



REGIONAL MULTI-HAZARD MITIGATION PLAN



*For Cass, Clay, Jackson, Platte and Ray counties
and their incorporated cities in Missouri*

MID-AMERICA REGIONAL COUNCIL ♦ 2025



FORWORD

To Residents of the Kansas City Region:

Since its beginnings in the early 1800s, the Kansas City metropolitan area has experienced the adverse effects of natural disasters. Historical records indicate that natural hazards, particularly floods and tornadoes, have had a profound effect on the region. Unfortunately, there is no way to prevent disasters from occurring. The impact of disasters, however, can be mitigated. Their effects can be lessened and losses reduced through the development and application of prudent hazard mitigation strategies and actions. In doing so, the Kansas City metropolitan area can be made to be a safer place to live, work and play.

Our climate is changing, and the occurrence and intensity of natural hazard events requires that all local jurisdictions in the Kansas City region focus attention on goals and mitigation strategies.

As of November 1, 2004, all local governments and school districts must have an approved hazard mitigation plan to be eligible to apply for and receive certain FEMA funds. This FEMA program provides funds to communities to mitigate the impact of natural disasters, such as floods and tornadoes. MARC, at the request of SEMA and in partnership with the Missouri Association of Councils of Government (MACOG), has developed this *Regional Multi-Hazard Mitigation Plan* to assist the local governments, school districts, businesses, community groups and residents of Cass, Clay, Jackson, Platte and Ray counties with information on hazards posing risks to life and property, and identifies actions that could be taken to reduce the impacts from disaster events. This plan addresses priority natural hazards that have in the past and may in the future affect the Kansas City region, including tornadoes; floods and dam and levee failures; severe winter weather, drought, heat and wildland fires; and severe thunderstorms and storm winds and hail.

Hazard mitigation is a dynamic and ongoing process. This plan is a continuation of the mitigation planning work begun in 2003; it provides a framework for hazard mitigation planning, both regionally and locally. This plan will be reviewed and updated at least annually to determine the effectiveness of mitigation actions; reflect changes in laws, regulations and/or policies; re-prioritize mitigation actions, if necessary; and consider other issues affecting hazard mitigation in the Kansas City metropolitan area.

MARC, as the facilitator of this mitigation planning effort, welcomes your comments and suggestions for improving this plan. Please direct your comments and suggestions to the Mid-America Regional Council, 600 Broadway, Suite 200, Kansas City, MO 64105 or info@marc.org.

Sincerely,

David A. Warm
Executive Director

Executive Summary

The purpose of hazard mitigation is to reduce loss of life and property by lessening the impact of natural, man-made and technological disasters. Hazard mitigation plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage and reconstruction. Cass, Clay, Jackson, Platte and Ray counties and participating jurisdictions developed a *Regional Multi-Hazard Mitigation Plan* that was approved by the Federal Emergency Management Agency (FEMA) in July 2020. The plan was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). In accordance with DMA 2000 requirements, Cass, Clay, Jackson, Platte and Ray counties and participating jurisdictions must update the plan every five years.

The *Regional Multi-Hazard Mitigation Plan* is a multi-jurisdictional plan that represents a number of local governments, school districts and other jurisdictions within the Kansas City region. The following jurisdictions participated in plan development and are represented by the plan through formal adoption:

THIS LIST WILL BE FINALIZED BY JUNE 2025

Cass County

Belton
Harrisonville
Lake Annette
Lake Winnebago
Peculiar
Pleasant Hill
Raymore
Archie R-V School District
Harrisonville School District
Pleasant Hill R-III School District
Raymore-Peculiar School District
Sherwood-Cass R-8 School District

Clay County

Excelsior Springs
Gladstone
Kearney
Lawson
Liberty
Mosby
North Kansas City
Smithville
Fishing River Fire Protection District
Excelsior Springs School District
Lawson School District
North Kansas City School District
Smithville R-II School District

Jackson County

Blue Springs
Grandview
Greenwood
Independence
Kansas City, Mo.
Lee's Summit
Oak Grove
Raytown
Central Jackson Co Fire Protection District
Sni Valley Fire Protection District
Blue Springs School District
Fort Osage R1 School District
Grain Valley School District
Independence School District
Kansas City School District
Lee's Summit R-7 School District
Oak Grove R-VI School District
Metropolitan Community Colleges

Platte County

Farley
Lake Waukomis
Northmoor
Parkville
Platte City
Platte Woods
Riverside
Tracy
Weatherby Lake
Weston
Northland Regional Ambulance District
West Platte Fire Protection District
North Platte R-1 School District
Park Hill School District
Platte County R-3 School District
West Platte R-II School District
Park University

Ray County

Richmond

The planning process followed the methodology prescribed in FEMA publications *Local Mitigation Planning Handbook* (March 2013) and *Multi-Jurisdictional Mitigation Planning* (August 2006), beginning with the formation of a Regional Multi-Hazard Mitigation Plan Steering Committee (HMSC) comprised of key stakeholders from Cass, Clay, Jackson, Platte and Ray counties and participating jurisdictions. The HMSC reviewed each section of the plan, including the planning process, risk assessment, mitigation strategy and plan maintenance. Revisions were made as appropriate to ensure the plan reflects current vulnerability within each jurisdiction.

The goals of the *Regional Multi-Hazard Mitigation Plan* are:

Prevention:

- Develop, implement and improve hazard assessment information to prevent hazards from impacting the community where possible.

Protection of Life and Property:

- Implement activities that help to protect lives and property by making homes, businesses, public and private buildings, and other structures more resistant to the effects of hazards.

Natural Resources Protection:

- Preserve, rehabilitate and restore wetlands and other natural areas to serve hazard mitigation purposes. Minimize negative effects of disasters on the environment. Integrate and coordinate hazard mitigation activities with local land use and park and open space planning.

Integration with Emergency Services:

- Enhance local and regional emergency planning, operations and training through collaboration and coordination among local, state and federal government agencies, business and industry, and community groups. Integrate and coordinate hazard mitigation activities with emergency operations plans and procedures.

Increasing Public Awareness:

- Develop and conduct public education and outreach programs to increase awareness of the risks associated with hazards in the Kansas City area.
- Provide local governments, community groups, businesses and residents with information on opportunities for partnerships, funding, tools and related mechanisms to help communities implement mitigation activities.

To meet plan goals, mitigation actions have been identified and are discussed in Section :5 Mitigation Strategy. Social, technical, administrative, political, legal, economic and environmental factors were considered when identifying and prioritizing mitigation actions. Online tools were updated as part of this plan update. Those tools will enable local jurisdictions to review their information each year and make updates to support the next plan process.

The *Regional Multi-Hazard Mitigation Plan* will be updated again in five years, by 2030.

**ATTACHMENT 1: HAZARD MITIGATION PLANNING COMMITTEE (HMPC) MEMBERS ROLES
AND RESPONSIBILITIES****I. Roles*****A. Planning Team:***

Justin Crane, Director, Cass County Emergency Management

Representing the following Cass County Communities:

- Belton
- Harrisonville
- Lake Winnebago
- Pleasant Hill
- Raymore
- Archie R-V School District
- Harrisonville School District
- Pleasant Hill School District
- Raymore-Peculiar School District
- Sherwood-Cass School District

Anne Poelzl, Clay County Assistant Emergency Management Director

Representing the following Clay County Communities:

- Excelsior Springs
- Gladstone
- Kearney
- Lawson
- Liberty
- North Kansas City
- Pleasant Valley
- Smithville
- Excelsior Springs School District
- North Kansas City School District
- Smithville R-II School District

Troy Schulte, County Administrator, Jackson County

Replaced with: Brian Gaddie, Public Works Director, Jackson County

Representing the following Jackson County Communities:

- Blue Springs
- Grain Valley
- Grandview
- Greenwood
- Independence
- Kansas City
- Lee's Summit
- Oak Grove
- Raytown
- Central Jackson County Fire Protection District
- Sni Valley Fire Protection District
- Grain Valley School District
- Independence School District
- Kansas City School District
- Lee's Summit School District
- Oak Grove R-VI School District
- Metropolitan Community Colleges

Michael O'Neal, Deputy Director, Platte County Sheriff's Department and **Jason Phelps**, Captain, Platte County Sheriff's Department (Appointed by Mark Owen, Director, Platte County Emergency Management)

Representing the following Platte County Communities:

- Dearborn
- Farley
- Lake Waukomis
- Northmoor
- Parkville
- Platte City
- Platte Woods
- Riverside
- Tracy
- Weatherby Lake
- Weston
- Northland Regional Ambulance District (NRAD)
- Park Hill School District
- Park University
- Platte County R-3 School District
- West Platte R-II School District

Dante Gliniecki, Emergency Manager, City of Independence

Christopher Carroll, Assistant Emergency Manager, Kansas City, Mo. Emergency Management

B. *Plan Author, Mid-America Regional Council (MARC):*

Marlene Nagel, Community Development Director

- Project oversight and plan author

Melinda Cheney, Emergency Services Planner (was deployed in Sept. 2024)

Erin Lynch, Emergency Services and Homeland Security Program Director

- Project oversight

John Davis, Emergency Services Fiscal Administrator

- Data management

Jay Hermann, GIS Manager, Research Services

- Research and Data lead

Tim Victor and Sara Hintze, Database Analysts, Research Services

- Developed online tools to collect/update jurisdiction profiles and goals and strategies

Jakob Goldman, GIS Specialist II

- GIS mapping, coordination and research

Tina Sikes, GIS Specialist II

- GIS mapping and research

Catherine Couch, Public Affairs Coordinator

- Lead graphic designer; marketing coordinator

Kristin Johnson-Waggoner, Public Affairs Program Director

- Editor, graphic design

Nordia Epps, Public Affairs Coordinator II

- Traditional Media and Social Media coordinator

Caroline Knecht, Public Affairs Website Coordinator

- Web site design

Sasan Baharaeen, Manager of Information Services

- Database design and maintenance, IT support

II. **Responsibilities**

A. ***Plan Author***

1. Provide administrative support for the update process to include, but not limited to:
 - a. Organize meetings, send mailings, draft and incorporate plan revisions, conduct research, etc.
 - b. Provide the Planning Team with recommendations and advice on plan requirements as well as electronic and/or hard copies of updates to the plan as they are drafted for review and comment
 - c. Assist in the development of mitigation strategies.
 - b. Provide monthly updates and other information as requested to SEMA in accordance memorandum of agreement.
 - d. Compile comments, revisions, evaluations, etc., from future reviews and updates and integrate into plan.

B. ***Planning Team***

1. Oversee the update process to include, but not limited to:
 - a. Determine requirements for satisfactory participation.
 - b. Review and approve all revisions to the hazard mitigation plan.
 - c. Provide locations to host meeting opportunities and guide public engagement actions.
 - d. Work with represented jurisdictions to assist in gathering required information and developing mitigation strategies.
 - e. Organize yearly reviews of the plan for represented jurisdictions. Review all new information submitted and forward to Plan Author for incorporation.

C. *Participating Jurisdictions*

1. Inform the update process by accomplishing the following:
 - a. Complete all requirements for satisfactory participation as determined by the Planning Team.
 - b. Review and comment on the plan as drafts become available. Formally adopt the completed plan by resolution.
 - c. Participate in yearly reviews of the plan and subsequent five-year updates. Submit changes as necessary to Planning Team representative for review and forward to Plan Author.
 - d. Designate a responsible party to coordinate the above and notify Planning Team representative of designee by name, job title, organization or any other satisfactory method upon appointment or when a change occurs. Responsible parties for participating jurisdictions shall be listed in **Attachment 2** to this section.

**ATTACHMENT 2: 2024-25 PARTICIPATING JURISDICTIONS'
DESIGNATED RESPONSIBLE PARTIES**

Jurisdiction	Responsible Party (Name)	Title
1. Cass County	Justin Crane	Emergency Management Director
2. Clay County	Anne Poetzl	Emergency Management Director
3. Jackson County	Troy Schulte, Brian Gaddie	Emergency Management/Public Works Director
4. Platte County	Mike O'Neal	Emergency Management Director
5. Ray County	Sheila Tracy	Presiding Commissioner (TBD)
6. Belton	Claire Canaan	Emergency Management Director
7. Blue Springs	Mike Mallon	Senior Development Director
8. Central Jackson County Fire Protection District	Jason Bonney	Asst. Fire Chief/Emergency Management
9. Excelsior Springs	Joe Maddick	Fire Chief
10. Farley	Kathy O'Neal	Chair of the Board of Aldermen
11. Fishing River Fire District (Mosby)		
12. Gladstone	Mike Desautels	Emergency Management Director/Fire Chief
13. Grain Valley	Ken Murphy	City Administrator
14. Grandview	Emily Spittler	Planner
15. Greenwood	Mitchell Armer	Police Chief
16. Harrisonville	Rusty Sullivan	Fire Chief/Emergency Services Director
17. Independence	Dante Gliniecki	Emergency Preparedness Planner
18. Kansas City, Mo	Christopher Carroll	Emergency Management Manager
19. Kearney	David Pavlich	Community Development Director
20. Lake Waukomis	Rick Zelfer	Emergency Management Director
21. Lake Winnebago	Kenneth Smith	Emergency Management Director
22. Lawson	Bruce Summa	Police Chief
23. Lee's Summit	Benjamin Hicks	Assistant Chief of Emergency Management
24. Liberty	Chris Young	Fire Chief
25. North Kansas City	Dan Williams	Fire Chief/Emergency Management Director
26. Northland Regional Ambulance District	Jason S James	Executive Director
27. Northmoor	Julie Rowden	City Clerk
28. Oak Grove	Mark Sherwood	Emergency Management Director
29. Parkville	Jon Jordan	Captain, Police Dept.
30. Platte City	Joe Wellington	Chief of Police
31. Platte Woods	Jim Kerns	EM Director
32. Pleasant Hill	Tommy Wright	Chief of Police

Jurisdiction	Responsible Party (Name)	Title
33. Raymore	Tim Baldwin	Emergency Management Coordinator
34. Raytown	Dyon Harper	Police Captain/EM Coordinator, Police Dept.
35. Richmond	Mark Sowder	Fire Chief/EM Director
36. Riverside	Keith Payne	Emergency Manager/Chief of Police
37. Sni Valley Fire Protection District	Mark Sherwood	Emergency Management Director
38. Smithville	Jason Lockridge	Police Chief
39. Tracy	Lori Liechti	City Clerk/Collector
40. Weatherby Lake	Donnie Hackman	Chief of Police
45. Weston	Kelly Clark	Chief of Police
46. Archie R-V School District	Dr. Michelle Wityk	Superintendent
47. Excelsior Springs School District	Jaret Tomlinson	Superintendent
48. Grain Valley School District	Dr. Nick Gooch	Assistant Superintendent
49. Harrisonville School District	Josh Chastain	Superintendent
50. Independence School District	Greg McGhee	Director of Facilities
51. Kansas City School District	Whitney Morgan	Facilities Manager
52. Lee's Summit School District	Ryan Hall	Supervisor of Safety & Environmental Services
53. North Kansas City School District	Mitzi Boydston	Director of Safety & Security
54. Oak Grove R-VI School District	Tracy Kemp	Principal and Safety Coordinator
55. Park Hill School District	Chad Phillips	Director, Safety and Security
56. Platte County R-III School District	Dr. Devin Doll	Exec. Director of Operations
57. Pleasant Hill School District	Wayne Burke Mike Clevenger	Superintendent Director of Facilities
58. Raymore-Peculiar School District	Bryan Pettengill	Assistant Director of Operations
59. Sherwood-Cass School District	Morris Jeffries	Director of Facilities
60. Smithville R-II School District	Robert Newhart	Director of Operations

Jurisdiction	Responsible Party (Name)	Title
61. West Platte R-II School District	Brock Dover	Superintendent
62. Metropolitan Community Colleges	Andrea Schatz	Chief Legal Officer
63. Park University	Jeff Hurley	Director of Campus Safety

Section 1: Introduction and Planning Process

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Section 1: Introduction and Planning Process

Requirement

§201.6(b):

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;*
- 2) An opportunity for neighboring jurisdictions, 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; and,*
- 3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.*

1.1 Purpose

Cass, Clay, Jackson, Platte and Ray counties (the Missouri counties of the MARC region), along with XX cities, XX fire/ambulance districts, XX school districts and XX colleges/universities, supported this 2025 *Regional Multi-Hazard Mitigation Plan* in order to initiate and sustain actions designed to reduce or eliminate long-term risk to people and property from priority natural hazards. The planning process is as important as the plan itself and creates a framework, both locally and regionally, for the development and implementation of public policy designed to protect residents, critical infrastructure, public and private property, and the environment from the impact of hazards. This updated plan ensures the continuity of mitigation project grant funding through 2030.

1.2 Background and Scope

Hazard mitigation is defined by FEMA as any action taken to eliminate or reduce the long-term risk to human life and property from natural, man-made and technological hazards. In 2005, the National Institute of Building Science's Multi-Hazard Mitigation Council, in response to a congressional mandate, conducted an independent study on savings generated through mitigation activities. The study concluded that mitigation grant funded projects have an overall societal benefit/cost ratio of 4.0 (i.e., for every dollar spent on mitigation activities, four dollars are saved through loss avoidance).

Since the last Plan was approved in July 2020, six events occurred in the state of Missouri, which resulted in federal major disaster declarations and federal emergency declarations. All of the storms affecting the state involved severe storms, four involved tornadoes and straight-line winds and five involved flash flooding or riverine flooding. Only one of the six impacted the 5 Missouri counties in the Kansas City region, the event DR-4612 in June 24 through July 1, 2022. Ray County was included among 21 counties. From March 11, 2019, to April 16, 2019, severe storms, straight-line winds, and flooding affected the region. Shortly thereafter, severe storms, tornadoes, and flooding affected the region between April 29, 2019 and July 5, 2019. Jackson, Platte and Ray were included in the major disaster declaration (DR 4451). Jackson qualified for individual and public assistance, Platte qualified for individual assistance, and Ray qualified for public assistance. The consequences of these events have impacted residents of the region economically, socially and emotionally. As such, mitigation planning ranks among the most important initiatives the region can undertake to protect its residents and minimize property damage.

Through mitigation planning, each participating jurisdiction has identified areas throughout the region vulnerable to potential hazards and developed strategies to reduce such vulnerability. This updated hazard mitigation plan documents the progress made on established mitigation actions and proposes new actions designed to reduce the impacts of hazards and increase resilience. The updated plan is the result of a collaborative effort by the following participating jurisdictions:

Cass County*

Belton*
 Harrisonville*
 Lake Winnebago*
 Peculiar*
 Pleasant Hill*
 Raymore*
 Archie R-V School District*
 Harrisonville School District*
 Pleasant Hill R-III School District*
 Raymore-Peculiar School District*
 Sherwood-Cass R-8 School District*

Clay County*

Excelsior Springs*
 Gladstone*
 Kearney*
 Lawson*
 Liberty*
 North Kansas City*
 Smithville*
 Excelsior Springs School District*
 North Kansas City School District*
 Smithville R-II School District*

Jackson County*

Blue Springs*
 Grandview*
 Greenwood*
 Grain Valley
 Independence*
 Kansas City, Mo.*
 Lee's Summit*
 Levasy
 Oak Grove*
 Raytown*

Central Jackson County Fire Protection District
 Sni Valley Fire Protection District*
 Blue Springs School District*
 Fort Osage R-1 School District*
 Grain Valley School District
 Independence School District*
 Kansas City School District*
 Lee's Summit School District*
 Oak Grove R-VI School District*
 Metropolitan Community Colleges*

Platte County*

Farley*
 Lake Waukomis*
 Northmoor*
 Parkville*
 Platte City*
 Platte Woods*
 Riverside*
 Tracy*
 Weatherby Lake*
 Weston*
 Northland Regional Ambulance District*
 North Platte R-1 School District*
 Park Hill School District*
 Platte County R-3 School District*
 West Platte R-II School District*
 Park University*

Ray County*

Richmond*

*Denotes 2020 Participants

The updated *Regional Multi-Hazard Mitigation Plan* was prepared pursuant to the requirements of Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C. 5165, as amended by Section 104 of the Disaster Mitigation Act of 2000, P.L. 106-390 (DMA 2000) and regulations set forth in 44 CFR §201.6, *Local Mitigation Plans*. With an approved updated hazard mitigation plan, Cass, Clay, Jackson, Platte and Ray counties and certain cities, school districts, colleges and universities will remain eligible for grants under the following federal hazard mitigation assistance programs:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- Building Resilient Infrastructure and Communities (BRIC)

1.3 Planning Process

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.*

1.3.1 Background

The plan update process was set in motion on January 11, 2024, with MARC staff informing the Metropolitan Emergency Managers Committee (MEMC) that the five-year update to the Kansas City region’s hazard mitigation plan was due by June 2025, with a proposed timeline shared at that time. A monthly report on the plan update has been provided to the MEMC at their regular meetings. The MARC Board of Directors, composed of local elected officials from the region’s counties and cities, authorized the preparation of the plan at their February 27, 2024, meeting. Communities, both new and past plan participants, were invited to take part in this planning process. They were encouraged to review the current Regional Hazard Mitigation Plan available on the MARC website at <https://www.marc.org/Emergency-Services-9-1-1/MEMC/Activities/Regional-Hazard-Mitigation-Plan> and to review their current mitigation strategies.

A Steering Committee met **XX** times during the planning process –to provide guidance to the Mid-America Regional Council staff in the preparation of the plan. The Steering Committee began meeting in February 2024 and continued with regular meetings throughout the plan’s development and adoption.

A formal kickoff meeting was held on May 20, 2024, at the MARC offices in Kansas City, Missouri, with an online option. Representatives from local jurisdictions and the public were invited to hear from local and national speakers on the importance of mitigation planning, steps that jurisdictions have and could take, resources that FEMA has available to assist with mitigation actions, the plan requirements and schedule for preparing and adopting the plan.

There were **59** representatives from local jurisdictions, nonprofit organizations, and federal agencies who registered for the meeting, and **16** attended, including 32 online. Participant discussions were focused around reviewing possible natural hazards of greatest concern to their jurisdictions and the region, and the selection of the priority hazards for the focus of this plan. MARC assembled an internal

team from Emergency Services and Research Services to work on the plan, and an initial meeting was held on **date**. A meeting was held with representatives from SEMA and FEMA on **date**.

The Steering Committee for the Hazard Mitigation Plan (HMPC) was formed to guide and coordinate the planning process and to review the plan materials as they were developed. The HMPC consisted of selected representatives from the Missouri counties in the Planning area, cities within those counties including Kansas City and Independence, Mo., and representatives from underserved vulnerable populations. For a complete listing of HMPC members and their roles and responsibilities see **Attachment 1** to this section. For the MARC Board and MEMC meeting summaries, see **Appendix B: Supporting Documents**.

Before the Steering Committee formally convened, MARC staff reviewed the 2020 Regional Hazard Mitigation Plan, the Missouri State Hazard Mitigation Plan, the Kansas City region's Threat Hazard Identification Risk Assessment (THIRA), FEMA's Local Mitigation Planning Handbook, FEMA's Mitigation Plan Review Guide, and multiple Hazard Mitigation plans from communities all across the country. The MARC staff outlined the process and timeline for completing the HMP update. The proposed planning process and timeline was presented in concept at the May 20, 2024, kickoff meeting and to the HMSC for discussion at their April 25, 2024, meeting.

1.3.2 Planning Team Kickoff

The 2025 update planning process formally began at the May 20, 2024, kick-off meeting, where local jurisdiction representatives and other stakeholders were provided with background information, FEMA guidance, requirements for the new plan, the importance of participating in the plan, possible mitigation measures, and a nominal timeline for the plan update process. As its first order of business, the HMSC adopted the Combination Model (FEMA 386-8, 12) as a means to fulfill the requirements of multi-jurisdictional plan development, similar to the process used for the 2020 update. Through this Combination Model, MARC was designated the Plan Author (authorized to act on behalf of the participating jurisdictions in development of the plan); and the HMSC was designated the Planning Team. The Planning Team consists of representatives from four of the five participating Missouri counties (Cass, Clay, Jackson and Platte) plus representatives from cities including Kansas City, Missouri, and the city of Independence, and representatives of agencies serving vulnerable populations.

After the model for the Plan update was confirmed, the HMSC identified which threats and hazards would be considered in the update. To assist this determination, the HMSC reviewed hazards identified in the State of Missouri's Hazard Mitigation Plan, the hazards addressed in the region's 2020 Plan (and recommendations for improvements), and hazards identified through the THIRA process. The steering committee decided that the 2025 Plan should focus on priority natural hazards, rather than lower priority natural and man-made hazards. Natural hazards with low occurrence, earthquakes and wildfires, could be removed from the Plan. To consolidate further, similar hazards were grouped together. Drought and heat waves were grouped together as Heat. Flooding (both riverine and flash), levee failures, and dam failures were grouped together as flooding.

Additional business at the kick-off meeting included determination of satisfactory participation requirements for jurisdictions and beginning initial outreach and information collection efforts. Participation requirements were identified for local jurisdictions to complete in order to obtain the information necessary to inform the update process. For local jurisdictions, eight participation requirements were outlined:

1. Attend a meeting (in-person or virtually) to discuss participation in the plan.
2. For 2020 plan participants, update the 2020 profile for the local jurisdiction using the MARC provided online tool.
3. For new participants, create a new user and complete the online profile.
4. Review the hazard profiles and identify the level of risk and vulnerability for each priority hazard for the local jurisdiction.
5. Develop goals and identify proposed mitigation actions for the community.
6. Prioritize actions emphasizing relative cost-effectiveness.
7. Review and comment on draft plan
8. Communicate about the plan through social media
9. Host opportunities for public involvement (e.g. promote public survey, link local Internet presence to a plan website, share information about the plan at local meetings and events).

In order to achieve the requirements, the HMSC agreed that participating organizations would be asked to provide information for the update through a series of surveys or tools including a Community/School Profile including a Hazard Mitigation Goals and Actions Status Update for those communities that participated in the last plan, and a 2025 Hazard Mitigation Goals and Actions Tool for new participating organizations to complete. Each county in the planning area agreed to communicate with cities, school districts, universities/colleges, and fire/ambulance districts in summer/fall 2024 to inform them about the hazard mitigation plan update process, the requirements for participation and the various tools for information collection. County emergency managers and MARC staff reached out to jurisdictions that participated in the 2020 plan and others in the five-county area about participating in the 2025 plan. After information had been collected from participants about the hazards most likely to affect their community, their capabilities, and the strategies they selected to address the hazards, preparations were made to share the information with stakeholders and members of the public through posting of the draft plan on the MARC website. Social media was used to promote the draft plan for public review and comment.

All jurisdictions were encouraged to form an internal planning team to review 2020 information and provide updates. All information, including meeting notices, summaries, etc., about the update process was made available in accordance with Missouri Sunshine Law provisions. As such, neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties were provided the opportunity to be involved in the planning process. Additional information regarding Missouri's Sunshine Law can be found on the Web site of Missouri's Attorney General at <http://ago.mo.gov/sunshinelaw/>. Further, informational updates and participation opportunities were reported at the monthly meetings of the Metropolitan Emergency Managers Committee (MEMC), which are open to the public and other interested parties.

Table S1.1 summarizes the meetings conducted throughout the planning timeline by date held, agenda and attendees (noted by title, agency, organization or jurisdiction). Meeting agendas, summaries and sign-in sheets can be found in **Appendix B: Supporting Documents**.

Table S1.1 Summary of Planning Meetings

Meeting	Date	Purpose of Meeting	Attendees
HMP Review		Discuss revisions and plan reformatting, Adding hazards, mitigation actions, schedule for future meetings.	Planning Team, MARC
Kick-off	May 20, 2024	Background, Planning Team formation, Initial planning, participation requirements.	Local jurisdiction stakeholders, Planning Team, MARC (59 registered, xx in attendance)
Hazard Mitigation Steering Committee (HMSC)	February 27, 2024	Review of the 2020 Plan, Update Process and Timeline , Regional Hazard Review, Share proposed timeline, key milestones, and deadlines, FEMA's new requirements. Community and School District Profile and Survey Platform , Introduction to the new community and school district profiles and survey tools. Develop an Initial Approach for Stakeholder and Community Engagement , Identify key stakeholder groups and target audiences, Discuss any changes in stakeholders or key personnel from 2020, Discuss possible outreach strategies for community engagement and input, Regional Kickoff Meeting	Steering Committee members, MARC staff
Hazard Mitigation Steering Committee (HMSC)	April 25, 2024	Kickoff Meeting Plans: Audience, Project Success Story, Data Needs; Steering Committee Expansion; Public Outreach Strategy; Data Gathering Tools and Deadline Discussion; Feasibility of Hosting Regional Mitigation Workshop to share ideas for goals and actions.	Steering Committee members, MARC staff
Hazard Mitigation Steering Committee (HMSC)	May 31, 2024	Discuss feedback from kickoff meeting, possible outreach and meetings to engage jurisdictions, documentation of time and in-kind support	Steering Committee members, MARC staff
Hazard Mitigation Steering Committee (HMSC)	July 31, 2024	Public Survey Launch and Distribution, review of promotional flyer, status of local jurisdictions use of online tools to collect profile and goals information, timeframe to analyze data, updated website information.	Steering Committee members, MARC staff
Hazard Mitigation Steering Committee (HMSC)	October 15, 2024	Community Profiles/School Profiles Public Survey, initial results, Possible Mitigation Strategies	Steering Committee members, MARC staff
Hazard Mitigation Steering Committee (HMSC)	November 7, 2024	Update on Community Profile Information and Participation among Cities, Counties, School Districts, Other Districts, Colleges; Discuss how steering committee might help to encourage cities, counties and school districts to participate; how to ensure Quality control; Update on Community Survey and Use of Social Media, Need to document local actions. Update on Ch. 2 Regional Profile; Update on Ch. 4 Risk Profile Documentation of In-Kind Support	Steering Committee members, MARC staff, consultant
Hazard Mitigation Steering Committee (HMSC)	December 6, 2024	Update on local jurisdictions completion of profiles and goals/actions; status of plan chapter drafts for review; update on public survey	Steering Committee members, MARC staff, consultant

Table S1.1 Summary of Planning Meetings			
Meeting	Date	Purpose of Meeting	Attendees
Hazard Mitigation Steering Committee (HMSC)	January or February 2025		
Hazard Mitigation Steering Committee (HMSC)	March or April 2025	Review draft plan and authorize submission for approval by FEMA.	

1.3.3 Plan Section Review and Update Methodology

To minimize the burden of the update, the HMSC determined to revise only those sections where information had changed, new or better data was available, or to address FEMA recommendations for improvements from the 2020 Plan. As discussed in the Background Section 1.3.1 above, MARC staff evaluated the plan in its entirety, determining which sections required revision in accordance with FEMA’s *Local Mitigation Plan Review Guide* (October 1, 2014) and *Multi-Jurisdictional Mitigation Planning*, 2006 and presented the HMPC with recommendations. *Table 1.3.3* describes the data deficiencies that were present during the 2020 plan update process and the status of those data deficiencies for the current plan update process. Any new data sets they have been utilized in the analysis.

The data deficiencies identified here are from the *2020 Plan Implementation and Maintenance* section and new deficiencies identified for the 2020 plan. The “action required” column shows what actions were to be taken in the 2025 plan efforts or future efforts.

Table 1.3.3 Data Deficiency Corrective Actions 2015 and 2020			
Data Deficiency	Action Required	Status	Responsible Party
1. Dam inundation pathways	Continue to work the MDNR and local dam owners to obtain information/maps showing dam failure inundation pathways as part of EAP update/completion process	Ryan P. Stack ryan.stack@dnr.mo.gov from the DNR provided digital files for Emergency Action Plans with Inundation Maps. MARC staff is reviewing to determine if the digital files address the listed data deficiency.	Planning Team
2. Levee failure analysis information largely unavailable	Continue to work with USACE and other entities to obtain levee failure analysis information as it becomes available	Continue to look for this type of information.	Planning Team
3. Future land use data unavailable for Ray County	Incorporate future land use maps for Ray County as developed	Ray County was added to the Kansas City MPO planning boundary and MARC has compiled land	Ray County Planning Team representative, MARC

Table 1.3.3 Data Deficiency Corrective Actions 2015 and 2020

Data Deficiency	Action Required	Status	Responsible Party
		use information about the county.	
4. Various data collection/interpretation deficiencies were noted for winter weather, heat wave, and drought due to certain inherent limitations	Continue to reassess hazards and data collection methods for next update. As new collection methods and interpretation techniques become available, incorporate into plan update	The drought monitor comprehensive statistics were used to show additional drought information not shown in the 2015 Plan. It displays the percentage of a county in each drought classification on any given week.	Planning Team, MARC
5. Utility infrastructure - Research Services of MARC does not currently have access to this data	Through collaboration with jurisdictions and utility companies, MARC continues to work on addressing this.	MARC continues to work on collecting this information.	Planning Team, MARC
6. Data regarding homes without basements to identify neighborhoods most vulnerable in tornado event. The digital database used to provide MARC with data from jurisdictions does not collect this information.	MARC has encouraged local jurisdictions to collect this information to inform hazard planning.	Information is not yet available.	MARC
7. Building counts – not all jurisdictions maintain a GIS layer of building points or building outlines. MARC digitized many buildings by hand as part of a SOLAR grant but will not be able to keep it current.	As jurisdictions develop GIS capabilities this information will be incorporated in future updates.	MARC has developed capacity to quantify building counts based on building outlines and the information was used to assess vulnerable properties in the 100-year floodplain.	Participating Jurisdictions
8. Critical facilities – don't have measures of size or capacity or capabilities for most of them. This information would help produce more meaningful maps and visualizations.	As jurisdictions continue to implement HAZUS software this information may become more accessible.	MARC has developed extensive databases of critical facilities in the five-county area and that information is provided to each local jurisdiction as part of the online planning tool. Feedback from the local jurisdictions is helping to further refine the	Participating jurisdictions, MARC

Table 1.3.3 Data Deficiency Corrective Actions 2015 and 2020

Data Deficiency	Action Required	Status	Responsible Party
		datasets. In review of transportation facilities, looking for dataset for low water crossings.	
9. Addresses of repetitive flood loss properties would have been helpful in mapping the general locations where flooding occurs that is more likely to damage property.	Continue to work with jurisdictions and the State Emergency Management Agency to determine options for obtaining this type of information.	Have not collected this information	Participating jurisdictions, MARC
10. Map and data of buildings inside the 500-year floodplain to help local officials understand the area vulnerable to large flooding events, particularly as changing climate may increase the potential for impacts in these areas.	Collect and include dataset for 500-year floodplain for five county area and counts of buildings and their values inside the area mapped.	Have not begun this effort.	Participating jurisdictions, MARC

The above table illustrates the results of the plan review and recommendations for revisions, which were subsequently approved by the HMSC. In addition, **Table S1.2** identifies any format changes that have been made where applicable. MARC staff conducted research, collected information, developed maps and authored the plan update. As changes, updates and recommendations were drafted into the plan, the HMSC provided MARC with comments and feedback during planning meetings and via e-mail.

As plan sections were drafted they were posted on the Teams folder for the HMSC and the MARC website at [Hazard Mitigation Plan | MARC](#) and made available to the HMSC members for view and comment. The final draft of the plan was approved for submission by the HMSC on **date**.

Table S1.2 Review Process Summary (will be modified after January review)

Section	Reviewed (Yes/No)	Revisions Made (Yes/No)	Basis for Revisions	Summary of Revisions
Introduction & Planning Process	Yes	Yes	Added information on meetings held and public input received	Updated table with additional information
Planning Area Profile	Yes	Yes	Suggested additional demographic detail	Updated with additional data on specific vulnerable populations.
Capabilities Assessment	Yes	Yes	Plan organization New survey tools	Assembled data for each local jurisdiction from the online data tool in the Capabilities Assessment chapter
Risk Assessment	Yes	Yes	Consolidated risk assessment and vulnerability analysis.	Added detail consistent with FEMA rules in analyzing priority hazards.
Mitigation Strategy	Yes	Yes	Each local jurisdiction was asked to update their goals and strategies given identification of priority natural hazards, risk profiles and presentations of information on possible goals and strategies for consideration.	Compiled new 2025 goals and action steps
Plan Maintenance	Yes	Yes	The online planning tool will be available to each jurisdiction (and to new jurisdictions) beyond the timeframe of the plan preparation to review information and update their capabilities and goals and strategies.	Updated section to reflect feedback from Steering Committee

1.3.4 Review and Incorporation of Existing Plans

Existing plans, codes, ordinances, programs, resources and staffing were reviewed and integrated in the planning process. The Community Profile tool collected information about the different tools available to communities related to administration, financial planning, education and outreach, and planning and regulation. **Table S1.3** lists the different tools that were included in the Community Profile for communities to report on¹:

Table S1.3 Community Profile Tools	
Administrative & Technical	Financial
<p>Administrative Resources:</p> <ul style="list-style-type: none"> *Planning and Zoning Commission *Mitigation Planning Committee *Maintenance Program to reduce risk *Mutual aid agreement <p>Staffing Resources:</p> <ul style="list-style-type: none"> *Chief Building Official *Floodplain Administrator *Emergency Manager *Community Planner *Civil Engineer *Public Health Official *IT Support *GIS Coordinator <p>Technical Resources:</p> <ul style="list-style-type: none"> *Warning System/Services *Hazard data and information *Critical Facilities Map/APRS *HAZUS Analysis *Existing Land Use Maps *Future Land Use Maps *State Hazard Mitigation Plan *Grant Writing 	<ul style="list-style-type: none"> *Capital Improvement Project Funding *Authority to levy taxes for specific purpose *Fees for water, sewer, gas or electric services *Impact fees for new development *Stormwater utility fee *Incur debt through general and/or special tax bonds *Incur debt through private activities *Community Development Block Grant *Flood Mitigation Assistance Program *Pre-Disaster Mitigation Program *Hazard Mitigation Grant Program
Education & Outreach	Planning & Regulatory
<p>Existing Warning Systems:</p> <ul style="list-style-type: none"> *Storm Sirens *Mass Notification Systems *MEMC Project Community Alert *National Weather Service *Kansas City Scout <p>Community Partnerships:</p> <ul style="list-style-type: none"> *Regional Homeland Security Coordinating Committee *Metropolitan Emergency Managers Committee *Mid-America Local Emergency Planning Committee *Metropolitan Official Health Agencies of the Kansas City Area *SAVE Coalition *Kansas City Organization Active in Disaster *Community Emergency Response Team 	<p>Plans:</p> <ul style="list-style-type: none"> *Comprehensive Master Plan *Capital Improvement Plan *Economic Development Plan *Local Emergency Operations Plan *Continuity of Operations Plan *Public Health Emergency Preparedness Plan *Transportation Plan *Stormwater Management Plan *Community Wildlife Protection Plan *Brownfields Redevelopment *Climate Change Adaptation

Table S1.3 Community Profile Tools	
*Medical Reserve Corps of Greater Kansas City ** Ongoing public education (PrepareKC) *Natural disaster or safety related school program *StormReady certification *Firewise Communities certification *Public-private partnership initiatives (disaster related) *Media coverage and Public Awareness	Codes: *Building Code *Fire Code *Mechanical Code *Plumbing Code *Dangerous Building Code Land Use Planning Policies: *Stream setback ordinances *Floodplain management ordinances *Soil and erosion ordinances *Burn ordinance *Storm water runoff ordinances *Water conservation measures *Open space acquisition/dedication *Flood buyout *Site plan review requirements.

For each tool, one of the questions asked was if the jurisdiction had reviewed that tool during the Hazard Mitigation Plan update. Where applicable, the Community Profile requested jurisdictions describe how these documents and measures were integrated in the planning process. School districts, universities and colleges were polled on a different set of tools including:

- ✓ Evacuation plans
- ✓ Storm Sheltering Plan
- ✓ Shelter-In-Place Plan
- ✓ Infectious Disease Plan
- ✓ Water Conservation Measures
- ✓ Security Plan

Section 3 includes a summary of the tools included in the Community Profile and the School Profile. The tools were web-based through a portal on the MARC website to enable jurisdictions to provide updated information on their jurisdictions' profiles, risks and updated hazard mitigation goals and actions. A GIS tool has allowed jurisdictions to review data through a series of GIS layers to consider further impacts to their jurisdiction from the priority hazards addressed in the plan and review resources for the plan to inform their goals and strategies. [Hazard Mitigation](#)

1.3.5 Public Involvement

Hazard mitigation planning is best accomplished when those with a stake in the plan are actively involved. Because hazards can affect everyone, these stakeholders are not just local government officials, but also private industry, nonprofit organizations and most importantly private citizens. Seeking public feedback on the mitigation strategies considered by each jurisdiction ensures that the concerns of the community are adequately addressed and provides insight as to where scarce resources might best be used.

In order to make best use of limited time and resources during the planning process, local jurisdictions were asked to share information about the plan with their stakeholders and to help in promoting a

public survey to engage residents and seek their input on hazards of concern, actions that local jurisdictions could take, how residents receive information about emergency events and how they could be better informed. Social media posts were placed as well as some paid media, email communications, use of QR codes and e-news articles were all used to promote the survey. A flyer promoting the survey was posted on the MARC website and made available to the Metropolitan Emergency Managers Committee, the Hazard Mitigation Steering Committee and others that were identified as having possible interest in the Plan.

Table S1.4 details actions taken to promote the plan and encourage participation in the public survey.

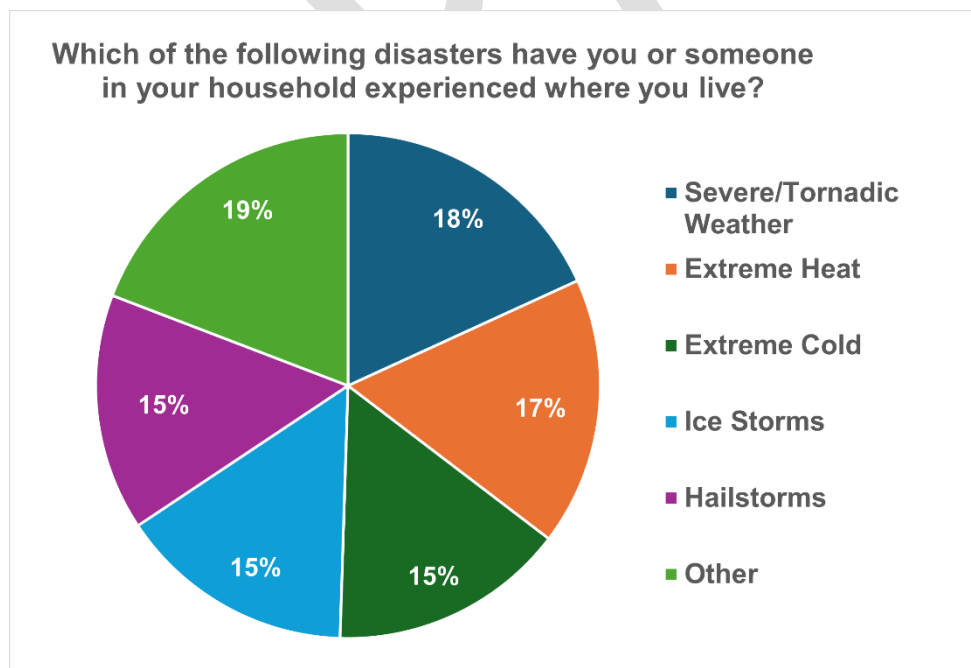
Table S1.4 MARC Stakeholder Community Engagement			
Event date	Description of Event, Location	County	Media Used
May 20, 2024	Kickoff Meeting at MARC offices, 600 Broadway, Kansas City, MO and online	Cass, Clay, Jackson, Platte, Ray	Flyer and HMTL invitations sent to large group of local stakeholders Used MARC website to promote event
May 2024	Posted information about the Hazard Mitigation Plan update on the MARC website and a link to a public survey	Cass, Clay, Jackson, Platte, Ray	Promoted the website address to stakeholders of jurisdictions, committee members and the public.
June 2024	Prepared and disseminated a flyer with a QR code about the plan and the public survey. Encouraged residents to complete the online survey.	Cass, Clay, Jackson, Platte, Ray	Worked with steering committee members and others to share the flyer through electronic means and as handouts at community events.
date	Community Organizations Active in Disaster (COAD) meeting at MARC and online	Cass, Clay, Jackson, Platte, Ray	Presented information on the HM Plan and solicited input on greatest threats to vulnerable populations and steps that jurisdictions could take to support these populations.
November 2024	Prepared and disseminated a flyer with a QR code about the plan and the public survey. Encouraged residents to complete the online survey.	Cass, Clay, Jackson, Platte, Ray	Used social media Facebook and Instagram to run through end of November 2024. Message showed up in feeds 15,382 times, reached 7,728 accounts and received 191 clicks on the links. The click rate was above 1%, a reasonable average. Placed print ads for Spanish version in two print newspapers – Dos Mundos and KC Hispanic News. Costs for English and Spanish media \$420.

Table S1.4 MARC Stakeholder Community Engagement			
Event date	Description of Event, Location	County	Media Used
January 2025	Draft plan posted on MARC website for review. Jurisdiction stakeholders and the public encouraged to review and submit feedback through online survey.	Cass, Clay, Jackson, Platte, Ray	

Posts were created on MARC’s social media sites including Instagram and Facebook. A homepage story was created on the MARC Web site. E-mail invitations were sent through MARC listservs, requesting regional partners and committees forward to their constituents. Jurisdictions were provided with fliers advertising the plan and public survey for distribution around their community. Webs URL links and QR codes were used to help residents and stakeholders gain access to information. Additionally, jurisdictions were asked to link notices for the plan and public survey to their local government and school district Web sites, where applicable. Jurisdictions were also asked to use any other available outlets to advertise the events, such as e-newsletters and posting information to their own social networking accounts.

Public Survey Results

The public survey was intended to seek input into the plan, gaining an understanding of the public’s awareness of natural hazards, hazards that have affected them personally, ones they feel their community is most at risk for in the future, what steps their community has taken to reduce risks to injury and property damage, and what further steps might be helpful.

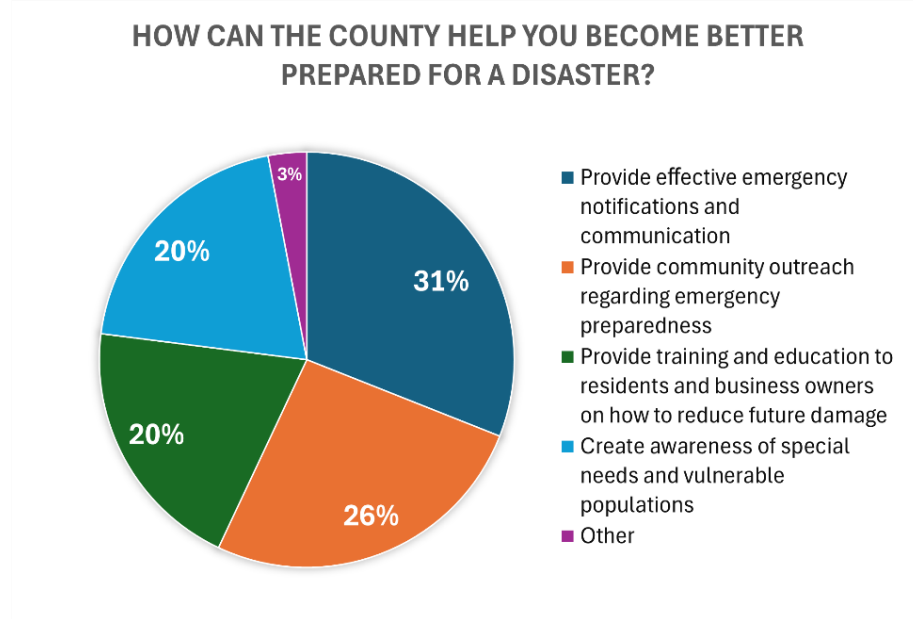


Q1. Which of the following disasters have you or someone in your household experienced where you live now? Windstorms and tornadoes were most often cited followed by extreme heat, ice storms, extreme cold and hail. Other disasters mentioned were earthquakes and wildfires.

Q2. Which disasters have you experienced most frequently? Severe thunderstorms/tornadoes 29%, extreme heat 22%, ice storms and extreme cold 25%.

Q3. Have you experienced flooding? Only 1 of 5 respondents.

Q4. What mitigation actions do you feel could help best protect your community? Protecting utilities and other infrastructure, including drainage systems 36%, protect health care and emergency services' facilities 17%, help provide property owners with dollars 12% and enact local ordinances and building standards 12%.



Q5. How could your county best support you to lessen your risk from natural hazards? Emergency notification systems and communications 31%, community outreach 25%, create awareness of special needs/vulnerable populations 21% and train and educate residents and business owners on measures to reduce their risks 20%.

One-fourth of respondents did not feel adequately informed about risks to their community, indicating an opportunity to educate the region’s population. Social media, television and email were the most often cited ways that respondents received information.

Draft Plan Review

The final plan, prior to submission to SEMA and FEMA, was provided to all participating jurisdictions. The plan was placed in its entirety on MARC’s website and an online feedback mechanism was created to provide a concluding opportunity for the public to comment on the plan. MARC staff issued press releases, used social media and sent email notifications through local list serves on how to provide feedback. Jurisdictions were again asked to link these items to their Websites as well as utilize other available outlets to spread the word regarding the final review period.

Following SEMA’s approval of the plan “pending adoption” and prior to formal adoption of the plan, jurisdictions were encouraged to hold public meetings to discuss the plan’s adoption.

Copies of meeting notices, fliers, advertisements, press releases, etc. are provided in Appendix B: Supporting Documents.

ⁱ FEMA. Worksheets 4.1- 4.3 Capability Assessment Worksheet, Safe Growth Audit, National Flood Insurance Program Worksheet. Local Mitigation Planning Handbook, March 2013.