

**Pike County  
Missouri  
Natural Hazards Mitigation Plan  
Five Year Update**

**Section 5**

**Bowling Green**

**Pike County, Missouri**  
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**Section 5 Bowling Green**

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## **City Profile----Bowling Green**

### **History of Bowling Green**

The city of Bowling Green is located in central Pike County twelve miles west of the Mississippi River. John Walker Bayse of Bowling Green, Kentucky laid out the town in 1819. The town's position 400 feet above the floodplains of the Mississippi River protected its development from the threat of floods, which plagued other settlements, and a large spring provided a plentiful source of water for the settlers. In 1826 Bowling Green was incorporated as a town. The town's location in an area ideal for farming soon made it a commercial center. In 1821 Bowling Green became the County Seat for Pike County. Its location on the pioneer Salt River Trail encouraged its steady growth. Schools and churches followed with the first school Pike Academy in 1837 to Merewether's Bowling Green College in 1881. The completion of the Chicago and Alton Railroad in 1871 and the St Louis and Hannibal in 1876 insured Bowling Green's place as a commercial center for the area.

The classical revival style Pike County Court House constructed in 1917 is the dramatic centerpiece of the town square. Another significant structure listed on the National Register of Historic Places is the home of the famous early 20<sup>th</sup> century political figure the Honorable Champ Clark. Located a few blocks from the town square Clark's Victorian home highlights his career in the House of Representatives. He was elected as a Democrat to Congress in 1893 and served continuously until 1921 with the exception of a brief hiatus from 1895-1897. He was nearly nominated for the presidency at the 1912 Democratic National Convention.

Bowling Green with its location in the heart of a prosperous agricultural community, its location at the intersection of US 54 and US 61, and its position as County Seat for Pike County insures its continued growth and prominence as a center of commerce. Bowling Green is the largest city in Pike County with a population of 5,166 residents. Bowling Green has its own airport, Bowling Green Municipal Airport and is also served by the Kansas City Southern railroad. Major highway expansion along Hwy. 61 has spurred growth along south Business highway 61 over the past several years and is expected to continue impacting the economic future by attracting new businesses and industry.

Bowling Green has undertaken several recent capital improvement projects to serve the needs of the community. A water treatment plant was completed in 1997 in the northern part of the city as an addition to the two-cell area lagoon system. This system was constructed in partnership with the state to serve both the city and the Northeast Correctional Center. It has also completed improvements to the intake facilities at the city lake and expanded the wastewater collection system.

The Northeast Correctional Center was completed in 1998 and annexed into the city. This facility provides housing for 1,975 high custody male inmates and special housing and programming arrangements for male offenders under the age of 17. The Northeast Correctional Center is also the largest employer in the city.

Honey Shuck, home of Champ Clark, former Speaker of the House of Representatives is located in Bowling Green. It is on the National Register of Historic Places and is a museum, which welcomes visitors from all over the country. (Pike County Profile 2003)



**Pike County Courthouse**



**Champ Clark's "Honey Shuck" -----NRHP**

## **Form of Government**

Bowling Green's city government is Mayor, City Administrator and Board of Alderman. The city of Bowling Green is divided into three wards, with two aldermen elected from each ward.

City services include water and sewer services and garbage collection (subcontracted to Sharp Bros). Bowling Green has a police department with six full time officers. The Bowling Green Volunteer Fire Department has fifteen volunteer fire fighters. Bowling Green also has a Library, Community Center, and two city parks.

## **In-Place Plans**

Upon adoption of the Pike County Natural Hazards Mitigation Plan, the plan will serve as a baseline of information on the natural hazards that impact Pike County and the city of Bowling Green. These mitigation goals and objectives will help local governments and other organizations in the Pike County plan for natural hazard mitigation in their own planning documents. The meetings of the Hazard Mitigation Committee will provide an opportunity for committee member to report back on the progress made on the integration of mitigation planning into the county and city planning documents and procedures.

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

### **Hazardous Material Response Plan LEPC**

Pike County

### **Emergency Operations Plans (EOP)**

Pike County EOP

## **Ordinances adopted by Bowling Green**

Planning and Zoning  
Land Use Maintenance  
Subdivision  
Storm Water Management  
Building codes: BOCC, ICC Updated 2008

## **Floodplain Management Ordinance and Floodplain Development Procedures:**

The purpose of this ordinance is to promote the public health, safety and general welfare and minimize losses and to establish and maintain the county's eligibility for participation in the National Flood Insurance Program (NFIP).

**Bowling Green EOP (Emergency Operations Plan)**, Published in 1999; updated in 2008.

The EOP is a multi-hazard, functional plan, broken into three components:

1. A basic plan that serves as an overview of the jurisdiction's approach to emergency management.
2. Annexes that address specific activities critical to emergency response and recovery.

The plan also defines lines of succession for continuity of government during a disaster as well as preservation of records and the logistics of administrative functions such as procedures for obtaining temporary use of facilities. The EOP is reviewed annually and revised as needed. Includes Emergency Preparedness Plan

## Mitigation Programs

Mitigation entails taking actions to reduce or eliminate injury, loss of life, and property damage from natural hazards. Because of Pike County's location on the Mississippi River, the majority of its mitigation efforts focus on floodplain management regulations and participation in the National Flood Insurance Program. The first Pike County Natural Hazards mitigation plan was implemented in 2004. Through public involvement and planning, the county has adopted this policy. Though the focus remains on rescue and response, a number of mitigation efforts have been implemented.

- The County participated in a federally funded property acquisition program following the 1993 flood. Those residents who previously resided in the floodplain were offered financial incentives to move out of the floodplain through a buy-out process of their property.
- Pike County is currently cooperating with the U.S. Corps of Engineers regarding levee systems along the Mississippi River to determine what actions are needed to recertify the levees and keep those areas affected in the National Flood Insurance Program (NFIP).
- Pike County's Emergency Plan and LEPC contain mitigation measures.
- Pike County receives NWS warnings, and the sheriff's office is staffed on a 24-hour basis by dispatch personnel. Additionally, the county has implemented the use of a text messaging warning system through cell phones. For those outside of incorporated areas, this measure has increased both awareness and the effectiveness of the county's warning system. However, large-scale warning equipment (sirens, etc.) is still limited to the county's municipalities and the means used to alert each respective community varies. The use of local media remains prevalent as an effective warning system.
- Pike County works collaboratively with all municipalities in identifying key sites in each incorporated area as well as sharing information regarding any/all natural threats with those entities that are interested in hazard response and mitigation.
- The County works conjunctively with local media (newspapers, radio, cable providers, and Internet service providers) to both provide information to the public and highlight mock disasters in an effort to raise public awareness about natural hazards and the planned responses. Various trainings, including weather spotting courses, have been offered to help mitigate the effects of severe weather upon the county's citizenry.
- All Bowling Green schools have written and compiled an all-hazards plan which includes mitigation measures for natural disasters.
- The Emergency Management Director keeps a working reference library of all materials regarding disaster response, natural hazard mitigation, and rescue/evacuation plans. The reference material is freely shared with the public as well as interested municipal officials.

### Bowling Green Participation in NFIP (National Flood Insurance Program)

	Date joined NFIP	Policies in Force	Insurance in Force	Number of claims	Total Payments 1978-2009
Bowling Green	3/22/1974	3	\$203,500	2	\$3,312



## Population and Demographics

The population demographics below **do not** include the population of Northeast Correction Center **except** for total population. Bowling Green has a diverse population by age. The median age in Bowling Green is 36.5 years. The population under the age of five years is 6.6%. Senior citizens, those over the age of 65, constitute 18.3% of the Bowling Green's total population compared to 13.5% for the state of Missouri. These two groups, along with the children of school age will be given special consideration when planning mitigation actions for Bowling Green.

<b>City of Bowling Green</b>	<b>2000 Census</b>	
<b>Population Density</b>	<b>Number</b>	<b>Percent</b>
Total Persons	5,166*	100
Number of Households	1,290	xx
Average Household Size	2.3	xx
* Includes Northeast Correctional Center		
Source: 2000 U.S. Census		

<b>City of Bowling Green</b>	<b>2000 Census</b>	
<b>Population by Age Group</b>	<b>Number</b>	<b>Percent</b>
Under 5 years	216	6.6
Between 5 and 19 years	747	22.9
Between 20 and 64 years	1700	52.2
65 years and over	597	18.3
Median age	36.5 years	xx
Source: 2000 U.S. Census		

## Utilities

<b>Water</b>	Supplied by:	City of Bowling Green
	Source:	Two city reservoirs
	Capacity:	1,400,000 gallons/day
<b>Electricity</b>	Supplied by:	AmerenUE
<b>Gas</b>	Supplied by:	Atmos Energy
<b>Sanitation</b>	Supplied by:	City of Bowling Green
	Type:	SRB Plant and 2 cell lagoon
	Capacity:	SRB Plant, 750,000 gallons/day Lagoon, 500,000 gallons/day
<b>Trash collection</b>	Supplied by:	Sharp Bros



## Employment

Bowling Green has a diverse work force as seen in Table 3. The 2000 Census records show that Bowling Green had an unemployment rate of 8.9% out of total work force of 1,542 persons. These workers had a mean travel time to work of 18.2 minutes and their median household income was \$27,287. The statistics show that nearly 18% of the work force is professional or management. An additional 50% is in service, sales and office employment. Construction, maintenance, production and transportation account for an additional 31%.

<b>City of Bowling Green</b>	<b>2000 Census</b>	
<b>Occupation</b>	<b>Number</b>	<b>Percent</b>
Management, Professional	252	17.9
Service occupations	386	27.5
Sales and office occupations	318	22.6
Farming, fishing, and forestry	14	1.0
Construction and maintenance	165	11.7
Production and transportation	270	19.2
Total civilians employed	1,405	xx
Unemployment rate	137	8.9
Mean Travel time to work	18.2	xx
Median Household Income	\$27,287	xx
Persons below poverty level	395	13.1
Source: 2000 U.S. Census		

Bowling Green has four major employers (over 50 employees) within the city limits. Other workers compute to other parts of Pike, Lincoln, Audrain, or Ralls counties.

<b>Employer</b>	<b># of Persons Employed</b>	<b>City of Employment</b>
NECC, Northeast Correctional Center	590	Bowling Green
NECAC (Northeast Comm. Action Corp.)	316	Bowling Green
Pike County	104	Bowling Green
Daffron & Associates	59	Bowling Green
Walmart		Bowling Green
True Manufacturing		Bowling Green
Ameren UE		Bowling Green

## Education

The tables below show Bowling Green's education profile. At least 78 % of those over 25 years of age have at least earned their high school diploma. Almost 13 % of those have gone on to obtain an Associate, Bachelor, or advanced college degree.

<b>City of Bowling Green</b>	<b>2000 Census</b>	
<b>Education Profile</b>	<b>Number</b>	<b>Percent</b>
Total Persons over 25 years old	2,072	100
Less than High School Degree	458	22.1
High School Graduate	1,024	49.4
Some college	325	15.7
Associate or Bachelor Degree	195	9.4
Post-graduate or Professional Degree	70	3.4
Source: 2000 U.S. Census		

<b>City of Bowling Green</b>	<b>2000 Census</b>	
<b>Educational Enrollment</b>	<b>Number</b>	<b>Percent</b>
Total Persons enrolled in school	784	100
Nursery, pre-school	19	2.4
Kindergarten	84	10.7
Elementary ( 1 – 8 )	449	57.3
High School ( 9 – 12 )	151	19.3
College or graduate school	81	10.3
Source: 2000 U.S. Census		

Bowling Green R-I School District has a school complex at 700 W. Adams. The enrollment and staff are found in the table below. The Bowling Green R-I School District is one of the largest in the state in terms of square miles and serves approximately 1500 students. The elementary schools in Curryville and Frankford are in the Bowling Green R-I School District and students graduating from those elementary schools continue their education in the Bowling Green Middle and High Schools.

## Schools

<b>Name</b>	<b>Location</b>	<b>Students</b>	<b>Staff</b>
<b>Bowling Green R-I</b>			
Bowling Green Elementary	700 W. Adams, Bowling Green	475	44
Bowling Green Middle	700 W. Adams, Bowling Green	369	29
Bowling Green High	700 W. Adams, Bowling Green	485	39

## Vulnerabilities

### Public and Critical Facilities

Name	Location	City
<b>U.S. Facilities</b>		
U.S. Post Office	W. Church	Bowling Green
<b>Missouri Facilities</b>		
Northeast Correctional Center	13698 Airport Road	Bowling Green
MODOT Maintenance	Bus. Highway 54	Bowling Green
<b>Pike County Facilities</b>		
Pike County Courthouse	115 W. Main	Bowling Green
911 Center	115 W. Main	Bowling Green
Sheriff and County Jail	Hwy 54 W.	Bowling Green
Pike County Health Department	5 E. Church	Bowling Green
Pike County Highway Department		Bowling Green
<b>City of Bowling Green Facilities</b>		
Bowling Green City Hall	16 W. Church	Bowling Green
Bowling Green Police Department	15 W. Church	Bowling Green
Bowling Green Fire Department	W. Church	Bowling Green
Bowling Green Library	201 W. Locust	Bowling Green
Bowling Green Street Dept.		Bowling Green

### Health Care Facilities

Name	Location	# Units
Pike County Health Dept.	5 E. Church, Bowling Green	xx
Bowling Green Health Clinic	214 W. Church, Bowling Green	xx
Hannibal Clinic	710 Bus. 61 S., Bowling Green	xx
Pike County Ambulance	Bus. 54, Bowling Green	xx
Eastern Missouri Health Services	1015 W. Adams	xx
Pike Medical Clinic	905 Bus. 54 @ Hwy 161	xx

The nearest hospital is the Pike County Memorial Hospital, 2305 W. Georgia, Louisiana, which is 11 miles to the east.

### Long Term Care and / or Nursing Homes / Senior Housing

Name	Location	# Beds
Moore-Pike Nursing Home	300 S. St. Charles	65
Country View Nursing Facility	2106 W. Main	60
Sidewell Retirement	119 W. Centennial	20
Towers Senior Citizens Complex	510 W. Champ Clark	

### Licensed Child Care Facilities

Name	Location	Capacity
DSC Head Start	1903 W. Locust	94
The Learning Center	805 N. Bus. Hwy 61	50
Robie Orf	1011 Bus Hwy 161 S	10
Christy Cannon	420 McWard Drive	10
Karen Hale	501 N. St. Charles	10
Karen Edwards	220 N. Main Cross	10
Rosemary Conrow	416 S. 15 <sup>th</sup> St.	10

### Schools

Name	Location	Students	Staff
<b>Bowling Green R-I</b>			
Bowling Green Elementary	700 W. Adams, Bowling Green	475	44
Bowling Green Middle	700 W. Adams, Bowling Green	369	29
Bowling Green High	700 W. Adams, Bowling Green	485	39

### Trailer Courts

Name	Location	# Units
Town and Country	817 Bus. Hwy 61 N,	14 units
Lampighter	S. 20 <sup>th</sup> St.	24
Mid-Town Mobile Homes	701 N. 15 <sup>th</sup> St.	30
Dempsey's	1800 W. Church	5
Matt's	S. 20 <sup>th</sup> St.	14

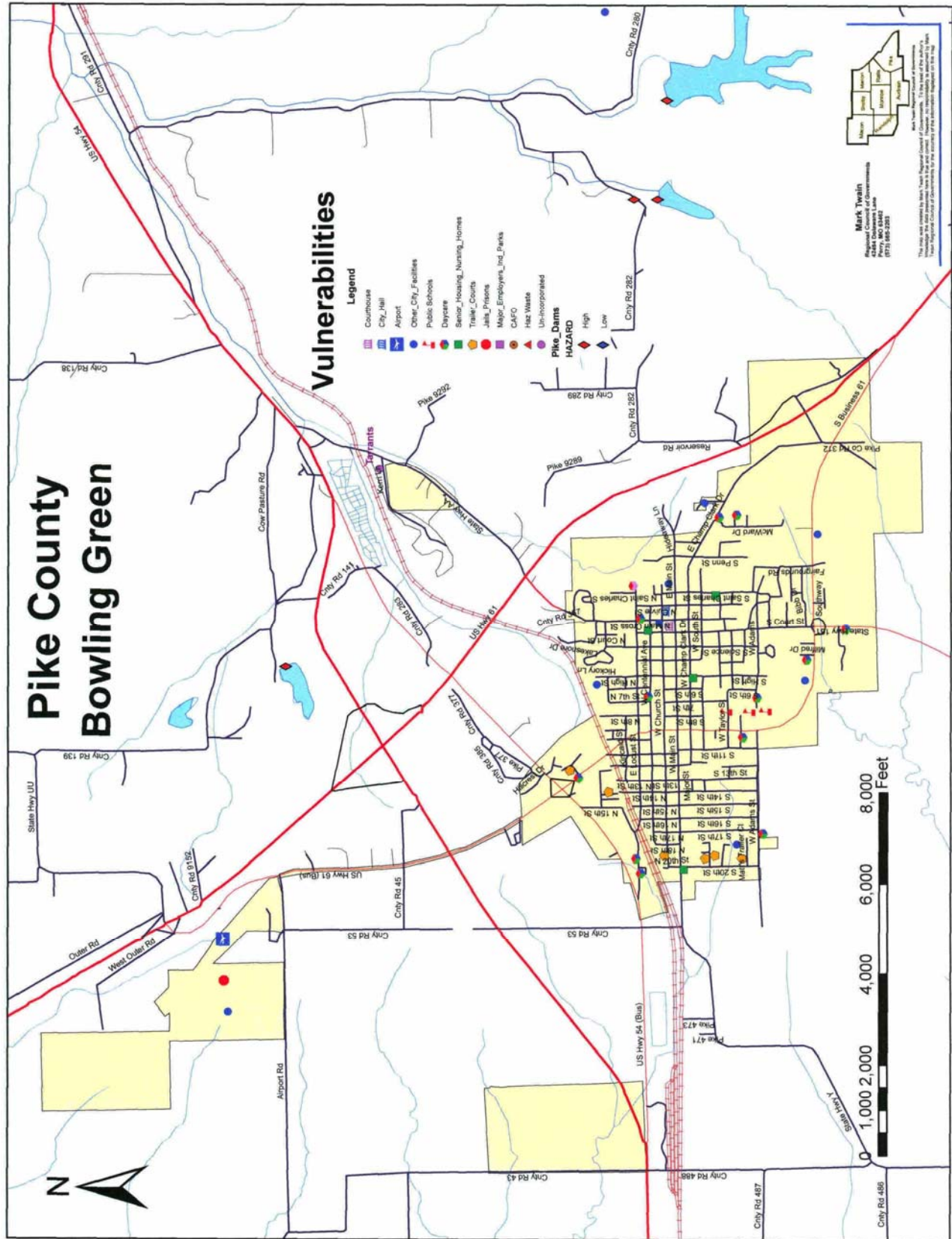
### Hazardous Materials

The local Pike County LEPC handles any emergencies involving hazardous materials. It is important to know the location of hazardous material because of the cascading effect from a natural hazard. Addresses of the hazardous material locations in the county can be found in the Pike County Emergency Operations Plan—Hazardous Materials Response--LEPC manual.

The Hazard Mitigation Committee recommends that a comprehensive map of these locations be made available to all emergency personnel in the event of a natural hazard.

Within the city limits of Bowling Green, the following businesses have bulk propane gas tanks above ground. These are considered hazardous in the event of a natural hazard event.

Name	Location
Ferrell Gas	822 VFW Road
MFA Oil Co.	1407 W. Locust
Ayers Oil	410 Bus. Hwy 61 N.
B.G. Fuel Stop	18048 Bus. 161 S.



## Capabilities

### Public and Critical Facilities

Name	Location	City
<b>U.S. Facilities</b>		
U.S. Post Office	W. Church	Bowling Green
<b>Missouri Facilities</b>		
Northeast Correctional Center	13698 Airport Road	Bowling Green
MODOT Maintenance	Bus. Highway 54	Bowling Green
<b>Pike County Facilities</b>		
Pike County Courthouse	115 W. Main	Bowling Green
911 Center	115 W. Main	Bowling Green
Sheriff and County Jail	1600 Hwy 54 W.	Bowling Green
Pike County Health Department	5 E. Church	Bowling Green
Pike County Highway Department		Bowling Green
<b>City of Bowling Green Facilities</b>		
Bowling Green City Hall	16 W. Church	Bowling Green
Bowling Green Police Department	15 W. Church	Bowling Green
Bowling Green Fire Department	W. Church	Bowling Green
Bowling Green Library	201 W. Locust	Bowling Green
Bowling Green Street Dept.		Bowling Green

### Law Enforcement and Fire Departments

Name	Location	Staff
Bowling Green Police Dept.	15 W. Church, Bowling Green	6 officers
Bowling Green Volunteer Fire Dept.	W. Church, Bowling Green	15 firefighters
Pike County Sheriff	1600 Bus. Hwy 54, Bowling Green	8 officers

### Health Care Facilities

Name	Location	# Units
Pike County Health Dept.	5 E. Church, Bowling Green	xx
Bowling Green Health Clinic	214 W. Church, Bowling Green	xx
Hannibal Clinic	710 Bus. 61 S., Bowling Green	xx
Pike County Ambulance	Bus. 54, Bowling Green	xx
Eastern Missouri Health Services	1015 W. Adams	xx
Pike Medical Clinic	905 Bus. 54 @ Hwy 161	xx

The nearest hospital is the Pike County Memorial Hospital, 2305 W. Georgia, Louisiana, which is 11 miles to the east.

## Emergency Operations Centers

Name	Location
Sheriff's Department	1600 Bus. Hwy 54 W.
Bowling Green Police Department	15 W. Church

## Shelters

Name	Location
Church of the Nazarene	807 S. Court Street, Bowling Green
Bowling Green Elementary	700 W. Adams, Bowling Green
Bowling Green Middle	700 W. Adams, Bowling Green
Bowling Green High	700 W. Adams, Bowling Green
Presbyterian Church	205 W. Centennial, Bowling Green
Bowling Green Fire Station	W. Church, Bowling Green

## Emergency services

### 911 Center

The 911 Center at the Pike County Sheriff's Office takes all emergency calls, then dispatches ambulance, fire and law enforcement departments that serve Bowling Green.

Pike County Health Department takes steps to prevent contamination and other health concerns in emergencies and disasters.

In addition Bowling Green maintains Agreements of Mutual Assistance with all the surrounding communities.

### In-Place Plans

#### Hazardous Material Response Plan LEPC

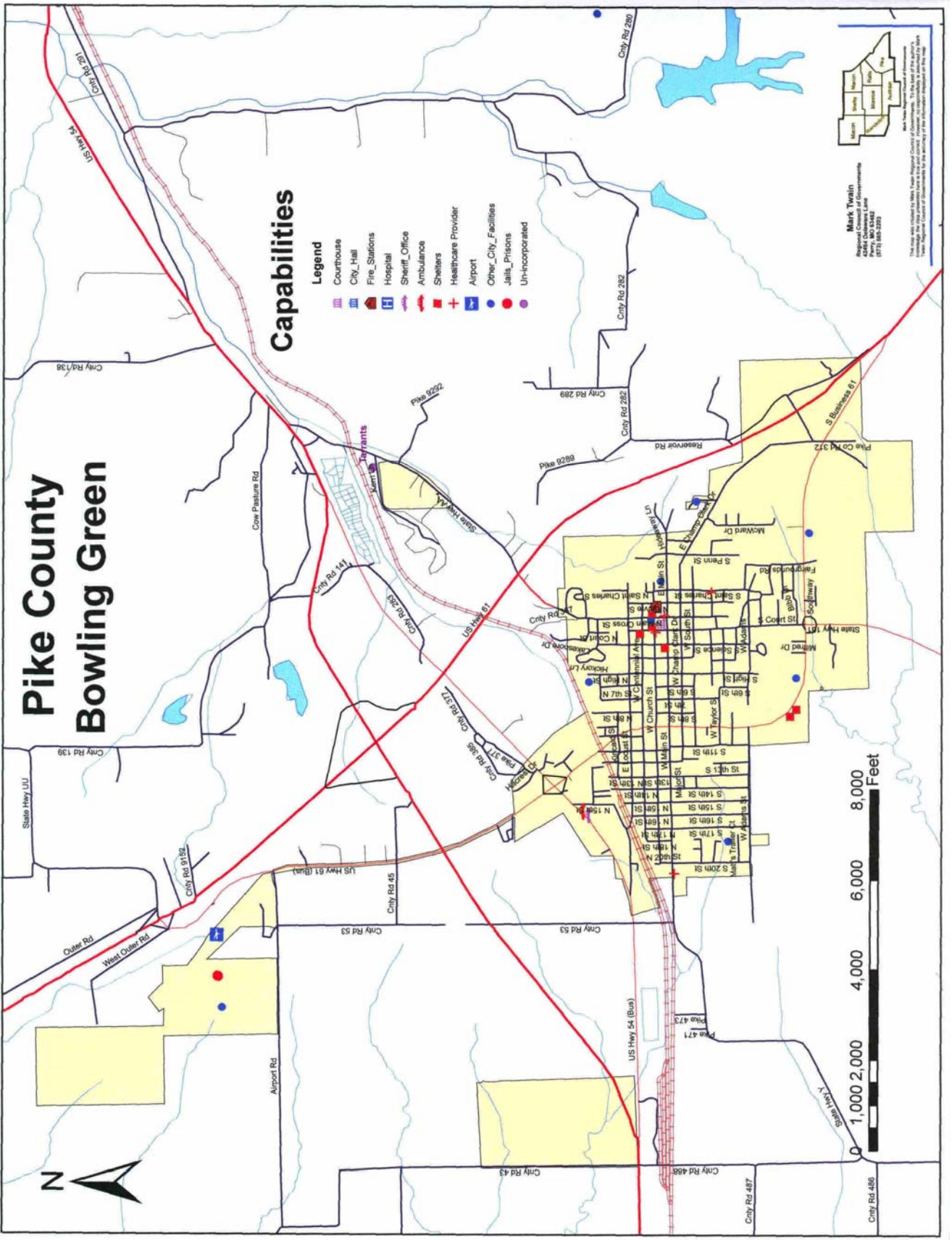
Pike County

#### Emergency Operations Plans (EOP)

Bowling Green EOP

Pike County EOP







# Mitigation

## Definition of Mitigation

Mitigation is defined as “...sustained (long-termed) action that reduces or eliminates long-term risk to people and property from natural hazards and their effects.” It describes the ongoing effort at the Federal, State, local and individual levels to lessen the impact of disasters upon our families, homes, communities and economy. (HMP Handbook p.15)

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

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

### Mission

The mission of the Bowling Green Natural Hazards Mitigation Plan is to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards.

### Goals

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

### Objectives

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

### Action Items and Strategies

The action items are a listing of activities in which county agencies and citizens can be engaged to reduce risk. Each action item includes an estimate of the timeline and strategies for implementation. When developing mitigation strategy, the planning committee followed several guidelines for selection of action items. They looked for action items that were socially acceptable, technically feasible, administratively executable by local communities, politically acceptable, legally implemented by county, economically feasible and environmentally sound (STAPLEE). The planning committee eliminated no action items after the STAPLEE guidelines were followed. A summary of the STAPLEE guidelines for each action item can be found at the end of this section.

## **Mission Statement**

The mission of the Bowling Green-Pike County Natural Hazards Mitigation Plan is to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the environment from natural hazards. This can be achieved by increasing public awareness, documenting the resources for risk reduction and loss-prevention, and identifying activities to guide the county towards building a safer, more sustainable community. This plan will work in conjunction with plans in place listed at the end of the community profiles.

## **Mitigation Goals**

The three goals of natural hazard mitigation for Bowling Green are:

- A. Protect the lives and livelihoods of all the citizens
- B. Decrease the impact of natural hazards
- C. Ensure continued operation of government and emergency functions in a disaster.

## **Mitigation Plan Objectives**

The Plan objectives help to guide direction of future activities aimed at reducing risk and preventing loss from natural hazards. The objectives listed here serve as checkpoints as agencies and organizations begin implementing mitigation action items.

### **1. Protect Life and Property**

- Implement activities that assist in protecting lives by making homes, businesses, infrastructure, critical facilities, and other property more resistant to natural hazards.
- Reduce losses and repetitive damages for chronic hazard events while promoting insurance coverage for catastrophic hazards.
- Improve hazard assessment information to make recommendations for discouraging new development and encouraging preventative measures for existing development in areas vulnerable to natural hazards.

### **2. Public Awareness**

- Develop and implement education and outreach programs to increase public awareness of the risks associated with natural hazards.
- Provide information on tools, partnership opportunities, and funding resources to assist in implementing mitigation activities.

### 3. Natural Systems

- Balance watershed planning, natural resource management, and land use planning with natural hazard mitigation to protect life, property, and the environment.
- Preserve, rehabilitate, and enhance natural systems to serve natural hazard mitigation functions.

### 4. Partnerships and Implementation

- Strengthen communication and coordinate participation among and within public agencies, citizens, non-profit organizations, business, and industry to gain a vested interest in implementation.
- Encourage leadership within public and private sector organizations to prioritize and implement local, county, and regional hazard mitigation activities.

### 5. Emergency Services

- Establish policy to ensure mitigation projects for critical facilities, services, and infrastructure.
- Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations, business, and industry.
- Coordinate and integrate natural hazard mitigation activities, where appropriate, with emergency operations plans and procedures.

## Mitigation Action Items and Strategies

Action Items and Strategies were developed for each of the seven natural hazards that may face the citizens of Bowling Green. Timeframe for completion, strategies to complete each action item and the coordinating organizations were determined for each action.

The action items addressed by the Bowling Green Hazard Mitigation Committee included:

- **Prevention.** Prevention actions are intended to keep a hazard risk problem from getting worse. Using prevention actions, future development can be guided away from hazards, while maintaining other community goals.
- **Property Protection.** Property protection actions are used to modify buildings subject to hazard risk, rather than to prevent the hazard from occurring. These actions directly protect people and property at risk.
- **Natural Resource Protection.** Natural resource protection actions are intended to reduce the intensity of hazard effects as well as to improve the quality of the environment and wildlife habitats. Conservation agencies usually implement these activities.

- **Emergency Services.** Emergency services actions protect people before and after a hazards event. Most counties have emergency management offices to coordinate warning, response, and recovery during a disaster.
- **Structural.** Structural actions involve construction of man-made structures to control hazards. Examples are levees, floodwalls, and storm sewers.
- **Public Information.** Public information activities inform and remind people about hazardous areas and the measures necessary to avoid potential damage and injury.

## Organization of Mitigation Action Items

The mitigation plan identifies action items developed through data collection and research. Action items were determined that pertained to all the natural hazards ( AH) that face Bowling Green, and then determined specific action items for each of the seven natural hazards. To help ensure activity implementation, each action item includes information on the timeline and coordinating organizations. Upon implementation, the coordinating organizations may look to partner organizations for resources and technical assistance.

- **Coordinating Organization.** The coordinating organization is the organization that is willing and able to organize resources, find appropriate funding, or oversee activity implementation, monitoring, and evaluation. Coordinating organizations may include local, county, or regional agencies that are capable of or responsible for implementing activities and programs.
- **Timeline.** Action items include both short and long-term activities. Each action item includes an estimate of the timeline for implementation.
- **Ideas for Implementation.** Each action item includes ideas for implementation and potential resources, which may include grant programs or human resources.
- **Plan Objectives Addressed.** The plan objectives addressed by each action item are included as a way to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins.
- **Priority.** The Mitigation Action Items and Strategies are listed in this section in order of priority for each hazard and summarized in a Five Year Matrix at the end of this section.

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

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

Utilizing the previous Natural Hazards Mitigation Plan, the Bowling Green Hazard Mitigation Committee has a comprehensive list of possible hazards and ways to mitigate their

impact. The benefit/cost is determined by considering the number of citizens served by the action, the long-term effects of said action, and a number of other factors.

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

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

The information needed to answer these questions effectively can be found throughout the plan. This information assisted each jurisdiction in answering these questions. Once they used this procedure, each jurisdiction was able to prioritize their mitigation actions. Once jurisdictions had completed the Cost-Benefit Review, they then had to take into account other variables such as the ability to implement actions and funding considerations to complete the prioritization process.

## **Public Participation**

Meetings with the Hazard Mitigation Committees served as the method to obtain input and identify priorities in developing goals for reducing risk and preventing loss from natural hazards in Bowling Green. Articles in the local papers informed the public that hazard mitigation planning was occurring in their communities and they were invited to let their concerns be known.

In accordance with Missouri's "sunshine law" (RSMo 610.010, 610.020, 610.023, and 610.024), the public was notified each time the Hazard Mitigation Committees met and the plan, or sections of the plan, was presented for review. Input from the general public was solicited through media outlets and various reminders at public gatherings.

The Hazard Mitigation Committees met to determine action items that would address each of the plan objectives, determine which organizations or groups within the county would be responsible for the action, an estimated timeline for the action, and to prioritize the action items.

## **5 Year Review, Update and Revision Process 2009**

All Hazard Mitigation Plans are required to be revised every five years after initial approval by FEMA. The first Pike County Multi-Jurisdiction Natural Hazard Mitigation Plan was finalized in December 2004. The city of Bowling Green was contacted to form a Hazard Mitigation Committee.

At the initial meeting, the committee reviewed and discussed the applicability of each portion in the original Hazard Mitigation Plan and opted to update all sections of the plan,

though in varying degrees. Committee members were asked to provide updated information on critical response capabilities and assets within their communities for the next meeting.

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

The next meetings were held to discuss the mitigation action items developed in the 2004 plan and if they were completed, needed revision or were to be deleted, and any new action items that the committee felt were needed. The result of those meetings is summarized in the 5 Year Mitigation Action Matrix found at the end of the Mitigation section for each jurisdiction. The 2004 Action Items are presented followed by the revision and comments highlighted in yellow.

The committee's final meeting was focused on plan maintenance and implementation and review of the entire plan. Annual assessments will be conducted by the County's Emergency Management Director and will be open to the public. Press releases in local newspapers will encourage public participation in the assessment process. Plan copies will be publicly accessible in each local jurisdiction for review and comment by county citizens.

The 2004 Action Items and the 2009 revisions are also analyzed using **STAPLEE** (action items that were socially acceptable, technically feasible, admistratively executable by local communities, politically acceptable, legally implemented by county, economically feasible and environmentally sound (**STAPLEE**)). A summary of the **STAPLEE** guidelines for each action item can be found at the end of this section just before the 5 Year Mitigation Action Matrix. The 2004 action items are listed, and the **2009 revisions and new action items are in bold print.**

### **City of Bowling Green---Hazard Mitigation Committee 2009**

J D Kehrman	City Administrator
Mel Meyer	Fire Chief
Dave Oney	Acting Police Chief
Bo Stinnett	Manager Public Works
Mel Orf	Building and Zoning Inspector
Barb Allison	City Clerk

## Staplee Evaluation of Action Items.

		<b>S</b>	<b>T</b>	<b>A</b>	<b>P</b>	<b>L</b>	<b>E</b>	<b>E</b>
	<b>Action Item</b>	Social	Technical	Administrative	Political	Legal	Economic	Environmental Considerations
****	The 2004 action items are listed, and the <b>2009 revisions and new action items are in bold print.</b>							
<b>AH #1</b>	Evaluate and upgrade as needed the current emergency response communication infrastructure. -- <b>Upgrade communication in accordance with rest of county and 911. Fire Dept. update radios. Base radio upgrade at Police Dept</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #2</b>	Maintain and replace missing street signs. -- <b>Also enforce ordinance requiring all buildings and homes to have addresses displayed as part of ICC building codes</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #3</b>	Obtain sufficient back-up generators for designated “after the event” shelters, continue to monitor for future needs. -- <b>Shelter at Bowling Green High Rise has generator. Generator can be moved to Nazarene Church shelter. Fire Dept maintains list of shelters and updates list monthly</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #4</b>	Education, brochures, provided to schools and citizens. -- -- <b>Task Force will distribute packet of informational brochures to each household. --Information will be added to new city webpages. -- Notices included in the utility bills. Articles in the Bowling Green Times throughout the year.</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #5</b>	Promote NOAA radio Use. -- <b>Articles in the Bowling Green Times. Brochures available at City Hall Investigate funding sources for NOAA radios at reduced costs</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #6</b>	Maintain transportation infrastructure. -- <b>Ongoing</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #7</b>	Participate in regularly scheduled Table-top exercises and mock emergency exercises. Update Emergency Preparedness Manual. -- <b>Participate in county and regional exercises as well as the Prison mock exercises and True Manufacturing mock accident exercises and fire drills.</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #8</b>	Maintain Mutual Aid Agreements and update on regular schedule. -- <b>Ongoing and current</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #9</b>	<b>Warning siren testing every 1<sup>st</sup> Monday of the month</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #10</b>	<b>Will consider joining the “Call Cast” through Pike County 911 for phone alerts to all citizens</b>	✓	✓	✓	✓	✓	✓	NA
<b>AH #11</b>	<b>Have backup generators for the water and wastewater plants</b>	✓	✓	✓	✓	✓	✓	✓
<b>AH #12</b>	<b>Encourage all commercial businesses to install a “Knox” box that holds a key for access by Fire Dept in emergency.</b>	✓	✓	✓	✓	✓	✓	NA

\*\*\*\* WW -- Winter Weather / Ice Storms    T -- Tornados/ Storms    F -- Flooding,    EQ -- Earthquake  
 WF -- Wildfire    DF -- Dam Failure    EHD -- Extreme Heat/ Drought    LS--Landslide  
 SH -- Sinkhole    LF -- Levee Failure    AH -- All Hazards

## Staplee Evaluation of Action Items.

		<b>S</b>	<b>T</b>	<b>A</b>	<b>P</b>	<b>L</b>	<b>E</b>	<b>E</b>
	<b>Action Item</b>	Social	Technical	Administrative	Political	Legal	Economic	Environmental Considerations
****	The 2004 action items are listed, and the <b>2009 revisions and new action items are in bold print.</b>							
<b>T #1</b>	Work with AmerenUE on tree and debris removal interfering with power lines. -- <b>Ongoing</b>	✓	✓	✓	✓	✓	✓	✓
<b>T #2</b>	Promote use of NOAA radios in schools, nursing homes, businesses, private homes, and large gatherings. -- <b>Articles in the Bowling Green Times. Brochures available at City Hall Investigate funding sources for NOAA radios at reduced costs</b>	✓	✓	✓	✓	✓	✓	NA
<b>T #3</b>	Update and maintain list of buildings that are designated “after the event” shelters, distribute list <del>Shelters fully equipped and back-up generators.</del> -- <b>Shelter at Bowling Green High Rise has generator. Generator can be moved to Nazarene Church shelter. Fire Dept maintains list of shelters and updates list monthly</b>	✓	✓	✓	✓	✓	✓	NA
<b>T #4</b>	Distributed information on how to retrofit windows in schools, daycares, and nursing homes. -- <b>DELETE</b>	✓	✓	✓	✓	✓	✓	NA
<b>T #5</b>	Investigate possible ordinance to require mobile home parks to have on-site storm shelter. -- <b>DELETE -- not included in the building codes ICC</b>	✓	✓	✓	✓	✓	✓	NA
<b>T #6</b>	Educational brochures on what to do during a tornado or severe storm. -- <b>Information will be added to new city webpage. Articles in the Bowling Green Times</b>	✓	✓	✓	✓	✓	✓	NA
<b>T #7</b>	Maintain and test warning sirens. Upgrade system as needed. -- <b>Warning siren testing every 1<sup>st</sup> Monday of the month Investigate acquiring an additional siren on west side of town</b>	✓	✓	✓	✓	✓	✓	NA
<b>T #8</b>	Partnership with local cable company to make severe weather announcements. -- <b>DELETE -- Cable company no longer offers this service</b>	✓	✓	✓	✓	✓	✓	NA
<b>F #1</b>	Maintain, enforce, and update as needed---Floodplain Ordinance. -- <b>Floodplain Ordinance up to date. Floodplain Manager attends classes to remain current.</b>	✓	✓	✓	✓	✓	✓	✓
<b>F #2</b>	Work with FEMA and Army Corp of Engineers to update Floodplain map as needed. -- <b>Currently working with FEMA to update floodplain maps, new floodplain maps go into effect 2010</b>	✓	✓	✓	✓	✓	✓	✓
<b>F #3</b>	Conduct engineering study on the storm water drainage system and 4 major tributaries. -- <b>Completed study</b>	✓	✓	✓	✓	✓	✓	✓
<b>F #4</b>	Review storm water drainage system engineering study and develop plan of action and funding. -- <b>Completed study and completed improvements to storm water drainage system Regular cleaning of culverts</b>	✓	✓	✓	✓	✓	✓	✓
<b>F #5</b>	Ordinance to require a water flow engineering study for all new developments with respect to effects on rest of city. -- <b>Ordinance passed and enforced---Ongoing</b>	✓	✓	✓	✓	✓	✓	✓

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 WF -- Wildfire      DF -- Dam Failure      EHD -- Extreme Heat/ Drought      LS--Landslide  
 SH -- Sinkhole      LF -- Levee Failure      AH -- All Hazards



## Staplee Evaluation of Action Items.

		<b>S</b>	<b>T</b>	<b>A</b>	<b>P</b>	<b>L</b>	<b>E</b>	<b>E</b>
	<b>Action Item</b>	Social	Technical	Administrative	Political	Legal	Economic	Environmental Considerations
****	The 2004 action items are listed, and the <b>2009 revisions and new action items are in bold print.</b>							
<b>WW #1</b>	Remove trees from power line easements in addition to current trimming program. -- <b>Ongoing</b>	✓	✓	✓	✓	✓	✓	✓
<b>WW #2</b>	Maintain snow plowing and removal equipment. -- <b>Salt storage facility built. Established emergency snow routes throughout the city. Upgrade equipment as needed</b>	✓	✓	✓	✓	✓	✓	NA
<b>WW #3</b>	Insure that school buses are outfitted with two –way radios. -- <b>Ongoing</b>	✓	✓	✓	✓	✓	✓	NA
<b>WW #4</b>	<b>Maintain list of shelters that can be used for cold weather shelters as needed and update list monthly</b>	✓	✓	✓	✓	✓	✓	NA
<b>EQ # 1</b>	Encourage schools to conduct programs on earthquake safety. -- <b>Ongoing</b>	✓	✓	✓	✓	✓	✓	NA
<b>EQ # 2</b>	Have speaker <del>and/or materials available</del> to conduct programs on earthquake safety. -- <b>Have speaker to conduct programs on earthquake safety</b>	✓	✓	✓	✓	✓	✓	NA
<b>EQ # 3</b>	Use HAZUS software to potential loss due to earthquakes. -- <b>DELETE</b>	✓	✓	✓	✓	✓	✓	NA
<b>EQ # 4</b>	Informational brochures available to public, newspaper articles. -- <b>Information will be added to new city webpage. Notices included in the utility bills.</b>		✓	✓	✓	✓	✓	✓
<b>EQ # 5</b>	Design Construction Awareness Brochures. -- <b>Information will be added to new webpage. ICC Building codes in place</b>	✓	✓	✓	✓	✓	✓	NA
<b>EQ # 6</b>	Participate in regularly scheduled training exercises. -- <b>Ongoing</b>	✓	✓	✓	✓	✓	✓	NA
<b>EQ # 7</b>	Enforcement of current Building codes. -- <b>Enforcement of Building codes ICC</b>	✓	✓	✓	✓	✓	✓	NA
<b>EHD #1</b>	Establish cooling centers at shelters. -- <b>Maintain list of shelters that can be used for hot weather shelters as needed and update list monthly</b>	✓	✓	✓	✓	✓	✓	NA
<b>EHD #2</b>	Encourage Drought resistant yard watering practices. -- <b>Ongoing</b>	✓	✓	✓	✓	✓	✓	✓
<b>EHD #3</b>	City has an agreement with Clarence Cannon Wholesale Water to as a secondary source for water. <b>Infrastructure will be constructed within 1 year.</b>	✓	✓	✓	✓	✓	✓	✓

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 WF -- Wildfire    DF -- Dam Failure    EHD -- Extreme Heat/ Drought    LS--Landslide  
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### Staplee Evaluation of Action Items.

		<b>S</b>	<b>T</b>	<b>A</b>	<b>P</b>	<b>L</b>	<b>E</b>	<b>E</b>
<b>****</b>	<b>Action Item</b> The 2004 action items are listed, and the <b>2009 revisions and new action items are in bold print.</b>	Social	Technical	Administrative	Political	Legal	Economic	Environmental Considerations
<b>WF # 1</b>	Burning Bans issued by Fire Department as needed. -- <b>Burning Ban ordinance in place and enforced—no burning in city limits</b>	✓	✓	✓	✓	✓	✓	✓
<b>DF # 1</b>	Inspect and maintain dams at city reservoirs according to Dept. of Natural Resources standards. -- <b>City crews monitor and maintain the city dams. Inspected by MO DNR every two years.</b>	✓	✓	✓	✓	✓	✓	✓
<b>LF</b>	<b>Not Applicable</b>							
<b>SH</b>	<b>Not Applicable</b>							
<b>LS</b>	<b>Not Applicable</b>							

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 WF -- Wildfire    DF -- Dam Failure    EHD -- Extreme Heat/ Drought    LS--Landslide  
 SH -- Sinkhole    LF -- Levee Failure    AH -- All Hazards

# Five Year Matrix Mitigation Action Summary Sheets

## Natural Hazards Considered for Mitigation

Tornados and Thunderstorms  
Flooding  
Winter Weather/ Ice Storms  
Extreme Heat / Drought  
Earthquake  
Wildfire  
Dam Failure  
Sinkholes  
Landslides  
Levee Failure

Action Items that pertain to All Hazards.

The Mitigation Action Items are listed in order of priority for each hazard.

Action Items updated in 2009 are in yellow shaded rows.

Natural Hazard	Action Item and Strategy	Coordinating Organization	Timeline	N—New R—Revision O---Ongoing	Funding	Goals			Objectives					
						Protect lives and livelihoods	Decrease Impact of Hazards	Cont'd operation of government & emergency functions	Protect life and Property	Public Awareness	Natural Systems	Partnerships	Emergency Service	Structural **
All hazards <b>AH #1</b>	Evaluate and upgrade as needed the current emergency response communication infrastructure.	HMC Police, Fire	Ongoing			✓	✓	✓	✓			✓	✓	✓
<b>2009 Update</b>	<b>Upgrade communication in accordance with rest of county and 911. Fire Dept. update radios Base radio upgrade at Police Dept</b>	<b>HMC, Emergency personnel</b>	<b>2 years 2 years</b>	<b>R</b>	<b>LF F-S-G</b>	✓	✓	✓	✓			✓	✓	<b>E N</b>
All hazards <b>AH #2</b>	Maintain and replace missing street signs.	Pike Co. 911 Street Dept	Ongoing					✓		✓		✓	✓	
<b>2009 Update</b>	<b>Also enforce ordinance requiring all buildings and homes to have addresses displayed as part of ICC building codes</b>	<b>HMC, Building Inspector</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓		✓		✓		✓	✓	<b>E N</b>
All hazards <b>AH #3</b>	Obtain sufficient back-up generators for designated “after the event” shelters, continue to monitor for future needs.	HMC, EPC	1-2 years			✓	✓		✓			✓	✓	✓
<b>2009 Update</b>	<b>Shelter at Bowling Green High Rise has generator. Generator can be moved to Nazarene Church shelter. Fire Dept maintains list of shelters and updates list monthly</b>	<b>HMC</b>	<b>Ongoing</b>	<b>R</b>	<b>LF</b>	✓	✓		✓			✓	✓	

EOC---Emergency Operations Center  
HMC—Hazard Mitigation Committee

LF---Local Funding  
EMD—Emergency Management Director

N/A Not Applicable  
F-S-G Federal / State Grants  
MODOT—Missouri Dept of Trans

\*\* E = Existing Buildings N = New Buildings

The Mitigation Action Items are listed in order of priority for each hazard.

Action Items updated in 2009 are in yellow shaded rows.

Natural Hazard	Action Item and Strategy	Coordinating Organization	Timeline	N—New R—Revision O---Ongoing	Funding	Goals			Objectives					
						Protect lives and livelihoods	Decrease Impact of Hazards	Cont'd operation of government & emergency functions	Protect life and Property	Public Awareness	Natural Systems	Partnerships	Emergency Service	Structural **
All hazards <b>AH #4</b>	Education, brochures, provided to schools and citizens.	HMC, Schools, media, webpage	1-2 years			✓	✓			✓		✓		✓
<b>2009 Update</b>	--Task Force will distribute packet of informational brochures to each household. --Information will be added to new city webpages. -- Notices included in the utility bills. Articles in the Bowling Green Times throughout the year.	HMC, Schools, media, webpage	3 months 6 month Ongoing	R	LF	✓	✓			✓		✓		
All hazards <b>AH #5</b>	Promote NOAA radio Use.	HMC, media	1year			✓	✓			✓		✓		✓
<b>2009 Update</b>	Articles in the Bowling Green Times Brochures available at City Hall Investigate funding sources for NOAA radios at reduced costs	HMC, media	Ongoing Ongoing 6 months	O R	LF	✓	✓			✓		✓		
All hazards <b>AH #6</b>	Maintain transportation infrastructure.	Street dept.	Ongoing			✓	✓	✓				✓	✓	✓
<b>2009 Update</b>	Ongoing	Street Dept.	Ongoing	O	LF	✓	✓	✓					✓	✓
All hazards <b>AH #7</b>	Participate in regularly scheduled Table-top exercises and mock emergency exercises. Update Emergency Preparedness Manual.	Emer. Operation personnel, police and fire Dept., HMC	Ongoing			✓	✓	✓	✓			✓	✓	✓
<b>2009 Update</b>	Participate in county and regional exercises as well as the Prison mock exercises and True Manufacturing mock accident exercises and fire drills.	HMC, Fire Dept, Emergency personnel	Ongoing	O	LF	✓	✓	✓	✓			✓	✓	

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HMC---Hazard Mitigation Committee

LF---Local Funding  
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N/A Not Applicable  
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Natural Hazard	Action Item and Strategy	Coordinating Organization	Timeline	N—New R—Revision O---Ongoing	Funding	Goals			Objectives					
						Protect lives and livelihoods	Decrease Impact of Hazards	Cont'd operation of government & emergency functions	Protect life and Property	Public Awareness	Natural Systems	Partnerships	Emergency Service	Structural **
All hazards <b>AH #8</b>	Maintain Mutual Aid Agreements and update on regular schedule.	Law enforcement, Fire Dept., HMC	Ongoing			✓	✓	✓				✓	✓	✓
<b>2009 Update</b>	<b>Ongoing and current</b>	<b>HMC, Fire Dept, Emergency personnel</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓	✓				✓	✓	
<b>2009 Update</b> All hazards <b>AH #9</b>	<b>Warning siren testing every 1<sup>st</sup> Monday of the month</b>	<b>HMC, Fire Dept, Emergency personnel</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓	✓			✓	
<b>2009 Update</b> All hazards <b>AH #10</b>	<b>Will consider joining the “Call Cast” through Pike County 911 for phone alerts to all citizens</b>	<b>HMC, Fire Dept, Emergency personnel</b>	<b>2 years</b>	<b>N</b>	<b>LF</b>	✓	✓	✓	✓	✓		✓	✓	
<b>2009 Update</b> All hazards <b>AH #11</b>	<b>Have backup generators for the water and wastewater plants</b>	<b>Water and Wastewater Depts</b>	<b>Ongoing</b>	<b>N</b>	<b>LF</b>	✓	✓	✓	✓		✓		✓	<b>E</b>
<b>2009 Update</b> All hazards <b>AH #12</b>	<b>Encourage all commercial businesses to install a “Knox” box that holds a key for access by Fire Dept in emergency.</b>	<b>HMC, Fire Dept, Emergency personnel</b>	<b>Ongoing</b>	<b>N</b>	<b>LF</b>	✓	✓		✓	✓		✓	✓	<b>E N</b>

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Natural Hazard	Action Item and Strategy	Coordinating Organization	Timeline	N—New R—Revision O---Ongoing	Funding	Goals			Objectives					
						Protect lives and livelihoods	Decrease Impact of Hazards	Cont'd operation of government & emergency functions	Protect life and Property	Public Awareness	Natural Systems	Partnerships	Emergency Service	Structural **
Tornados/ Storms <b>T #1</b>	Work with AmerenUE on tree and debris removal interfering with power lines.	HMC, AmerenUE Utility Company	Ongoing			✓	✓	✓	✓			✓	✓	✓
<b>2009 Update</b>	<b>Ongoing</b>	<b>HMC, AmerenUE Utility Company</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓	✓	✓			✓	✓	
Tornados/ Storms <b>T #2</b>	Promote use of NOAA radios in schools, nursing homes, businesses, private homes, and large gatherings.	HMC, media	1-2 years			✓	✓		✓	✓		✓	✓	✓
<b>2009 Update</b>	<b>Articles in the Bowling Green Times Brochures available at City Hall Investigate funding sources for NOAA radios at reduced costs</b>	<b>HMC, media</b>	<b>Ongoing Ongoing 6 months</b>	<b>O R</b>	<b>LF</b>	✓	✓		✓	✓				
Tornados/ Storms <b>T #3</b>	Update and maintain list of buildings that are designated “after the event” shelters, distribute list <del>Shelters fully equipped and back-up generators.</del>	HMC, EPD, law enforcement, media	Ongoing			✓	✓		✓	✓			✓	✓
<b>2009 Update</b>	<b>Shelter at Bowling Green High Rise has generator. Generator can be moved to Nazarene Church shelter. Fire Dept maintains list of shelters and updates list monthly</b>	<b>HMC, Emergency personnel</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓			✓	✓	<b>E</b>
Tornados/ Storms <b>T #4</b>	Distributed information on how to retrofit windows in schools, daycares, and nursing homes.	HMC	1-2 years			✓	✓		✓	✓			✓	✓
<b>2009 Update</b>	<b>DELETE NA</b>		<b>X</b>											

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Natural Hazard	Action Item and Strategy	Coordinating Organization	Timeline	N—New R—Revision O---Ongoing	Funding	Goals			Objectives					
						Protect lives and livelihoods	Decrease Impact of Hazards	Cont'd operation of government & emergency functions	Protect life and Property	Public Awareness	Natural Systems	Partnerships	Emergency Service	Structural **
Tornados/ Storms <b>T #5</b>	Investigate possible ordinance to require mobile home parks to have on-site storm shelter.	HMC	1-5 years			✓	✓		✓	✓			✓	✓
<b>2009 Update</b>	<b>DELETE -- -not included in the building codes ICC</b>		X											
Tornados/ Storms <b>T #6</b>	Educational brochures on what to do during a tornado or severe storm.	Schools, HMC, EPD, law enforcement	1-2 years			✓	✓		✓	✓			✓	✓
<b>2009 Update</b>	<b>Information will be added to new city webpage. Articles in the Bowling Green Times</b>	<b>HMC, media</b>	<b>6months Ongoing</b>	<b>R O</b>	<b>LF</b>	✓	✓		✓	✓		✓	✓	
Tornados/ Storms <b>T #7</b>	Maintain and test warning sirens. Upgrade system as needed.	EPD HMC	Ongoing			✓	✓	✓	✓				✓	✓
<b>2009 Update</b>	<b>Warning siren testing every 1<sup>st</sup> Monday of the month Investigate acquiring an additional siren on west side of town</b>	<b>HMC, Emergency personnel</b>	<b>Ongoing 1-2 years</b>	<b>O R</b>	<b>LF F-S-G</b>	✓	✓		✓			✓	✓	N
Tornados/ Storms <b>T #8</b>	Partnership with local cable company to make severe weather announcements.	EPD, cable TV company	6 months			✓	✓		✓			✓	✓	✓
<b>2009 Update</b>	<b>DELETE Cable company no longer offers this service</b>		X											

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Flooding <b>F #1</b>	Maintain, enforce, and update as needed--- Floodplain Ordinance.	Floodplain manager, HMC	Ongoing			✓	✓		✓	✓	✓	✓		✓
<b>2009 Update</b>	<b>Floodplain Ordinance up to date. Floodplain Manager attends classes to remain current.</b>	<b>Floodplain manager, HMC</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓	✓	✓	✓		<b>E N</b>
Flooding <b>F #2</b>	Work with FEMA and Army Corp of Engineers to update Floodplain map as needed.	Floodplain manager	1-5 years				✓		✓		✓	✓		
<b>2009 Update</b>	<b>Currently working with FEMA to update floodplain maps, new floodplain maps go into effect 2010</b>	<b>Floodplain manager, HMC</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>		✓		✓	✓	✓	✓		
Flooding <b>F # 3</b>	Conduct engineering study on the storm water drainage system and 4 major tributaries.	HMC	6 months				✓	✓	✓		✓	✓	✓	
<b>2009 Update</b>	<b>Completed study</b>		<b>X</b>											
Flooding <b>F # 4</b>	Review storm water drainage system engineering study and develop plan of action and funding.	HMC	1 – 3 year				✓		✓		✓	✓		
<b>2009 Update</b>	<b>Completed study and completed improvements to storm water drainage system Regular cleaning of culverts</b>		<b>Ongoing</b>	<b>O</b>	<b>LF</b>		✓		✓		✓	✓		<b>E N</b>

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Flooding <b>F # 5</b>	Ordinance to require a water flow engineering study for all new developments with respect to effects on rest of city.	HMC	1 year				✓		✓		✓	✓		
<b>2009 Update</b>	<b>Ordinance passed and enforced----Ongoing</b>	<b>HMC</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>		✓		✓		✓	✓		N
Winter Weather <b>WW #1</b>	Remove trees from power line easements in addition to current trimming program.	Street Dept., AmerenUE Utility Company, HMC	Ongoing			✓	✓	✓	✓			✓	✓	✓
<b>2009 Update</b>	<b>Ongoing</b>	<b>Street Dept., AmerenUE Utility Company, HMC</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓	✓	✓			✓	✓	
Winter Weather <b>WW # 2</b>	Maintain snow plowing and removal equipment..	Street Dept. HMC	Ongoing			✓	✓	✓	✓				✓	✓
<b>2009 Update</b>	<b>Salt storage facility built Established emergency snow routes throughout the city Upgrade equipment as needed</b>	<b>Street Dept. HMC</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓				✓	N
Winter Weather <b>WW # 3</b>	Insure that school buses are outfitted with two –way radios.	HMC Schools	Ongoing			✓	✓		✓	✓		✓	✓	✓
<b>2009 Update</b>	<b>Ongoing</b>	<b>HMC Schools</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓	✓		✓		

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<b>2009 Update</b> Winter Weather <b>WW # 4</b>	<b>Maintain list of shelters that can be used for cold weather shelters as needed and update list monthly</b>	<b>Fire Dept, HMC</b>	<b>6 months</b>	<b>R</b>	<b>LF</b>	✓	✓		✓	✓		✓	✓	<b>E</b>
Earthquake <b>EQ # 1</b>	Encourage schools to conduct programs on earthquake safety.	HMC Schools	Ongoing			✓	✓		✓	✓		✓		✓
<b>2009 Update</b>	<b>Ongoing</b>	<b>HMC Schools</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓	✓		✓		
Earthquake <b>EQ # 2</b>	Have speaker <del>and/or materials available</del> to conduct programs on earthquake safety.	HMC, Police Dept, Fire Dept. EPD	Ongoing				✓			✓		✓		
<b>2009 Update</b>	<b>Have speaker to conduct programs on earthquake safety</b>	<b>HMC, Police Dept, Fire Dept. EPD</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>		✓			✓		✓		
Earthquake <b>EQ # 3</b>	Use HAZUS software to potential loss due to earthquakes.	HMC	1-3 years				✓	✓	✓	✓		✓		
<b>2009 Update</b>	<b>DELETE</b>		<b>X</b>											

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Earthquake <b>EQ # 4</b>	Informational brochures available to public, newspaper articles.	HMC, media	1 year			✓	✓		✓	✓		✓		✓
<b>2009 Update</b>	<b>Information will be added to new city webpage. Notices included in the utility bills.</b>	<b>HMC, media</b>	<b>6months Ongoing</b>	<b>R O</b>	<b>LF</b>	✓	✓		✓	✓		✓		
Earthquake <b>EQ # 5</b>	Design Construction Awareness Brochures.	HMC	1 year			✓	✓		✓	✓		✓		✓
<b>2009 Update</b>	<b>Information will be added to new webpage. ICC Building codes in place</b>	<b>HMC, Building Inspector</b>	<b>6 months Ongoing</b>	<b>R O</b>	<b>LF</b>	✓	✓		✓	✓		✓		<b>E N</b>
Earthquake <b>EQ # 6</b>	Participate in regularly scheduled training exercises.	HMC, EPD Fire Depts. Law Enforcement	Ongoing			✓	✓	✓	✓			✓	✓	✓
<b>2009 Update</b>	<b>Ongoing</b>	<b>HMC, Emergency personnel</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓	✓	✓			✓	✓	
Earthquake <b>EQ # 7</b>	Enforcement of current Building codes.	HMC	Ongoing			✓	✓							✓
<b>2009 Update</b>	<b>Enforcement of Building codes ICC</b>	<b>HMC, Building Inspector</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓	✓		✓		<b>E N</b>

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Extreme Heat/ Drought <b>EHD #1</b>	Establish cooling centers at shelters.	HMC, Pike Co. Health Dept.	Ongoing			✓	✓		✓	✓		✓		✓
<b>2009 Update</b>	<b>Maintain list of shelters that can be used for hot weather shelters as needed and update list monthly</b>	<b>HMC, Emergency personnel</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓	✓		✓	✓	
Extreme Heat/ Drought <b>EHD #2</b>	Encourage Drought resistant yard watering practices.	HMC University Outreach	Ongoing				✓			✓	✓	✓		
<b>2009 Update</b>	<b>Ongoing</b>	<b>HMC University Outreach</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>		✓			✓	✓			
Extreme Heat/ Drought <b>EHD #3</b>	City has an agreement with Clarence Cannon Wholesale Water to as a secondary source for water. Infrastructure will be constructed within	HMC, Water Dept	Ongoing 2 years	O N	LF	✓	✓		✓		✓	✓	✓	N
Wildfire <b>WF # 1</b>	Burning Bans issued by Fire Department as needed.	HMC Fire Department	Ongoing			✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>2009 Update</b>	<b>Burning Ban ordinance in place and enforced—no burning in city limits</b>	<b>HMC Fire Department</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓	✓	✓	✓		

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Dam Failure <b>DF # 1</b>	Inspect and maintain dams at city reservoirs according to Dept. of Natural Resources standards.	HMC, MO Dept. of Natural Resources	Ongoing			✓	✓	✓	✓		✓	✓	✓	✓
<b>2009 Update</b>	<b>City crews monitor and maintain the city dams. Inspected by MO DNR every two years.</b>	<b>HMC, MO Dept. of Natural Resources City Crews</b>	<b>Ongoing</b>	<b>O</b>	<b>LF</b>	✓	✓		✓		✓	✓		<b>E</b>
<b>2009 Update Levee Failure</b>	<b>Not applicable</b>		<b>X</b>											
<b>2009 Update Sinkholes</b>	<b>Not applicable</b>		<b>X</b>											
<b>2009 Update Landslide</b>	<b>Not applicable</b>		<b>X</b>											

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