
4 MITIGATION STRATEGY

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

This section presents the mitigation strategy updated by the Mitigation Planning Committee (MPC) based on the updated risk assessment. The mitigation strategy was developed through a collaborative group process. The process included review of general goal statements to guide the jurisdictions in lessening disaster impacts as well as specific mitigation actions to directly reduce vulnerability to hazards and losses. The following definitions are taken from FEMA's *Local Hazard Mitigation Review Guide (October 1, 2012)*.

- **Mitigation Goals** are general guidelines that explain what you want to achieve. Goals are long-term policy statements and global visions that support the mitigation strategy. The goals address the risk of hazards identified in the plan.
- **Mitigation Actions** are specific actions, projects, activities, or processes taken to reduce or eliminate long-term risk to people and property from hazards and their impacts. Implementing mitigation actions helps achieve the plan's mission and goals.

4.1 Goals

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

This planning effort is an update to Shelby County's existing hazard mitigation plan approved by FEMA on September 21, 2018. Therefore, the goals from the 2018 Shelby County Hazard Mitigation Plan were reviewed to see if they were still valid, feasible, practical, and applicable to the defined hazard impacts. These goals are listed below:

1. Public Awareness- Using a variety of communications avenues to increase the citizens awareness of and promote education about the natural hazards that they may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.
2. Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effect of future natural hazards.
3. Investigate, implement, maintain, and enforce mitigation policies and programs that limit the impact of natural hazards: on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.

The MPC conducted a discussion session during their meeting to review and update the plan goals. To ensure that the goals developed for this update were comprehensive and supported State goals, the 2018 State Hazard Mitigation Plan goals were reviewed. It was determined that the broadly stated purposes were still valid for the 2023 update.

4.2 Identification and Analysis of Mitigation Actions

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

Some specific sources for mitigation action ideas include the following:

- FEMA's Mitigation Action Ideas Publication, <https://www.fema.gov/media-library/assets/documents/30627>
- FEMA's Climate Resilient Activities for Hazard Mitigation Assistance, <https://www.fema.gov/media-library/assets/documents/110202>
- EPA's Hazard Mitigation for Natural Disasters Publication, <https://www.epa.gov/waterutilityresponse/hazard-mitigation-natural-disasters>
- EPA's Planning for an Emergency Drinking Water Supply Publication, <https://www.epa.gov/waterutilityresponse/water-utility-planning-emergency-drinking-water-supply>

During the MPC meeting, the results of the risk assessment update were provided to the MPC members for review and the key issues were identified for specific hazards. Changes in risk since adoption of the previously approved plan were discussed. Actions from the previous plan included completed actions, on-going actions, and actions upon which progress had not been made. The MPC discussed SEMA's identified funding priorities and the types of mitigation actions generally recognized by FEMA.

The MPC included problem statements in the plan update at the end of each hazard profile. The problem statements summarize the risk to the planning area presented by each hazard and include possible methods to reduce that risk. Use of the problem statements allowed the MPC to recognize new and innovative strategies for mitigate risks in the planning area.

During the Planning Meeting the mitigation strategy was reviewed. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during the Planning Meeting:

- A list of actions proposed in the previous mitigation plan, the current State Plan, and approved plans in surrounding counties,
- Key issues from the risk assessments, including the problem statements concluding each hazard profile and vulnerability analysis,
- State priorities established for HMA grants, and
- Public input during meetings, responses to data collection questionnaires, and other efforts to involve the public in the plan development process.

For the Planning Meeting, individual jurisdictions, including school and special districts, developed final mitigation strategy for submission to the MPC. They were encouraged to review the details of the risk assessment vulnerability analysis specific to their jurisdiction. They were also provided a link to the FEMA's publication, *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*. This document was developed by FEMA as a resource for identification of a range of potential mitigation actions for reducing risk to natural hazards and disasters.

The MPC reviewed the actions from the previously approved plan for progress made since the plan

had been adopted, using worksheets included in Appendix C of this plan. During the Planning Meeting, the list of actions for each jurisdiction was provided to the jurisdiction's MPC representative along with the worksheets. Each jurisdiction was instructed to provide information regarding the "Action Status" with one of the following status choices:

- Completed, with a description of the progress;
- Ongoing, with a description of the progress made to date; or
- Not Yet Started, with a discussion of the reasons for lack of progress.

Additionally, the future inclusion of each mitigation action in the plan update was identified as either keep, delete, or modify. Based on the status updates, there was 1 completed action, 13 continuing actions (either ongoing or modified), and 22 deleted actions.

Table 4.1 provides a summary of the action statuses for each jurisdiction:

Table 4.1. Action Status Summary

Jurisdiction	Completed Actions	Continuing Actions (ongoing or modify)	Deleted Actions
Shelby County	0	4	3
Bethel	0	1	4
Clarence	1	0	2
Hunnewell	0	1	3
Shelbina	0	4	5
Shelbyville	0	1	3
PWSD #1 of Shelby	0	0	0
North Shelby	0	1	1
Shelby County R-IV	0	1	1

Table 4.2 provides a summary of the completed and deleted actions from the previous plan.

Table 4.2. Summary of Completed and Deleted Actions from the Previous Plan

Completed Actions	Completion Details (date, amount, funding source)
Clarence	
Obtain sufficient back-up generators for shelters	2022; SEMA Dept. of Public Safety
Deleted Actions	Reason for Deletion
Shelby County	
Promote the use of NOAA radios	Action was determined to be an everyday item.
Participate in regularly scheduled Table-top exercises and mock emergency exercises.	Action was determined to be an everyday item.
Encourage landowners to inspect and maintain their dams and levees according to Dept. of Natural Resources standards. Schedule regular inspection and maintenance of dams at city lakes.	Action was determined to be an everyday item.
Bethel	
Promote the use of NOAA radios	Action was determined to be an everyday item.
Investigate purchasing NOAA radios for several locations within the city.	Action was determined to be an everyday item.
Establish cooling centers and shelter	Action was determined to be an everyday item.
NFIP Enforcement	Action was determined to be an everyday item.
Clarence	
Promote the use of NOAA radios	Action was determined to be an everyday item.
Identify and participate in Table-top exercises to gain adequate training.	Action was determined to be an everyday item.
Hunnewell	
Promote the use of NOAA radios	Action was determined to be an everyday item.
Investigate purchasing NOAA radios for several locations within the city	Action was determined to be an everyday item.
Establish cooling centers and shelter	Action was determined to be an everyday item.
Shelbina	
Investigate purchasing NOAA radios for several locations within the city.	Action was determined to be an everyday item.
Participate in regularly scheduled Table-top exercises and mock emergency exercises.	Action was determined to be an everyday item.
Conduct regular inspections of dams and levees to meet DNR regulations.	Action was determined to be an everyday item.
Establish cooling centers and shelter	Action was determined to be an everyday item.
NFIP Enforcement	Action was determined to be an everyday item.
Shelbyville	
Promote the use of NOAA radios	Action was determined to be an everyday item.
Participate in regularly scheduled Table-top exercises and mock emergency exercises.	Action was determined to be an everyday item.
Conduct regular inspections of dams and levees to meet DNR regulations.	Action was determined to be an everyday item.
North Shelby School District	
Promote the use of NOAA radios	Action was determined to be an everyday item.
Shelby County R-IV School District	
Promote the use of NOAA radios	Action was determined to be an everyday item.

Source: Previously approved County Hazard Mitigation Plan; Data Collection Questionnaires.

4.3 Implementation of Mitigation Actions

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

Jurisdictional MPC members were encouraged to meet with others in their community to finalize the actions to be submitted for the updated mitigation strategy. Throughout the MPC consideration and discussion, emphasis was placed on the importance of a benefit-cost analysis in determining project priority. The Disaster Mitigation Act requires benefit-cost review as the primary method by which mitigation projects should be prioritized. The MPC decided to pursue implementation according to when and where damage occurs, available funding, political will, jurisdictional priority, and priorities identified in the 2018 Missouri State Hazard Mitigation Plan. The benefit/cost review at the planning stage primarily consisted of a qualitative analysis and was not the detailed process required grant funding application. For each action, the plan sets forth a narrative describing the types of benefits that could be realized from action implementation. The cost was estimated as closely as possible, with further refinement to be supplied as project development occurs.

FEMA's STAPLEE methodology was used to assess the costs and benefits, overall feasibility of mitigation actions, and other issues impacting project. During the prioritization process, the jurisdictions used worksheets to assign scores. The worksheets posed questions based on the STAPLEE elements as well as the potential mitigation effectiveness of each action. Scores were based on the responses to the questions as follows:

Definitely YES = 3 points
 Maybe YES = 2 points
 Probably NO = 1 points
 Definitely NO = 0 points

The following questions were asked for each proposed action.

S: Is the action socially acceptable?
 T: Is the action technically feasible and potentially successful?
 A: Does the jurisdiction have the administrative capability to successfully implement this action?
 P: Is the action politically acceptable?
 L: Does the jurisdiction have the legal authority to implement the action?
 E: Is the action economically beneficial?
 E: Will the project have an environmental impact that is either beneficial or neutral? (score "3" if positive and "2" if neutral)

Will the implemented action result in lives saved?
 Will the implanted action result in a reduction of disaster damage?

The final scores are listed below in the analysis of each action. The STAPLEE final score for each action, absent other considerations, such as a localized need for a project, determined the priority. Low priority action items were those that had a total score of between 0 and 24. Moderate priority actions were those scoring between 25 and 29. High priority actions scored 30 or above. A blank STAPLEE worksheet is shown in Figure 4.1.

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:		
Action or Project		
Action/Project Number:	Insert a unique action number for this action for future tracking purposes. This can be a combination of the jurisdiction name, followed by the goal number and action number (i.e. Joplin1.1)	
Name of Action or Project:		
Mitigation Category:	Prevention; Structure and Infrastructure Projects; Natural Systems Protection; Education and Outreach; Emergency Services	
STAPLEE Criteria		Score
Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		
S: Is it Socially Acceptable		
T: Is it Technically feasible and potentially successful?		
A: Does the jurisdiction have the Administrative capacity to execute this action?		
P: Is it Politically acceptable?		
L: Is there Legal authority to implement?		
E: Is it Economically beneficial?		
E: Will the project have either a neutral or positive impact on the natural Environment ?		
Will historic structures be saved or protected?		
Could it be implemented quickly?		
STAPLEE SCORE		
Mitigation Effectiveness Criteria	Evaluation Rating	Score
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives will be saved.	
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	
MITIGATION EFFECTIVENESS SCORE		
TOTAL SCORE (STAPLEE + Mitigation Effectiveness)		
<input type="checkbox"/> High Priority (30+ points)	<input type="checkbox"/> Medium Priority (25 - 29 points)	<input type="checkbox"/> Low Priority (<25 points)

Completed by
(Name, Title, Phone Number)

ACTION WORKSHEET

Action Worksheet	
Name of Jurisdiction:	
Risk / Vulnerability	
Hazard(s) Addressed:	List the hazard or hazards that will be addressed by this action
Problem being Mitigated:	Provide a brief description of the problem that the action will address. Utilize the problem statement developed in the risk assessment.
Action or Project	
Applicable Goal Statement:	Choose the goal statement that applies to this action
Action/Project Number:	Insert a unique action number for this action for future tracking purposes. This can be a combination of the jurisdiction name, followed by the goal number and action number (i.e. Joplin1.1)
Name of Action or Project:	
Mitigation Category:	Prevention; Structure and Infrastructure Projects; Natural Systems Protection; Education and Outreach; Emergency Services
Action or Project Description:	Describe the action or project.
Estimated Cost:	Provide an estimate of the cost to implement this action. This can be accomplished with a range of estimated costs.
Benefits:	Provide a narrative describing the losses that will be avoided by implementing this action. If dollar amounts of avoided losses are known, include them as well.
Plan for Implementation	
Responsible Organization/Department:	Which organization will be responsible for tracking this action? Be specific to include the specific department or position within a department.
Supporting Organization/Department:	Which organization/department will assist in implementation of this action?
Action/Project Priority:	Include the STAPLEE score and Priority (H, M, L)
Timeline for Completion:	How many months/years to complete.
Potential Fund Sources:	List specific funding sources that may be used to pay for the implementation of the action.
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Indicate status as New, Continuing Not Started, or Continuing in Progress)
Report of Progress:	For Continuing actions only, indicate the report on progress. If the action is not started, indicate any barriers encountered to initiate the action. If the action is in progress, indicate the activity that has occurred to date.

Action Worksheet	
Name of Jurisdiction:	Shelby County
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado
Problem being Mitigated:	Shelters lack backup power sources, making them and the people they serve vulnerable to the uncontrollable.
Action or Project	
Applicable Goal Statement:	Goal 1: Public Awareness- Using a variety of communications avenue to increase the citizens awareness of and promote education about the natural hazards that may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.
Action/Project Number:	Shelby County 2023.1
Name of Action or Project:	Obtain sufficient back-up generators for shelters.
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Emergency Services
Action or Project Description:	Research ways to purchase back-up generators for shelters.
Estimated Cost:	\$50,000
Benefits:	Lives will be protected from hazards such as extreme heat and cold
Plan for Implementation	
Responsible Organization/Department:	Shelby County EMD
Supporting Organization/Department:	Shelby County Commission
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan, Count Emergency Operations Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support the search to purchase generators.

Action Worksheet	
Name of Jurisdiction:	Shelby County
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Emergency communications lack the ability to continue operations if a disaster occurs.
Action or Project	
Applicable Goal Statement:	Goal 2: Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effect of future natural hazards.
Action/Project Number:	Shelby County 2023.2
Name of Action or Project:	Obtain sufficient back-up generators to maintain communications for all emergency personnel as funds become available.
Mitigation Category:	Prevention, Emergency Services
Action or Project Description:	Purchase generators to provide back-up power to maintain communications for emergency personnel.
Estimated Cost:	\$50,000
Benefits:	During a disaster, emergency communications will be able to continue operations and provide services.
Plan for Implementation	
Responsible Organization/Department:	Shelby County EMD
Supporting Organization/Department:	Shelby County Commission
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan, Local Emergency Planning Committee
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support the research to purchase back-up generators.

Action Worksheet	
Name of Jurisdiction:	Shelby County
Risk / Vulnerability	
Hazard(s) Addressed:	Flood
Problem being Mitigated:	Low water crossings flood and are not accessible, existing bridges are damaged by flooding and roads flood during periods of heavy rains.
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	Shelby County 2023.3
Name of Action or Project:	Replace existing bridges, replace low water crossings with bridges, and raise flood prone roads.
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Emergency Services
Action or Project Description:	Replace bridges, low water crossings, and raise roads.
Estimated Cost:	\$2,000,000
Benefits:	Bridges will be safe, low water crossings will be accessible, and roads that typically flood will no longer flood.
Plan for Implementation	
Responsible Organization/Department:	Shelby County Road & Bridge Department
Supporting Organization/Department:	Shelby County Commission
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support the research to identify funding for road and bridge improvements.

Action Worksheet	
Name of Jurisdiction:	Shelby County
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Providing shelter during a storm or disaster
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	Shelby County 2023.4
Name of Action or Project:	Safe Rooms
Mitigation Category:	Prevention, Structure and Infrastructure Projects
Action or Project Description:	Shelters/Safe rooms for residents
Estimated Cost:	\$3,000,000
Benefits:	Residents are provided a safe place during storms/disasters
Plan for Implementation	
Responsible Organization/Department:	Shelby County EMD
Supporting Organization/Department:	Shelby County Commission
Action/Project Priority:	High
Timeline for Completion:	2028
Potential Fund Sources:	Emergency Preparedness Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to research funding opportunities for a storm shelter

Action Worksheet	
Name of Jurisdiction:	Bethel
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado
Problem being Mitigated:	Shelters lack backup power sources, making them and the people they serve vulnerable to the uncontrollable.
Action or Project	
Applicable Goal Statement:	Goal 1: Public Awareness- Using a variety of communications avenue to increase the citizens awareness of and promote education about the natural hazards that may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.
Action/Project Number:	Bethel 2023.1
Name of Action or Project:	Obtain sufficient back-up generators for shelters.
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Emergency Services
Action or Project Description:	Research ways to purchase back-up generators for shelters.
Estimated Cost:	\$50,000
Benefits:	Lives will be protected from hazards such as extreme heat and cold
Plan for Implementation	
Responsible Organization/Department:	Village Clerk
Supporting Organization/Department:	Village Trustees
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan, Local Emergency Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support the research to purchase generators.

Action Worksheet	
Name of Jurisdiction:	Bethel
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado
Problem being Mitigated:	In the case of a power outage, the sewer treatment plant is unable to operate, exacerbating the risk to the public
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	Bethel 2023.2
Name of Action or Project:	Obtain sufficient back-up generator for lagoon pumps
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Natural Systems Protection
Action or Project Description:	Research ways to purchase back-up generators for lagoon pumps
Estimated Cost:	\$50,000
Benefits:	Public utilities will still be available in the event of a power outage
Plan for Implementation	
Responsible Organization/Department:	Public Works
Supporting Organization/Department:	Village Clerk
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	New
Report of Progress:	New Action Item

Action Worksheet	
Name of Jurisdiction:	Hunnewell
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado
Problem being Mitigated:	Shelters lack backup power sources, making them and the people they serve vulnerable to the uncontrollable.
Action or Project	
Applicable Goal Statement:	Goal 1: Public Awareness- Using a variety of communications avenue to increase the citizens awareness of and promote education about the natural hazards that may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.
Action/Project Number:	Hunnewell 2023.1
Name of Action or Project:	Obtain sufficient back-up generators for shelters
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Emergency Services
Action or Project Description:	Research ways to purchase back-up generators for shelters
Estimated Cost:	\$50,000
Benefits:	Lives will be protected from hazards such as extreme heat and cold
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	City Council
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support the research to purchase new generators

Action Worksheet	
Name of Jurisdiction:	Clarence
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado
Problem being Mitigated:	Back up generators require transfer switches to be able to power shelters
Action or Project	
Applicable Goal Statement:	Goal 1: Public Awareness- Using a variety of communications avenue to increase the citizens awareness of and promote education about the natural hazards that may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.
Action/Project Number:	Clarence 2023.1
Name of Action or Project:	Obtain a transfer switch for the backup generator
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Emergency Services
Action or Project Description:	Install a transfer switch for back-up generators to hook to shelters
Estimated Cost:	\$40,000
Benefits:	Lives will be protected from hazards such as extreme heat and cold
Plan for Implementation	
Responsible Organization/Department:	City Administrator
Supporting Organization/Department:	City Clerk
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	New
Report of Progress:	New Action Item

Action Worksheet	
Name of Jurisdiction:	Clarence
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Residents lack early warning of storms or tornadoes
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	Clarence 2023.2
Name of Action or Project:	Obtain warning sirens for the South side of the city and update warning sirens on the North side of the city
Mitigation Category:	Prevention, Structure and Infrastructure Projects
Action or Project Description:	Purchase sirens to provide early warning to residents
Estimated Cost:	\$54,000
Benefits:	During severe weather, residents will have ample warning to seek shelter
Plan for Implementation	
Responsible Organization/Department:	City Administrator
Supporting Organization/Department:	City Clerk
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Emergency Preparedness Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	New
Report of Progress:	New Action Item

Action Worksheet	
Name of Jurisdiction:	Shelbina
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado
Problem being Mitigated:	Shelters lack backup power sources, making them and the people they serve vulnerable to the uncontrollable.
Action or Project	
Applicable Goal Statement:	Goal 1: Public Awareness- Using a variety of communications avenue to increase the citizens awareness of and promote education about the natural hazards that may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.
Action/Project Number:	Shelbina 2023.1
Name of Action or Project:	Obtain sufficient back-up generators for shelters
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Emergency Services
Action or Project Description:	Research ways to purchase back-up generators for shelters
Estimated Cost:	\$50,000
Benefits:	Lives will be protected from hazards such as extreme heat and cold
Plan for Implementation	
Responsible Organization/Department:	City Superintendent
Supporting Organization/Department:	City Clerk
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support the research to purchase generators

Action Worksheet	
Name of Jurisdiction:	Shelbina
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Emergency communications lack the ability to continue operations if a disaster occurs
Action or Project	
Applicable Goal Statement:	Goal 2: Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effect of future natural hazards.
Action/Project Number:	Shelbina 2023.2
Name of Action or Project:	Obtain sufficient back-up generators to maintain communications for all emergency personnel as funds become available.
Mitigation Category:	Prevention, Emergency Services
Action or Project Description:	Purchase generators to provide back-up power to maintain communications for emergency personnel
Estimated Cost:	\$50,000
Benefits:	During a disaster, emergency communications will be able to continue operations and provide services
Plan for Implementation	
Responsible Organization/Department:	City Superintendent
Supporting Organization/Department:	City Clerk
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support the research to purchase back-up generators

Action Worksheet	
Name of Jurisdiction:	Shelbina
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Residents lack early warning of storms or tornadoes
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	Shelbina 2023.3
Name of Action or Project:	Obtain warning sirens for the South side of the city
Mitigation Category:	Prevention, Structure and Infrastructure Projects
Action or Project Description:	Purchase sirens to provide early warning to residents
Estimated Cost:	\$27,000
Benefits:	During severe weather, residents will have ample warning to seek shelter
Plan for Implementation	
Responsible Organization/Department:	City Superintendent
Supporting Organization/Department:	City Clerk
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Emergency Preparedness Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to seek funding for the installation of warning sirens

Action Worksheet	
Name of Jurisdiction:	Shelbina
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Flooding
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	Shelbina 2023.4
Name of Action or Project:	Storm Water Drainage
Mitigation Category:	Prevention, Structure and Infrastructure Projects
Action or Project Description:	Action will be taken to divert storm water drainage and minimize the damage that is cause by storm water.
Estimated Cost:	\$500,000
Benefits:	Lives and properties are protected
Plan for Implementation	
Responsible Organization/Department:	City Superintendent
Supporting Organization/Department:	City Clerk
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	H/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to seek funding to address storm water drainage throughout the city

Action Worksheet	
Name of Jurisdiction:	Shelbina
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Tornado, Severe Winter Weather, Earthquake
Problem being Mitigated:	Utility Vulnerability to Disaster
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	Shelbina 2023.5
Name of Action or Project:	Replace Aging PVC Gas Mains
Mitigation Category:	Prevention, Structure and Infrastructure Projects
Action or Project Description:	Action will be taken to replace aging PVC Gas Mains and services.
Estimated Cost:	\$536,500
Benefits:	Infrastructure is improved and more reliable public utilities
Plan for Implementation	
Responsible Organization/Department:	City Superintendent
Supporting Organization/Department:	City Clerk
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	H/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	New
Report of Progress:	New Action Item

Action Worksheet	
Name of Jurisdiction:	Shelbyville
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado
Problem being Mitigated:	Shelters lack backup power sources, making them and the people they serve vulnerable to the uncontrollable.
Action or Project	
Applicable Goal Statement:	Goal 1: Public Awareness- Using a variety of communications avenue to increase the citizens awareness of and promote education about the natural hazards that may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.
Action/Project Number:	Shelbyville 2023.1
Name of Action or Project:	Obtain sufficient back-up generators for shelters
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Emergency Services
Action or Project Description:	Research ways to purchase back-up generators for shelters
Estimated Cost:	\$50,000
Benefits:	Lives will be protected from hazards such as extreme heat and cold
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	City Council
Action/Project Priority:	Medium
Timeline for Completion:	2025
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support the research to purchase generators

Action Worksheet	
Name of Jurisdiction:	North Shelby School District
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Students are lacking adequate protection from natural hazards
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	North Shelby School District 2023.1
Name of Action or Project:	Upgrade or build tornado safe rooms at the school
Mitigation Category:	Prevention, Structure and Infrastructure Projects
Action or Project Description:	Build a room that will protect the student while at school during an extreme weather event
Estimated Cost:	\$3,000,000
Benefits:	Students will have adequate protection
Plan for Implementation	
Responsible Organization/Department:	Superintendent
Supporting Organization/Department:	Building Principal
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	Emergency Preparedness Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support upgrading or building a safe room

Action Worksheet	
Name of Jurisdiction:	North Shelby School District
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado
Problem being Mitigated:	Schools lack backup power sources, making them and the students vulnerable to the uncontrollable.
Action or Project	
Applicable Goal Statement:	Goal 1: Public Awareness- Using a variety of communications avenue to increase the citizens awareness of and promote education about the natural hazards that may face, their vulnerability to these hazards, and how to lessen the effect of future natural hazards.
Action/Project Number:	North Shelby School District 2023.2
Name of Action or Project:	Obtain sufficient back-up generators
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Emergency Services
Action or Project Description:	Research ways to purchase back-up generators
Estimated Cost:	\$50,000
Benefits:	Lives will be protected from hazards such as extreme heat and cold
Plan for Implementation	
Responsible Organization/Department:	Superintendent
Supporting Organization/Department:	Building Principal
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	New
Report of Progress:	New Action Item

Action Worksheet	
Name of Jurisdiction:	North Shelby School District
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperatures. Severe Thunderstorms, Severe Winter Weather, Tornado
Problem being Mitigated:	Additional communication mechanism between administration offices and buses out traveling the roads
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	North Shelby School District 2023.3
Name of Action or Project:	Two-Way Radios and Cameras
Mitigation Category:	Prevention, Structure and Infrastructure Projects, Emergency Services
Action or Project Description:	Obtain cameras for school buses and two-way radios for all administration offices and all school buses
Estimated Cost:	\$50,000
Benefits:	Radios will be used to be notified of storm watches/warning as a preventative measure to assist in getting everyone to a safe location in advance of hazardous situations.
Plan for Implementation	
Responsible Organization/Department:	Superintendent
Supporting Organization/Department:	School Board
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Hazard Mitigation Grant Funds
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	New
Report of Progress:	New Action Item

Action Worksheet	
Name of Jurisdiction:	Shelby County R-IV School District
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Students are lacking adequate protection from natural hazards
Action or Project	
Applicable Goal Statement:	Goal 3: Investigate, implement, maintain, and enforce mitigation policies and programs that limit that impact of natural hazards; on the loss of life; on new and existing properties; on natural resources; on infrastructure; and on the local economy.
Action/Project Number:	Shelby County R-IV School District 2023.1
Name of Action or Project:	Build tornado safe rooms at the MS/HS Building
Mitigation Category:	Prevention, Structure and Infrastructure Projects
Action or Project Description:	Build a room that will protect students while at school
Estimated Cost:	\$3,000,000
Benefits:	Students will have adequate protection
Plan for Implementation	
Responsible Organization/Department:	Superintendent
Supporting Organization/Department:	School Board
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	Emergency Preparedness Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	Continuing
Report of Progress:	Continuing to support upgrading or building a safe room

Action Worksheet	
Name of Jurisdiction:	Public Water Supply District #1 of Shelby
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Lack of cellular service inhibits communication and imposes risks in instances of extreme hazard
Action or Project	
Applicable Goal Statement:	Goal 2: Strengthen communication and coordination between local governments, emergency personnel, public agencies, and citizens to mitigate the effect of future natural hazards.
Action/Project Number:	Public Water Supply District #1 of Shelby 2023.1
Name of Action or Project:	Improve Cellular Connectivity
Mitigation Category:	Prevention, Emergency Services
Action or Project Description:	Purchase cellular boosters to improve cellular connectivity
Estimated Cost:	\$30,000
Benefits:	Communication lines remain open in the event of a hazard
Plan for Implementation	
Responsible Organization/Department:	Manager
Supporting Organization/Department:	Office Supervisor
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	N/A
Local Planning Mechanisms to be Used in Implementation, if any:	Hazard Mitigation Plan
Progress Report	
Action Status:	New
Report of Progress:	New Action Item

Table 4.3. Mitigation Action Matrix

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
Prevention Public Education								
Shelby County 2023.1	Generator for shelters	Shelby County	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelby County 2023.2	Generators for emergency communications	Shelby County	High	2	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelby County 2023.3	Replace bridges and low water crossings and raise flood prone roads	Shelby County	High	3	Flooding	✓	✓	
Shelby County 2023.4	Build Safe Room	Shelby County	High	3	All Hazards	✓	✓	
Bethel 2023.1	Generator for shelters	Bethel	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Bethel 2023.2	Generator for Lagoon Pumps	Bethel	High	3	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓	✓	
Clarence 2023.1	Transfer switch for generator	Clarence	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓	✓	
Clarence 2021.2	Warning Sirens	Clarence	High	3	All Hazards	✓	✓	

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
Hunnewell 2023.1	Generator for shelters	Hunnewell	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelbina 2023.1	Generator for shelters	Shelbina	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelbina 2023.2	Generators for emergency communications	Shelbina	High	2	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelbina 2023.3	Warning Sirens	Shelbina	High	3	All Hazards	✓	✓	
Shelbina 2023.4	Storm Water Drainage	Shelbina	High	3	Flooding	✓	✓	
Shelbina 2023.5	Replace Aging PVC Gas Mains	Shelbina	High	3	Flooding, Tornado, Severe Winter Weather, Earthquake	✓	✓	
Shelbyville 2023.1	Generator for shelters	Shelbyville	Med	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
North Shelby School District 2023.1	Build a tornado safe room	North Shelby School District	High	3	All Hazards	✓	✓	

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
North Shelby School District 2023.2	Generator for school	North Shelby School District	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
North Shelby School District 2023.3	Two-Way Radios and Cameras	North Shelby School District	High	3	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓	✓	
Shelby County R-IV School District 2023.1	Build a tornado safe room	Shelby County R-IV School District	High	3	All Hazards	✓		
PWSD #1 of Shelby 2023.1	Improve Cellular Connectivity	PWSD #1 of Shelby	High	2	All Hazards	✓		
	Structure and Infrastructure Projects							
Shelby County 2023.1	Generator for shelters	Shelby County	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelby County 2023.3	Replace bridges and low water crossings and raise flood prone roads	Shelby County	High	3	Flooding	✓	✓	
Shelby County 2023.4	Build Safe Room	Shelby County	High	3	All Hazards	✓	✓	

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
Bethel 2023.1	Generator for shelters	Bethel	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Bethel 2023.2	Generator for Lagoon Pumps	Bethel	High	3	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓	✓	
Clarence 2023.1	Transfer switch for generator	Clarence	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓	✓	
Clarence 2021.2	Warning Sirens	Clarence	High	3	All Hazards	✓	✓	
Hunnewell 2023.1	Generator for shelters	Hunnewell	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelbina 2023.1	Generator for shelters	Shelbina	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelbina 2023.3	Warning Sirens	Shelbina	High	3	All Hazards	✓	✓	
Shelbina 2023.4	Storm Water Drainage	Shelbina	High	3	Flooding	✓	✓	
Shelbina 2023.5	Replace Aging PVC Gas Mains	Shelbina	High	3	Flooding, Tornado, Severe Winter Weather, Earthquake	✓	✓	

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
Shelbyville 2023.1	Generator for shelters	Shelbyville	Med	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
North Shelby School District 2023.1	Build a tornado safe room	North Shelby School District	High	3	All Hazards	✓	✓	
North Shelby School District 2023.2	Generator for school	North Shelby School District	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
North Shelby School District 2023.3	Two-Way Radios and Cameras	North Shelby School District	High	3	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓	✓	
Shelby County R-IV School District 2023.1	Build a tornado safe room	Shelby County R-IV School District	High	3	All Hazards	✓		
Natural Systems Protection								
Bethel 2023.2	Generator for Lagoon Pumps	Bethel	High	3	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓	✓	
Emergency Services								
Shelby County 2023.1	Generator for shelters	Shelby County	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
Shelby County 2023.2	Generators for emergency communications	Shelby County	High	2	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelby County 2023.2	Replace bridges and low water crossings and raise flood prone roads	Shelby County	High	3	Flooding	✓	✓	
Bethel 2023.1	Generator for shelters	Bethel	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Clarence 2023.1	Transfer switch for generator	Clarence	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓	✓	
Hunnewell 2023.1	Generator for shelters	Hunnewell	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelbina 2023.1	Generator for shelters	Shelbina	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
Shelbina 2023.2	Generators for emergency communications	Shelbina	High	2	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
Shelbyville 2023.1	Generator for shelters	Shelbyville	Med	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
North Shelby School District 2023.2	Generator for school	North Shelby School District	High	1	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓		
North Shelby School District 2023.3	Two-Way Radios and Cameras	North Shelby School District	High	3	Extreme Temperature, Severe Thunderstorm, Severe Winter Weather, Tornado	✓	✓	
PWSD #1 of Shelby 2023.1	Improve Cellular Connectivity	PWSD #1 of Shelby	High	2	All Hazards	✓		

