



1 INTRODUCTION AND PLANNING PROCESS

1.1 Purpose

Johnson County and thirty-two other jurisdictions prepared this local hazard mitigation plan to guide hazard mitigation planning to better protect the people and property of the County from the effects of hazard events. This plan demonstrates the communities' commitment to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources. This plan was also developed to make Johnson County and participating jurisdictions eligible for certain federal disaster assistance, specifically, the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program.

1.2 Background and Scope

Each year in the United States, natural disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters, because additional expenses to insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Many natural disasters are predictable, and much of the damage caused by these events can be alleviated or even eliminated.

Hazard mitigation is defined by FEMA as "any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event." The results of a three-year, congressionally mandated independent study to assess future savings from mitigation activities provides evidence that mitigation activities are highly cost-effective. On average, each dollar spent on mitigation saves society an average of \$4 in avoided future losses in addition to saving lives and preventing injuries (National Institute of Building Science Multi-Hazard Mitigation Council 2005).

Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies to lessen impacts are determined, prioritized, and implemented. This plan documents Johnson County's hazard mitigation planning process and identifies relevant hazards, vulnerabilities, and strategies the County and participating jurisdictions will use to decrease vulnerability and increase resiliency and sustainability in Johnson County.

The Johnson County Multi-Hazard Mitigation Plan is a multi-jurisdictional plan that geographically covers everything within Johnson County's jurisdictional boundaries (hereinafter

referred to as the planning area). The following 33 jurisdictions participated in the planning process:

- Unincorporated Johnson County
- City of De Soto
- City of Edgerton
- City of Fairway
- City of Gardner
- City of Lake Quivira
- City of Leawood
- City of Lenexa
- City of Merriam
- City of Mission
- City of Mission Hills
- City of Mission Woods
- City of Olathe
- City of Overland Park
- City of Prairie Village
- City of Roeland Park
- City of Shawnee
- City of Spring Hill
- City of Westwood
- City of Westwood Hills
- Unified School District 229 Blue Valley
- Unified School District 230 Spring Hill
- Unified School District 231 Gardner/Edgerton
- Unified School District 232 De Soto
- Unified School District 233 Olathe
- Unified School District 512 Shawnee Mission
- Kansas School of the Deaf
- Johnson County Community College
- Kansas University Edwards Campus
- Special Districts
 - Consolidated Fire District #2
 - Fire District #1
 - Fire District #2
 - Fire District #3

This plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 (Public Law 106-390) and the implementing regulations set forth by the Interim Final Rule published in the *Federal Register* on February 26, 2002, (44 CFR §201.6) and finalized on

October 31, 2007. (Hereafter, these requirements and regulations will be referred to collectively as the Disaster Mitigation Act.) While the act emphasized the need for mitigation plans and more coordinated mitigation planning and implementation efforts, the regulations established the requirements that local hazard mitigation plans must meet in order for a local jurisdiction to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288).

Information in this plan will be used to help guide and coordinate mitigation activities and decisions for local land use policy in the future. Proactive mitigation planning will help reduce the cost of disaster response and recovery to communities and their residents by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruptions. The Johnson County planning area has been affected by hazards in the past and the participating jurisdictions are therefore committed to reducing future impacts from hazard events and becoming eligible for mitigation-related federal funding.

1.3 Plan Organization

The Johnson County Multi-Hazard Mitigation Plan is organized as follows:

- Executive Summary
- Prerequisites
- Chapter 1: Introduction and Planning Process
- Chapter 2: Planning Area Profile and Capabilities
- Chapter 3: Risk Assessment
- Chapter 4: Mitigation Strategy
- Chapter 5: Plan Implementation and Maintenance
- Appendices

1.4 Planning Process

44 CFR Requirement 201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

After the Disaster Mitigation Act of 2000 (DMA) became effective, Johnson County initiated a coordinated county-wide mitigation planning effort. This initial county-wide planning effort utilized the State-endorsed “Mitigation 20/20” planning software tool. Participating jurisdictions gathered and entered the necessary data and submitted the resulting plan and subsequent revisions to FEMA in November of 2003, March 2005, and August 2006. It was determined that the plan document did not meet the DMA requirements and FEMA suggested that the County proceed with a more traditional planning approach, not utilizing the “Mitigation 20/20” software.

Johnson County contracted with AMEC Earth and Environmental (AMEC) in March 2008 to assist the County and participating jurisdictions in developing a multi-jurisdictional, multi-hazard mitigation plan. Johnson County Emergency Management took the lead in developing this plan with AMEC’s assistance. AMEC’s role was to:

- Assist in establishing the Hazard Mitigation Planning Committee (HMPC) as defined by the Disaster Mitigation Act (DMA),
- Meet the DMA requirements as established by federal regulations and following FEMA’s planning guidance,
- Facilitate the entire planning process,
- Identify the data requirements that HMPC participants could provide and conduct the research and documentation necessary to augment that data,
- Assist in facilitating the public input process,
- Produce the draft and final plan documents, and
- Coordinate the Kansas Division of Emergency Management and FEMA Region VII plan reviews.

1.4.1 Multi-Jurisdictional Participation

44 CFR Requirement §201.6(a)(3): Multi-jurisdictional plans may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.

Johnson County invited incorporated cities, school districts, the community college, state school, a public university, and special districts to participate in the multi-jurisdictional Johnson County Multi-Hazard Mitigation Plan. The Disaster Mitigation Act requires that each jurisdiction participate in the planning process and officially adopt the multi-jurisdictional hazard mitigation plan. Each jurisdiction that chose to participate in the planning process and development of the plan was required to meet strict plan participation requirements defined at the beginning of the process, which included the following:

- Designate a representative to serve on the HMPC,
- Participate in at least one of the HMPC meetings,
- Complete and return the AMEC Data Collection Guide,
- Identify mitigation actions for the plan,
- Review and comment on plan drafts,
- Inform the public, local officials, and other interested parties about the planning process and provide opportunity for them to comment on the plan,
- Formally adopt the mitigation plan.

All of the jurisdictions listed as official participants in this plan met all of these participation requirements.

Table 1.1 shows the attendance of representatives at each meeting; sign-in sheets are included in Appendix B: Planning Process Documentation.

Table 1.1 Jurisdictional Participation in Planning Meetings

Jurisdiction	HMPC Kickoff Meeting	HMPC Kickoff #2	HMPC Meeting #2	HMPC Meeting #3
Johnson County	X	X	X	X
De Soto		X		X
Edgerton	X		X	X
Fairway		X	X	
Gardner	X			X
Lake Quivira	X		X	X
Leawood		X		X
Lenexa	X		X	X
Merriam		X	X	
Mission	X			X
Mission Hills	X		X	X
Mission Woods		X		X
Olathe	X		X	X
Overland Park	X		X	X
Prairie Village	X			X
Roeland Park		X	X	X
Shawnee		X		
Spring Hill		X	X	
Westwood		X		X
Westwood Hills		X		X
Consolidated Fire District #2			X	X
Fire District #1		X		X
Fire District #2		X		
Rural Fire District #3		X		X

Jurisdiction	HMPC Kickoff Meeting	HMPC Kickoff #2	HMPC Meeting #2	HMPC Meeting #3
USD #229 Blue Valley		X		X
USD #230 Spring Hill	X		X	
USD #231 Gardner/Edgerton	X		X	X
USD #232 De Soto		X	X	X
USD #233 Olathe	X			X
USD #512 Shawnee Mission	X		X	X
Johnson County Community College			X	X
KS School of the Deaf			X	
Kansas University Edwards Campus			X	X

1.4.2 The 12-Step Planning Process

AMEC and Johnson County Emergency Management worked together to establish the framework and process for this planning effort using FEMA’s *Local Multi-Hazard Mitigation Planning Guidance* (2008) and the State and Local Mitigation Planning How-To Guides (2001), which include *Multi-Jurisdictional Mitigation Planning* (2006). The plan is structured around a four-phase process:

- 1) Organize resources
- 2) Assess risks
- 3) Develop the mitigation plan
- 4) Implement the plan and monitor progress

Into this process, AMEC integrated a modified detailed 12-step planning process used for FEMA’s Community Rating System (CRS) and Flood Mitigation Assistance programs. Thus, the modified 12-step process used for this plan meets the funding eligibility requirements of the Hazard Mitigation Grant Program, Pre-Disaster Mitigation program, Community Rating System, and Flood Mitigation Assistance program. Table 1.2 shows how the modified 12-step process fits into FEMA’s four-phase process.

Table 1.2. Mitigation Planning Process Used to Develop the Johnson County Multi-Hazard Mitigation Plan

DMA Process	Modified CRS Process
1) Organize Resources	
201.6(c)(1)	1) Organize the Planning Effort
201.6(b)(1)	2) Involve the Public
201.6(b)(2) and (3)	3) Coordinate with Other Departments and Agencies

2) Assess Risks	
201.6(c)(2)(i), (iii)	4) Identify the Hazards
201.6(c)(2)(i), (iii)	5) Profile the Hazards
201.6(c)(2)(ii), (iii)	6) Identify Assets
201.6(c)(2)(ii), (iii)	7) Estimate Losses
3) Develop the Mitigation Plan	
201.6(c)(3)(i)	8) Set Goals
201.6(c)(3)(ii)	9) Review Possible Activities
201.6(c)(3)(iii)	10) Draft an Action Plan
4) Implement the Plan and Monitor Progress	
201.6(c)(5)	11) Adopt the Plan
201.6(c)(4)	12) Implement, Evaluate, and Revise the Plan

Phase I Organize Resources

Step 1: Organize the Planning Effort

The planning process officially began with a kickoff meeting in Overland Park, Kansas, on May 28, 2008. Johnson County Emergency Management emailed letters of invitation to the kickoff meeting to the local emergency planning committee member for each City in Johnson County, the school districts, community college, and local public university. This list is included in Appendix B. It was decided that a second kickoff meeting would be scheduled to encourage additional jurisdictions to participate in the plan. The second planning meeting was held on June 26, 2008.

A Hazard Mitigation Planning Committee (HMPC) was created that includes representatives from each participating jurisdiction, and other local and state organizations responsible for making decisions in the plan and agreeing upon the final contents. Kickoff meeting attendees discussed potential participants and made decisions about additional stakeholders to invite to participate on the HMPC.

The HMPC contributed to this planning process by:

- providing facilities for meetings,
- attending meetings,
- collecting data,
- managing administrative details,
- making decisions on plan process and content,
- submitting mitigation action implementation worksheets,
- reviewing drafts, and
- coordinating and assisting with public involvement and plan adoptions.

The HMPC communicated during the planning process with a combination of face-to-face meetings, phone interviews, sub-meetings with the City Department leaders, and email

correspondence. The meeting schedule and topics are listed in Table 1.3. The sign-in sheets, agendas, and meeting minutes for each of the meetings are included in Appendix B.

Table 1.3 Schedule of HMPC Meetings

Meeting	Topic	Date
HMPC #1	Kickoff meeting: introduction to DMA, the planning process, integration of Mitigation 20/20 planning efforts, public participation strategy and hazard identification. Distribution of data collection guide to jurisdictions.	May 28, 2008
HMPC #2	2 nd Kickoff Meeting – same as above	June 26, 2008
HMPC #3	Review of profiled hazards. Identification of plan goals and objectives.	August 20, 2008
HMPC #4	Mitigation action identification and prioritization. Determine process to monitor, evaluate, and update plan.	December 4, 2008

During the kickoff meetings, AMEC presented information on the scope and purpose of the plan, participation requirements of HMPC members, and the proposed project work plan and schedule. Plans for public involvement (Step 2) and coordination with other agencies and departments (Step 3) were discussed. AMEC also introduced hazard identification requirements and data requirements. The HMPC discussed past events and impacts and future probability for each of the hazards required by FEMA for consideration in a local hazard mitigation plan. The HMPC refined the list of hazards to make it relevant to Johnson County.

Participants were given the AMEC Data Collection Guide to facilitate the collection of information needed to support the plan, such as data on historic hazard events, values at risk, and current capabilities. Each participating jurisdiction completed and returned the worksheets in this document to AMEC.

Step 2: Plan for Public Involvement

44 CFR Requirement 201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval.

At the kickoff meetings, the HMPC discussed options for soliciting public input on the mitigation plan. The strategy includes the use of individual websites and newsletters.

The public was given an opportunity to provide input on a draft of the complete plan at two public meetings. The first was held on January 26, 2009 at the Sylvester Powell Jr. Community Center in Mission, Kansas and the second was held on February 3, 2009 at the Johnson County

Community College in Overland Park, Kansas. The jurisdictions announced the availability of the draft plan on their websites (appendix B) and to media outlets such as the Kansas City Star, Olathe News, Lenexa Centennial, Gardner News, Eudora News, Sun Publications, NBC Action News, KMBZ News, and KCTV 5 News. The press release announced the public meetings and provided a link to the Johnson County website at <http://www.jocoem.org/hmp-comment.asp> to review and comment on the draft plan. Johnson County Emergency Management also has a blog site established to discuss emergency management issues. This plan was discussed on the blog page (appendix B).

The HMGP invited other targeted stakeholders to comment on the final draft by invitation email on February 24, 2009 which is described in greater detail in Step 3: Coordinate with Other Departments and Agencies.

Step 3: Coordinate with Other Departments and Agencies

44 CFR Requirement 201.6(b): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process. (3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

There are numerous organizations whose goals and interests interface with hazard mitigation in Johnson County. Coordination with these organizations and other community planning efforts is vital to the success of this plan. Johnson County Emergency Management invited other local, state, and federal departments and agencies to the kickoff meeting to learn about the hazard mitigation planning initiative. Many of the agencies participated throughout the planning process on the HMPC and were listed previously in Step 1: Organize the Planning Effort.

As part of the coordination with other agencies, the HMPC collected and reviewed existing technical data, reports, and plans. These included the Kansas State Hazard Mitigation Plan, mitigation 20/20 data, the Johnson County 2002 Flood Insurance Study, Olathe Emergency Response Plan, De Soto's Flood Mitigation Plan, Overland Park's Community Rating System application with Section 510 Repetitive Loss Area Analysis (July 2008), the regional Natural Hazard Mitigation Plan (2004) covering Kansas City, Missouri, reports from the National Flood Insurance Program's Community Information System, Kansas Forest Service Community Wildfire Hazard Assessment Report for Johnson County (2008), seven watershed studies, as well as other data from state and federal agencies. The watershed studies include the Blue River Watershed Study (December 2005), Captain and Kill Creek Watershed Study (March 2006), Cedar Creek Watershed Study (May 2006), Indian Creek Watershed Study (April 2006), Johnson County Marais Des Cygnes Watershed Study (May 2007), Mill Creek Watershed Study (December 2003), Northeast Johnson County Watershed Study (November 2006), This information was used in the development of the hazard identification, vulnerability assessment,

and capability assessment and in the formation of goals, objectives, and mitigation actions. These sources are documented throughout the plan and in Appendix A: References.

Johnson County Emergency Management developed a list of neighboring emergency management coordinators and local and regional agencies involved in hazard mitigation activities, as well as other interests, to invite by email letter to attend one of the two public meetings and to review and comment on the draft of the Johnson County Multi-Hazard Mitigation Plan. This email letter was sent by Nick Crossley on January 21, 2009. A copy of this email letter is provided in Appendix B.

A second email invitation was sent out on February 24, 2009 for neighboring emergency management coordinators, and state and federal contacts to be able to review the plan during the final draft stage and provide comments back to Johnson County Emergency Management. The final draft was available to view on Johnson County's website, <http://www.jocoem.org/hmp-comment.asp> for one week.

Phase 2 Assess Risk

Step 4: Identify the Hazards

AMEC assisted the HMPC in a process to identify the natural hazards that have impacted or could impact communities in Johnson County. At the kickoff meetings, the HMPC examined the history of disaster declarations in Johnson County, the list of hazards suggested by FEMA for consideration, and additional hazards included in the Kansas State Plan. The committee then worked through this list of all potential hazards that could affect the planning area. They discussed past hazard events, types of damage, and where additional information might be found.

Step 5: Profile the Hazards

During the kick-off meetings, the HMPC refined the list of hazards to make the analysis relevant to Johnson County, discussed past events and impacts and came to consensus on the probability level for each hazard. During the second meeting, the planning committee reviewed the magnitude, duration, and warning elements that were utilized in preparation of the preliminary hazard profiles and made recommendations for modifications to more accurately reflect the impacts of the hazards in the planning area. A profile of each of these hazards was then developed. Web resources, existing reports and plans, and existing geographic information systems (GIS) layers were used to compile information about past hazard events. This information and information provided by the HMPC was used to develop profiles detailing the location, previous occurrences, probability of future occurrences, and magnitude/severity of each hazard. The data collection guide distributed at the kickoff meeting also provided information to identify hazards and vulnerabilities. More information on the methodology and resources used to identify and profile the hazards can be found in Sections 3.1 and 3.2.

Step 6: Identify Assets

After profiling the hazards that could affect Johnson County, the HMPC collected information to describe the likely impacts of future hazard events on the participating jurisdictions. This step included two parts: a vulnerability assessment and a capability assessment.

Vulnerability Assessment—Participating jurisdictions inventoried their assets at risk to natural hazards—overall and in identified hazard areas. These assets included total number and value of structures; critical facilities and infrastructure; natural, historic, and cultural assets; economic assets; and vulnerable populations. The HMPC also analyzed development trends in hazard areas. FEMA’s loss estimation computer software, HAZUS-MH, was utilized to provide information on populations at risk as well as estimated numbers and values of buildings at risk. The assets at risk were discussed for the planning area as a whole for those hazards that do not vary geographically. Additionally, utilizing the HAZUS-MH tool, assets at risk to a 100-year flood as well as dam failure in Johnson County were discussed separately as these hazards vary across the planning area

Capability Assessment—This assessment consisted of identifying the existing mitigation capabilities of participating jurisdictions. This involved collecting information about existing government programs, policies, regulations, ordinances, and plans that mitigate or could be used to mitigate risk to disasters. Participating jurisdictions collected information on their regulatory, personnel, fiscal, and technical capabilities, as well as ongoing initiatives related to interagency coordination and public outreach. This information is included in Chapter 2 Planning Area Profile and Capabilities.

Step 7: Estimate Losses

Where sufficient information was available, a variety of methods was used to estimate losses for each profiled hazard that received a moderate or high planning significance level. For the earthquake, dam and levee failure, and flood hazard, the planning committee utilized FEMA’s loss estimation computer software, HAZUS-MH-MR-3. The Hazards U.S. Multi-Hazard, Maintenance Release 3 (HAZUS-MH MR3) is a nationally applicable standardized methodology and software program that estimates potential losses from floods, winds, earthquakes, and hurricane. AMEC conducted a HAZUS Level I flood and earthquake loss analysis, using the default data with HAZUS. As an added value AMEC performed a HAZUS-MH Level II flood analysis, incorporating local building inventory based on the parcel layers. Additionally this entailed incorporating the Digital Flood Insurance Rate Map into the HAZUS-MH flood modeling. This resulted in a more accurate and refined flood loss estimation, aggregated by jurisdiction.

The methodology is described in detail for each hazard analysis that included a loss estimate. This information can be found in Section 3.3.3

Phase 3 Develop the Mitigation Plan

Step 8: Set Goals

AMEC facilitated a brainstorming and discussion session with the HMPC during their second meeting to identify goals and objectives for the overall multi-jurisdictional mitigation plan. To focus the committee on the issues brought out by the risk assessment, key issues were summarized for each hazard profiled. Then the HMPC discussed definitions and examples of goals, objectives, and actions and considered the goals of the state hazard mitigation plan and other relevant local plans. Then, as a group, the HMPC achieved consensus on the final goals and objectives for the multi-jurisdictional plan, which are described in Chapter 4.

Step 9: Review Possible Activities

At the third meeting of the HMPC, the draft risk assessment was given to the HMPC committee members. The draft risk assessment was placed on the planning website www.jocoem.org/hmp.htm for the HMPC to review. Also at the meeting, an idea sheet of key issues was given to facilitate the development of action ideas. This planning tool is provided in Appendix B. The idea sheet provided the list of key issues or problem statements that were identified through the risk assessment process organized by each hazard analyzed and a list of mitigation actions. In addition, AMEC provided the HMPC with information on types of mitigation actions. A handout was provided with the following list of types of mitigation actions, which originated from the National Flood Insurance Program's Community Rating System, as well as definitions and examples for each type of action.

During the meeting, all actions were reviewed and additional actions were brainstormed. For all actions submitted the responsible jurisdictions completed action implementation worksheets and STAPLEE worksheets for each action they wished to include in the plan for their jurisdiction. This process is described in additional detail in Chapter 4.

Step 10: Draft the Plan

A complete draft of the plan was made available online and in hard copy for review and comment by the public and other agencies and interested stakeholders. This review period was from January 26 to February 15, 2009. A second review period was available from February 24 to March 2, 2009. Methods for inviting interested parties and the public to review and comment on the plan were discussed in Steps 2 and 3, and materials are provided in Appendix B. Comments from the planning committee were integrated into a final draft for submittal to the Kansas Division of Emergency Management and FEMA Region VII.

Phase 4 Implement the Plan and Monitor Progress

Step 11: Adopt the Plan

To secure buy-in and officially implement the plan, the governing bodies of each participating jurisdiction must adopt the plan. Scanned copies of resolutions of adoption will be added to Appendix G of this plan.

Step 12: Implement, Evaluate, and Revise the Plan

The HMPC developed and agreed upon an overall strategy for plan implementation and for monitoring and maintaining the plan over time during Meeting #3. This strategy is described in Chapter 5 Plan Maintenance Process.