2. Convene annual EMD meeting, where discussion of county’s LEOP should be a major topic. This discussion should include integrating hazard mitigation activities into the county LEOP and municipal LEOPs.
3. EMDs from smaller cities work with EMDs from larger cities to examine the possibility of purchasing used warning equipment from larger cities.
4. Add “Inclusion of Mitigation” to checklist for updating local economic development or comprehensive plans to ensure that hazard mitigation will be included in future planning.
5. EMDs meet with building associations and encourage them to include stormwater planning in all new development.
6. County Commission and EMD develop and maintain a list of potential flood-prone properties, based on past disaster declarations and flash flooding events.

Phase 2: Within one year, with the committee’s assistance:

1. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and discuss potential funding sources for advanced warning systems. EMDs would then take back this information to their respective communities.
2. Convene annual EMD meeting, where discussion of county’s LEOP should be a major topic. This discussion should include integrating hazard mitigation activities into the county LEOP and municipal LEOPs.
3. Investigate cooperative purchasing of advanced warning systems between all jurisdictions to reduce the cost of the system for each municipality.
4. Public Works Department officials and city engineer meet to discuss ideas for stormwater management, then make presentation to city council that outlines the need for a stormwater management plan.
5. The LEOP review committee comprised of local emergency responders, businesses, residents, government officials and schools should examine the hazard mitigation plan when updating the LEOP.
6. Add “Inclusion of Mitigation” to checklist for updating local economic development or comprehensive plans to ensure that hazard mitigation will be included in future planning.
7. Work with contractors and building associations to design an ordinance requiring stormwater management plans for all new development.
8. Recommend county/city officials earmark budget funds for purchasing floodplain property.
9. Meet with planning and zoning board to discuss rezoning floodplain as open space.
10. Larger communities that are purchasing new warning systems could make their old warning systems available to smaller communities in the county or region.

Phase 3: Within three years, with the committee’s assistance:

1. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and discuss potential funding sources for advanced warning systems. EMDs would then take back this information to their respective communities.
2. Convene annual EMD meeting, where discussion of county’s LEOP should be a major topic. This discussion should include integrating hazard mitigation activities into the county LEOP and municipal LEOPs.
3. Add “Inclusion of Mitigation” to checklist for updating local economic development or comprehensive plans to ensure that hazard mitigation will be included in future planning.
4. Recommend county/city officials earmark budget funds for purchasing floodplain property.
5. Pursue funding for stormwater management planning process.
6. Make recommendation to city council, after working with building associations to draft ordinance, to pass ordinance requiring stormwater management plans for all new development.
7. Examine option of passing a sales tax that can be used to purchase flood-prone areas and convert to public space.
8. Use funding (from city budget or federal grants) to buy flood prone property.
9. Recommend, after meeting with planning and zoning board, that repetitive loss properties in the floodplain be rezoned as open space.

Phase 4: Within five years, with the committee’s assistance:

1. Schedule an annual meeting of EMDs from Phelps County jurisdictions to exchange information and discuss potential funding sources for advanced warning systems. EMDs would then take back this information to their respective communities.
2. Convene EMD meeting, where discussion of county’s LEOP should be a major topic. This discussion should include integrating hazard mitigation activities into the county LEOP and municipal LEOPs.
3. Add “Inclusion of Mitigation” to checklist for updating local economic development or comprehensive plans to ensure that hazard mitigation will be included in future planning.
4. Recommend county/city officials earmark budget funds for purchasing floodplain property.
5. Budget for purchase of new warning system or apply for grants to support the same cause.
6. Examine option of passing a sales tax that can be used to purchase flood-prone areas and convert to public space.
7. Use funding (from city budget or federal grants) to buy flood prone property and convert to public space.

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document that incurs a cost and/or liability must still be approved by separate governmental actions commensurate with the normal governmental proceedings for approving such actions, in accordance with local ordinance, laws and regulations.

Potential Partners:

- City Government
- County Government
- Emergency Management Directors
- Mitigation Planning Committee
- Missouri State Emergency Management Agency
- Corps of Engineers
- Phelps County Disaster Committee
- Region I Homeland Security Oversight Committee
- Local schools, churches, non-profit organizations, government agencies and businesses

General Responsibility: It is recommended that the county and city emergency management directors and the Mitigation Planning committee accept general responsibility to steer the development and execution of the activities and projects required to accomplish the goals, objectives and strategies identified in this program document. With the exception of normal responsibility of local governmental agents, this is a voluntary participation that in no way states nor implies the acceptance of any liability for the success or failure of the program, activities, events or projects undertaken to complete the program or any portions thereof.

Potential Lead Responsibility by Action		Estimated Cost
Action 1:	County and city EMDs and Local Government	Unknown
Action 2:	Local Planners, Local Government	\$800
Action 3:	County and city EMDs	\$500
Action 4:	County and city EMDs and Building Associations	\$1,500
Action 5:	Local Government, All EMDs, Floodplain Managers	Unknown
Action 6:	City EMDs and City Councils, Local Planners, Floodplain Managers	\$1,500
Total Estimated Cost:		\$4,300

Sources of Funding: Grants, local general revenue funds, private financial donations and private donations of goods and services.

Summary of Actions/Measures Achieved 2004-2009:

In the five year interim since the hazard mitigation plan was adopted, Phelps County and the communities within the county have made progress in long-term planning for hazard mitigation. Community warning systems have been improved. Regulations and planning has been completed and adopted on stormwater requirements. New planning efforts are including mitigation issues and projects. Flood buyouts have been completed and are in process for repetitive loss properties in the Gasconade River floodplain.

Program Title: Finding Funding

Goal: Secure resources for investment in hazard mitigation through the following objectives:

1. Research the use of local and outside sources of funding.
2. Encourage participation of property owners in investing in hazard mitigation projects on their own property.
3. In the event of a disaster declaration, be prepared to apply for hazard mitigation grants for prioritized projects.

Necessary Community Program/Plan Cross-Coordination

Local Emergency Operations Plans
Comprehensive Economic Development Strategy for the Meramec Region
Rolla Open Channel Capital Improvements Program
Rolla Area Community Housing Assessment

Actions/Measures to be Taken

Action 1: Work with SEMA Region I coordinator to learn about new mitigation funding opportunities.

Achievements 2004-2009: Quarterly meetings are hosted by SEMA's area coordinator for Region I.

Action 2: Structure grant proposals for road/bridge upgrades so that hazard mitigation concerns are also met.

Action 3: Work with state/local/federal agencies to include mitigation in all economic and community development projects.

Achievements 2004-2009: The St. James Comprehensive Plan is currently being developed and includes hazard mitigation issues and projects.

Action 4: Encourage local governments to budget for mitigation projects.

Achievements 2004-2009: The City of Rolla completed a \$3 million upgrade to one of the sewer treatment plants to accommodate increased needs for capacity.

Action 5: Encourage cities and counties to implement cost-share programs with private property owners for hazard mitigation projects that benefit the community as a whole. Achievements 2004-2009: The City of Rolla has a cost-share program where if a property owner purchases the materials needed to correct a stormwater problem, the city will provide the labor and equipment to complete the project.

Action 6: Implement public awareness program about the benefits of hazard mitigation projects, both public and private.

Action 7: Prioritize mitigation projects, based on cost-effectiveness and starting with those sites facing the greatest threat to life, health and property.

Strategy: Establish a mitigation planning committee comprised of emergency response agencies, health department officials, Red Cross employees, CERT teams, local businesses, schools and citizens, who will plan for and implement the activities and projects necessary to accomplish the stated mitigation goal. A second partnership comprised of all EMD directors from the various jurisdictions in the county should be established to meet once each year to discuss emergency planning and mitigation issues and share ideas.

Achievements 2004-2009:

Local governments and organizations, such as the Phelps County Disaster Committee, have all taken steps to do long-term planning on funding for hazard mitigation projects. Whether including projects in their own budgets or actively seeking grant funds to complete mitigation projects, actions are being taken by several entities in the region to address this goal.

Phase 1: Within six months, with the committee's assistance:

1. Invite Region I coordinator to annual meeting of EMDs to discuss recent mitigation projects funded by SEMA and new grant monies available. The Invite SEMA mitigation specialist or mitigation officer to meet with EMDs at their annual meeting and/or local officials of county and cities.
2. Add an action item to the Comprehensive Economic Development Strategy (CEDS) plan for the Meramec Regional Planning Commission to work with one or more community each year to assess mitigation needs and seek funding to meet those needs.
3. Discuss and explore possibility of cost-share programs between residents and city/county. The committee should explore what types of programs would achieve the greatest response and benefit and look at funding possibilities.
4. Develop and maintain a list of potential flood-prone properties, based on past disaster declarations and flash flooding events.

Phase 2: Within one year, with the committee's assistance:

1. Invite SEMA Region I coordinator to meet with city/county officials on a yearly basis.
2. Invite SEMA Region I coordinator to annual meeting of EMDs to discuss recent mitigation projects funded by SEMA and new grant monies available.
3. Make bridges that would mitigate flooding problems a top priority when applying for grants.
4. Complete a survey of bridge/road upgrades that would mitigate flooding, to be prepared for when funding becomes available.
5. Research and distribute press releases encouraging residents to secure propane tanks, trailers, small buildings, have power lines run underground using personal finances.

6. Discuss and explore possibility of cost-share programs between residents and city/county. The committee should explore what types of programs would achieve the greatest response and benefit and look at funding possibilities.
7. Present cost-share funding program ideas to local officials to incorporate into annual budgets.

Phase 3: Within three years, with the committee’s assistance:

1. Invite SEMA Region I coordinator to meet with city/county officials on a yearly basis.
2. Invite SEMA Region I coordinator to annual meeting of EMDs to discuss recent mitigation projects funded by SEMA and new grant monies available.
3. During annual comment period on use of Community Development Block Grant funds, suggest that Missouri Department of Economic Development set aside funds for community mitigation projects each year.
4. Publicize availability of cost-share programs in each jurisdiction.

Phase 4: Within five years, with the committee’s assistance:

1. Invite SEMA Region I coordinator to meet with city/county officials on a yearly basis.
2. Invite SEMA Region I coordinator to annual meeting of EMDs to discuss recent mitigation projects funded by SEMA and new grant monies available.
3. During annual comment period on use of Community Development Block Grant funds, suggest that Missouri Department of Economic Development set aside funds for community mitigation projects each year.
4. Publicize availability of cost-share programs in each jurisdiction.
5. Apply for any mitigation grants that become available through FEMA.

Acceptance and Approval: Local government acceptance and approval through local government resolution of the details of this mitigation program document in no way obligates the local government to actually carry out its provisions. Each individual action contained in this document that incurs a cost and/or liability must still be approved by separate governmental actions commensurate with the normal governmental proceedings for approving such actions, in accordance with local ordinance, laws and regulations.

Potential Partners:

- City Government
- County Government
- Emergency Management Directors
- Mitigation Planning Committee
- Missouri State Emergency Management Agency
- Meramec Regional Planning Commission
- Region I Homeland Security Oversight Committee
- Phelps County Disaster Committee

General Responsibility: It is recommended that the county and city emergency management directors and the Mitigation Planning committee accept general responsibility to steer the development and execution of the activities and projects required to accomplish the goals, objectives and strategies identified in this program document. With the exception of normal responsibility of local governmental agents, this is a voluntary participation that in no way states nor implies the acceptance of any liability for the success or failure of the program, activities, events or projects undertaken to complete the program or any portions thereof.

Potential Lead Responsibility by Action		Estimated Cost
Action 1:	County and city EMDs, Local Government	\$0
Action 2:	County/City engineers, Local Government, Grant Writers	\$3,500
Action 3:	Local Planners, Local Government, County and City EMDs	\$2,500
Action 4:	County and City EMDs, Local Government	\$500
Action 5:	County and City EMDs, Local Government, HMPC	\$1,500
Action 6:	City and County EMDs, Local Government	\$750
Action 7:	City and County EMDs, Local Government, Local Planners, City/County Engineers, HMPC	\$1,500
Total Estimated Cost:		\$10,250

Sources of Funding: Grants, local general revenue funds, private financial donations and private donations of goods and services.

Summary of Actions/Measures Achieved 2004-2009:

In the five year interim since the hazard mitigation plan was adopted, Phelps County and the communities within the county have made progress in finding funding for hazard mitigation projects. Funding for hazard mitigation projects have been included in local government budgets. The City of Rolla has a cost-share program to encourage local residents to complete mitigation projects on their own property. The City of Newburg sought out grant funds from USDA Rural Development for the city’s warning system. The City of St. James is including hazard mitigation projects in its capital improvements plan.

Table 4.3 Summary of Mitigation Programs and Action items Developed for Phelps County and All Jurisdictions

Jurisdiction	Action/Measure	Mitigation Program	Goal #	Priority	Hazard Addressed
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	1. Implement an education program on personal emergency preparedness.	Reducing Vulnerability of the People	1	High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	2. Promote the development of emergency plans by businesses.			High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	3. Encourage cities to obtain early warning systems and improved communications systems to minimize loss of life.			High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	4. Promote the use of weather radios by local residents and schools to ensure advanced warning about threatening weather.			High	Severe Storms Tornados
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	5. Partner with local radio stations to assure that appropriate warning of impending disasters is provided to all residents in the countywide listening area.			High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	6. Encourage and continue tree trimming programs as well as dead tree removal program.			High	Severe Storms Tornados
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	7. Examine potential road and bridge upgrades that would reduce danger to residents during occurrences of natural disasters.				Flood Earthquake

Jurisdiction	Action/Measure	Mitigation Program	Goal #	Priority	Hazard Addressed
Phelps County Doolittle Edgar Springs Newburg Rolla St. James School Districts	8. Encourage the construction of storm shelters, especially tornado safe rooms, near schools & large employment centers	Reducing Vulnerability of the People	1	High	Severe Storms Tornados
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	1. Encourage a self-inspection program at critical facilities to assure that the building infrastructure is earthquake and tornado resistant.	Property and Infrastructure Protection	2	High	Earthquake Tornado
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	2. Educate residents about the dangers of floodplain development and the benefits the National Flood Insurance Program.			High	Flood
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	3. Encourage minimum standards for building codes in all cities.			Medium	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	4. Encourage local governments to develop and implement regulations for securing hazardous materials tanks and mobile homes.			Medium	Flood Severe Storms Tornado
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	1. Distribute SEMA brochures at public facilities and events.	Outreach and Education	3	High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	2. Distribute regular press releases from county and city EMD offices concerning hazards, where they strike, frequency and preparedness.			High	All Hazards

Jurisdiction	Action/Measure	Mitigation Program	Goal #	Priority	Hazard Addressed
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	3. Encourage local residents to purchase weather radios.	Outreach and Education	3	High	Severe Storms Tornados
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	4. Ask SEMA mitigation specialists to present information to city councils, county commission and local planning organizations.			High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	5. Re-evaluate the hazard mitigation plan and merge with other community planning			High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	6. Distribute press releases by cities/county regarding adopted mitigation measures.			Medium	All Hazards
Phelps County	7. Encourage county health department and Red Cross to implement education/awareness campaigns on individual preparedness.			High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	8. Publicize city and/or county drills.			Medium	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	1. Encourage joint meetings of different organizations/ agencies for mitigation planning	Communication Enhancement	4	Medium	All Hazards
Phelps County	2. Joint training or drills between				

Jurisdiction	Action/Measure	Mitigation Program	Goal #	Priority	Hazard Addressed
Doolittle Edgar Springs Newburg Rolla St. James	agencies, public and private entities including schools and businesses.			Medium	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	3. Pool different agency resources to achieve widespread mitigation results.	Communication Enhancement	4	High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	4. Encourage meetings between EMD, city/county officials and SEMA to familiarize local officials with mitigation planning and implementation and budgeting for mitigation projects.			High	All Hazards
Doolittle Edgar Springs Newburg Rolla St. James	1. Encourage communities to budget for enhanced warning systems.	Long-Term Planning	5	High	All Hazards
Doolittle Edgar Springs Newburg Rolla St. James	2. Encourage all communities to develop stormwater management plans.			Low	Flood Severe Storms
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	3. Coordinate and integrate hazard mitigation activities, where appropriate, with emergency operations plans and procedures.			Medium	All Hazards
Doolittle Edgar Springs Newburg Rolla St. James	4. Encourage cities to require contractor stormwater management plans in all new development.			Low	Flood Severe Storms
Phelps County Doolittle Edgar Springs Newburg	5. Encourage local governments to purchase properties in the floodplain as funds become available and convert land into			Medium	Flood

Jurisdiction	Action/Measure	Mitigation Program	Goal #	Priority	Hazard Addressed
Rolla St. James	public space/recreation area.				
Phelps County Newburg Rolla St. James	6. Encourage communities to discuss zoning repetitive loss properties in the floodplain as open space.			High	Flood
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	1. Work with SEMA Region I coordinator to learn about new mitigation funding opportunities.	Finding Funding	6	High	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	2. Structure grant proposals for road/bridge upgrades so that hazard mitigation concerns are also met.			Medium	Flood Earthquake
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	3. Work with state/local/federal agencies to include mitigation in all economic and community development projects.			Medium	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	4. Encourage local governments to budget for mitigation projects.			Medium	All Hazard
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	5. Encourage cities and county to implement cost-share programs with private landowners for hazard mitigation projects that benefit the community as a whole.			Medium	All Hazards
Phelps County Doolittle Edgar Springs Newburg Rolla	6. Implement public awareness program about the benefits of hazard mitigation projects, both public and private.			High	All Hazards

Jurisdiction	Action/Measure	Mitigation Program	Goal #	Priority	Hazard Addressed
St. James					
Phelps County Doolittle Edgar Springs Newburg Rolla St. James	7. Prioritize mitigation projects, based on cost-effectiveness and starting with those sites facing the greatest threat to life, health and property.			High	All Hazards

Table 4.4 Summary of Estimated Costs and Responsible Parties and Potential Funding Sources For Reducing Vulnerability of People

Action Item	Responsible Party	Estimated Cost	Potential Sources of Funding
Implement education program on personal emergency preparedness	County EMD City EMDs County Health Dept.	\$1,500	Grants Local general revenue funds Private donations of cash, goods or services
Promote the development of emergency plans by businesses	County EMD County Health Dept.	\$2,500	Grants Local general revenue funds Private donations of cash, goods or services
Encourage cities to obtain early warning systems and improved communications systems and update existing warning systems	Local Government County EMD City EMDs	\$1,500	Grants Local general revenue funds Private donations of cash, goods or services
Promote the use of weather radios by local residents and schools to ensure advanced warning of threatening weather.	County EMD City EMDs Local Government Emergency Response Agencies School Districts	\$500	Grants Local general revenue funds Private donations of cash, goods or services
Partner with local radio stations to assure that appropriate warning of impending disasters is provided to all residents in the countywide listening area.	County EMD City EMDs	\$500	Grants (USDA, Homeland Security) Local general revenue funds Private donations of cash, goods or services
Continue tree trimming and dead tree removal programs.	Local Government County EMD City EMDs Public Utilities Private Utilities	Unknown	Local general revenue funds Private donations

Action Item	Responsible Party	Estimated Cost	Potential Sources of Funding
Examine potential road and bridge upgrades that would reduce danger to residents during occurrences of natural disasters.	County Government City Government	\$5,000	Grants Local general revenue funds Private donations of cash, goods or services
Encourage the construction of storm shelters, especially tornado safe rooms, near schools & large employment centers	Local governments Local school districts	Unknown	Grants Local general revenue funds Private donations of cash, goods or services
Total Estimated Cost of Program:		\$11,500	

Table 4.5 Summary of Estimated Costs, Responsible Parties and Potential Funding Sources For Property and Infrastructure Protection

Action Item	Responsible Party	Estimated Cost	Potential Sources of Funding
Encourage self-inspection program at critical facilities for earthquake and tornado resistance	All EMDs	\$1,500	Grants Local general revenue funds
Educate residents & contractors about the dangers of floodplain development, floodplain building requirements & benefits of NFIP	County EMD/ Floodplain Manager	\$1,500	Grants Local general revenue funds Private donations of cash, goods or services
Encourage minimum standards for building codes in all cities.	County EMD Local Government	\$1,500	Grants Local general revenue funds Private donations of cash, goods or services
Encourage local governments to develop & implement regulations for securing hazardous materials tanks and Mobile homes to reduce risk during flooding & severe weather	County EMD City EMDs Local government	\$3,000	Grants Local general revenue funds Private donations of cash, goods or services
Total Estimated Cost of Program		\$7,500	

Table 4.6 Summary of Estimated Costs, Responsible Parties and Potential Funding Sources for Hazard Mitigation Outreach and Education Program

Action Item	Responsible Party	Estimated Cost	Potential Sources of Funding
Distribute SEMA brochures at public facilities & events	County EMD City EMDs	\$500	Local general revenue funds Private donations of cash, goods or services
Distribute regular press releases from county & city EMD offices on hazards	County EMD City EMDs	\$500	Local general revenue funds
Encourage residents to purchase weather radios thru press releases and brochures	County EMD City EMDs	\$500	Grants Local general revenue funds Private donations of cash, goods or services
Ask SEMA mitigation specialists to present information to city councils, county commission & local planning organizations	County EMD City EMDs Local governments	\$ 0	N/A
Re-evaluate the hazard mitigation plan & merge with other community planning	County EMD City EMDs Local planners City administrators HMPC	\$3,500	Grants Local general revenue funds Private donations of cash, goods or services
Distribute press releases by cities/county regarding adopted mitigation measures	County EMD City EMDs Local governments	\$700	Local general revenue funds
Encourage county health department & local American Red Cross Chapter to use publicity campaigns to make residents aware of proper measures to take during threatening conditions (ex. Heat wave)	County EMD County Health Department Local Red Cross Chapter	\$1,000	Grants Local general revenue funds Private donations of cash, goods or services
Publicize county or city-wide drills	County EMD City EMDs	\$250	Grants Local general revenue funds Private donations of cash, goods or services
Total Estimated Cost of Program:		\$6,950	

Table 4.7 Summary of Estimated Costs, Responsible Parties and Potential Funding Sources for Communication Enhancement Program

Action Item	Responsible Party	Estimated Cost	Potential Sources of Funding
Encourage joint meetings of different organizations/agencies for mitigation planning	County EMD City EMDs	\$500	Grants Local general revenue funds Private donations of cash, goods or services
Joint training (or drills) between agencies, public & private entities (including schools & businesses)	County EMD City EMDs Emergency response agencies	\$10,000	Grants Local general revenue funds Private donations of cash, goods or services
Pool different agency resources to achieve widespread mitigation results	County & City EMDs Local government	\$1,000	Grants Local general revenue funds Private donations of cash, goods or services
Encourage meetings between EMD, city/county officials & SEMA to familiarize officials with mitigation planning & implementation & budgeting for mitigation projects.	County EMD City EMD Local governments	-0-	
Encourage elected officials to distribute public relations information about mitigation projects	County EMD City EMDs Local Governments	\$500	Grants Local general revenue funds
Total Estimated Cost of Program:		\$12,000	

Table 4.8 Summary of Estimated Costs, Responsible Parties and Potential Funding Sources for Long-Term Planning Program

Action Item	Responsible Party	Estimated Cost	Potential Sources of Funding
Encourage communities to budget for enhanced warning systems.	County EMD City EMD Local governments	Unknown	Grants Local general revenue funds Private donations of cash, goods or services
Encourage all communities to develop storm water management plans	Local planners Local governments	\$800	Grants Local general revenue funds Private donations of cash, goods or services

Action Item	Responsible Party	Estimated Cost	Potential Sources of Funding
Coordinate and integrate hazard mitigation activities, where appropriate, with emergency operations plans & procedures	County EMD City EMDs	\$500	Local general revenue funds
Encourage cities to require contractor storm water management plans in all new development – both residential & commercial	Local planners Local governments	\$1,500	Local general revenue funds Private donations of cash, goods or services
Encourage local government to purchase properties in the floodplain as funds become available & convert land to public space/recreation areas	Local government County & city EMDs Floodplain managers	Unknown	Grants Local general revenue funds Private donations of cash, goods or services
Encourage communities to discuss zoning repetitive loss properties in the floodplain as open space	City government Local planners City EMDs Floodplain managers	\$1,500	Local general revenue funds
Total Estimated Cost of Program:		\$4,300	

Table 4.9 Summary of Estimated Costs, Responsible Parties and Potential Funding Sources for Finding Funding Program

Action Item	Responsible Party	Estimated Cost	Potential Sources of Funding
Work with SEMA Region I coordinator to learn about new mitigation funding opportunities	County EMD City EMD Local governments	\$-0-	
Structure grant proposals for road/bridge upgrades so that hazard mitigation concerns are also met	City/County engineers Local government Local grant writers	\$3,500	Grants Local general revenue funds Private donations of cash, goods or services
Work with local/state/federal agencies to include mitigation in all economic & community development projects	Local planners Local government County & city EMDs	\$2,500	Grants Local general revenue funds Private donations of cash, goods or services
Encourage local governments to budget for mitigation projects	County & City EMDs Local governments	\$500	Local general revenue funds
Encourage cities and counties to implement cost-share programs with private property owners for hazard	Local governments, County & city EMDs	\$1,500	Grants Local general revenue funds

Action Item	Responsible Party	Estimated Cost	Potential Sources of Funding
mitigation projects that benefit the community as a whole			Private donations of cash, goods or services
Implement public awareness program about the benefits of hazard mitigation projects, both public & private	County & city EMDs Local government	\$750	Grants Local general revenue funds Private donations of cash, goods or services
Prioritize mitigation projects, based on cost-effectiveness and starting with those sites facing the greatest threat to life, health & property	County & city EMDs Local governments Local planners City/County engineers HMPC	\$1,500	Grants Local general revenue funds Private donations of cash, goods or services
Total Estimated Cost of Program:		\$10,250	

4.4 Mitigation Actions in Support of the National Flood Insurance Program

Phelps County and the cities of Doolittle, Edgar Springs, Newburg, Rolla and St. James are committed to continuing participation in the National Flood Insurance Program (NFIP). Table 4.9 summarizes specific hazard mitigation action items that directly or indirectly support the NFIP.

Table 4.10 Specific Mitigation Actions Supporting NFIP in Phelps County and the Cities of Doolittle, Edgar Springs, Newburg, Rolla, St. James

Hazard Mitigation Program	Action Item	Jurisdiction
Reducing Vulnerability	1. Implement an education program on personal emergency preparedness.	Phelps County, Doolittle, Edgar Springs, Newburg, Rolla, St. James
Property and Infrastructure Protection	3. Maintain and upgrade levee in Morrison.	Phelps County, Doolittle, Edgar Springs, Newburg, Rolla, St. James
	4. Educate residents, realtors & contractors on the dangers of floodplain development & the benefits of the NFIP.	
	1. Encourage local government to develop and implement regulations for securing hazardous materials tanks and mobile homes to reduce hazards during storms/flooding.	
Outreach and Education	2. Distribute regular press releases on hazards, vulnerable areas, frequency and preparedness	Phelps County, Doolittle, Edgar Springs, Newburg, Rolla, St. James
Long-Term Planning	2. Encourage all communities to develop storm water management plans	Phelps County, Doolittle, Edgar Springs, Newburg, Rolla, St. James
	4. Encourage cities to require contractor storm water management plans in all new development--both residential and commercial properties	
	5. Encourage local government to purchase properties in the flood plain as funds become available and convert that land into public space/recreation areas	
	6. Encourage communities to discuss zoning repetitive loss properties in the flood plain as open space.	
Finding Funding	5. Encourage cities and county to implement cost-share programs with private property owners for hazard mitigation projects that benefit the community as a whole	Phelps County, Doolittle, Edgar Springs, Newburg, Rolla, St. James