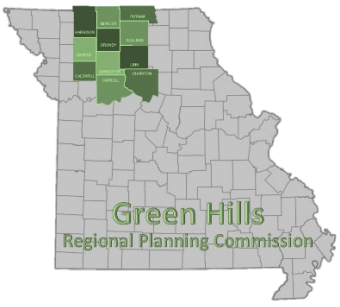
Mercer County Multi-Jurisdictional Hazard Mitigation Plan Update 2024



MERCER COUNTY – PRINCETON – MERCER – PRINCETON R-V SCHOOL – NORTH MERCER R-III SCHOOL



CONTRIBUTORS

Mercer County Hazard Mitigation Planning Committee

Jurisdictional Representatives

Name	Title (if any)	Department	Agency/Organization
Cheston Easter	Associate Commissioner	Mercer County	Mercer County
Jerry Girdner	Superintendent	Public School	Princeton R-V School District
Wade Hall	Superintendent	Public School	Mercer R-III School District
Cory Willett	City Clerk	City Council	City of Princeton
Tracy Meinecke	City Clerk	City Council	City of Mercer

Stakeholder Representatives

Name	Title	Department	Agency/Organization
Gina Finney	Director	MCHD	Mercer County Health Department
Jerry Allen	Presiding Commissioner	Mercer County	Mercer County
Judy Hamilton	County Clerk	Mercer County	Mercer County
Zachary Martin	Associate Commissioner	Mercer County	Mercer County
Greg Goodnight	City Administrator	City Council	City of Princeton
Jamie McClain	Deputy Clerk	City Council	City of Princeton
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EXECUTIVE SUMMARY

The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. Mercer County and participating jurisdictions and school/special districts developed this multi-jurisdictional local hazard mitigation plan update to reduce future losses from hazard events to the County and its communities and school/special districts. The plan is an update of a plan that was approved on August 28, 2019. The plan and the update were prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 to result in eligibility for the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance Grant Programs.

The County Multi-Hazard Mitigation Plan is a multi-jurisdictional plan that covers the following jurisdictions that participated in the planning process:

- Unincorporated Mercer County
- City of Princeton
- City of Mercer
- Princeton R-V School District
- Mercer R-III School District

Mercer County and the entities listed above developed a Multi-Jurisdictional Hazard Mitigation Plan that was approved by FEMA on August 28, 2019 (hereafter referred to as the *2019 Mercer County Hazard Mitigation Plan*). This current planning effort serves to update that previously approved plan.

The plan update process followed a methodology in accordance with FEMA guidance, which began with the formation of a Mitigation Planning Committee (MPC) comprised of representatives from Mercer County and participating jurisdictions. The MPC updated the risk assessment that identified and profiled hazards that pose a risk to Mercer County and analyzed jurisdictional vulnerability to these hazards. The MPC also examined the capabilities in place to mitigate the hazard damages, with emphasis on changes that have occurred since the previously approved plan was adopted. The MPC determined that the planning area is vulnerable to several hazards that are identified, profiled, and analyzed in this plan. Riverine and flash flooding, winter storms, severe thunderstorms (hail, lightning, high winds), and tornados are among the hazards that historically have had a significant impact.

Based upon the risk assessment and the Missouri State Hazard Mitigation Plan, the MPC updated goals for reducing risk from hazards. The goals are listed below:

- Goal 1: Protect the lives, property, and livelihoods of all citizens.
- Goal 2: Manage growth in designated hazard areas through sustainable policies, principles, and practices.

- Goal 3: Ensure continued operation of government and emergency functions in a disaster.
- Goal 4: Maintain economic activities essential to the survival and recovery from natural hazards.
- Goal 5: Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property.

To advance the identified goals, the MPC developed recommended mitigation actions, as summarized in the table on the following pages. The MPC developed an implementation plan for each action, which identifies priority level, background information, ideas for implementation, responsible agency, timeline, cost estimate, potential funding sources, and more. These additional details are provided in Chapter 4.

Table I. Mitigation Action Matrix

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
C1, P1, M1	Publicize the availability of hazard information to real estate agents, builders, developers, and homeowners.	MC, P, M	High	1, 5	Flooding, dam failure, earthquake, extreme temperatures, severe thunderstorms, severe winter weather, tornado, wildfire	Yes	Yes	Yes
C3	Develop a county-wide inventory of emergency shelters and safe rooms.	MC	High	1,3	Earthquake, extreme temperatures, severe thunderstorms, severe winter weather, tornado	No	No	No
P2, M2	Develop individual, community specific shelter saferoom inventories.	P, M	High	1, 3	Earthquake, extreme temperatures, severe thunderstorms, severe winter weather, tornado	No	No	No

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
C12, P6, M6	Make local government experts available to property owners to offer hazard audits of vulnerable structures.	MC	Low	1	Flooding, dam failure, earthquake, extreme temperatures, severe thunderstorms, severe winter weather, tornado	Yes	No	Yes
P8, M9	Install warning sirens with automated units that have battery back-up.	P, M	High	1	Flooding, dam failure, earthquake, drought, extreme temperatures, severe thunderstorms, severe winter weather, tornado, wildfire	No	No	no
PS5, MS5	Conduct earthquake, tornado drills at the school at least once annually	PS, MS	High	1,5	Earthquake, tornado, severe thunderstorm	No	No	no
C14	Acquire a generator through a grant for a shelter site.	MC	High	5	Severe thunderstorms, earthquake, extreme temperature, tornado, severe winter weather	No	No	no

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
PS4, MS4	Develop plans and construct a community saferoom on the Princeton and Mercer School Campus	MC	High	5	Severe thunderstorms, earthquake, extreme temperature, tornado, severe winter weather	No	No	no
C6	Implement NFIP	MC	Medium	1,2	Flooding, dam failure, severe thunderstorms	Yes	Yes	Yes
C9, P4, M4	Ensure the use of best management practices for channel and drainage systems maintenance.	MC, P, M	High	1	Flooding, dam failure, severe thunderstorms	Yes	Yes	Yes
C13, P7, M7	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.	MC, P, M	High	1,2	Flooding, dam failure, severe thunderstorms	Yes	Yes	Yes
P8	Continue participation in NFIP, maintain flood plain protections	P	High	1,2,5	Flooding, dam failure, severe thunderstorms	Yes	Yes	Yes
M8	Obtain equipment to clear debris, grade roads, remove snow	M	High	3	Flooding severe thunderstorms, severe winter weather, tornado	No	No	no

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
C4	Emergency Management will arrange for training on safety audits and hazard mitigation for facilities using state and federal training resources and grant funding	MC	High	1,4,5	Flooding, dam failure, earthquake, drought, extreme temperatures, severe thunderstorms, severe winter weather, tornado, wildfire	No	No	No
C11, P5, M5, PS3, MS3	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.	MC, P, M, PS, MS	High	1,4,5	Flooding, dam failure, earthquake, drought, extreme temperatures, severe thunderstorms, severe winter weather, tornado, wildfire	No	No	No
C2	Conduct Storm Spotter training classes for local Emergency Personnel and interested members of the public.	MC	High	1	Severe thunderstorms, severe winter weather, tornadoes	No	No	No

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
C7, M3, P3, PS1, MS1	Obtain free publications from FEMA, NES, USGS, and other federal and state agencies and deposit them with local libraries.	MC	High	5	Flooding, dam failure, earthquake, drought, extreme temperatures, severe thunderstorms, severe winter weather, tornado, wildfire	No	No	No
C5	Provide opportunities for training so local businesses are equipped to develop their own emergency plans.	MC	High	4,5	Flooding, dam failure, earthquake, drought, extreme temperatures, severe thunderstorms, severe winter weather, tornado, wildfire	No	No	No
C8	Maintain local library repositories with the latest available publications	MC	High	5	Flooding, dam failure, earthquake, drought, extreme temperatures, severe thunderstorms, severe winter weather, tornado, wildfire	No	No	No

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
C10, PS2, PS3	Coordinate and conduct a standalone event to educate the public about emergency preparedness and early warning systems	MC	High	5	Flooding, dam failure, earthquakes, drought, extreme temperatures, severe thunderstorms, severe winter weather, tornado, wildfire	No	No	no

PREREQUISITES

44 CFR requirement 201.6(c)(5): The local hazard mitigation plan shall include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan. For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.

This plan has been reviewed by and adopted with resolutions or other documentation of adoption by all participating jurisdictions and schools/special districts. The documentation of each adoption is included in Appendix E, and a model resolution is included on the following page.

The jurisdictions listed in the Executive Summary participated in the development of this plan and have adopted the multi-jurisdictional plan.

Model Resolution

(*LOCAL GOVERNING BODY/SCHOOL DISTRICT*), Missouri RESOLUTION NO. _____

A RESOLUTION OF THE (*LOCAL GOVERNING BODY /SCHOOL DISTRICT*) ADOPTING THE (*PLAN NAME*)

WHEREAS the (*local governing body/school district*) recognizes the threat that natural hazards pose to people and property within the (local governing body/school district); and

WHEREAS the (*local governing body/school district*) has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the (*plan name*), hereafter referred to as the *Plan*, in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the *(local governing body/school district*) from the impacts of future hazards and disasters; and

WHEREAS the (*local governing body*) recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the (*local governing body/school district*) will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the (*local governing body/school district*) demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE (*LOCAL GOVERNMENT/SCHOOL DISTRICT*), in the State of Missouri, THAT:

In accordance with (*local rule for adopting resolutions*), the (*local governing body/school district*) adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of_____in favor and__against, and__abstaining, this_____day of _____,_____.

By (Sig): _____
Print name:
_____

ATTEST:

By (Sig.): _____
Print name:
_____

APPROVED AS TO FORM:

By (Sig.): _____
Print name:
_____

1 INTRODUCTION AND PLANNING PROCESS

1 INTRODUCTION AND PLANNING PROCESS 1.1
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1.2 Background and Scope *1.2*
1.3 Plan Organization *1.3*
1.4 Planning Process *1.4*
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1.1 PURPOSE

Hazard mitigation is defined as “any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards”. While natural hazards will continue to occur and at their worst will result in death and destruction of both property and infrastructure, this plan was undertaken to minimize the impact that these hazards will have on the people and property of Mercer County. Mercer County and the participating jurisdictions and school districts developed this multi-jurisdictional local hazard mitigation plan update to reduce future losses from inevitable hazardous events.

The jurisdictions participating in this plan are the unincorporated areas of Mercer County, The City of Princeton, the City of Mercer, the Princeton R-V School District, and the Mercer R-III School District. The jurisdictions participating in this plan understand that adopting the plan is a prerequisite for mitigation grant eligibility and understand that failure to adopt this plan will make them ineligible for mitigation grants.

The following legislation gives FEMA authority to require these plans: Robert T Stafford Disaster and Emergency Act (Public Law 93-288) as amended by the Disaster Mitigation Act of 2000 (Public Law 106-390), The implementing regulations set forth by the Interim Final Rule published in the *Federal Register* on February 26, 2002, (44 CFR §201.6) and finalized on October 31, 2007.

The following publications from FEMA were used as guidance in the development of this hazard mitigation plan for Mercer County. FEMA’s Local Mitigation Planning Handbook, May 2023, FEMA’s Local Mitigation Plan Review Guide, October 1, 2011, and the Local Mitigation Planning Policy Guide April 19, 2023.

Currently, the City of Princeton is the only jurisdiction in Mercer County to participate in the NFIP program. They do not participate in the CRS Program, there is currently only one flood insurance policy in the planning area.

1.2 BACKGROUND AND SCOPE

This Hazard Mitigation Plan is the update of a plan that was approved in August 2019. Hazard Mitigation Plans must be renewed every five years and then must be adopted by the participating jurisdictions within the plan. Both the plan and the update were prepared pursuant to the requirements of the Disaster Mitigation Act of 2000. This plan once completed and adopted will result in eligibility for the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance Grant Programs.

The following local governments and school districts participated in both the original plan as well as the plan updates. This will allow them to adopt the plan and secure eligibility for Hazard Mitigation Grant Funding.

- Mercer County
- City of Princeton
- City of Mercer
- Princeton R-V School District
- North Mercer R-III School District

Mercer County and the participating entities listed above developed a Multi-Jurisdictional Hazard Mitigation Plan that was approved by FEMA in August 2019 (hereafter referred to as the 2019 Hazard Mitigation Plan). This current planning effort serves to update that previously approved plan. There have been no changes to the jurisdictions participating in this version of the Mercer County Hazard Mitigation Plan.

Special Note: The City of South Lineville is a village in Missouri, but it is functionally the smaller portion of the City of Lineville, Iowa. The most recent census recorded the population at 195. The town is bisected by the Missouri-Iowa border. As of the most recent census, the southern Missouri portion of the city has a population of 13. The Missouri portion of the city has no city owned infrastructure, city hall, or elected officials. Given the extremely limited administrative capacity and the lack of funding to meet even minimal match-criteria for state and federal grant and loan requirements, the City of South Lineville was not included as a participating jurisdiction.

However, it should be noted that the city of Lineville, Iowa was invited to participate in the Mercer County Hazard Mitigation Plan. A letter was sent to the current mayor of the city of Lineville, as he does not keep regular office hours. Since Mercer County shares a border with Lineville, and some residents of the town, it was deemed important to provide them with an opportunity to participate in the Mercer County Hazard Mitigation Plan. (See Appendix B for supporting documentation).

There were other cities invited to participate in the Mercer County Hazard Mitigation Plan. They are very small cities located entirely within counties that border Mercer County, but the citizens of both cities may utilize services in Mercer County for their everyday needs, such as banking, shopping, visiting with a doctor, buying insurance, and obtaining prescription drugs. Since the citizens of these neighboring cities utilize some of the services in Mercer County, they were invited to participate. Letters were sent to the Mayor of Spickard, Missouri, which is located in Grundy County (Grundy County borders Mercer County to the South) and the Mayor of Cainsville, Missouri, which is located in Harrison County (Harrison County borders Mercer County to the West). The mayor of Lineville, IA was also invited to participate in the plan, as the

citizens of South Lineville, Missouri live in Mercer County. Lineville, IA is located in Wayne County, Iowa which is located to the north of Mercer County.

The information that is contained in the Mercer County Hazard Mitigation Plan will be used to help guide and coordinate mitigation activities and decisions for local land use policy in the future.

1.3 PLAN ORGANIZATION

This latest (2023) updated version of the Mercer County Hazard Mitigation Plan involved review, evaluation, and amendment of the existing plan. It addresses the same natural hazards that were addressed in the original plan, with changes outlined in the table below (See Table 1.1 below). Following is a breakdown of the organization of the 2023 Mercer County Hazard Mitigation Plan Update.

- Chapter 1: Introduction and Planning Process
- Chapter 2: Planning Area Profile and Capabilities
- Chapter 3: Risk Assessment
- Chapter 4: Mitigation Strategy
- Chapter 5: Plan Implementation and Maintenance
- Appendix A: Sources
- Appendix B: Planning Documentation & Invitation letters
- Appendix C: Questionnaires, Surveys, & STAPLEE Worksheets
- Appendix D: List of Critical Facilities
- Appendix E: Resolutions of Adoption

The following table (Table 1.1) below identifies significant changes in the 2023 update of the Hazard Mitigation Plan for Mercer County. While there were some changes to the previous plan, the priorities of the communities that participated in the Mercer County plan development have not changed since the previous plan. Due to factors including lack of population growth and lack of development the planning area itself has not changed significantly since the last Hazard Plan was developed.

Table 1.1. Changes Made in Plan Update

Plan Section	Summary of Updates
Executive Summary	• Added Mitigation Action Matrix Table • Revised the executive summary and resolution to match order of template.
Chapter 1 - Introduction and Planning Process	• Updated members of the Mitigation Planning Committee (MPC) and participating jurisdictions formally adopted the MPC.
Chapter 2 - Planning Area Profile and Capabilities	• Changes include updating maps, identifying most current state plan, and updating demographic data using 2020 Census and American Community Survey Information • inviting neighboring jurisdictions to participate.

	• Updated charts, graphs, tables, maps, and other information where necessary
Chapter 3 – Risk Assessment	• Combined extreme heat and extreme cold into one hazard: extreme temperatures. • Updated section with current Census information, agricultural summary, and confirming that current data is correct. • Previous events updated for each hazard. • Discussion of each hazard's impact updated to include "Changing Future Conditions Considerations"
Chapter 4 - Mitigation Strategy	• 2018 mitigation goals and strategies reviewed by planning committee and updated. • The mitigation category of each action was added to the action worksheets
Chapter 5 - Plan Implementation and Maintenance	• Updated the MPC meeting for evaluating and updating the plan to annually.

1.4 PLANNING PROCESS

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

Mercer County, Missouri contracted with the Green Hills Regional Planning Commission (GHRPC) to facilitate and coordinate the update of the multi-jurisdictional, local hazard mitigation plan. In fulfillment of the role, GHRPC:

- Assisted in establishing a Mitigation Planning Committee (MPC) as defined by the Disaster Mitigation Act (DMA),
- Assessed whether there was adherence to the process set forth in the previously approved plan for maintenance (example, did the MPC meet regularly as specified in the previously approved plan), and explain how adherence occurred, and/or why it did not occur,
- Ensured the updated plan meets the DMA requirements as established by federal regulations and follows the most current planning guidance of the Federal Emergency Management Agency (FEMA),
- Facilitated the entire plan development process,
- Identified the data that MPC participants could provide and conduct the research and documentation necessary to augment that data,
- Assisted in soliciting public input,
- Produced the draft and final plan update in a FEMA-approvable document and coordinated the Missouri State Emergency Management Agency (SEMA) and (FEMA) plan reviews.

There were attempts to reach members for the committee that would represent underserved communities as required under 44 CFR 201.6(b)(2). In Mercer County the following organizations

were invited to participate: The Senior Center in Mercer County, The Housing Authority of Mercer County, The churches within the county, the Food Pantry in Mercer County. (See Appendix B) None of the agencies chose to participate in the Mercer County Hazard Mitigation Plan. However, the Director of the Mercer County Health Department did elect to participate, and they do provide services for underserved communities.

The following table (**Table 1.2)** shows the MPC members and the entities they represent, along with their titles. Each of the following representatives participated directly with the development of the plan. They attended the meetings and actively participated in the development of the plan. The MPC was comprised of representatives from each jurisdiction on a voluntary basis rather than as an official act by any of the jurisdictions. Each member of the MPC was actively involved in the meetings and the decisions for the Hazard Mitigation Plan. These members were either present at the public meetings or met individually with the GHRPC staff member in charge of developing the plan. All jurisdictions met their responsibilities for the planning process by:

- Attending at least one meeting
- Completing the Data Questionnaire to the best of their ability
- Reviewing and returning the Action Worksheets
- All jurisdictions will return the Adoption Resolution (Found in Appendix D)

Table 1.2. Jurisdictional Representatives of Mercer County Mitigation Planning Committee

Name	Title	Department	Jurisdiction/Agency/Organization
Cheston Easter	Associate Commissioner	Mercer County	Mercer County
Cory Willett	City Clerk	City Council	City of Princeton
Tracy Meinecke	City Clerk	City Council	City of Mercer
Jerry Girdner	Superintendent	Public School	Princeton R-V School District
Wade Hall	Superintendent	Public School	North Mercer R-III School District

1.4.1 Multi-Jurisdictional Participation

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

The Disaster Mitigation Act requires that each jurisdiction participate in the planning process and officially adopt the plan. Minimum criteria for participation were determined at the planning meeting that each jurisdiction must attend one meeting to be considered a “participant.” These plan participation requirements include:

- Designation of a representative to serve on the MPC;
- Participation in at least one meeting, including planning, MPC meetings, by either direct participation or authorized representation, or one-on-one with planning staff;
- Provision of sufficient information to support plan development by completion and return of Data Collection Questionnaires and validating/correcting critical facility inventories;
- Provision of progress reports on mitigation actions from the previously approved plan and identified additional mitigation actions for the plan;
- Eliminate from further consideration those actions from the previously approved plan that were not implemented because they were impractical, inappropriate, not cost-effective, or were otherwise not feasible;

- Review and comment on plan drafts;
- Actively solicit input from the public, local officials, and other interested parties about the planning process and provide an opportunity for them to comment on the plan;
- Provide documentation to show time donated to the planning effort; and
- Formally adopt the mitigation plan.

Data for this plan was gathered in part through a series of meetings held within Mercer County and the distribution of surveys available at the following: the City of Princeton, the City of Mercer, The Mercer County Health Department, North Mercer R-III, and Princeton R-V School Districts. The planning process for the Mercer County Hazard Mitigation Plan began during the summer of 2023, with discussions involving elected officials, community members, and other interested parties, and the planning committee was formed.

While every effort was made to include a diverse group of interested parties and businesses and organizations within the county, little interest was shown in participating in this planning process. Participants that were involved were asked to identify critical infrastructure, rank the likelihood of disaster occurrence, perform a susceptibility analysis based on these factors, and determine appropriate mitigation strategies for each individual disaster. This data was recorded and assimilated into this plan by GHRPC staff. The MPC membership showed a range of knowledge and abilities to address the mitigation categories shown in Table 1.3.

Table 1.3. MPC Capability with Six Mitigation Categories

Community Department/Office	Preventative Measures	Structure and Infrastructure Projects		Natural Resource Protection	Public Information	Emergency Services
		Property Protection	Structural Flood Control Projects			
City Clerk Princeton (Cory Willett)	X				X	X
City Clerk Mercer (Tracy Meinecke)	X				X	X
Floodplain Administrator (Greg Goodnight)	X	X	X	X	X	
Health Department (Gina Finney)	X				X	X
Public Works (Greg Goodnight: City Administrator)		X	X	X		
School Administrators (Jerry Girdner, Wade Hall, & Meredith Ussery)	X	X			X	X
County Officials (Cheston Easter, Jerry Allen, Zachary Martin, Judy	X	X		X	X	X

Hamilton)						

In accordance with Missouri's "sunshine law" (RSMo 610.010, 610.020, 610.023, and 610.024), the public was notified each time the plan was presented for review. Input from each public official (city and county) was solicited by email or mailing an explanatory letter with notice of the posted draft on the Green Hills Planning Commission's website. These were disbursed on a schedule that allowed officials sufficient time to review the draft prior to the next public County Commission or City Council meeting. Participation was solicited by letter or email from each of the following jurisdictions:

- Mercer County
- City of Princeton
- City of Mercer
- Princeton R-V School District
- North Mercer R-III School District

Finally, city and county officials were encouraged to invite others from any county, state, or federal agency as well as local businesses that had interest in contributing to the planning process. Input from the public was solicited through reminders at public gatherings, press releases, letters to various businesses and community organizations, and a Public Survey. Surrounding jurisdictions were invited to review the county's plan draft via the GHRPC website.

Table 1.5 below shows the representation of each participating jurisdiction at the planning meetings, the provision of responses to the Data Collection Questionnaire, and update or development of mitigation actions. Sign-in sheets and other documentation for participation are in Appendix B.

Table 1.4. Jurisdictional Participation in Planning Process

Jurisdiction	Kick-off Meeting	Meeting #2	Meeting #3	Data Collection Questionnaire Response	Update/Develop Mitigation Actions
Mercer County	X	X	X	X	X
City of Princeton	X	X	X	X	X
City of Mercer	X	X	X	X	X
Princeton R-V School District	X	X	X	X	X
North Mercer R-III School Dist.	X	X	X	X	X

1.4.2 The Planning Steps

The sources utilized for the plan and development process used the following: FEMA's Local Mitigation Planning Handbook (May 2023), Local Mitigation Plan Review Guide (October 1, 2011), Local Mitigation Planning Policy Guide (April 19, 2023), and Integrating Hazard Mitigation Into Local Planning: Case Studies and Tools for Community Officials (March 1, 2013). The United States Census Bureau, the United States Geological Society, the United States Army Corps of Engineers, the Missouri Department of Natural Resources, the Missouri Department of Conservation, the Center for Agriculture, Resources and Environmental Systems at the University of Missouri-Columbia, Mercer County HAZUS data, the National Climatic Data Center, and the Missouri State Hazard Mitigation Plan provided additional information regarding severe thunderstorm and winter

weather, wildfire, tornado, earthquake, and flood hazards effecting Mercer County. Other sources utilized for this plan are included in Section 3.

The development of this plan update followed the 10-step planning process adapted from FEMA's Community Rating System (CRS) and Flood Mitigation Assistance programs, so to ensure funding eligibility requirements for the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, Community Rating System, and Flood Mitigation Assistance Program.

Table 1.5. County Mitigation Plan Update Process

Community Rating System (CRS) Planning Steps (Activity 510)	Local Mitigation Planning Handbook Tasks (44 CFR Part 201)
Step 1. Organize	Task 1: Determine the Planning Area and Resources
	Task 2: Build the Planning Team 44 CFR 201.6(c)(1)
Step 2. Involve the public	Task 3: Create an Outreach Strategy 44 CFR 201.6(b)(1)
Step 3. Coordinate	Task 4: Review Community Capabilities 44 CFR 201.6(b)(2) & (3)
Step 4. Assess the hazard	Task 5: Conduct a Risk Assessment 44 CFR 201.6(c)(2)(i) 44 CFR 201.6(c)(2)(ii) & (iii)
Step 5. Assess the problem	
Step 6. Set goals	Task 6: Develop a Mitigation Strategy 44 CFR 201.6(c)(3)(i); 44 CFR 201.6(c)(3)(ii); and 44 CFR 201.6(c)(3)(iii)
Step 7. Review possible activities	
Step 8. Draft an action plan	
Step 9. Adopt the plan	Task 8: Review and Adopt the Plan
Step 10. Implement, evaluate, revise	Task 7: Keep the Plan Current
	Task 9: Create a Safe and Resilient Community 44 CFR 201.6(c)(4)

Step 1: Organize the Planning Team
(Handbook Tasks 1, 2, and 5)

- The hazard mitigation planner from GHRPC initially met with each jurisdiction as well as possible stakeholders in the planning process to inform them that a new hazard mitigation plan was being prepared. The GHRPC planner made the request that they designate a delegate to be on the MPC. These meetings included the following:
    - City Council Meetings.
    - One-on-one meetings with the Mercer County Sheriff, the Mercer County Health Department, and the County Commissioners Meeting.
    - One-on-one meetings with the superintendents of both Princeton R-V School District and North Mercer R-III.
    - There were also invitations sent to churches, the food pantry, community organizations, emergency services, and various businesses and other potential stakeholders within the planning area.

    - The Data Collection Questionnaire was distributed to the officials that would be involved in the hazard mitigation planning process at these initial meetings.
- The kick-off meeting was held on October 5, 2023, in the Mercer County Health Department's meeting room. This meeting was advertised in the local newspaper and on the local radio stations.
    - A power point presentation was given on the Hazard Mitigation Process, the agenda was discussed, and members of the planning committee were made aware of what would be required of them going forward.
    - The attendees gave suggestions about potential stakeholders participating in the planning process.
    - In addition to calls, correspondence, and verbal requests that others attend the meetings, as well as press releases on the radio and in the local paper, the MPC and a representative from the Mercer County Health Department were the only participants to attend the initial meeting.
    - There was a discussion about the community's capabilities. The booklet, *"Mitigation Ideas: A Resource to Reducing Risk to Natural Hazards, FEMA 2013"* was distributed to stakeholders so they could prepare for the upcoming meetings.
- The second planning meetings were held on November 13, 2023, in the public session of the Mercer County Commissioner's Meeting and November 14, 2023 at Princeton City Hall.
    - At these meetings participants conducted a risk assessment of their jurisdiction's capabilities and vulnerabilities.
    - Goals of the Mercer County Plan were discussed and agreed upon. There is a detailed list in Section 4 of this Hazard Mitigation Plan about the goals of the MPC.
- The third planning meeting was held in the public meeting of the Mercer County Commissioners on January 29, 2024, and in Princeton City Hall and Mercer City Hall on January 25, 2024.
    - This was the meeting where the MPC determined which actions would be retained or modified in the plan and which actions would be deleted.
    - This was also the meeting where new actions for the plan were discussed.
    - The retained actions and the new actions were scored using the STAPLEE method at this meeting.
- All available documentation, agendas, power point presentations, or other documentation related to the hazard mitigation process may be found in Appendix B.
- Some information was solicited from the MPC by phone, email, and verbally. The documentation of this information, what is available, is included in Appendix B.

Table 1.6. Schedule of MPC Meetings

Meeting	Topic	Date
Informational Meeting	Introduction to the Hazard Mitigation Plan and Process; requirements for each jurisdiction; handouts; selecting a delegate; and distributing data collection questionnaires.	9/1/2023 – 9/30/2023
Kick-off Meeting	Hazard Mitigation Process, the responsibilities of the jurisdictional representatives, outreach strategy and suggested participants.	October 5, 2023

Planning Meeting #2	Participants conducted a risk assessment, and goals were determined. Potential actions were discussed.	Nov. 13, 2023 & Nov. 14, 2023
Planning Meeting #3	Actions were determined for the final draft of the plan, potential actions scored (STAPLEE) to prioritize.	Jan. 25, 2024 & Jan. 29, 2024

Step 2: Plan for Public Involvement
(Handbook Task 3)

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

- The initial meetings for the Hazard Mitigation Plan for Mercer County were conducted in person with representatives from the County.
    - The planner attended the City Council meeting in Princeton and Mercer,
    - met with the director of the county health department, the county sheriff,
    - spoke with the county commissioners during their public session, and
    - met with the superintendents of both Princeton R-V and North Mercer R-III prior to scheduling the first public meeting.
    - In addition to that, invitations were sent to the emergency departments in the county, the local churches, the food pantry, housing agencies, local businesses, and other potential stakeholders in order to solicit participation.
    - The planning process made every effort to include underserved members of the community by inviting senior citizen organizations, the housing authority, the food pantry, and the Mercer County Health Department. These organizations serve the poor, the elderly, and the disabled that reside in Mercer County.
- The kick-off meeting for the Mercer County Hazard Mitigation Plan update was held in the Mercer County Health Department. This agency is located in the city of Princeton. There were representatives from each jurisdiction present at the meeting. There was a discussion about hazard mitigation planning with a power point presentation. This meeting was advertised on the local radio stations (KTTN & KAAN) and in the local newspaper, The Post-Telegraph.
- Public surveys were distributed and representatives from the city of Princeton and the City of Mercer were to distribute as people came into the City Hall in either town. The superintendents of both school districts distributed the surveys to members of the staff. The Mercer County Health Department also made attempts to distribute the survey.
- Members of the MPC were instructed to invite potential stakeholders to attend the next meeting. At the kick-off meeting a list of potential participants was discussed, and later invited to participate by letter and in some cases by telephone calls.
- Press releases were sent to the local media about the following meetings and other matters related to the HMP, they are as follows:
    - Kick-off meeting.
    - 2nd planning meeting
    - 3rd planning meeting
- The Hazard Mitigation Committee also agreed to mention the upcoming meetings at their respective churches, civic organizations, meetings, and in passing when speaking with people from the community.

- The draft of the plan was made available to the public in hard copy at City Hall in Princeton and City Hall in Mercer. Additionally, there was a draft of the plan on the GHRPC website. These plan copies were made available from January 25 through February 25, 2024. The availability of this plan for public review was advertised on local radio stations and in the local newspaper. There were no comments made in response to the plan, however there were 11 surveys returned from participants within the community. This information received from the public was considered by the MPC committee during their meetings and is included in the following figures: figure 1.1 through figure 1.20.
- All available information about the public meetings, attendance, press releases, paperwork completed at meetings, public surveys, questionnaires, agendas, power point presentation, and all other available documentation can be found in the Appendices as follows:
    - Planning Documentation & Invitations: Appendix B
    - Questionnaires & Completed Surveys: Appendix C
    - Action Plans/STAPLEE Worksheets: Appendix E

The public survey received 11 responses. The information collected from the public surveys was considered by the MPC when developing the plan. The data collected is listed below.

Figure 1.1. Question 1

During the past 5 years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood wildfire, or other type of natural disaster?

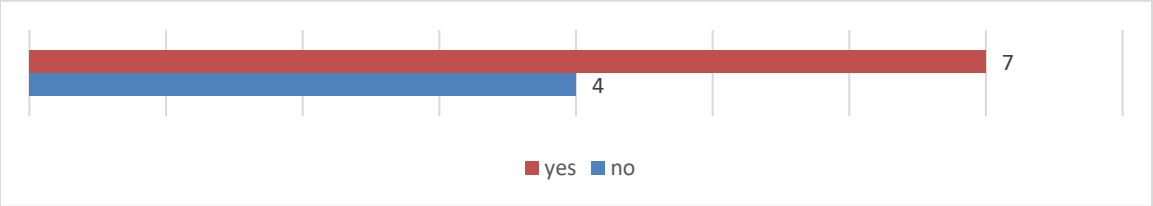


Figure 1.2. Question 2

If “YES”. Which of these natural disasters have you or someone in your household experienced in the past five years? (Please check all that apply)

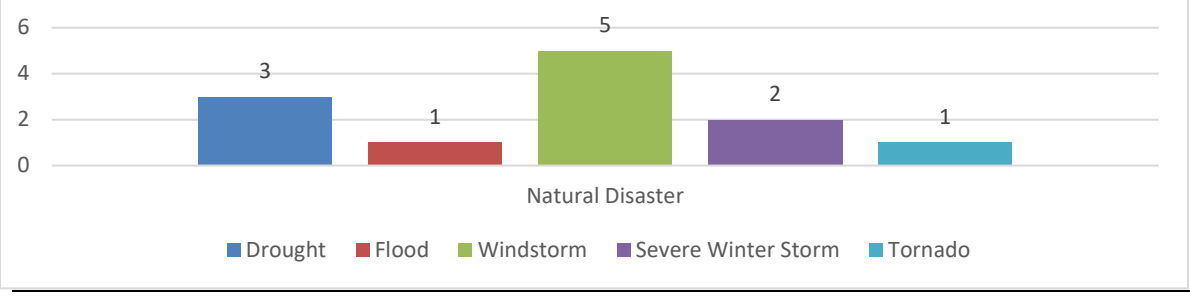


Figure 1.3. Question 3

How concerned are you about the following natural disasters affecting your county?

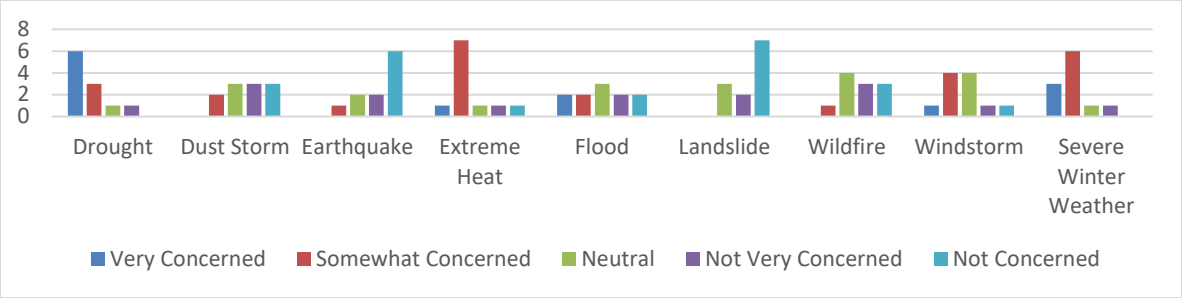


Figure 1.4. Question 4

Have you ever received information about how to make members of your household and your home safer from natural disasters?

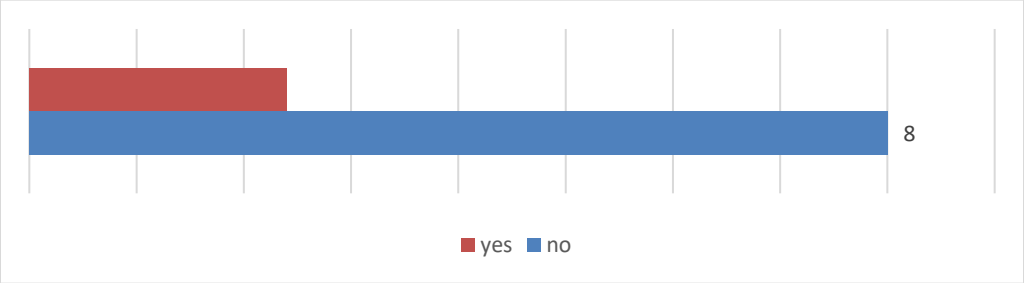


Figure 1.5. Question 5

If “yes”, how recently? (Note, there were only 3 responses to the question)

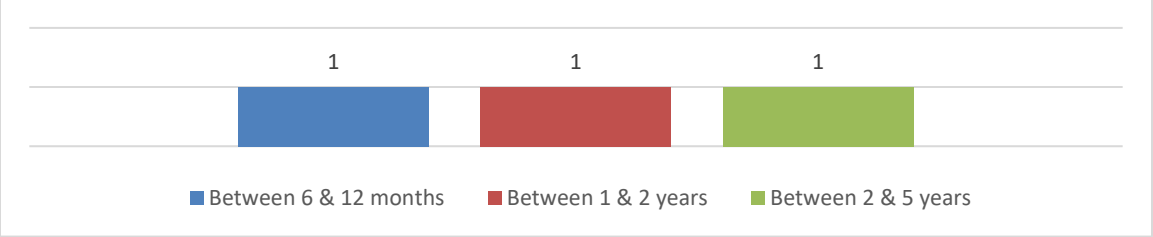


Figure 1.6. Question 6

From whom did you last receive information about how to make members of your household and your home safer from natural disasters?

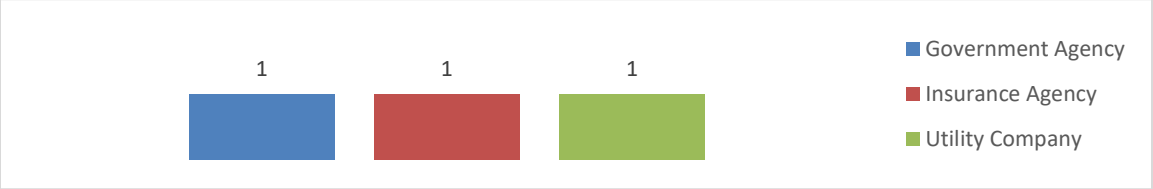


Figure 1.7. Question 7

Whom would you most trust to provide you with information about how to make your household and home safer from natural disasters? (Check up to 3)

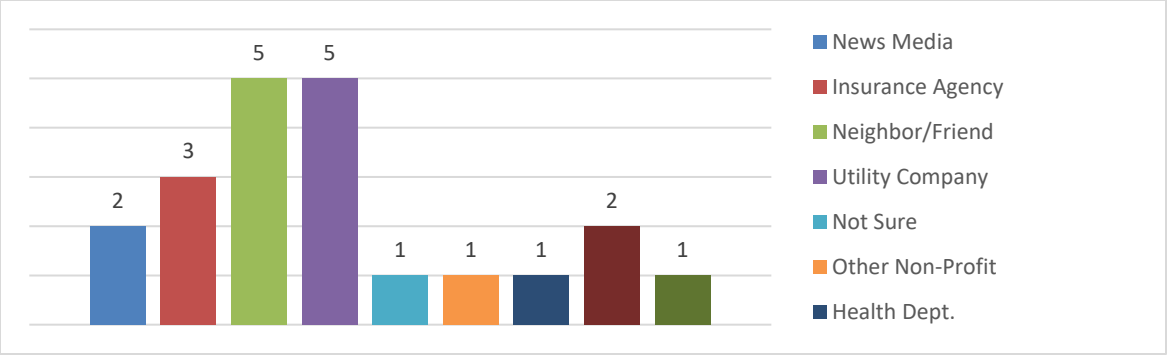


Figure 1.8. Question 8

What is the most effective way for you to receive information about how to make your household and home safer from natural disasters? (Please check up to three)

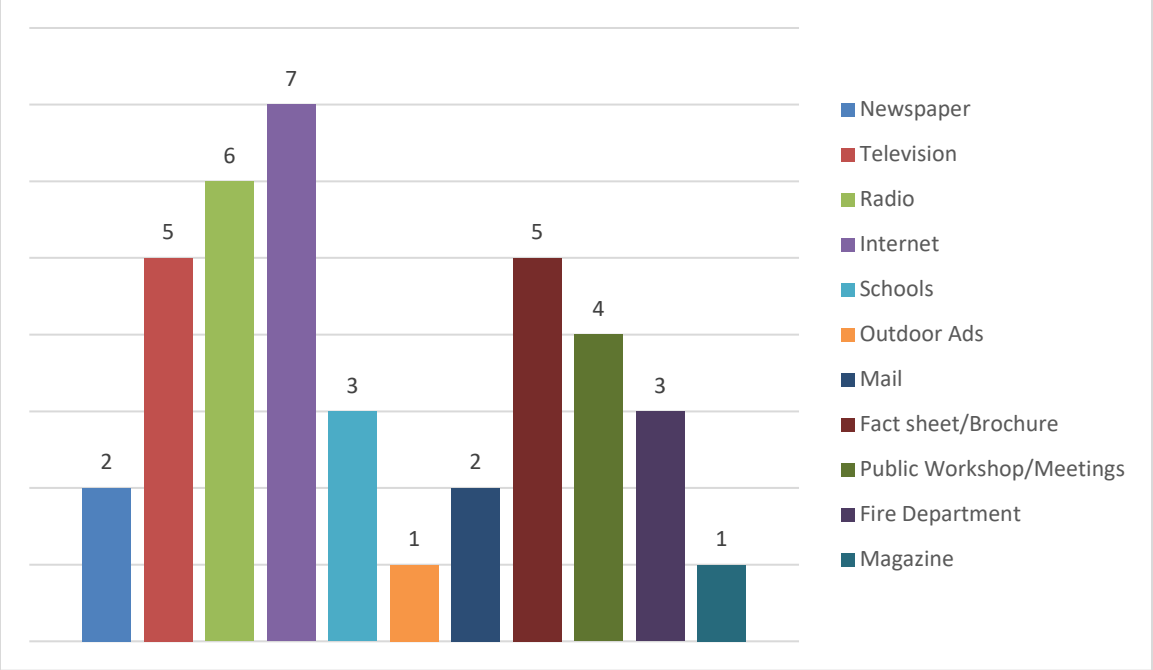


Figure 1.9. Question 9

Prior to this survey, were you aware of your county's Natural Hazard Mitigation Plan?

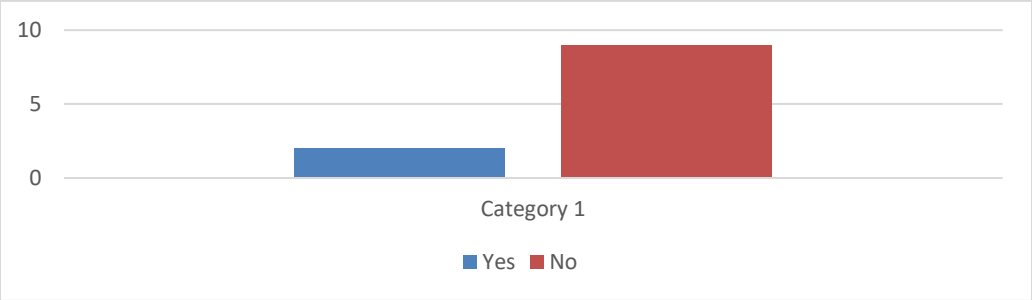


Figure 1.10. Question 10

Prior to this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the Hazard Mitigation Plan every five years in order for your county to be eligible for federal pre- and post-disaster hazard mitigation funds?

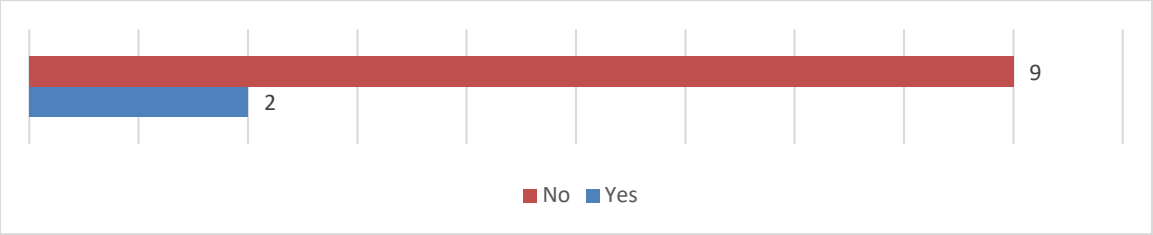


Figure 1.11. Question 11

What specific types of community assets are most important to you?

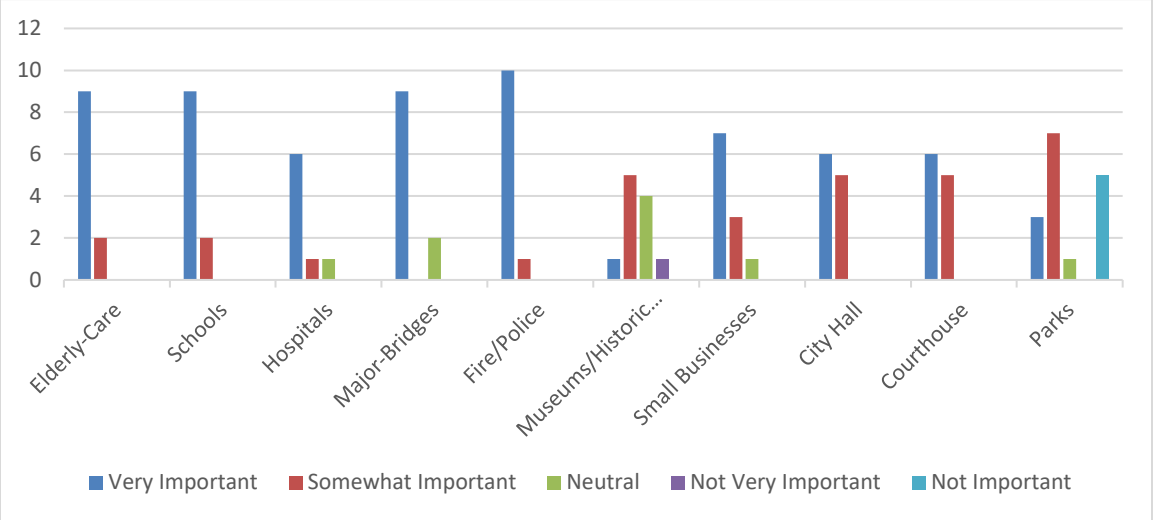


Figure 1.12. Question 12

A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. (Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)

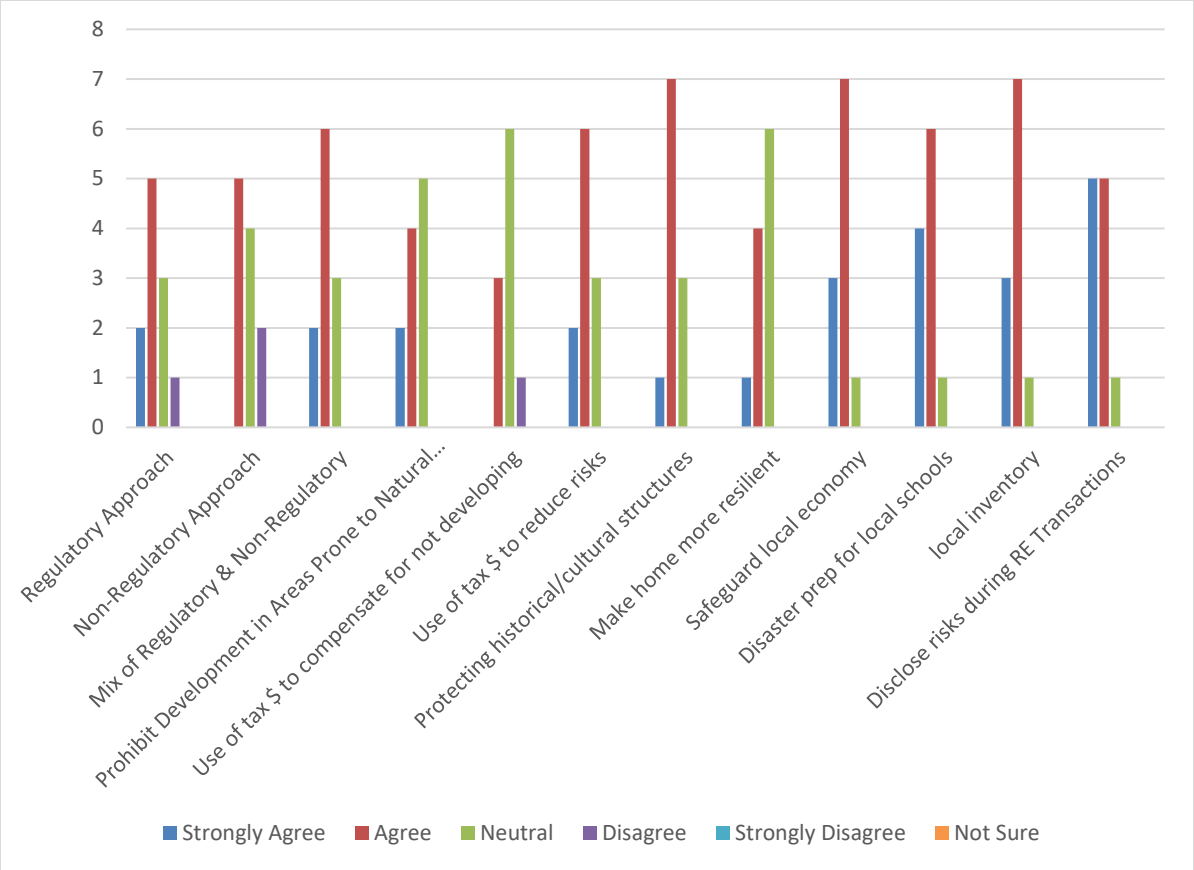


Figure 1.13. Question 14

Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. (Please tell us how important each one is to you).

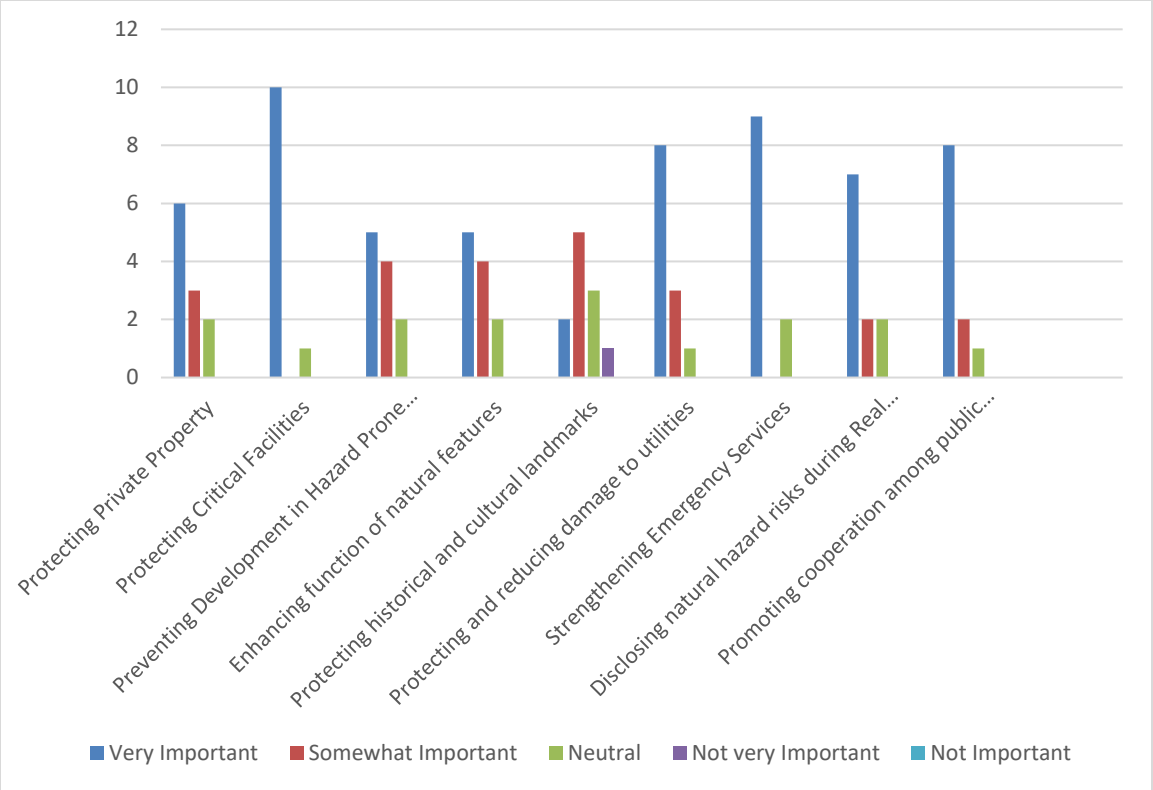


Figure 1.14. Question 15

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off

temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

In the following, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do.

1. Attended meeting or received written information on natural disasters or emergency preparedness?
2. Talked with members in your household about what to do in case of a natural disaster or emergency?
3. Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?
4. Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?
5. In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?
6. Prepared your home by having smoke detectors on each level of the house?
7. Discussed or created a utility shutoff procedure in the event of a natural disaster?

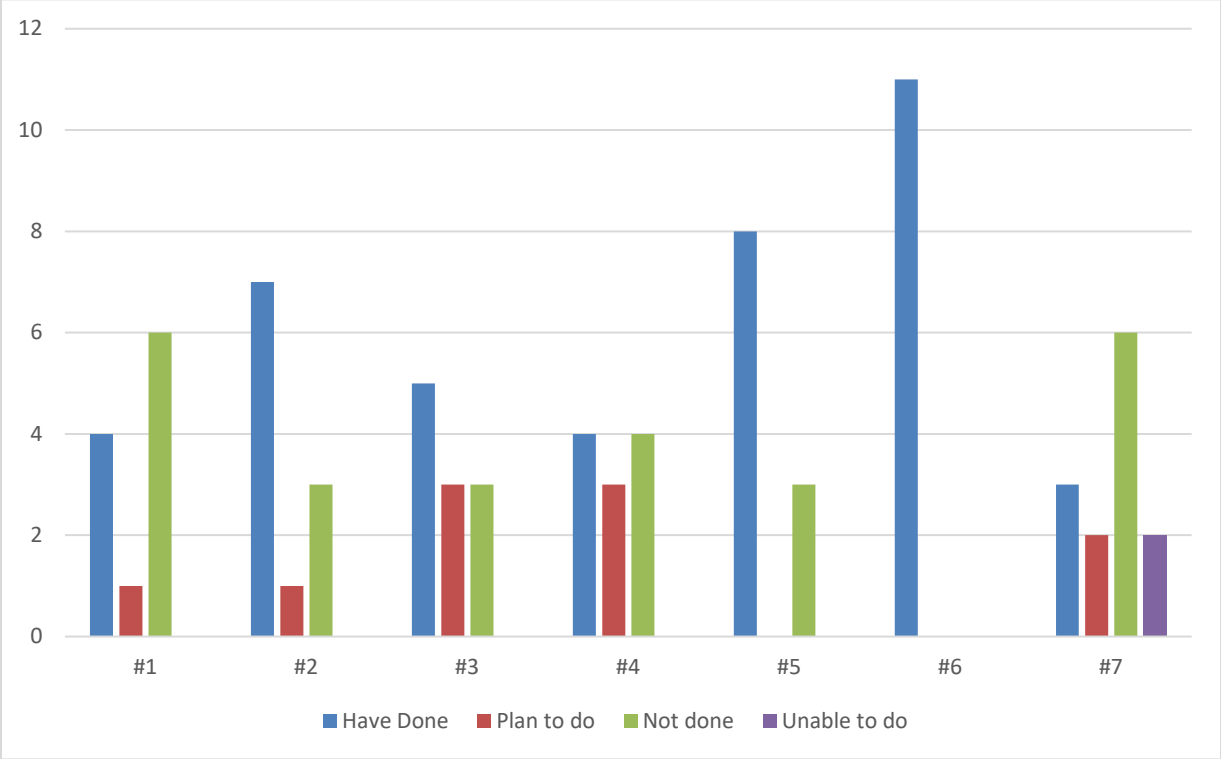


Figure 1.15. Question 16

Please indicate your gender.

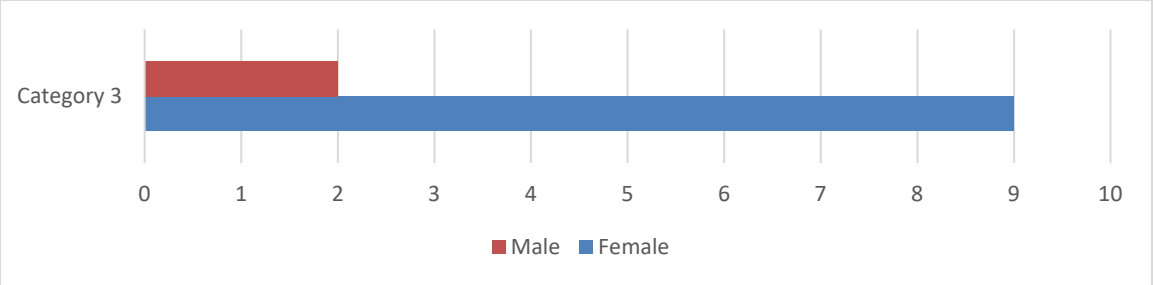


Figure 1.16. Question 17

Please indicate your level of education:

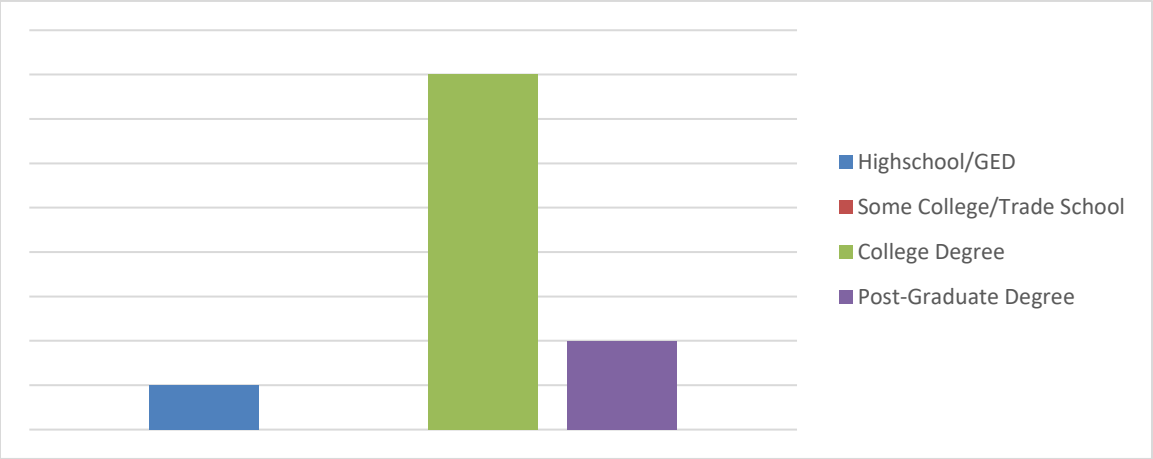


Figure 1.17. Question 18

What is your total household income?

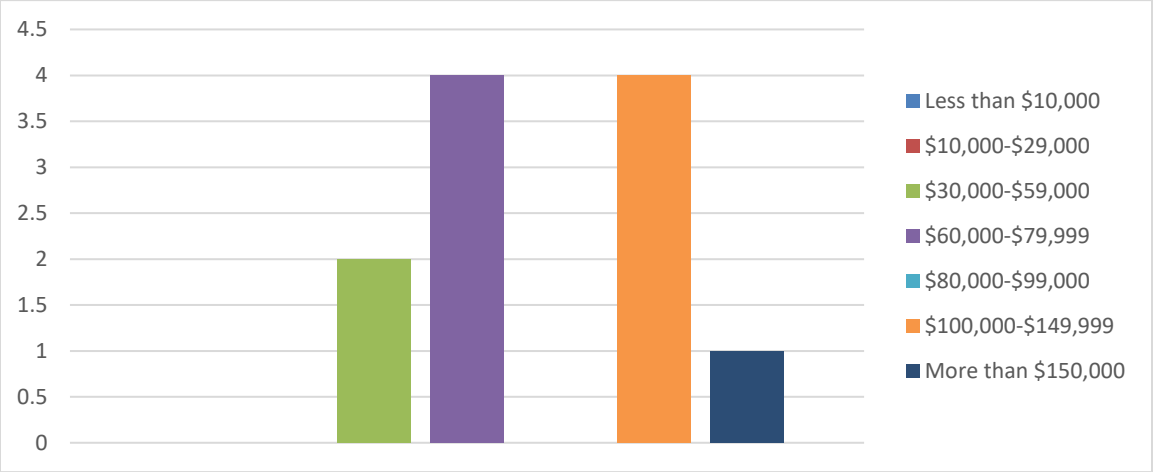


Figure 1.18. Question 19

Please specify your race and ethnicity.

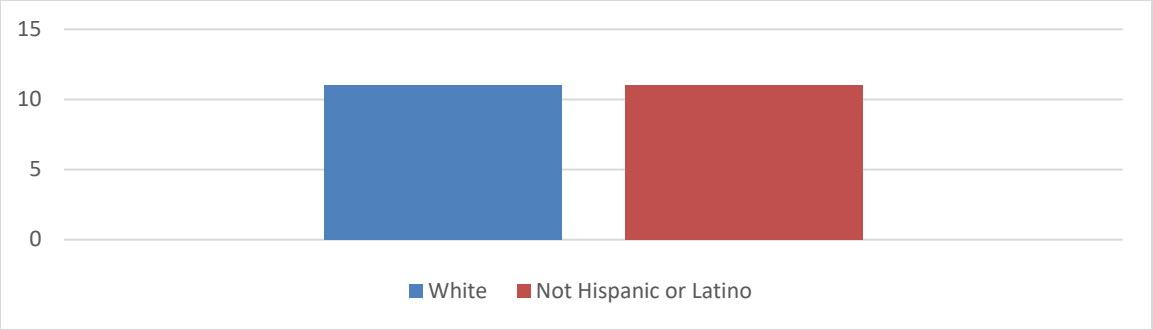


Figure 1.19. Question 20

How long have you lived in Mercer County?

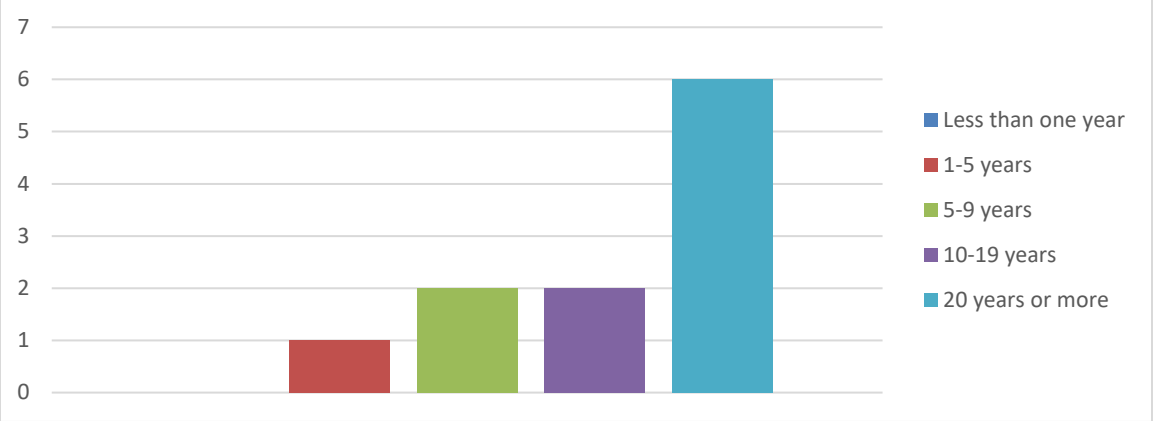
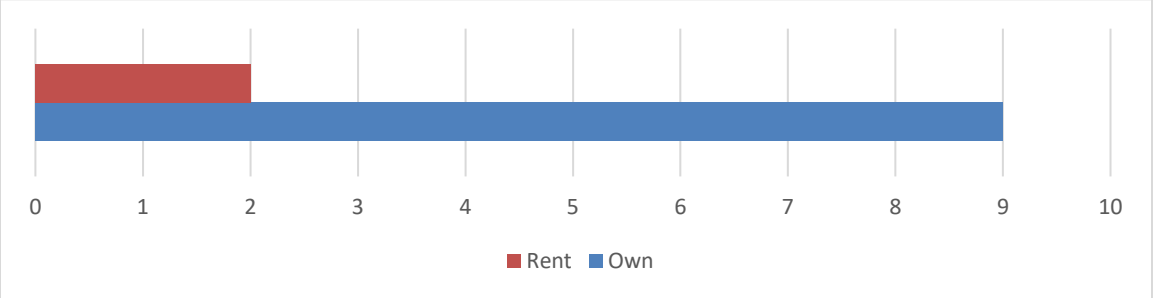


Figure 1.20. Question 21

Do you own or rent your home?



The copies of these completed questionnaires can be found in Appendix C.

Step 3: Coordinate with Other Departments and Agencies and Incorporate Existing Information
(Handbook Task 3)

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

The representative from Green Hills Regional Planning Commission met in person with the following individuals to introduce the Hazard Mitigation Process and invite the following people to participate in the planning process and to encourage them to bring interested parties into the planning process.

- The City Council of Princeton (3 Aldermen, Mayor, and City Clerk)
- The City Clerk of Mercer (Tracy Meinecke)
- The Sheriff of Mercer County (Jose Lopez)
- The Director of the Mercer County Health Department (Gina Finney)
- The Mercer County Commissioners & County Clerk (3 Commissioners and County Clerk)
- The superintendent of Princeton R-V School District (Jerry Girdner)
- The superintendent of North Mercer R-III (Wade Hall)

Letters of invitation to participate in the update of the Mercer County HMP were sent out on September 14, 2023, to the following potential stakeholders:

- Neighboring communities:
    - City of Lineville, IA
    - City of Cainsville, MO
    - City of Spickard, MO
- Local and regional agencies involved in hazard mitigation activities:
    - Princeton Ambulance District
    - Princeton Fire Department
    - Princeton Clinic
    - Mercer Fire Department
    - Sheriff of Mercer County
- Agencies with the authority to regulate development:
    - The floodplain administrator of Princeton
    - The City of Princeton
    - The City of Mercer
    - Mercer County officials
    - Public Water District #1
- Businesses & Academia
    - Princeton R-V School District
    - North Mercer R-III School District
    - Smithfield Farms
    - Grundy Electric
    - The Famous
    - Shelter Insurance

    - Farm Bureau Insurance
    - Mercer County Title Co.
    - The Princeton Chamber of Commerce
    - Dollar General
    - The Hometown Café
    - Our Store
    - Mercer Grocery Store
- Other private and non-profit interests, including underserved/vulnerable populations
    - The Methodist Church of Princeton & Mercer
    - The Christian Church of Princeton
    - The catholic Church of Princeton
    - Mercer Assembly of God
    - The Mercer County Food Pantry
    - The Princeton Housing Authority
    - Bristol Manor (senior living)
    - Pearl's II (senior living)
    - The Senior Center

After the initial meeting was concluded, and no public interest shown in participation, a second round of invitations was sent out to a slightly modified list of participants. (See Appendix B for invitations and list of invitees).

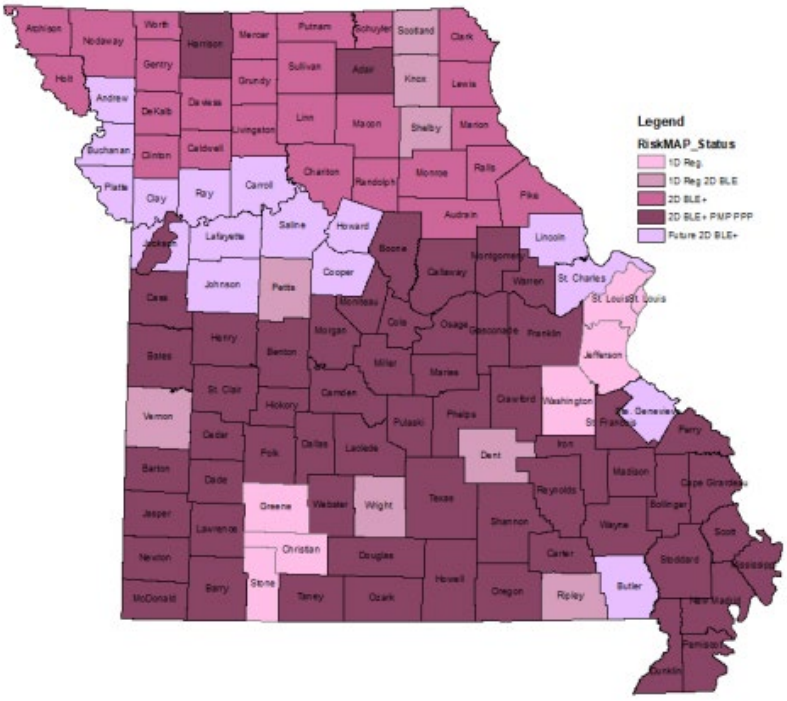
There was a Press Release on KTTN and KAAN advertising the plan and providing the location and time for interested parties to attend the initial public meeting. The press release was also published in the Princeton Post-Telegraph with meeting location and time.

The draft of the Mercer County Hazard Mitigation Plan was published on Green Hills Regional Planning Commission's website, and a hard copy of the plan was made available in the City Halls of both Princeton and Mercer. The press release advising the public of the availability of the plan and who to contact in the event that they had a comment was published in the Princeton Post Telegraph and broadcast on the local radio stations: KTTN & KAAN. The plan was available for public comment from January 26th to February 26th, 2024.

Coordination with FEMA Risk MAP Project

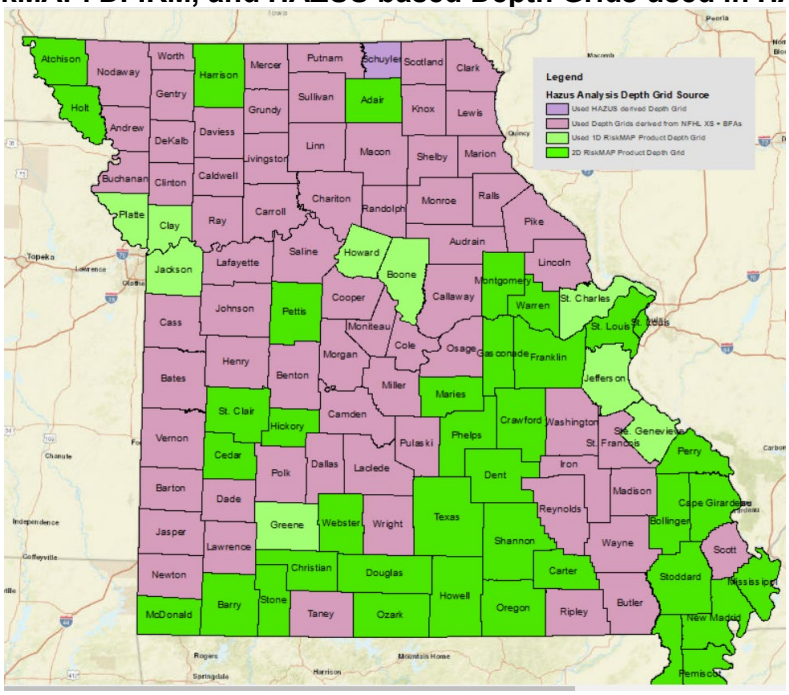
- The most current RISK Map was downloaded from FEMA's website and was available at the 2nd planning meeting.
- The following figure (Figure 1.22) was taken from the Missouri State Hazard Mitigation Plan, 2023.

Figure 1.21. RiskMAP Study Status Map



The following figure indicates which analysis was performed per county. According to the Missouri Hazard Mitigation Plan 2023, the analysis of Mercer County was conducted as follows. For counties with digital FIRMs, the regulatory special flood hazard area was utilized. Next, depth grids were generated using cross sections from the FIRM database and/or hydraulic models in combination with the terrain elevation data from which the DFIRM was derived.

Figure 1.22. RiskMAP. DFIRM, and HAZUS based Depth Grids used in HAZUS Analysis



Source: the Missouri Hazard Mitigation Plan 2023

Integration of Other Data, Reports, Studies, and Plans

- In order to complete the Mercer County Hazard Mitigation Plan the following sources were implemented: the Missouri State Hazard Mitigation Plan, Hazard Mitigation Plans from areas near the planning area, the University of Missouri Extension Reports, Flood Insurance Studies (FIS), Flood Insurance Rate Maps (FIRMs), State Department of Natural Resources (DNR) dam information, the National Inventory of Dams (NID), dam inspection reports, state fire reports, Wildland/Urban Interface and Intermix areas from the SILVIS Lab - Department of Forest Ecology and Management - University of Wisconsin, local comprehensive plans, economic development plans, capital improvement plans, US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics, and local budgets.

Step 4: Assess the Hazard: Identify and Profile Hazards
(Handbook Task 4)

- To adequately assess the issues, resources available on the Internet, existing reports and plans, information provided by jurisdictions on the Data Questionnaires, and HAZUS Data was utilized to compile information about each identified hazard. Each of the hazards was revised to include the most recent location data, previous occurrences, probability of future occurrence, and magnitude/severity. Losses were estimated using a combination of resources, including HAZUS data and information available from local resources.
- During the 2nd meeting, the jurisdictions determined which hazards were present in the county that would be included in the HMP for Mercer County.

Step 5: Assess the Problem: Identify Assets and Estimate Losses
(Handbook Task 4)

- Data from the 2023 Missouri State Hazard Mitigation Plan was utilized as the best and most recent data available.
- The following information was used to determine the assets and estimate losses in Mercer County: census, GIS data, HAZUS, and the Data Collection Questionnaire.
- Losses were estimated using the Missouri State Hazard Mitigation Plan and available HAZUS data for Mercer County.
- At the 2nd meeting, the initial draft of the risk assessment was available. A presentation of the problem statements identified for each hazard to assist with the evaluation of the goals and the upcoming review of actions.

Step 6: Set Goals
(Handbook Task 6)

At the 2nd planning meeting the MPC reviewed the goals of the previously approved plan, they made the determination to update the goals slightly to better align with the state plan. The objectives have not changed for the MPC, but the wording of the goals was changed slightly.

The goals can be found in Section 4 of the Mercer County Hazard Mitigation Plan. They were listed as follows:

- Goal 1: Protect the lives, property, and livelihoods of all citizens.
- Goal 2: Manage growth in designated hazard areas through sustainable policies, principles, and practices.
- Goal 3: Ensure continued operation of government and emergency functions in a disaster.
- Goal 4: Maintain economic activities essential to the survival and recovery from natural hazards.
- Goal 5: Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property.

Step 7: Review Possible Mitigation Actions and Activities
(Handbook Task 6)

- The 3rd Planning Meeting was when the MPC reviewed the mitigation strategy from the previously approved plan. It was also at this meeting that the risk assessment was updated. Each jurisdiction was aware that they must have at least one action plan for each hazard included in the plan.
- The County determined that each of the actions stated in the previous plan would be retained in the plan as they were ongoing.
- Summarize how each jurisdiction was expected to report on progress made on previously proposed actions. MPC members were encouraged to continue forward only those actions that substantively addressed long-terms risks identified in the risk assessment.
- Summarize any changes in the risk assessment that prompted new mitigation strategies, and incorporation of any actions that were identified during RiskMAP projects.
- Cite the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)* that was used as a reference in the development of action projects.
- Participants were encouraged to focus on long-term mitigation solutions and consideration was given to the potential cost of each project in relation to the anticipated future cost savings.
- The Mercer County Hazard Mitigation Planning Committee utilized the STAPLEE method for evaluating the priority and effectiveness of each action.

Step 8: Draft an Action Plan
(Handbook Task 6)

The action worksheets, including the plan for implementation, submitted by each jurisdiction for the updated Mitigation Strategy are included in Chapter 4.

Step 9: Adopt the Plan
(Handbook Task 8)

Each jurisdiction is aware that they must adopt the plan prior to final approval. Once the draft is returned from SEMA and approved, each jurisdiction will document the adoption of the plan. This will be documented in the final plan, and will be located in Appendix F.

Step 10: Implement, Evaluate, and Revise the Plan

(Handbook Tasks 7 & 9)

At the 3rd planning meeting, where actions were scored and decided upon, the MPC along with the GHRPC Planner agreed to meet at least annually to determine if actions were ongoing or completed. It was determined that at these meetings, any amendments that were needed in the plan would be discussed and undertaken if necessary. There is more detailed information about the strategy for plan maintenance in Chapter 5 of the Mercer County Hazard Mitigation Plan.

2 PLANNING AREA PROFILE AND CAPABILITIES

2 PLANNING AREA PROFILE AND CAPABILITIES 2.1

2.1 *Mercer County Planning Area Profile 2.2*

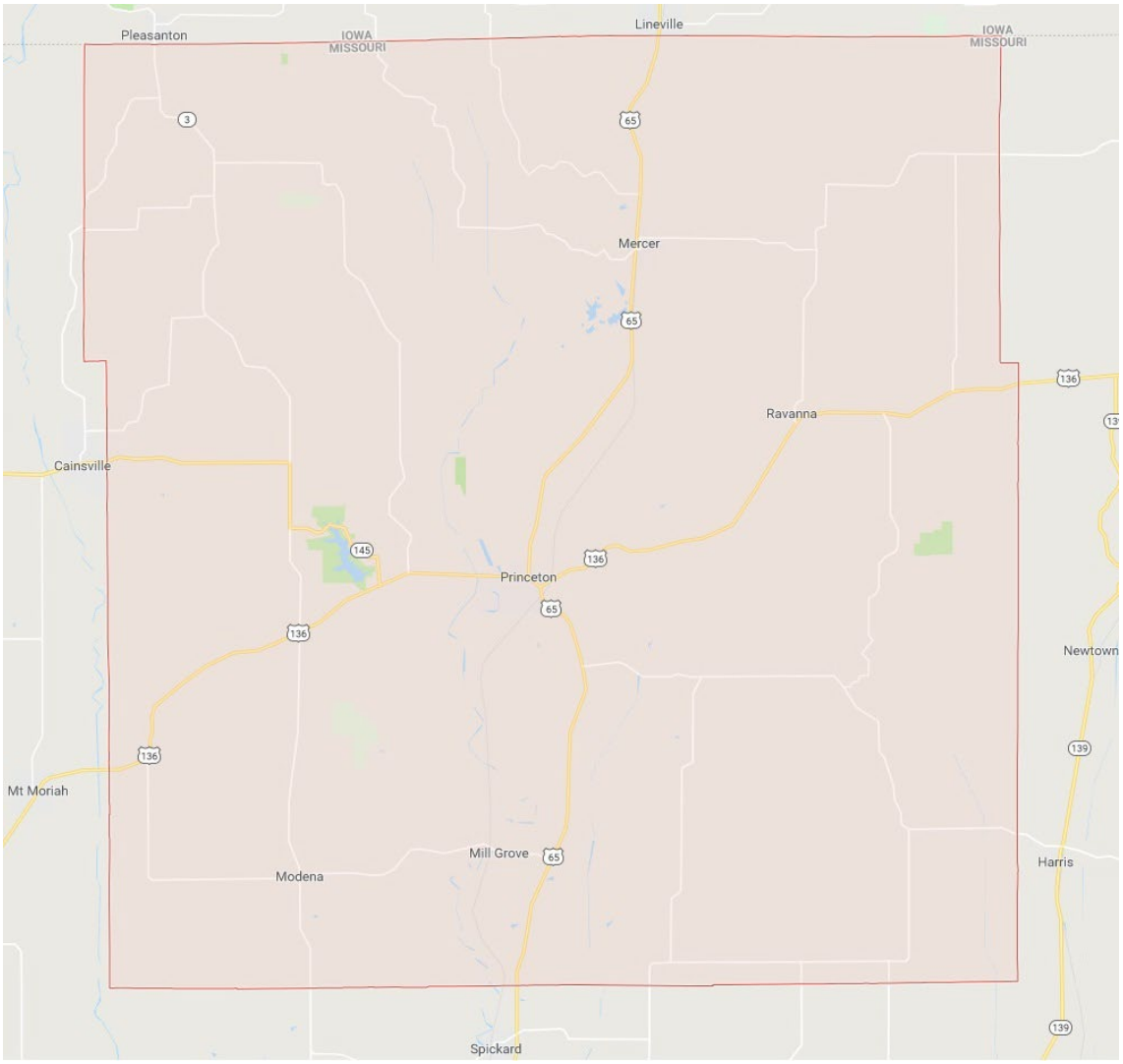
2.1.2 Geography, Geology and Topography 2.3
2.1.3 Climate 2.6
2.1.4 Population/Demographics 2.7
2.1.5 History 2.9
2.1.6 Occupations 2.10
2.1.7 Agriculture 2.10
2.1.8 FEMA Hazard Mitigation Assistance (HMA) Grants in Planning Area 2.11
2.1.9 FEMA Public Assistance (PA) Grants in Planning Area 2.11

2.2 *Jurisdictional Profiles and Mitigation Capabilities 2.17*

2.2.1 Unincorporated Mercer County 2.17
2.2.2 City of Princeton 2.21
2.2.3 City of Mercer 2.23
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2.1 MERCER COUNTY PLANNING AREA PROFILE

Table 2.1. Maps of Mercer County





Mercer County is located in the North central portion of Missouri (see map, left). It is bordered to the north by Decatur and Wayne Counties in Iowa, on the south by Grundy County Missouri, on the west by Harrison County Missouri, and on the east by Putnam and Sullivan Counties in Missouri. Princeton, the county seat, lies approximately at the center of the County at the intersection of Highway 65 and Highway 136.

The population of Mercer County, from the 2020 Decennial Census, is 3538 people with a population estimate of 3,437 people for 2022. The population in 2010 was 3,785. The population of Mercer County has been steadily declining. The population change from April 2020 to July 2022 (estimates based) is -9.2%. The population of Missouri has increased 3.15% and the United States population has increased 7.95% in the same time frame.
The median household income in 2021 dollars was $52,105 in Mercer County. The 2010 American

Community Survey 5-Year Estimates for Mercer County put the median household income at $34,008. This is a change of +53.2%. The following table (table 2.3) compares this information to the state of Missouri and the United States median household income.

Table 2.2. Median Household Income Comparisons.

	2010 Median Household Income	2022 Median Household Income	%Change in Median Household Income
Mercer County	$34,008	$52,105	+53.2%
Missouri	$44,301	$64,811	+46.3%
United States	$50,046	$74,755	+49.4%

Source: The American Community Survey 2010 & 2022

Table 2.3. Median Value of House Comparisons

	2010 Median House Value	2022 Median House Value	%Change in Median House Value
Mercer County	$82,700	$85,300	+3.04%
Missouri	$151,600	$171,800	+11.76%
United States	$174,600	$244,900	+28.71%

Source: The American Community Survey 2010 & 2022

2.1.1 Geography, Geology and Topography

Mercer County is located in the North central portion of Missouri. It is bordered on the north by the Iowa counties Decatur and Wayne. On the south Mercer County is bordered by Grundy County. To the west of Mercer County is Harrison County and to the east are Putnam County and Sullivan County.

Mercer County has an area of 291,488 acres, or approximately 456 square miles. Of this, the majority of the area is land, with 1.3 square miles of water in the county. Mercer County is roughly square in shape, and measures 21 miles both north to south and 21 miles east to west.

The county is completely rural, and agriculture is the main enterprise of the county. Crops and pasture land make up the majority of the land cover, but there are some forested areas on the flood plains along major creeks and rivers.

Most of Mercer County consists of gently rolling to hilly uplands. The wide, gently sloping ridges are oriented north to south, as are the major drainage ways. Four major systems control drainage in the county. The West Medicine Creek and Muddy Creek systems enter the county at the Iowa border and drain to the eastern part of the county. The Weldon Fork of the Grand River bisects and drains the middle portion of the county. Much of the Weldon Fork north of Princeton has been channelized for flood control. Many intermittent streams in the far western part of Mercer County drain to the southwest towards the Thompson River, which is near the border between Mercer County and Harrison County.

The planning area is almost entirely rural, with most of the land used for agricultural purposes. There are three cities located within the planning area. The largest city, the county seat, is Princeton. The second city in Mercer County is the city of Mercer. It is significantly smaller than Princeton and is located approximately 8 miles north on US HWY 65. The city of South Lineville is on the Missouri-Iowa border with a population of 10.

The population of the planning area is declining, with many of the younger working adults leaving

Mercer County for other areas. Due to the declining population and recent layoffs at the county's largest employer, there is little development predicted in the planning area.

Table 2.4. Watershed Map of Mercer County (Middle Grand Basin)

The following map shows the "Middle Grand Basin" which comprises the majority of Mercer County. Mercer County is indicated by a star within the county lines.

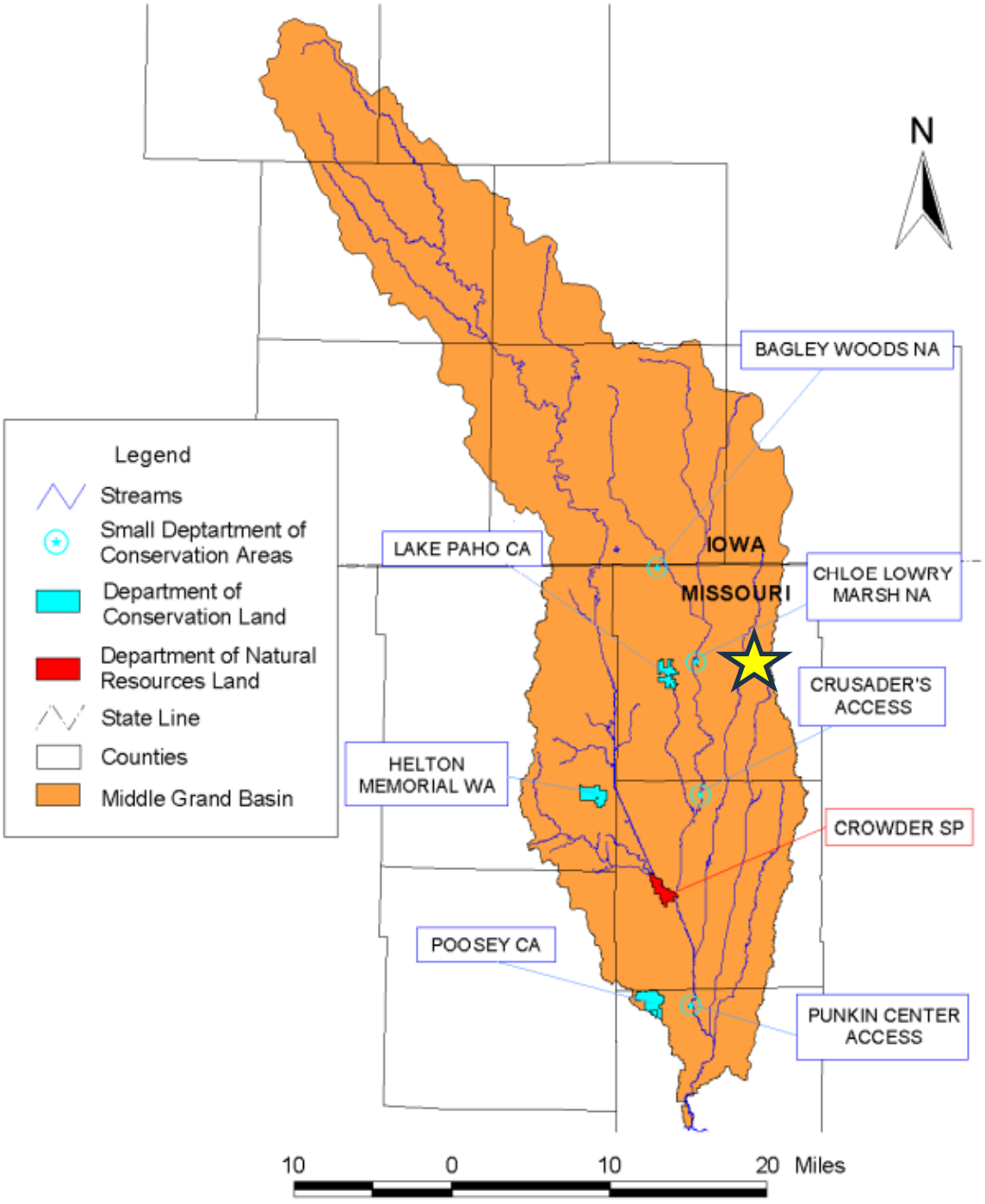
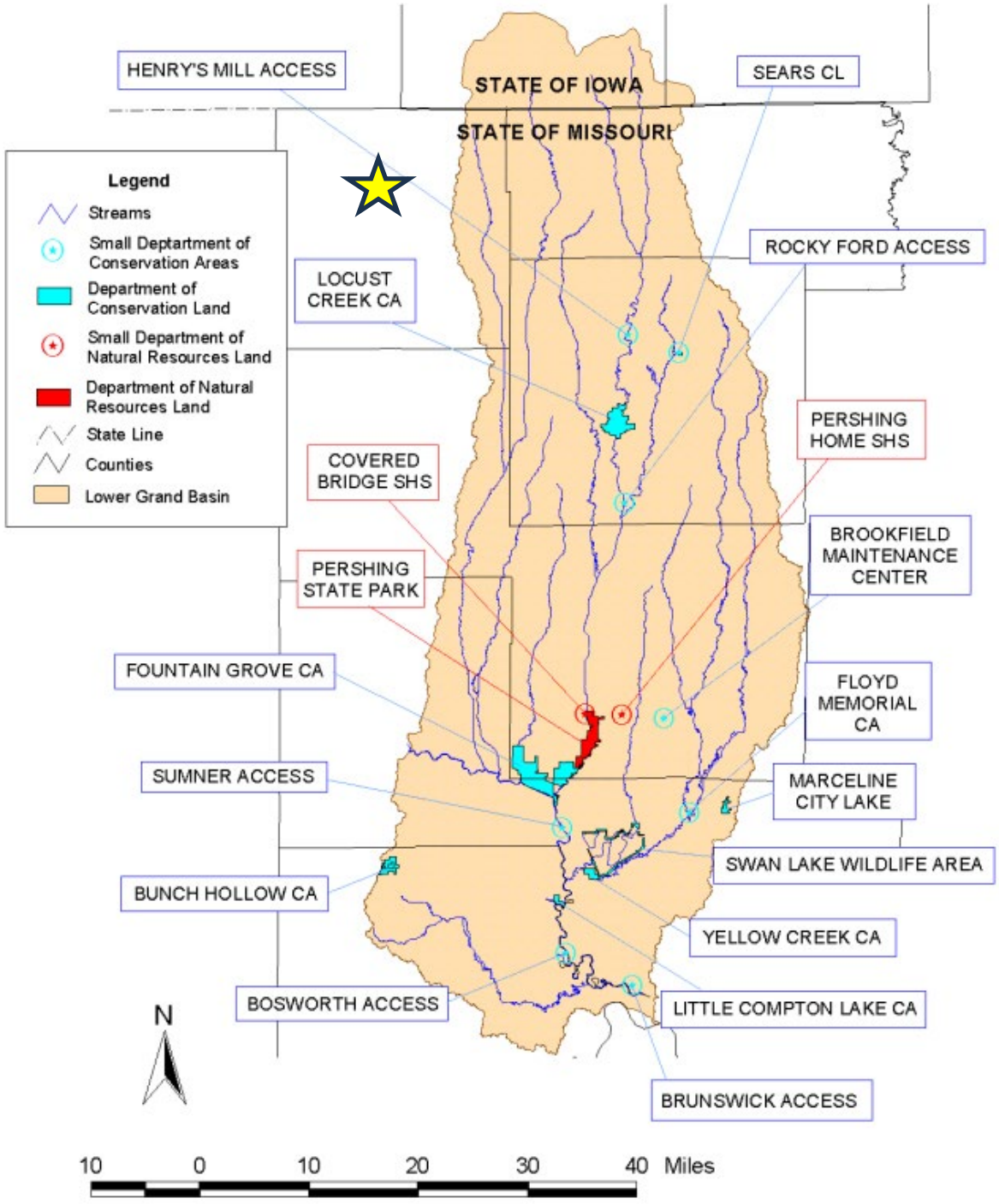


Table 2.5. Watershed Map of Mercer County (Lower Grand Basin)

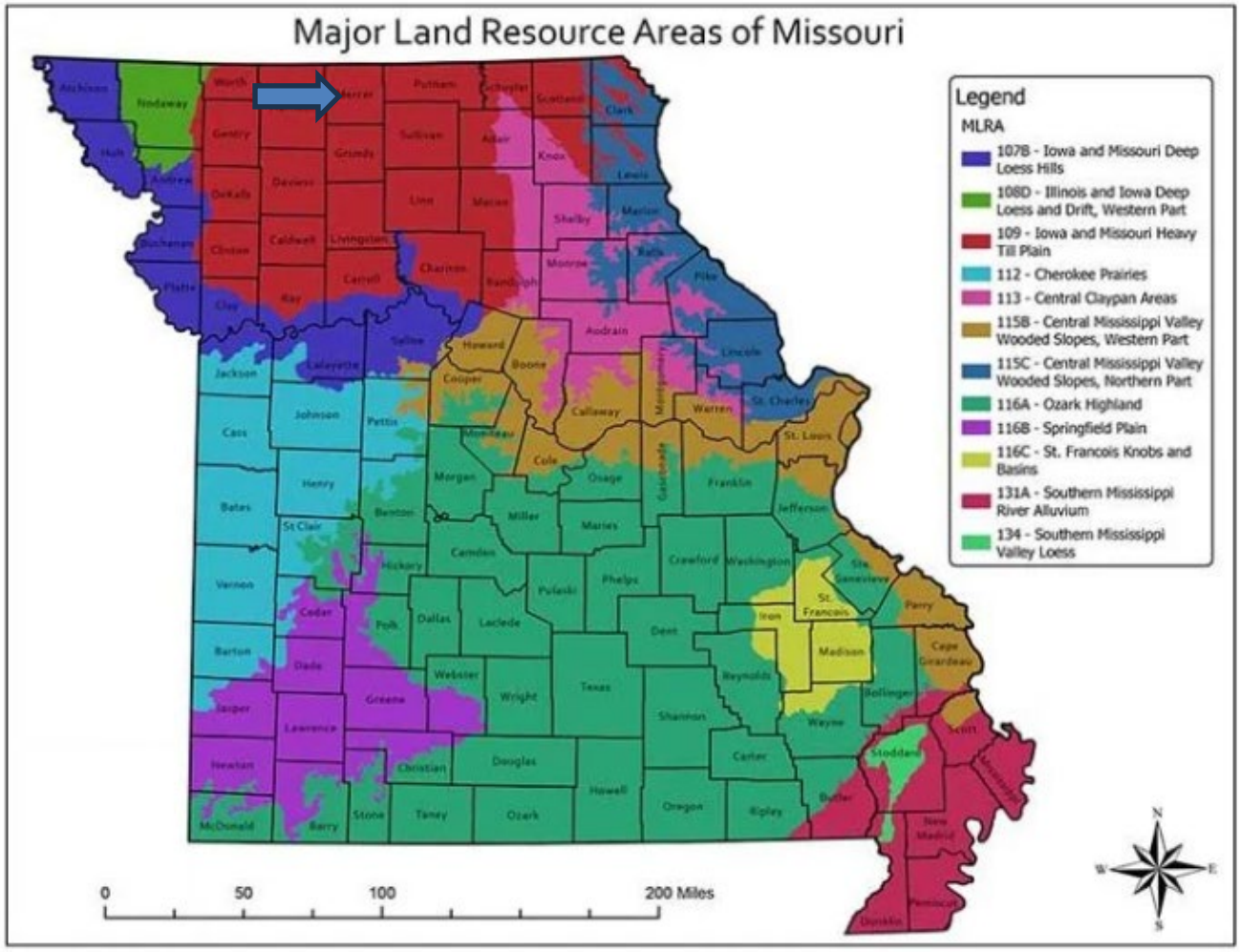
The following map of the Lower Grand Basin shows that the western portion of the county is made up of the Lower Grand Basin. Mercer County is marked with a star.



Source: mdc.mo.gov

Table 2.6. The following map provides information about the major land resources Missouri

The predominant type of soil in Mercer County is Classified as Iowa and Missouri Heavy Till Plain. Much of the soil in Mercer County is very productive and deep soil high in organic matter. The high clay content that can be found in this soil is a limiting factor. This soil is good for growing corn and soybeans; however, the clay pan could inhibit yields in some crops.



2.1.2 Climate

Mercer County, Missouri gets 39 inches of rain per year on average. The US average is 38 inches of rain per year. Mercer County averages 19 inches of snow per year, while the US average amount of snowfall is 28 inches. On average, there are 202 sunny days per year in Mercer County. The US average is 205 sunny days per year. The July high is around 87 degrees, and the January low is around 15 degrees.

Mercer County gets some kind of precipitation, on average, 103 days each year. The following graphs illustrate the average conditions for Princeton, Missouri from 1981-2010. The following graphs were all obtained from High Plains RCC CLIMOD data. The weather station in Princeton, MO was chosen as it is at the center of the county as well as the county seat.

Table 2.7. Monthly Climate Temperature and Precipitation – Princeton, MO

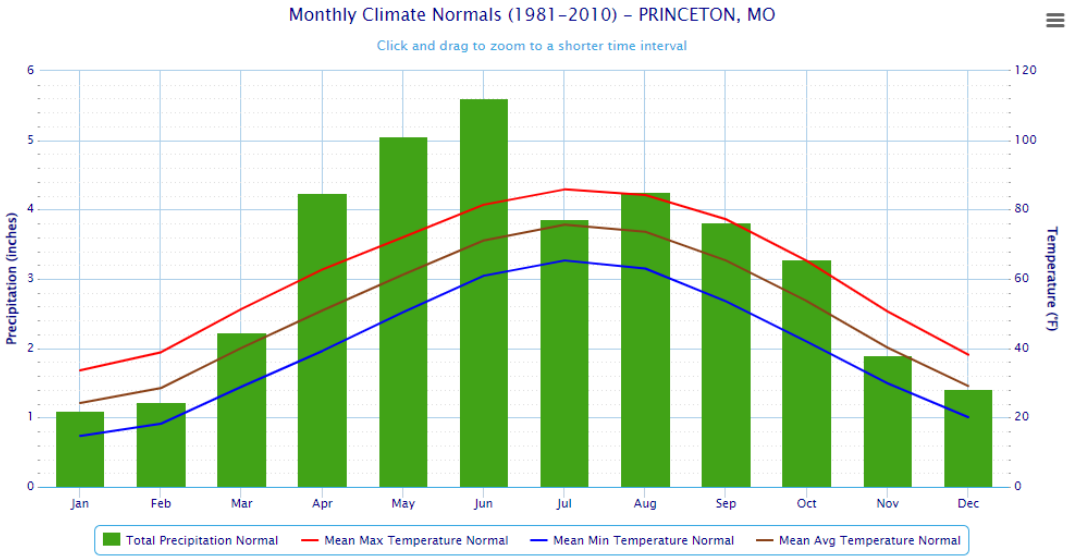
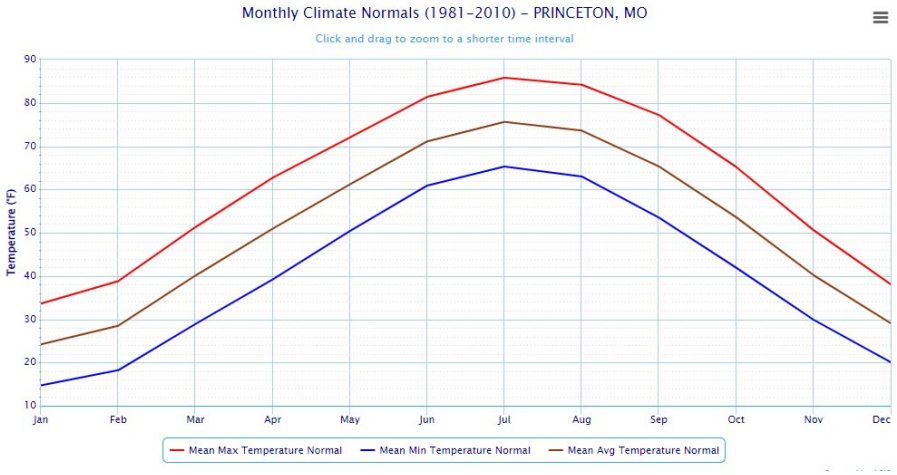


Table 2.8. Monthly Climate Normal Temperatures – Princeton, MO



2.1.3 Population/Demographics

Table 2.9. Mercer County Population 2010-2020 by Jurisdiction

Jurisdiction	2010 Population	2020 Population	2022 Annual Population Estimate or ACS Population	# Change (2010-2020)	% Change (2010-2020)
Mercer County	3785	3538	3437	-247	-6.53%
City of Princeton	1166	1007	1007*	-159	-13.64
City of Mercer	318	263	263*	-55	-17.30

Source: U.S. Bureau of the Census, Decennial Census, annual population estimates/ 5-Year American Community Survey 2022
*ACS Population provided for cities with populations of 5,000 or more

Table 2.10. Total Population by Age Groups, Total

Report Area	Age 0-4	Age 5-19	Age 20-24	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65+
Mercer County	225	763	134	348	426	346	546	773
Missouri	367,132	1,185,941	400,642	814,351	763,084	744,131	832,417	1,033,836
US	19,423,121	63,575,618	21,574,425	45,351,942	42,441,883	41,631,458	42,829,413	52,888,621

Source: U.S. Bureau of the Census, Decennial Census, annual population estimates/5-year American Community Survey 2022

Table 2.11. Total Population by Age Groups, Percent

Report Area	Age 0-4	Age 5-19	Age 20-24	Age 25-34	Age 35-44	Age 45-54	Age 55-64	Age 65+
Mercer County	6.32%	21.43%	3.76%	9.77%	11.96%	9.72%	15.33%	21.71%
Missouri	5.98%	19.31%	6.52%	13.26%	12.42%	12.12%	13.55%	16.83%
US	5.89%	19.28%	6.54%	13.76%	12.87%	12.63%	12.99%	16.04%

Source: U.S. Bureau of the Census, Decennial Census, annual population estimates/5-year American Community Survey 2022

Table 2.12. Total Population in Households

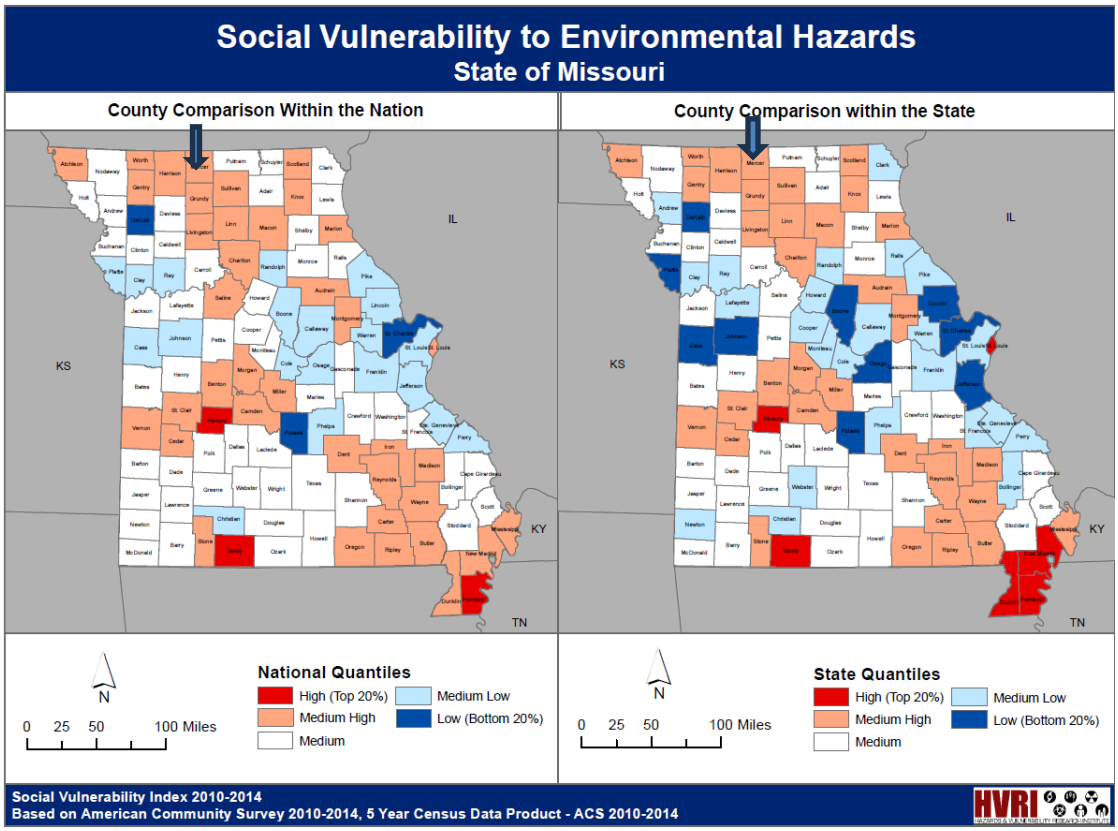
Report Area	Number of Households	Average Household Size
Mercer County	1911	2.84
Missouri	2,786,621	2.46
United States	140,498,736	2.60

Source: U.S. Bureau of the Census, Decennial Census, annual population estimates/5-year American Community Survey 2022

Based on the latest American Community Survey 5-year estimates, (Table 2.10), the population of Mercer County under the age of 4 is currently 6.32% which is above the State of Missouri average at 5.98% and the National average of 5.89%. The portion of the population above the age of 65 is also above the state and national average, but by a significantly larger margin. Mercer County currently has 21.71% above the age of 65. The state of Missouri has an elderly population which comprises 16.83% of the population, and the nation has an elderly population of 16.04%.

The University of South Carolina developed an index to evaluate and rank the ability to respond to, cope with, recover from, and adapt to disasters. The index synthesizes 29 socioeconomic variables which research literature suggests contribute to reduction in a community's ability to prepare for, respond to, and recover from hazards. SoVI ® data sources include primarily those from the United States Census Bureau. The SoVI score for Mercer County, Missouri is 1.71. As the following Table, the Social Vulnerability to Environmental Hazards in Mercer County is established as "Medium-High".

Table 2.13. Social Vulnerability to Environmental Hazards in Missouri by County



Mercer County is indicated by a blue arrow on the above maps.

Table 2.14. Unemployment, Poverty, Education, and Language Percentage Demographics, Mercer County, Missouri

Jurisdiction	Total in Labor Force	Percent of Population Unemployed	Percent of Families Below the Poverty Level	Percentage of Population (High School graduate)	Percentage of Population (Bachelor's degree or higher)	Percentage of population with spoken language other than English
Mercer County	2788	3.5%	13.5%	87.5%	18.4%	4.3%
City of Princeton	897	6.7%	20.7%	88.0%	18.4%	6.8%
City of Mercer	298	25.1%	11.7%	90.2%	10.9%	6.0%
Missouri	4,949,628	2.6%	12.7%	91.0%	30.7%	6.2%
United States	267,057,693	3.5%	12.8%	88.9%	33.7%	21.7%

Source: U.S. Census, 2022 American Community Survey, 5-year Estimates.

2.1.4 History

Up until 1837 the land now known as Mercer County was a hunting place of the Fox, Sioux, and Pottawatomie Indians, and the first Europeans in the area were traders who would spend a few months each year bartering with those Indians. The permanent settlement of Mercer County by European settlers was not until 1837, and a considerable portion of Mercer County remained almost entirely unoccupied for nearly twenty years after that date. Immigrants from the free states of the east rarely settled in Missouri or the territories beyond, and those who came from the southern States with their slaves did not care to place them in a position favorable for their escape. This prejudice against the border counties extended even to those that did not own slaves. The first

settlers were mainly from Virginia, North Caroline, Tennessee, and Kentucky.

Originally part of Livingston County, and then later Grundy County, Mercer was officially formed on February 14, 1845, and named in honor of General Hugh Mercer, of Revolutionary War fame. In 1847 the county seat was located in Princeton. Princeton was named after the place where the battle took place where General Mercer lost his life.

An interesting subject connected with the border counties, of which Mercer County is one, is the dispute regarding the boundary line between Missouri and Iowa. From the organization of Iowa until 1851 the location of the boundary line was subject to dispute. In 1837, in accordance with an act of the Legislature of Missouri, a survey of the northern boundary line was made by commissioners on behalf of the State, who located it on a line that did not coincide with the Indian boundary line. The line that was subsequently run by commissioners on behalf of Iowa did correspond with the Indian boundary line. The territory in dispute was a little over eight miles in width at the east and eleven miles in width at the west end.

Both Missouri and Iowa were trying to claim this portion for themselves. This conflict was known as the Honey War, which was a bloodless territorial dispute. However, Mercer County was still very sparsely populated, so nothing of a serious nature resulted. The question in dispute at last went to the United States Supreme Court, where it was settled, and in 1851 the line was surveyed, and the boundary marked by iron posts set ten miles apart.

Historical Landmarks

There are two listings on the National Historical Registry for Mercer County, Missouri

1. Casteel, Herbert Cain and Carah Brantley, House (Princeton, address restricted)
2. Leo Ellis Post #22, American Legion Building; 804 Grant St., Princeton, MO

2.1.5 Occupations

The following table lists the occupation statistics for Mercer County, the City of Princeton, and the City of Mercer. The following statistics were listed as percentages rather than totals so comparisons can be drawn regarding the information.

Table 2.15. Occupation Statistics, Mercer County, Missouri

Place	Management, Business, Science, and Arts Occupations	Service Occupations	Sales and Office Occupations	Natural Resources, Construction, and Maintenance Occupations	Production, Transportation, and Material Moving Occupations
Mercer County	36.2%	11.6%	16.6%	14.3%	21.3%
City of Princeton	18.9%	14.3%	19.9%	28.2%	18.7%
City of Mercer	22%	14.3%	20.9%	9.9%	33%

Source: U.S. Census, 2022 American Community Survey, 5-year Estimates.

2.1.6 Agriculture

Agriculture makes up a large part of the economy in Mercer County. Within Mercer County there are a total of 493 farms comprised of 193,736 acres as of the latest agricultural census in 2017. The average acreage making up a farm in the planning area is 393 acres. The average net income from a farm in the County is $40,422. The total number of persons holding a job in the field of agriculture in the planning area is 504, which is 30.6% of the total labor force. The top type of livestock raised in Mercer County is Cattle, most of the farms that raise cattle raise them to provide beef rather than milk. Corn is the most abundant crop in the county.

The following table includes information for Mercer County with surrounding Missouri counties for comparison. (See Table 2.16.)

Table 2.16. Agriculture information for Mercer and Surrounding Counties

	Mercer	Grundy	Harrison	Putnam	Sullivan
Total # of Farms	493	662	974	585	671
Acres Per Farm	193,736	225,423	392,068	264,311	309,995
Average Income Per Farm	$40,422	$35,755	$28,568	$35,370	$76,547

2.1.7 FEMA Hazard Mitigation Assistance (HMA) Grants in Planning Area

When the data provided by FEMA was searched, there were no results found in Missouri that matched by county name (“Mercer”), by city name (“Princeton” or “Mercer”), or by zip code. According to the Dataset Name: Hazard Mitigation Assistance Mitigated Properties-V3, there has been no assistance requested in the planning area. The following Table 2.17. has been left blank to represent this information.

Table 2.17. FEMA HMA Grants in Mercer County from 1993-2023

Disaster Declaration	Project Type	Sub-Grantee	Date Approved	Project Total
-0-	n/a	n/a	n/a	-0-
Total				-0-

Source: Federal Emergency Management Agency, 11/6/2023

2.1.8 FEMA Public Assistance (PA) Grants in Planning Area

Table 2.18. FEMA PA Grants in Mercer County from 2002-2023

Disaster Declaration	Project Type	Project Size	Applicant	Project Total
1412	ROADS AND BRIDGES	Small	Mercer County	$ 4,612.63
1412	ROADS AND BRIDGES	Small	Mercer County	$ 1,181.70
1412	ROADS AND BRIDGES	Small	Mercer County	$ 1,439.36
1412	ROADS AND BRIDGES	Small	Mercer County	$ 2,367.34
1412	ROADS AND BRIDGES	Small	Mercer County	$ 3,218.17
1412	ROADS AND BRIDGES	Small	Mercer County	$ 4,176.44
1412	ROAD DAMAGE	Small	Mercer County	$ 872.10

1412	ROADS/WASHOUT	Small	Mercer County	$ 2,561.14
1412	ROAD DAMAGE	Small	Mercer County	$ 2,170.39
1412	ROAD DAMAGE	Small	Mercer County	$ 3,702.63
1412	ROAD/DITCH DAMAGE	Small	Mercer County	$ 5,876.30
1412	DAMAGED ROADS	Small	Mercer County	$ 4,259.63
1412	ROAD DAMAGE	Small	Mercer County	$ 4,429.51
1412	ROAD DAMAGE	Small	Mercer County	$ 1,998.85
1412	WINGWALL DAMAGE	Small	Mercer County	$ 3,316.89
1412	ROAD DAMAGE	Small	Mercer County	$ 2,269.33
1412	ROAD WASHOUTS	Small	Mercer County	$ 3,701.69
1412	ROAD DAMAGE	Small	Mercer County	$ 2,972.37
1412	DAMAGE CULVERT/ROAD SURFACE	Small	Mercer County	$ 2,024.78
1412	ROAD DAMAGE	Small	Mercer County	$ 1,536.73
1412	ROAD DAMAGE	Small	Mercer County	$ 2,221.82
1412	BRIDGE DAMAGE	Small	Mercer County	$ 3,675.17
1412	CULVERT DAMAGE	Small	Mercer County	$ 1,946.65
1412	DAMAGED ROADS	Small	Mercer County	$ 1,526.62
1412	WING WALL DAMAGE	Small	Mercer County	$ 2,725.06
1412	CULVERT DAMAGE	Small	Mercer County	$ 7,671.60
1412	ROAD DAMAGE	Small	Mercer County	$ 1,322.09
1412	ROAD DAMAGE	Small	Mercer County	$ 8,259.96
1412	ROAD DAMAGE	Small	Mercer County	$ 4,433.66
1412	CULVERT DAMAGE	Small	Mercer County	$ 2,258.72
1412	ROAD DAMAGE	Small	Mercer County	$ 13,166.76
1412	ROAD DAMAGE	Small	Mercer County	$ 1,153.04
1412	ROAD DAMAGE	Small	Mercer County	$ 928.62
1412	BRIDGE & CULVERT DAMAGE	Small	Mercer County	$ 1,976.41
1412	ROAD DAMAGE	Small	Mercer County	$ 800.93
1412	WING WALL DAMAGE	Small	Mercer County	$ 2,505.20
1412	ROAD DAMAGE	Small	Mercer County	$ 1,428.53
1412	ROAD DAMAGE	Small	Mercer County	$ 783.14
1412	ROAD WASHOUT	Small	Mercer County	$ 3,251.64
1412	ROAD DAMAGE	Small	Mercer County	$ 1,962.49
1412	ROAD DAMAGE	Small	Mercer County	$ 849.67
1412	ROAD DAMAGE	Small	Mercer County	$ 2,968.49
1412	ROAD DAMAGE	Small	Mercer County	$ 823.11
1412	ROAD DAMAGE	Small	Mercer County	$ 5,072.58
1412	ROAD DAMAGE	Small	Mercer County	$ 4,719.72
1412	ROAD DAMAGE	Small	Mercer County	$ 5,949.35
1412	ROAD DAMAGE	Small	Mercer County	$ 997.89

1412	ROAD DAMAGE	Small	Mercer County	$ 2,208.26
1412	ROAD DAMAGE	Small	Mercer County	$ 1,717.94
1412	ROAD DAMAGE	Small	Mercer County	$ 2,089.14
1412	BRIDGE DAMAGE	Small	Mercer County	$ 1,978.90
1412	BRIDGE REPLACEMENT	Large	Mercer County	$ 53,215.75
1412	STREAM BED UNDER LITTLE RIVER BRIDGE	Small	Mercer County	$ 4,870.15
1708	ROADS, BRIDGES AND CULVERTS	Small	Mercer County	$ 18,833.35
1708	ROAD AND CULVERT DAMAGES	Small	Mercer County	$ 12,136.61
1708	CULVERT WASHOUT	Small	Mercer County	$ 3,771.66
1708	PA PILOT - DEBRIS REMOVAL	Small	Mercer County	$ 1,580.82
1708	CULVERT/ROAD WASHOUT	Small	Mercer County	$ 3,616.56
1708	ROAD & CULVERT WASHOUT	Small	Mercer County	$ 2,562.55
1708	CULVERT AND ROAD DAMAGE	Small	Mercer County	$ 4,324.07
1708	CULVERT AND ROAD WASHOUT	Small	Mercer County	$ 4,165.64
1708	ROADS AND CULVERTS	Small	Mercer County	$ 1,943.97
1773	ROAD WASHOUT (REVISED 9-4-08)	Small	Mercer County	$ 11,581.62
1773	ROAD / CULVERT WASHOUT	Small	Mercer County	$ 1,786.26
1773	ROAD WASHOUT	Small	Mercer County	$ 3,320.15
1773	ROAD WASHOUT REVISED 09-05-08	Small	Mercer County	$ 926.63
1773	ROAD WASHOUT	Small	Mercer County	$ 3,134.42
1773	ROAD WASHOUT	Small	Mercer County	$ 764.66
1773	ROAD WASHOUT - REVISED 9/13/08	Small	Mercer County	$ 1,358.72
1773	ROAD WASHOUT	Small	Mercer County	$ 3,094.44
1773	ROAD WASHOUTS	Small	Mercer County	$ 4,728.92
1773	ROAD & CULVERT WASHOUTS	Small	Mercer County	$ 2,703.67
1773	ROAD WASHOUT	Small	Mercer County	$ 5,265.38
1773	ROAD / CULVERT WASHOUT	Small	Mercer County	$ 5,404.88
1773	ROAD WASHOUT	Small	Mercer County	$ 2,244.66
1773	ROAD & CULVERT WASHOUT	Small	Mercer County	$ 2,896.14
1773	PA PILOT - DEBRIS REMOVAL	Small	Mercer County	$ 2,491.21
1773	ROAD CULVERT WASHOUT-REVISED	Small	Mercer County	$ 2,197.92
1773	ROAD / BRIDGE WASHOUT	Small	Mercer County	$ 5,384.45
1773	ROAD / BRIDGE WASHOUT	Small	Mercer County	$ 25,817.21
1773	ROAD / BRIDGE WASHOUT	Small	Mercer County	$ 23,535.08
1773	ROAD & CULVERT WASHOUT	Small	Mercer County	$ 24,021.23
1773	ROAD & BRIDGE WASHOUT	Small	Mercer County	$ 15,400.20
1773	ROAD WASHOUTS	Small	Mercer County	$ 3,956.33
1773	ROAD WASHOUT	Small	Mercer County	$ 9,892.16
1773	ROAD/CULVERT WASHOUTS	Small	Mercer County	$ 9,651.04
1773	ROAD WASHOUT	Small	Mercer County	$ 41,932.68

1773	ROAD / BRIDGE WASHOUT	Small	Mercer County	$ 40,017.62
1773	ROAD WASHOUT	Small	Mercer County	$ 28,522.04
1773	ROAD / CULVERT & BRIDGE WASHOUT	Small	Mercer County	$ 26,922.67
1773	ROAD WASHOUT	Small	Mercer County	$ 14,240.65
1773	ROAD WASHOUT	Small	Mercer County	$ 28,555.56
1773	ROAD WASHOUTS	Small	Mercer County	$ 28,604.00
1773	ROAD WASHOUT	Small	Mercer County	$ -
1934	1934-Mercer-GG01-CMC	Small	Mercer County	$ 4,119.81
1934	GG02FPC-1934-Princeton	Small	Mercer County	$ 7,575.00
1934	GG03FMC-CMC-1934- Mercer City of	Small	Mercer County	$ -
1934	GG04C-CMC-1934- Mercer City of	Small	Mercer County	$ 34,390.31
1934	MC07CGG - Gravel Roads, Embankment and Culverts	Small	Mercer County	$ 10,162.45
1934	GG05CPC-Low Water Bridge	Small	Mercer County	$ 17,434.91
1934	MC08CGG- Gravel Roads and Ditches	Small	Mercer County	$ 9,613.10
1934	MC10CGG- Gravel Roads	Small	Mercer County	$ 42,565.41
1934	MC09CGG- Gravel Roads	Small	Mercer County	$ 3,001.05
1934	MC13CGG- Gravel Roads	Small	Mercer County	$ 35,839.91
1934	MC11CGG- Gravel Roads	Small	Mercer County	$ 40,917.92
1934	MC15CGG - Gravel Road Surface,Base,Ditches and Culverts	Small	Mercer County	$ 11,881.98
1934	MC14CGG - Gravel Roads	Small	Mercer County	$ 27,072.59
1934	MCJL10 - Aggregate Roads	Small	Mercer County	$ 30,462.45
1934	MCJL11 - Aggregate Roads	Small	Mercer County	$ 22,414.79
1934	MC16CGG - Gravel Road Surface,Base, Ditches & Culverts	Small	Mercer County	$ 17,350.18
1934	MCJL12- Aggregated Roads	Small	Mercer County	$ 19,625.81
1934	MCJL13- Aggregate Roads	Small	Mercer County	$ 25,541.84
1934	MC17CGG- Gravel Roads	Small	Mercer County	$ 42,430.64
1934	MC19CGG- Gravel Roads	Small	Mercer County	$ 15,707.75
1934	MC18CGG- Gravel Roads	Small	Mercer County	$ 41,922.05
1934	MC20CGG - Culvert and Ditch Work	Small	Mercer County	$ 3,888.75
1934	MC22CGG- Gravel Roads	Small	Mercer County	$ 45,300.07
1934	MC21CGG- Gravel Roads	Small	Mercer County	$ 35,073.78
1934	MT-LG21- Gravel Roads	Small	Mercer County	$ 2,922.65
1934	MCJL15- Aggregate Roads	Small	Mercer County	$ 36,980.27
1934	MCJL14- Aggregate Roads	Small	Mercer County	$ 4,059.23
1934	MC23CGG- Gravel Roads Embankment Culverts	Small	Mercer County	$ 11,824.05
1934	MC24CGG- Gravel Roads Embankment and Culverts	Small	Mercer County	$ 7,255.82
1934	MCJL18 - Township Culverts	Small	Mercer County	$ 1,502.46
1934	MC28CCGG - Gravel Roads	Small	Mercer County	$ 22,706.83
1934	WM013 - Culvert	Small	Mercer County	$ 1,489.27

1934	MC25CGG - Gravel Roads Embankment and Culverts	Small	Mercer County	$ 4,728.48
1934	MC26CCGG - Gravel Roads Embankment and Culverts	Small	Mercer County	$ 13,803.02
1934	MC27CGG - Low Water Crossing	Small	Mercer County	$ 25,618.50
1934	MCJL16 - Aggregate Roads	Small	Mercer County	$ 34,697.07
1934	MCJL17 - Aggregate Roads	Small	Mercer County	$ 14,398.66
1934	MCJL19 - Culvert Wingwall	Small	Mercer County	$ 6,634.88
1934	HT-LG22 - Gravel Roads	Small	Mercer County	$ 4,365.62
1934	WM012 - Culvert	Small	Mercer County	$ 4,755.18
1934	WM011 - Culvert	Small	Mercer County	$ 1,486.18
1934	WM014 - Culvert	Small	Mercer County	$ 6,214.16
1934	TEG017 - Culvert Wingwall	Small	Mercer County	$ 4,062.38
1934	TEG018 - Culvert Wingwall/Bridge Approach	Small	Mercer County	$ 7,552.41
1934	TEG019 - Culvert Wingwall/Bridge Approach	Small	Mercer County	$ 7,725.36
4200	MEMBC01 Mercer County Culverts	Small	Mercer County	$ 12,963.39
4200	MEJFC03 Princeton (City of) Gravel Streets	Small	Mercer County	$ 5,602.55
4200	MEMBD03 Water Line Repairs	Small	Mercer County	$ 29,565.41
4200	MEMBC04 Mercer County Low Water Crossing	Large	Mercer County	$ 68,900.11
4200	MEMBC02 Mercer County Roads	Large	Mercer County	$ 255,615.11
4200	MEMD02C Roadway Culvert Replacement	Small	Mercer County	$ 6,965.62
4451	122531 - Somersett Township Roads Completed	Small	Mercer County	$ 53,677.82
4451	123228 - Medicine Township Cuvert Washout 0%	Small	Mercer County	$ 7,687.87
4451	129413 - Morgan Township gravel roads, ditches, & culve	Small	Mercer County	$ 24,386.59
4451	123233 - Morgan Township gravel roads and ditches. 90%	Small	Mercer County	$ 8,180.63
4451	123418 - City of Princeton Debris Removal	Small	Mercer County	$ 3,324.18
4451	122529 - Mercer County Bridges 0%	Large	Mercer County	$ -
4451	123420 - City of Princeton Damaged Culverts	Small	Mercer County	$ -
4451	123288 - Township-Wide Gravel Road & Culverts 100% Comp	Small	Mercer County	$ 4,399.82
4451	121702 - Project #121702 - DR4451MO - Marion Township C	Small	Mercer County	$ 93,275.21
4451	137222 - Madison Township Management Costs	Small	Mercer County	$ -
4451	152197 - Management Costs	Small	Mercer County	$ 751.27
4451	137226 - Management Costs for Time Associated with DR-	Small	Mercer County	$ -
4451	151977 - Management Costs	Small	Mercer County	$ 3,317.69
4451	122522 - Mercer County Roads Completed 100%	Large	Mercer County	$ 128,434.81
4451	122527 - Mercer County Cat C Roads 0%	Small	Mercer County	$ 35,285.88
4451	153711 - EC	Small	Mercer County	$ -
4451	137229 - Management Costs for Time Associated with	Small	Mercer County	$ -
4451	153710 - EC	Small	Mercer County	$ 10,917.74
4451	123421 - City of Princeton - Derry Sports	Small	Mercer County	$ -

	Complex Ball Fields			
4451	146541 - Donated Resources - Debris Removal	Small	Mercer County	$ 1,108.06
4451	137227 - Management Costs for Time Associated with	Small	Mercer County	$ -
4451	152672 - Estimate	Small	Mercer County	$ -
4451	137228 - Administrative Costs	Small	Mercer County	$ -
1934	MC12CGG- Gravel Roads	Small	Mercer County	$ 39,342.44
4451	123234 - Public Water Supply District #1 Pipe Repairs	Small	Mercer County	$ 49,765.34
4451	123225 - Medicine Township Gravel Washout 100%	Small	Mercer County	$ 12,087.65
4451	123226 - Medicine Township Culvert Washout 100%	Small	Mercer County	$ 2,720.25
4451	123229 - City of Mercer Roads	Small	Mercer County	$ 11,268.92
4451	123227 - Medicine Township Gravel Washout 0%	Small	Mercer County	$ 9,058.54
4451	123236 - Washington Township Gravel Roads & Tubing	Small	Mercer County	$ 59,113.94
Total				**$ 2,350,226.74**

Source: Federal Emergency Management Agency, 11/6/2023

2.2 JURISDICTIONAL PROFILES AND MITIGATION CAPABILITIES

This section will include individual profiles for each participating jurisdiction. It will also include a discussion of previous mitigation initiatives and ongoing mitigation capabilities in the planning area. There will be a summary table indicating specific capabilities of each jurisdiction that relate to their ability to implement mitigation opportunities. The unincorporated Mercer County is profiled first, followed by the City of Princeton and the City of Mercer. The North Mercer R-III School District and the Princeton R-V School District are profiled last in this section.

2.2.1 Unincorporated Mercer County

Mercer County's jurisdiction includes all unincorporated areas within the county boundaries. It is classified as a 3rd class county, which means that it has an assessed valuation of less than 500 million dollars. The county is governed by a 3-member board of commissioners consisting of a presiding commissioner and one commissioner representing each of the 2 county districts.

The county has the following elected offices:

- County Assessor
- Circuit Clerk
- County Clerk
- County Coroner
- Prosecuting Attorney
- Public Administrator
- County Recorder
- County Sheriff
- County Treasurer

The County Commissioners also appoint two positions, which are usually the same person:

- Emergency Management Director
- Local Emergency Planning Commission Chair

The County also has a road and bridge department that maintains county-level infrastructure, which predominately consists of grading gravel roads and replacing washed-out culverts.

Mitigation Initiatives/Capabilities

The county is one of the least populous in the state and has correspondingly low revenue. Due to the low budget, there are limited staff capabilities in Mercer County. Also attributable to this lack of revenue, the county does not have a public works director, parks and recreation department, code enforcement officer, or zoning administrator. Since the last update of the plan, mitigation activities in the county have been limited due to limited capabilities.

The unpopularity of government regulation with the local populace has also resulted in a lack of zoning regulations in the county. There is no zoning in the county, and there is no regulation on the use of land within the county. There is no comprehensive emergency plan.

Staff capabilities to reduce the impact of natural hazards include key officials from the Mercer County Commission, the County Sheriff's Department, the Emergency Management Director, the Ambulance District, and the Mercer County Fire Department. These key figures aid in planning, response, and recovery processes in the event of a disaster. Mercer County officials could coordinate to develop an Emergency Operations Plan. The development of such a plan would result in more efficient recovery efforts by saving lives, minimizing injuries, protecting property, preserving functioning government, and maintaining economic activities essential to the county's

recovery from natural disasters.

There are 2 outdoor warning sirens in the county, which are activated by the Sherriff Department Dispatch. There is one located in the City of Princeton, and one located in the City of Mercer. There is currently no other warning system.

Table 2.19. Unincorporated Mercer County Mitigation Capabilities

Capabilities	Status, *Including Date of Document or Policy*
Planning Capabilities	
Comprehensive Plan	No
Builder's Plan	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
County Emergency Operations Plan	No
Local Recovery Plan	No
County Recovery Plan	No
City Mitigation Plan	No
County Mitigation Plan	GHRPC 2018 (Approved and Adopted)
Debris Management Plan	No
Economic Development Plan	No
Transportation Plan	No
Land-use Plan	No
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	
Zoning Ordinance	No
Building Code	No
Floodplain Ordinance	No
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	no
Stormwater Ordinance	No
Drainage Ordinance	No
Site Plan Review Requirements	No
Historic Preservation Ordinance	no
Landscape Ordinance	No
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	no
Hazard Awareness Program	No
National Flood Insurance Program (NFIP)	No
NFIP Community Rating System (CRS) program	No
National Weather Service (NWS) Storm Ready	no
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	No

Capabilities	Status, *Including Date of Document or Policy*
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	no
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	No
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
Critical Facilities Inventory	Yes
Vulnerable Population Inventory	No
Land Use Map	No
Staff/Department	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Director	Yes
NFIP Floodplain Administrator	No
Emergency Response Team	No
Hazardous Materials Expert	no
Local Emergency Planning Committee	No
County Emergency Management Commission	No
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	No
Veterans Groups	Yes
Local Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	No

Capabilities	Status, *Including Date of Document or Policy*
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	No
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	No
Ability to incur debt through general obligation bonds	No
Ability to incur debt through special tax bonds	No
Ability to incur debt through private activities	No
Withhold spending in hazard prone areas	no

Source: Data Collection Questionnaire, 10/5/2023

2.2.2 City of Princeton

The city of Princeton is located at, roughly, the center of Mercer County and is the County Seat. There are 5 elected officials that make up the City Council. A Mayor and 4 Council members are responsible for the City of Princeton's governance. A 4th Class City, Princeton is governed by an elected Mayor and board of four elected Aldermen, as well as a City Clerk. The city also has the following departments:

- Public Works
- Housing
- Emergency Management
- Sanitation
- Transportation

The city has little in the way of planning but does have some regulation:

- Building Codes (enforced by inspection)
- Flood Plain Ordinances
- Nuisance Ordinances
- Storm Water Ordinances

Mitigation Initiatives/ Capabilities

There is one warning siren in the City of Princeton. It is located roughly in the middle of town. The sheriff's office is responsible for activating the siren. There is one community designated shelter. The shelter is in the basement of the courthouse at 802 E Main St., Princeton, MO. The Mercer County courthouse, the location of the shelter, was constructed in 1913.

The city maintains a "Storm Ready" certification from the NOAA and has a volunteer Emergency Response Team based on the federal CERT program. The City of Princeton does have a local Emergency Plan, which if incorporated into a County-wide Plan would result in better disaster recovery.

The city participates in NFIP. Through continued participation, mitigation strategies are incorporated into other plans through ordinances for buildings, floodplains, drainage, and storm water. The ordinances are re-evaluated periodically to ensure compliance and enforcement. New maps will be adopted once they are approved.

The city has some financial capability, ranging from (limited) capital improvement funding, donations from community organizations, utility fees, and some taxing and bonding capability. The city of Princeton does not have any zoning regulations. The city of Princeton participated in the last update of the county-wide multi-jurisdictional plan. Since the last update the mitigation activities have been limited due to limited capabilities.

The Mercer County Health Department is responsible for much of the efforts to educate and promote safety. The Mercer County Health Department is in the City of Princeton. They organize bicycle safety programs, child safety seat training, provide education about health and infectious control awareness, promote winter storm safety, and promote safety in extreme temperatures.

Table 2.20. City of Princeton Mitigation Capabilities

Capability	Status, *Including Date of Document or Policy*
Planning Capabilities	
Comprehensive Plan	no
Builder's Plan	No
Capital Improvement Plan	No
Local Emergency Plan	Yes
County Emergency Plan	No
Local Recovery Plan	No
County Recovery Plan	No
Local Mitigation Plan	Yes
County Mitigation Plan	Yes
Economic Development Plan	No
Transportation Plan	Yes
Land-use Plan	no
Flood Mitigation Assistance (FMA) Plan	no
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	
Zoning Ordinance	No
Building Code	Yes
Floodplain Ordinance	Yes
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes
Storm Water Ordinance	Yes
Drainage Ordinance	Yes
Seismic Construction Ordinance	No
Capability	
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	No
Wetlands and Riparian Areas Conservation Plan	No
Debris Management Plan	Yes
Program	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	Yes
National Flood Insurance Program (NFIP) Participant	Yes
NFIP Community Rating System (CRS) Participating Community	No
Hazard Awareness Program	No
National Weather Service (NWS) Storm Ready	Yes
Building Code Effectiveness Grading (BCEGs)	n/a
ISO Fire Rating	8
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	No
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	No

Capability	Status, *Including Date of Document or Policy*
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	No
Staff/Department	
Building Code Official	Yes-full-time
Building Inspector	Yes full-time
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes
Emergency Management Coordinator	Yes
NFIP Floodplain Administrator	Yes
Emergency Response Team	Yes
Hazardous Materials Expert	No
Local Emergency Planning Committee	Yes
County Emergency Management Commission	No
Sanitation Department	Yes
Transportation Department	Yes
Economic Development Department	No
Housing Department	Yes
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	No
Veterans Groups	Yes
Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	No
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, etc.)	Yes
Local Funding Availability	
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	No
Ability to withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 9/12/2023

2.2.3 City of Mercer

The City of Mercer is located on Highway 65, approximately halfway between the City of Princeton and the northern border of the county, which is also the Iowa State Line. Mercer is a 4th class city which is governed by an elected Mayor and a board of four elected Aldermen. There is a full-time City Clerk.

The City of Mercer has little in the way planning but does have some regulation:

- Local Emergency Plan
- Transportation Plan
- Fire Mitigation Plan
- Nuisance Ordinance

- Stormwater Ordinance

Mitigation Initiatives/ Capabilities

The City of Mercer has very limited administrative and financial capabilities. They collect some utility fees designed for the City's upkeep and infrastructure. They have one city employee, full-time, who is the water, wastewater, and street department. There is a part-time city employee that does fill in when the need arises. The city does have a nuisance ordinance but no building codes or zoning regulations of any kind. The city has some capacity to levy taxes and pass bond issues. The City of Mercer participated in the last update of the county-wide multi-jurisdictional plan.

Since the last update the mitigation activities have been limited due to limited capabilities. However, the City of Mercer has contracted with Green Hills Regional Planning Commission to provide code enforcement within the city limits.

There is one storm siren, located at the community building at the intersection of State and Cherry Streets which is activated by the County Sheriff's Department, which is located at the County Courthouse in Princeton. The city of Mercer does have a Local Emergency Plan, which if incorporated into a County-wide plan would result in better disaster recovery.

Table 2.21. City of Mercer Mitigation Capabilities

Capability	Status, *Including Date of Document or Policy*
Planning Capabilities	
Comprehensive Plan	no
Builder's Plan	no
Capital Improvement Plan	no
Local Emergency Plan	Yes
County Emergency Plan	no
Local Recovery Plan	no
County Recovery Plan	no
Local Mitigation Plan	Yes
County Mitigation Plan	Yes
Economic Development Plan	no
Transportation Plan	Yes
Land-use Plan	No
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	Yes
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No
Policies/Ordinance	
Zoning Ordinance	No
Building Code	no
Floodplain Ordinance	No
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes
Storm Water Ordinance	Yes
Drainage Ordinance	No
Seismic Construction Ordinance	No
Capability	
Site Plan Review Requirements	No
Historic Preservation Ordinance	No
Landscape Ordinance	No

Capability	Status, *Including Date of Document or Policy*
Wetlands and Riparian Areas Conservation Plan	No
Debris Management Plan	no
Program	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	no
National Flood Insurance Program (NFIP) Participant	No
NFIP Community Rating System (CRS) Participating Community	No
Hazard Awareness Program	No
National Weather Service (NWS) Storm Ready	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	7
Economic Development Program	no
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	No
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	No
Flood Insurance Maps	no
FEMA Flood Insurance Study (Detailed)	No
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	No
Staff/Department	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Coordinator	no
NFIP Floodplain Administrator	no
Emergency Response Team	No
Hazardous Materials Expert	no
Local Emergency Planning Committee	No
County Emergency Management Commission	No
Sanitation Department	No
Transportation Department	no
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	no
Veterans Groups	Yes
Environmental Organization	No
Homeowner Associations	No
Neighborhood Associations	no
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, etc.)	Yes
Local Funding Availability	

Capability	Status, *Including Date of Document or Policy*
Ability to apply for Community Development Block Grants	Yes
Ability to fund projects through Capital Improvements funding	no
Authority to levy taxes for a specific purpose	No
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	no
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	No
Ability to incur debt through private activities	No
Ability to withhold spending in hazard prone areas	No

Source: Data Collection Questionnaire, 9/28/2023

2.2.4 Summary of Jurisdictional Capabilities

Table 2.22. Mitigation Capabilities Summary Table

CAPABILITIES	Unincorporated Mercer County	City of Princeton	City of Mercer
Planning Capabilities			
Comprehensive Plan	No	No	No
Builder's Plan	No	No	No
Capital Improvement Plan	No	No	No
Local Emergency Plan	No	Yes	No
County Emergency Plan	No	No	No
Local Recovery Plan	No	No	No
County Recovery Plan	No	No	No
Local Mitigation Plan	No	No	No
County Mitigation Plan	Yes	Yes	Yes
Debris Management Plan	No	No	No
Economic Development Plan	No	No	No
Transportation Plan	No	Yes	No
Land-use Plan	No	No	No
Flood Mitigation Assistance (FMA) Plan	No	No	No
Watershed Plan	No	No	No
Firewise or other fire mitigation plan	No	No	No
School Mitigation Plan	No	No	No
Critical Facilities Plan (Mitigation/Response/Recovery)	No	No	No
Policies/Ordinance			
Zoning Ordinance	No	No	No
Building Code	No	Yes	No
Floodplain Ordinance	No	Yes	No
Subdivision Ordinance	No	No	No
Tree Trimming Ordinance	No	No	No
Nuisance Ordinance	No	Yes	Yes
Storm Water Ordinance	No	Yes	Yes
Drainage Ordinance	No	Yes	No
Site Plan Review Requirements	No	No	No
Historic Preservation Ordinance	No	No	No
Landscape Ordinance	No	No	No

CAPABILITIES	Unincorporated Mercer County	City of Princeton	City of Mercer
Seismic Construction Ordinance	No	No	No
Program			
Zoning/Land Use Restrictions	**No**	No	No
Codes Building Site/Design	No	Yes	No
National Flood Insurance Program (NFIP) Participant	No	Yes	No
NFIP Community Rating System (CRS) Participating Community	No	No	no
Hazard Awareness Program	No	Yes	No
National Weather Service (NWS) Storm Ready	No	Yes	No
Building Code Effectiveness Grading (BCEGs)	No	No	No
ISO Fire Rating	7	8	7
Economic Development Program	no	No	No
Land Use Program	No	No	No
Public Education/Awareness	No	No	No
Property Acquisition	No	No	No
Planning/Zoning Boards	No	No	No
Stream Maintenance Program	No	No	No
Tree Trimming Program	No	No	No
Engineering Studies for Streams (Local/County/Regional)	No	No	No
Mutual Aid Agreements	No	No	No
Studies/Reports/Maps			
Hazard Analysis/Risk Assessment (Local)	**No**	**No**	**No**
Hazard Analysis/Risk Assessment (County)	n/a	n/a	No
Flood Insurance Maps	No	No	no
FEMA Flood Insurance Study (Detailed)	No	No	no
Evacuation Route Map	No	No	No
Critical Facilities Inventory	No	No	No
Vulnerable Population Inventory	No	No	no
Land Use Map	No	No	no
Staff/Department			
Building Code Official	**No**	**Yes**	**No**
Building Inspector	No	Yes	No

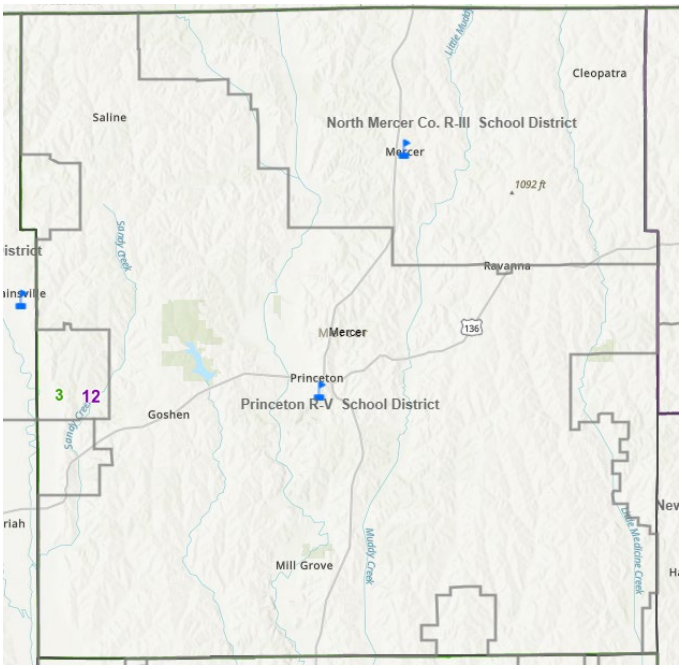
CAPABILITIES	Unincorporated Mercer County	City of Princeton	City of Mercer
Mapping Specialist (GIS)	No	No	No
Engineer	No	No	No
Development Planner	No	No	No
Public Works Official	No	Yes	No
Emergency Management Coordinator	No	Yes	No
NFIP Floodplain Administrator	No	Yes	No
Emergency Response Team	No	Yes	Yes
Hazardous Materials Expert	No	No	No
Local Emergency Planning Committee	No	No	No
County Emergency Management Commission	No	No	No
Sanitation Department	No	Yes	No
Transportation Department	No	Yes	No
Economic Development Department	No	No	No
Housing Department	No	Yes	No
Historic Preservation	No	No	No
Non-Governmental Organizations (NGOs)			
American Red Cross	**Y**	**Y**	**N**
Salvation Army	N	N	N
Veterans Groups	N	Y	y
Environmental Organization	N	N	N
Homeowner Associations	N	N	N
Neighborhood Associations	N	N	n
Chamber of Commerce	N	Y	N
Community Organizations (Lions, Kiwanis, etc.)	N	Y	y
Financial Resources			
Apply for Community Development Block Grants	**N**	**Y**	**Y**
Fund projects through Capital Improvements funding	N	N	N
Authority to levy taxes for specific purposes	Y	Y	Y
Fees for water, sewer, gas, or electric services	No	Yes	Yes
Impact fees for new development	No	No	No

CAPABILITIES	Unincorporated Mercer County	City of Princeton	City of Mercer
Incur debt through general obligation bonds	N	Y	N
Incur debt through special tax bonds	Y	Y	Y
Incur debt through private activities	N	N	N
Withhold spending in hazard prone areas	No	No	No

Source: Data Collection Questionnaire, 10/2023,9/2023, 8/2023

2.2.5 School District Profiles and Mitigation Capabilities

Table 2.23. Map of Mercer County School Districts



The map to the left shows the Princeton R-V School District and the North Mercer Co. R-III School District in the northeast corner of the county. The North Mercer R-III School District is contained within the county lines. It covers an area of 114.8916 square miles.
The Princeton R-V School District is almost entirely within the county lines with its borders extending into Grundy County to the South, in the west it extends into Harrison County, and east extends into Putnam County slightly. Mercer County School District encompasses 309.1506 square miles.
Four school districts located outside of the county have borders that lie within Mercer County. These districts are to the west: the Cainsville School District and South Harrison School District. In the south the Spickard School district extends into Mercer County. In the Southeast the Newtown Harris School District extends into Mercer County. These school districts did not participate in the Mercer County Hazard Mitigation Plan. The previous map (Table 2.23) was obtained from DESE's website.

Both school districts in Mercer County participated in the multi-jurisdictional hazard mitigation plan.

Table 2.24. North Mercer R-III Buildings and Enrollment Data, 11/21/2023

District Name	Building Name	Building Enrollment
North Mercer R-III	Mercer High	62
North Mercer R-III	North Mercer Elementary	83

Source: https://dese.mo.gov/school-data, 11/21/2023

North Mercer R-III School District is located at 22931 Main Street, Mercer, MO 64661. Table 2.24 provides building and enrollment information.

North Mercer R-III School District conducts annual hazard drills and is equipped with NOAA weather radios.

North Mercer R-III is governed by a Board of Education consisting of the Board President and six elected board members. The district currently serves 145 students and 37 teachers and staff. The district departments include:

- Central Office
- Health Services
- Custodial Services
- Cafeteria Services
- Transportation

Table 2.25. Princeton R-V Buildings and Enrollment Data, 11/21/2023

District Name	Building Name	Building Enrollment
Princeton R-V	Princeton R-V Elementary	184
Princeton R-V	Princeton R-V Jr.-Sr. High	161

Source: https://dese.mo.gov/school-data, 11/21/2023

Princeton R-V School District is located at 1008 E. Coleman Street, Princeton, MO 64673. Table 2.25 provides building and enrollment information.

Princeton R-V School District conducts annual hazard drills and is equipped with NOAA weather radios.

Princeton R-V School District is governed by a Board of Education consisting of the Board President and six elected board members. The district serves 345 students currently and employs 71 staff. The district departments include:

- Central Office
- Certified Staff (Education)
- Special Education
- Health Services
- Custodial Services
- Maintenance
- Food Services
- Transportation/Bus Barn

Table 2.26. Summary of Mitigation Capabilities-Princeton R-V & North Mercer R-III

Capability	Princeton R-V	North Mercer R-III
Planning Elements		
Master Plan/ Date	Y/ July 2022	Y/2023
Capital Improvement Plan/Date	Y/December 2019	Y/2023
School Emergency Plan / Date	Y/July 2022	Y/2022-2023
Weapons Policy/Date	Y/July 2023	Y/2023-2024
Personnel Resources		
Full-Time Building Official (Principal)	Yes/Superintendent	Yes/Superintendent
Emergency Manager	Y/Superintendent	y/Superintendent
Grant Writer	Y/Superintendent	No
Public Information Officer	Y/Superintendent	Y/Superintendent & Principal
Financial Resources		
Capital Improvements Project Funding	Y	Y
Local Funds	Y	Y
General Obligation Bonds	Y	Y
Special Tax Bonds	N	Y
Private Activities/Donations	Y	Y
State and Federal Funds/Grants	Y	Y
Other		
Public Education Programs	N	N
Privately or Self- Insured?	Privately	Privately
Fire Evacuation Training	Y	Y
Tornado Sheltering Exercises	Y	Y
Public Address/Emergency Alert System	Y	Y
NOAA Weather Radios	Y	Y
Lock-Down Security Training	Y	Y
Mitigation Programs	N	N
Tornado Shelter/Saferoom	N	N
Campus Police	N	N

Source: Data Collection Questionnaire, 7/25/2023

3 RISK ASSESSMENT

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44 CFR Requirement §201.6(c)(2): [The plan shall include] A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

The purpose of the risk assessment process is to identify and profile relevant hazards and assess the exposure to lives, property, and infrastructure within the planning area. Mercer County and participating jurisdictions and school districts developed a risk assessment update to reduce future losses from hazard events to the County and its communities and school districts.

The goal of the risk assessment is to estimate the potential loss in the planning area, including loss of life, personal injury, property damage, and economic loss from a hazard event. The risk assessment process allows communities and school/special districts in the planning area to better understand their potential risk from the identified hazards. It will provide a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

This chapter is divided into four main parts:

- **Section 3.1 Hazard Identification** identifies the hazards that threaten the planning area and provides a factual basis for elimination of hazards from further consideration;
- **Section 3.2 Assets at Risk** provides the planning area's total exposure to natural hazards, considering critical facilities and other community assets at risk;
- **Section 3.3 Land Use and Development** discusses development that has occurred since the last plan update and any increased or decreased risk that resulted. This section also discusses areas of planned future development and any implications on risk/vulnerability;
- **Section 3.4 Hazard Profiles and Vulnerability Analysis** provides more detailed information about the hazards impacting the planning area. For each hazard, there are three sections:
    - **Hazard Profile** provides a general description and discusses the threat to the planning area, the geographic location at risk, potential Strength/Magnitude/Extent, previous occurrences of hazard events, probability of future occurrence, risk summary by jurisdiction, impact of future development on the risk, and changing future conditions considerations.
    - **Vulnerability Assessment** further defines and quantifies populations, buildings, critical facilities, and other community/school or special district assets at risk to natural hazards.
    - **Problem Statement** briefly summarizes the problem and develops possible solutions.

3.1 Hazard Identification

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the type…of all natural hazards that can affect the jurisdiction.

This update of the Mercer County Multi-Jurisdictional Natural Hazard Mitigation Plan only addresses natural hazards. Human-caused and technological hazards are beyond the scope of the plan and have therefore been excluded. The risk assessment for Mercer County addresses individual jurisdictions' risks only when there is a notable difference in the impact relative to the entire county.

3.1.1 Review of Existing Mitigation Plans

In Missouri, local hazard mitigation plans typically only contain natural hazards as required by federal regulations. Table 3.1 below compares the hazards covered by this updated plan with the latest update to the state plan as well as Mercer County's previous plan. Included in the previous plan were several man-made disasters. The planning committee determined that these would be left out, since they are not required. Instead, they determined that the focus of the plan would be fulfilling the requirements and focusing the efforts of the committee on the necessary portions of the plan. There were also changes to the way the disasters were titled to further align with the Missouri Plan.

Table 3.1. Comparison of Existing Mitigation Plans

2024 Mercer County Update Natural Hazards	2018 Mercer County Plan Natural Hazards	2023 Missouri State Plan Natural Hazards
Natural Flood-Related Hazards		
Flooding	Flooding	Flooding
Levee Failure (not included)	Levee Failure (not included)	Levee Failure
Dam Failure	Dam Failure	Dam Failure
Natural Geologic Hazards		
Earthquake	Earthquake	Earthquake
Land Subsidence/Sinkholes (not included)	Land Subsidence/Sinkholes (not included)	Land Subsidence/Sinkholes
Natural Meteorological Hazards		
Drought	Drought	Drought
Extreme Temperature	Extreme Heat	Extreme Temperature
Severe Thunderstorms	Thunderstorm/High Winds/Lightning/Hail	Severe Thunderstorms
Severe Winter Weather	Severe Winter Weather	Severe Winter Weather

Tornadoes	Tornadoes	Tornadoes
Natural Other Hazard		
Wildfire	Wildfire	Wildfire
Human-Caused/Technological Hazards		
Not included	Civil-Disorder	Civil-Disorder
Not included	Cyber Disruption	Cyber Disruption
Not included	Public Health Emergencies/ Environmental Issues	Environmental Health Emergencies
Not included	Not Included	Fires (Urban/Structural)
Not included	Hazardous Materials Release	Hazardous Materials
Not included	Mass Transportation Accident	Mass Transportation Accidents
Not included	Not Included	Nuclear Power Plants
Not included	Public Health Emergencies/ Environmental Issues	Public Health Emergencies
Not included	Special Events	Special Events
Not included	Terrorism, Attack: Nuclear/ Conventional/Chemical/Biological	Terrorism
Not included	Utility Disruption/Failure	Utilities (Interruptions and System Failures)
Not included	Electromagnetic Pulse	Not Included

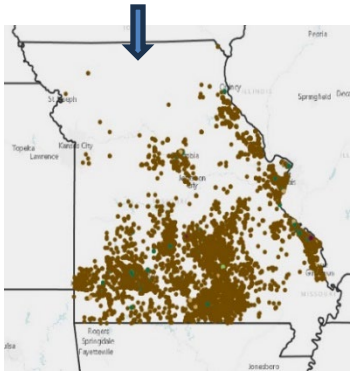
The current update will also reflect the new hazard classifications that are being used in the Missouri Plan. The Extreme Heat Category has now been renamed Extreme Temperatures which now includes severe cold events as well as extreme heat, while the Severe Winter Weather: Extreme Cold/ Ice Storm/ Heavy Snowfall has been renamed Severe Winter Weather.

Hazards Excluded and Why

Landslides and land subsidence/sinkholes, according to the USGS website, are not likely to occur in Mercer County due to the type of soil and substructure in Northern Missouri. A map composed with data from Mo DNR highlights this point. (picture below)

Fires: Urban/Structural were not included in the Mercer County Plan. The rural nature of the County led to the decision to exclude this type of hazard.

Coastal Storms – Hurricanes and Tsunamis were excluded, for obvious reasons.



Geothermal Activity is not present in or near the county and was therefore excluded.

Levees were excluded because there are no major regulated levee systems in Mercer County and virtually no available data on unregulated levees. The only levees in Mercer County are farm levees, and even if they were breached, the damage to the planning area would be minimal.

Nuclear facilities were not considered, as the closest nuclear facilities were in excess of 50 miles, which per the 2018 update of the State Hazard Mitigation Plan is the radius of potential contamination hazard for water and soil in the event of a catastrophic incident.

3.1.2 Review Disaster Declaration History

Federal and/or state declarations may be granted when the severity and magnitude of an event surpasses the ability of the local government to respond and recover. Disaster assistance is supplemental and sequential. When the local government's capacity has been surpassed, a state disaster declaration may be issued, allowing for the provision of state assistance. If the disaster is so severe that both the local and state government's capacities are exceeded, a federal emergency or disaster declaration may be issued allowing for the provision of federal assistance.

Missouri State of Emergencies are Executive Orders (E.O.) signed by the Governor. For disasters, a State of Emergency could lead to a Federal Disaster Declaration. Since the last plan update, no non-federally declared events resulted in a significant event impacting the planning area.

FEMA also issues emergency declarations, which are more limited in scope and do not include the long-term federal recovery programs of major disaster declarations. Determinations for declaration type are based on scale and type of damage and institutions or industrial sectors affected.

Table 3.2 lists the federal FEMA disaster declarations that included the planning area from 1965 to the present. In March of 2020, EM-3482 and DR-4490 were issued for the Covid-19 Pandemic.

Table 3.2. FEMA Disaster Declarations that included Mercer County, Missouri, 1965-Present

Disaster Number	Description	Declaration Date Incident Period	Individual Assistance (IA) Public Assistance (PA)
372	Heavy Rains, Tornadoes, & Flooding	April 19, 1973 April 19, 1973	IA & PA
407	Severe Storms & Flooding	November 1, 1993 November 1, 1993	IA & PA
995	Missouri Flooding, Severe Storm	July 9, 1993 June 10, 1993-October 25, 1993	IA & PA
1054	Severe Storms, Tornadoes, Hail, Flooding	June 2, 1995 May 13, 1995-June 23, 1995	IA & PA
1412	Severe Storms, Tornadoes, Flooding	May 6, 2002 April 24, 2002-June 10, 2002	PA
1524	Severe Storms, Tornadoes, Flooding	June 11, 2004 May 18, 2004-May 31, 2004	IA
1708	Severe Storms, Flooding	June 11, 2007 May 5, 2007-May 18, 2007	IA & PA

1736	Missouri Severe Winter Storms	December 27, 2007 December 8, 2007-December 15, 2007	PA
1773	Severe Storms, Flooding	June 25, 2008 June 1, 2008-August 13, 2008	IA & PA
1934	Severe Storms, Flooding, Tornadoes	August 17, 2010 June 12, 2010-July 31, 2010	PA
3017	Missouri Drought	September 24, 1976 September 24, 1976	
3232	Missouri Hurricane Katrina Evacuation	September 10, 2005 August 29, 2005-October 1, 2005	PA
3281	Missouri Severe Winter Storms	December 12, 2007 December 8, 2007-December 15, 2007	PA
3303	Missouri Severe Winter Storm	January 30, 2009 January 26, 2009-January 28, 2009	PA
3317	Severe Winter Storm	February 3, 2011 January 31, 2011- February 5, 2011	
3482	Biological Covid-19	March 13, 2020 January 20, 2020-May 11, 2023	Funeral Assistance
4200	Severe Storms, Tornadoes, Straight-Line Wind, Flooding	October 31, 2014 September 9, 2014- September 11, 2014	PA
4451	Severe Storms, Tornadoes, Flooding	July 9, 2019 April 29, 2019- July 6, 2019	
4490	Biological Covid-19 Pandemic	March 26, 2020 January 20, 2020-May 11, 2023	Funeral Assistance

Source: Federal Emergency Management Agency, https://www.fema.gov/data-visualization-summary-disaster-declarations-and-grants

3.1.3 Research Additional Sources

List the additional sources of data on locations and past impacts of hazards in the planning area:

- Missouri Hazard Mitigation Plans (2013, 2018, and 2023)
- Previously approved Mercer County Hazard Mitigation Plan (2019)
- Federal Emergency Management Agency (FEMA)
- Missouri Department of Natural Resources
- National Drought Mitigation Center Drought Reporter
- US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics
- National Agricultural Statistics Service (Agriculture production/losses)
- Data Collection Questionnaires completed by each jurisdiction.
- State of Missouri GIS data
- Environmental Protection Agency
- Flood Insurance Administration
- Hazards US (HAZUS)
- Missouri Department of Transportation
- Missouri Division of Fire Marshal Safety
- Missouri Public Service Commission

- National Fire Incident Reporting System (NFIRS)
- National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI);
- County and local Comprehensive Plans to the extent available
- County Emergency Management
- County Flood Insurance Rate Map, FEMA
- Flood Insurance Study, FEMA
- SILVIS Lab, Department of Forest Ecology and Management, University of Wisconsin
- U.S. Army Corps of Engineers
- U.S. Department of Transportation
- United States Geological Survey (USGS)
- Various articles and publications available on the internet will show citations for the sources in the body of the plan.

Note that the only centralized source of data for many of the weather-related hazards is the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI). Although it is usually the best and most current source, there are limitations to the data which should be noted. The NCEI documents the occurrence of storms and other significant weather phenomena having sufficient intensity to cause loss of life, injuries, significant property damage, and/or disruption to commerce. In addition, it is a partial record of other significant meteorological events, such as record maximum or minimum temperatures or precipitation that occurs in connection with another event. Some information appearing in the NCEI may be provided by or gathered from sources outside the National Weather Service (NWS), such as the media, law enforcement and/or other government agencies, private companies, individuals, etc. An effort is made to use the best available information but because of time and resource constraints, information from these sources may be unverified by the NWS. Those using information from NCEI should be cautious as the NWS does not guarantee the accuracy or validity of the information.

The NCEI damage amounts are estimates received from a variety of sources, including those listed above in the Data Sources section. For damage amounts, the NWS makes a best guess using all available data at the time of the publication. Property and crop damage figures should be considered as a broad estimate. Damages reported are in dollar values as they existed at the time of the storm event. They do not represent current dollar values.

The database currently contains data from January 1950 to March 2014, as entered by the NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The following timelines show the different time spans for each period of unique data collection and processing procedures.

1. Tornado: From 1950 through 1954, only tornado events were recorded.
2. Tornado, Thunderstorm Wind and Hail: From 1955 through 1992, only tornado, thunderstorm wind and hail events were keyed from the paper publications into digital data. From 1993 to 1995, only tornadoes, thunderstorms, wind, and hail events have been extracted from the Unformatted Text Files.
3. All Event Types (48 from Directive 10-1605): From 1996 to present, 48 event types are recorded as defined in NWS Directive 10-1605.

Note that injuries and deaths caused by a storm event are reported on an area-wide basis. When reviewing a table resulting from an NCEI search by county, the death or injury listed in connection with that county search did not necessarily occur in that county.

3.1.4 Hazards Identified

The hazards that significantly impact the planning area and that were chosen for further analysis are listed in Table 3.3 in alphabetical order. Not all hazards impact every jurisdiction. The following table utilizes the following symbol for hazard analysis. The symbol “x” indicates that the jurisdiction is impacted by the hazard, and a “- “indicates that the hazard in question is not applicable to that jurisdiction. However, there are some hazards that affect the entire planning area.

Natural hazards in North Missouri vary dramatically in regard to intensity, frequency, and the scope of impact. Some hazards, like earthquakes, happen without warning and do not provide any opportunity to warn the public. Other hazards, such as tornadoes, flooding, or severe winter storms provide a period of warning which allows for public preparation prior to their occurrence. The following natural hazards have been identified as potential threats for Mercer County:

- Dam Failure
- Drought
- Earthquakes
- Extreme Temperatures (Hot & Cold)
- Flooding (River and Flash)
- Severe Winter Weather
- Severe Thunderstorms
- Tornadoes
- Wildfire

Several resources were investigated for the accumulated data relating to natural hazards. The primary sources used for this data include the Federal Emergency Management Agency (FEMA), the Missouri State Emergency Management Agency (SEMA), National Centers for Environmental Information (NCEI), and National Oceanic and Atmospheric Administration (NOAA) websites and databases. United States Geological Survey (USGS) and the Center for Earthquake Research and Information (CERI) were the primary sources for earthquake information. Other sources included county officials, existing county, regional and state plans; reports on the floods of 1993, 1995, 2007, and 2008. This plan utilizes compiled data through December 2017 except where noted.

Table 3.3. Hazards Identified for Each Jurisdiction

Jurisdiction	Dam Failure	Drought	Earthquake	Extreme Temperatures	Flooding (River and Flash)	Severe Winter Weather	Severe Thunderstorms	Tornado	Wildfire			
Mercer County	X	X	X	X	X	X	X	X	x			
Princeton		X	X	X	X	X	X	X	X			
Mercer		X	X	X		X	X	X	X			
Schools and Special Districts												
Princeton R-V School District			x	x		x	x	x	x			
North Mercer R-III School District			x	x		x	x	x	x			

3.1.5 Multi-Jurisdictional Risk Assessment

Each hazard has a profile in which the risks are assessed on a planning area wide basis. Some hazards, like flooding, vary in risk across the planning area. Discussions of these variations are included in each profile as they apply.

The planning area is fairly uniform in terms of climate, topography, and building construction characteristics. Cities and towns have greater population and structure density and therefore have greater vulnerability to weather-related hazards. There is little variation in development trends across the planning area, as the Mercer County area as a whole and each of its communities has lost population over the last five years and Smithfield Farms, one of the area's largest employers has recently eliminated more than 92 jobs. In addition to that, there have been no new industries moving into the area to make up for these lost jobs. The county is overwhelmingly rural; with the primary vulnerable assets being crops and livestock. These matters are discussed in greater detail in the vulnerability sections of each hazard.

The structure of this multi-jurisdictional plan has been developed to update the previous plan. Each hazard has a profile in which the risks are assessed on an area wide basis of the planning area. Some hazards vary in risk across the planning area. The discussions of the variations have been included in each profile. The hazards that vary across the planning area in terms of risk include dam failure, flash flood, river flood, and grass or wildland fire. The differences in risks within each jurisdiction have been detailed in each hazard profile under a separate heading. The unincorporated areas of the County have experienced limited damage from winter storms, tornadoes, thunderstorms, extreme temperatures, drought, dam failure, and wildfire.

3.2 Assets at Risk

This section assesses the planning area population, structures, critical facilities and infrastructure, and other important assets that may be at risk from hazards. All structures within the planning area are visible on high resolution imagery and have been analyzed and classified. This offers the ability to display those structures by their type and purpose, which makes identifying critical infrastructure much easier. This was done on the last hazard mitigation plan for Mercer County. There have been no significant changes in the planning area since the last plan.

3.2.1 Total Exposure of Population and Structures

This section assesses the planning area population, structures, critical facilities and infrastructure, and other important assets that may be at risk from hazards. If there have been any changes in the planning area since the previously approved plan was adopted, these changes are summarized, and any new risks assessed.

Unincorporated County and Incorporated Cities

In the following three tables, population data is based on 2022 Census Bureau data. Building counts and building exposure values are based on parcel data developed by the State of Missouri Geographic Information Systems (GIS) database. This data, organized by County, is available on Google Drive through the link provided on the previous page. Contents exposure values were calculated by factoring a multiplier to the building exposure values based on usage type. The multipliers were derived from the HAZUS and are defined below in **Table 3.4**. Land values have been purposely excluded from consideration because land remains following disasters, and subsequent market devaluations are frequently short term and difficult to quantify. Another reason for excluding land values is that state and federal disaster assistance programs generally do not address loss of land (other than crop insurance). It should be noted that the total valuation of

buildings is based on county assessors' data which may not be current. In addition, government-owned properties are usually taxed differently or not at all, and so may not be an accurate representation of true value. Note that public school district assets and special districts assets are included in the total exposure tables assets by community and county.

Table 3.4 shows the total population, building count, estimated value of buildings, estimated value of contents and estimated total exposure to parcels for the unincorporated county and each incorporated city. For multi-county communities, the population and building data may include data on assets located outside the planning area. **Table 3.5** that follows provides the building value exposures for the county and each city in the planning area broken down by usage type. Finally, **Table 3.6** provides the building count total for the county and each city in the planning area broken out by building usage types (residential, commercial, industrial, and agricultural).

Table 3.4. Maximum Population and Building Exposure by Jurisdiction

Jurisdiction	2022 Annual Population Estimate	Building Count	Building Exposure ($)	Contents Exposure ($)	Total Exposure ($)
City of Princeton	1007	564	$71,313	$35,508	$106,821
City of Mercer	263	216	$27,064	$14,207	$41,270
Unincorporated Mercer County	3437	5993	$156,632	$80,831	$237,463
Totals	3538	6818	$259,255	$133,787	$393,042

Source: U.S. Bureau of the Census, Annual population estimates/ 5-Year American Community Survey 2022; Building Count and Building Exposure, Missouri GIS Database from SEMA Mitigation Management; Contents Exposure derived by applying multiplier to Building Exposure based on Hazus MH 2.1 standard contents multipliers per usage type as follows: Residential (50%), Commercial (100%), Industrial (150%), Agricultural (100%). For the purposes of these calculations, government, school, and utility were calculated at the commercial contents rate.

Table 3.5. Building Values/Exposure by Usage Type

Jurisdiction	Residential	Commercial	Industrial	Agricultural	Total
City of Princeton	$57,100	$6,223	$44	$22	$71,313
City of Mercer	$20,859	$3,442	$0	$9	$27,064
Unincorporated Mercer County	$141,353	$6,885	$1,659	$5,954	$156,632
Totals	$221,293	$18,801	$1,702	$5,999	$259,255

Source: Missouri GIS Database, SEMA Mitigation Management Section

Table 3.6. Building Counts by Usage Type

Jurisdiction	Residential Counts	Commercial Counts	Industrial Counts	Agricultural Counts	Total
City of Princeton	490	47	1	17	564
City of Mercer	179	26	0	7	216
Unincorporated Mercer County	1213	52	38	4683	5993
Totals	1899	142	39	4718	6818

Source: Missouri GIS Database, SEMA Mitigation Management Section; Public School Districts and Special Districts

Even though schools and special districts' total assets are included in the tables above, additional

discussion is needed, based on the data that is available from the districts' completion of the Data Collection Questionnaire and district-maintained websites. The number of enrolled students at the participating public-school districts is provided in **Table 3.7** below. Additional information includes the number of buildings, building values (building exposure) and contents value (contents exposure). These numbers will represent the total enrollment and building count for the public-school districts regardless of the county in which they are located.

Table 3.7. Population and Building Exposure by Jurisdiction-Public School Districts

Public School District	Enrollment	Building Count	Building Exposure ($)	Contents Exposure ($)	Total Exposure ($)
Princeton R-V	339	6	$28,116,378	$22,966,307	$51,082,685
North Mercer R-III	146	5	$11,678,267	$1,677,153	$13,355,267
Total	458	11	$39,794,645	$24,643,460	$64,437,952

Source: http://mcds.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx., select the file for the most recent year called "2023 Building Enrollment PK-12", filter the spreadsheet by selecting only the public school districts in the planning area. The Building Exposure, Contents Exposure, and Total Exposure amounts come from the completed Data Collection Questionnaires from Public School Districts. In general, the school districts obtain this information from their insurance coverage amounts.

3.2.2 Critical and Essential Facilities and Infrastructure

This section will include information from the Data Collection Questionnaire and other sources concerning the vulnerability of participating jurisdictions' critical, essential, high potential loss, and transportation/lifeline facilities to identified hazards. Definitions of each of these types of facilities are provided below.

- Critical Facility: Those facilities that are essential in providing utility or direction either during the response to an emergency or during the recovery operation.
- Essential Facility: Those facilities that if damaged, would have devastating impacts on disaster response and/or recovery.
- High Potential Loss Facilities: Those facilities that would have a high loss or impact on the community.
- Transportation and lifeline facilities: Those facilities and infrastructure critical to transportation, communications, and necessary utilities.

Table 3.8. includes a summary of the inventory of critical and essential facilities and infrastructure in the planning area. The list was compiled from the Data Collection Questionnaire as well as the following sources: The 2019 Mercer County HMP.

Table 3.8. Critical and Essential Facilities and Infrastructure

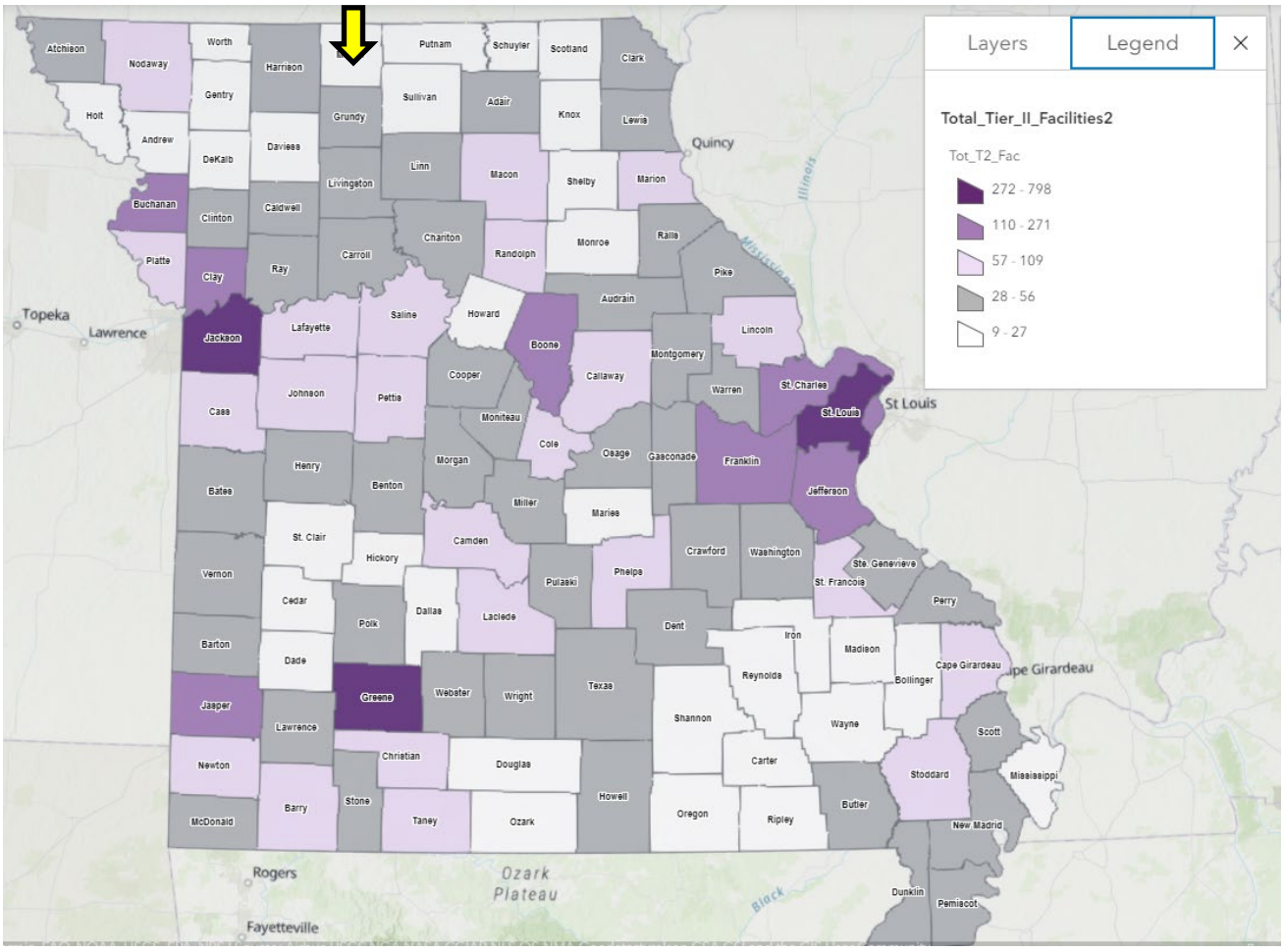
Name of Asset	Location
Critical Facilities	
County Courthouse/Sheriff	802 E. Main St. Princeton, MO 64673
Fire Station	22832 Main St. Princeton, MO 64673
County Fire Station	201 N Fullerton St. Princeton, MO 64673
"Health Care"	400 N Fullerton St. Princeton, MO 64673
County Ambulance	201 W Hickland St. Princeton, MO 64673
High Potential Loss Facilities	

Pearls II	611 N College Princeton, MO 64673
NM Electric Power Stations	13960 HWY BB 14678 Hwy Z 20709 US Hwy 136 14395 US Hwy 136
Transportation and Lifelines	
Water Treatment Plant	401 N Fullerton Rd. Princeton, MO 64673
GRM Network Central Communications Office	201 Chestnut St. Princeton, MO 64673
GRM Network Co	22796 Cherry St. Princeton, MO 64673
MFA Oil	18530 Fedora Loop Princeton, MO 64673
GRM Network Business Office	1001 Kentucky, Princeton, MO 64673
Smithfield Hog Division	17999 US Hwy 65 Princeton, MO 64673

Source: Mercer County Hazard Mitigation Plan 2019

Figure 3.1. Map of Tier II Facilities in Mercer County

Mercer County in the following map is indicated with the yellow area. This map shows the number of Tier II facilities in Mercer County. While the participants of the Mercer County Hazard Mitigation plan did not identify these facilities as a specific hazard, it was included in the plan for informational purposes.



Source: Missouri Hazard Mitigation Viewer

Table 3.1. Tier II Facilities in Mercer County

Facility Name	Facility Location	Facility Type
ANR Pipeline Company	Mercer County	Pipeline
GRM Princeton	200 Chestnut St., Princeton, MO	Other
Mercer Quarry	Highway M, Mercer, MO	Other
Midwest Propane Gas	601 Stewart St., Princeton, MO	Retail Petroleum
Princeton BP-PC	18530 Fedora Loop, Princeton, MO	Bulk Petroleum
Princeton LP	1404 E. Main St, Princeton, MO	Bulk Petroleum
Princeton Quarry	23500 Harmonica Rd., Princeton, MO	Other

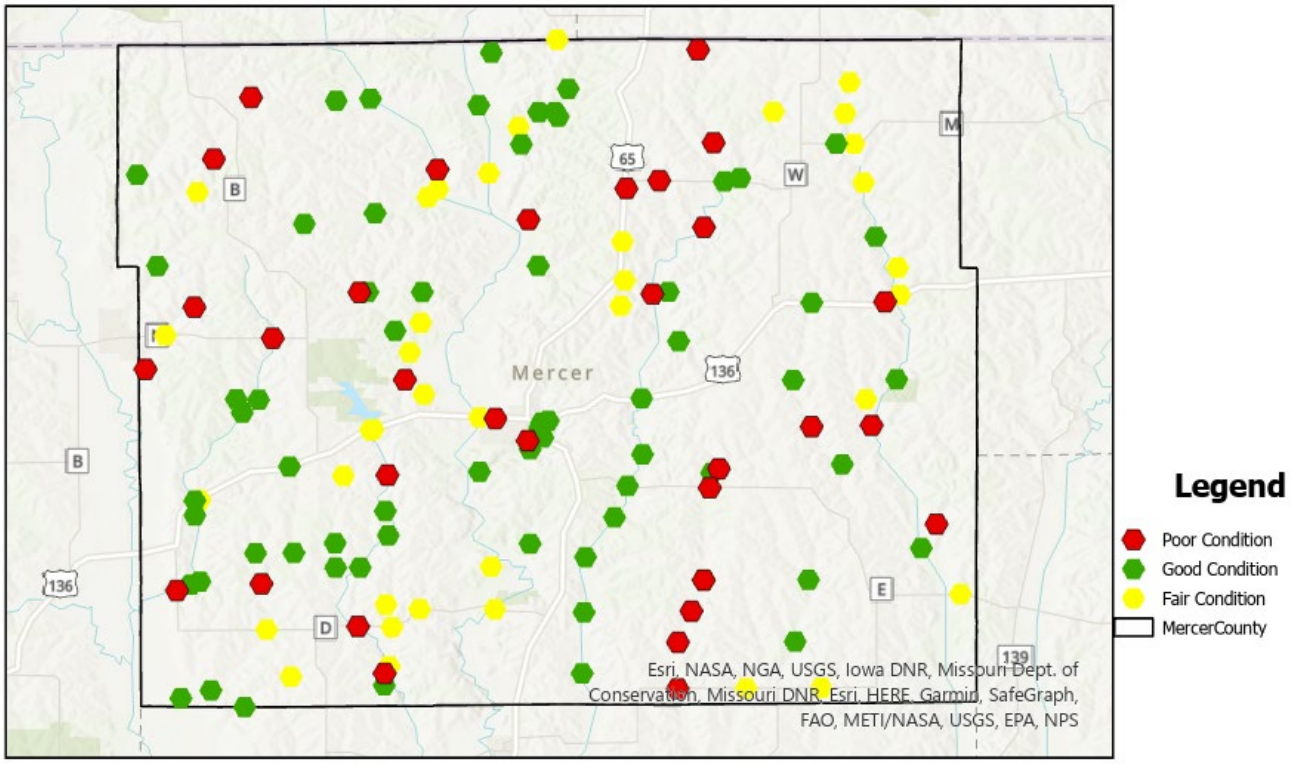
Source: LEPC Contact in Mercer County Missouri (Cheston Easter)

Table 3.9. Inventory of Critical/Essential Facilities and Infrastructure by Jurisdiction

Jurisdiction	Airport Facility	Bus Facility	Childcare Facility	Communications Tower	Electric Power Facility	Emergency Operations	Fire Service	Government	Housing	Shelters	Highway Bridge	Hospital/Health Care	Military	Natural Gas Facility	Nursing Homes	Police Station	Potable Water Facility	Rail	Sanitary Pump Stations	School Facilities	Stormwater Pump Stations	Tier II Chemical Facility	Wastewater Facility	TOTAL
Mercer County				X	X	X	X	X	X		X	X	x			X	X	X				X		13
City of Mercer			X	X		X	X	X	X	X	X						X	X	X	X		X	X	14
City of Princeton		X	X	X		X	X	X	X	X	X		x		X		X	X	X	X		X	X	18
Totals	0	1	2	3	1	3	3	3	3	2	3	1	3	0	1	1	3	3	2	2	0	3	2	45

Source: Missouri 2023 State Hazard Mitigation Plan and Hazard Mitigation Viewer; Data Collection Questionnaires; Hazus, etc.

Figure 3.1. Mercer County Bridges



The figure above shows all the bridges located within the planning area. This map was obtained by using data from the National Bridge Inventory and assigned a color to correspond with the condition of the bridge. The bridge inventory is further broken down in the table below. (Table 3.10).

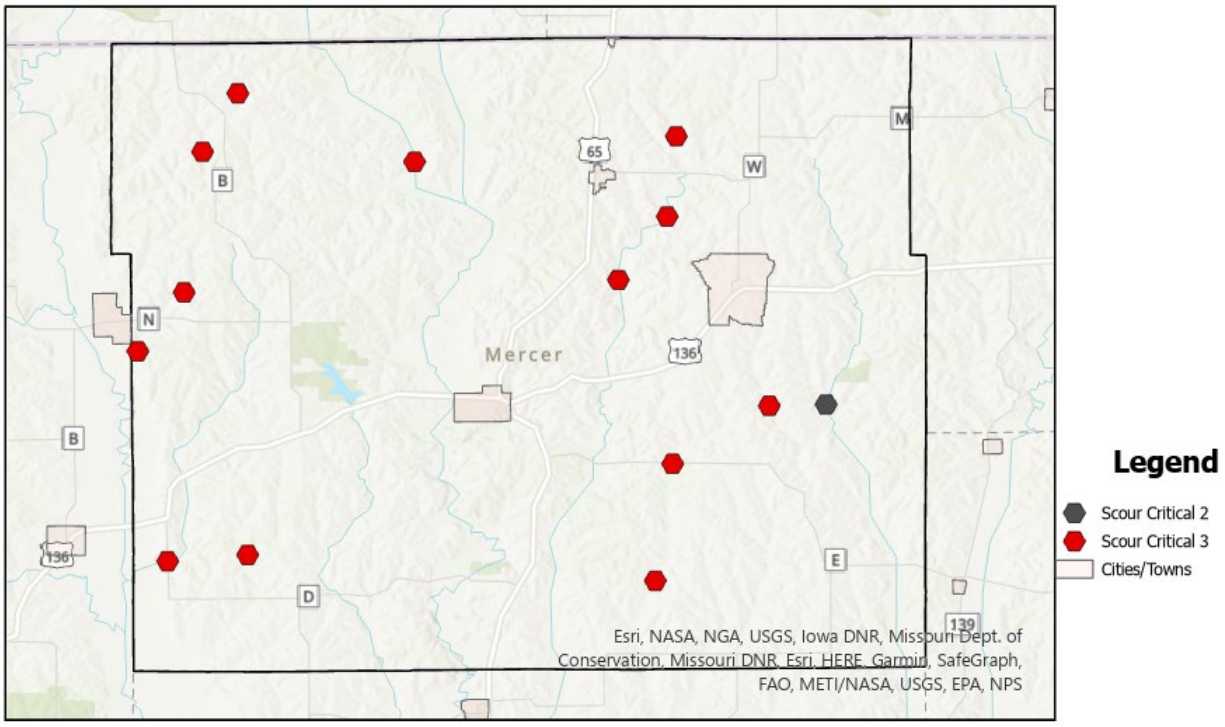
Bridges

The term “scour critical” refers to one of the database elements in the National Bridge Inventory. This element is quantified using a “scour index”, which is a number indicating the vulnerability of a bridge to scour during a flood. Bridges with a scour index between 1 and 3 are considered “scour critical”, or a bridge with a foundation determined to be unstable for the observed or evaluated scour condition.

Table 3.10. Mercer County Bridges

County	All Bridges	Good Condition	Fair Condition	Poor Condition	Scour Critical
Mercer County	137	66	38	33	14

Figure 3.2. Mercer County Structurally Deficient Bridges



The term "scour critical" refers to one of the database elements in the National Bridge Inventory. This element is quantified using a "scour index", which is a number indicating the vulnerability of a bridge to scour during a flood. Bridges with a scour index between 1 and 3 are considered "scour critical", or a bridge with a foundation determined to be unstable for the observed or evaluated to be in scour condition.

As you can see from the previous table, while there are scour critical bridges in Mercer County, a total of 13 scour critical 3 and 1 scour critical 2, none of the bridges fall within city limits of any municipality in Mercer County.

3.2.3 Other Assets

Assessing the vulnerability of the planning area to disaster also requires data on the natural, historic, cultural, and economic assets of the area. This information is important for many reasons.

- These types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- Knowing about these resources in advance allows for consideration immediately following a hazard event, which is when the potential for damage is higher.

- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- The presence of natural resources can reduce the impacts of future natural hazards, such as wetlands and riparian habitats which help absorb floodwaters.
- Losses to economic assets like these (e.g., major employers or primary economic sectors) could have severe impacts on a community and its ability to recover from disaster.

Table 3.2. Threatened and Endangered Species in Mercer County

Common Name	Scientific Name	Status
Mammals		
Gray Bat	Myotis grisescens	Endangered
Indiana Bat	Myotis sodalist	Endangered
Northern Long-eared Bat	Myotis septentrionalis	Endangered
Tricolored Bat	Perimyotis subflavus	Proposed Endangered
Fishes		
Topeka Shiner	Notropis topeka (=tristis)	Endangered
Insects		
Monarch Butterfly	Danaus plexippus	Candidate
Eastern Prairie Fringed Orchid	Platanthera Leucophaea	Threatened
Flowering Plants		
Mead's Milkweed	Asclepias meadii	Threatened
Western Prairie Fringed Orchid	Platanthera praeclara	Threatened
Critical Habitats		
None		

Source: U.S. Fish and Wildlife Service, http://www.fws.gov/midwest/Endangered/lists/missouri-cty.html; see also https://ecos.fws.gov/ipac/ and select 'Get Started" > Step '1 Find Location', choose select by state or county and enter the county name, selecting the appropriate community > follow remaining on-screen instructions.

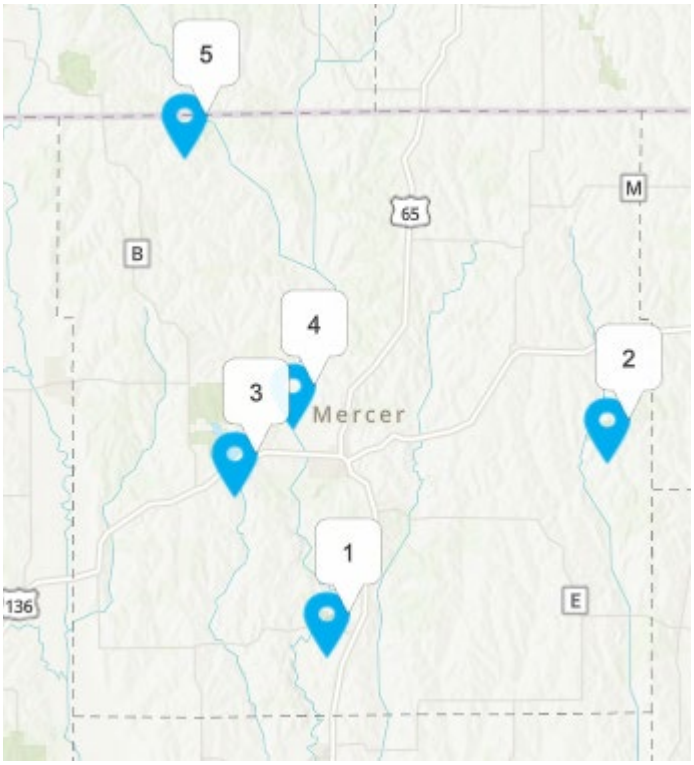
Natural Resources: The Missouri Department of Conservation (MDC) provides a database of lands the MDC owns, leases, or manages for public use. **Table 3.9** contains the names and locations of nature and conservation areas in the planning area. There are no state or federal parks in Mercer County. Following the table is a map of Mercer County with the locations of the conservation areas.

Table 3.3. Conservation Areas in Mercer County

Park / Conservation Area	Address	City
McClure Conservation Area	8 Miles South of Princeton	Princeton
Russell B., Hazel S. and Arnold VanDyke Conservation Area	10 Miles East of Princeton	Princeton
Lake Paho Conservation Area	5 Miles West of Princeton	Princeton
Chloe Lowry Marsh Natural Area	3 Miles Northwest of Princeton	Princeton
Peter and John Bagley Woods Conservation Area	10 Miles North of Mercer	Mercer

Source: http://mdc7.mdc.mo.gov/applications/moatlas/AreaList.aspx?txtUserID=guest&txtAreaNm=s

Figure 3.2. Map of Conservation Areas in Mercer County



1. McClure Conservation Areas
2. Russell B., Hazel S., and Arnold L. VanDyke Conservation Area
3. Lake Paho Conservation Area
4. Chloe Lowry Marsh Natural Area
5. Peter and John Bagley Woods Conservation Area

Historic Resources: The National Register of Historic Places is the official list of registered cultural resources worthy of preservation. It was authorized under the National Historic Preservation Act of 1966 as part of a national program. The purpose of the program is to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. The National Register is administered by the National Park Service under the Secretary of the Interior. Properties listed in the National Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. **Table 3.10** lists properties in Mercer County that are on the National Register of Historic Places.

Table 3.10. Mercer County Properties on the National Register of Historic Places

Property	Address	City	Date Listed
Leo Ellis Post #22, American Legion	804 Grant St.	Princeton	4/26/1996
Casteel, Herbert and Corah Brantley House	Address withheld	Princeton	7/14/1995

Source: Missouri Department of Natural Resources – Missouri National Register Listings by County; catalog.archives.gov/id/63819742


Leo Ellis Post #22, American Legion

Economic Resources: Major non-government employers in Mercer County shown on **(Table 3.11).**

Table 3.11. Major Non-Government Employers in Mercer County

Employer Name	Main Locations	Product or Service	Employees
Grand River Mutual	1001 Kentucky St. Princeton, MO	Telecommunications/ISP	50
Smithfield Foods	17999 US HWY 65 Princeton, MO	Hog Confinement (CAFO)	195

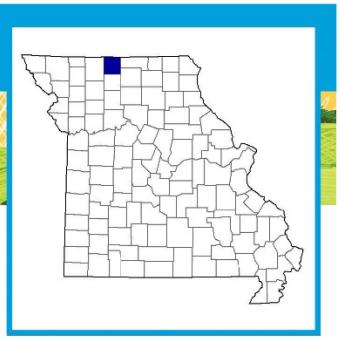
Source: Data Collection Questionnaires; local Economic Development Commissions

Mercer County is mostly rural, and overwhelmingly agricultural. The largest employer in the area is Smithfield Foods, and the region is largely reliant upon this company. Additionally, there are several farms throughout the region and many people make a living through agricultural means. See Figure 3.2 and 3.3 below for the latest census of agriculture of Mercer County which was taken in 2017.

Figure 3.2. Census of Agriculture Information for Mercer County-2017

2017 CENSUS OF AGRICULTURE *County Profile*





Mercer County
Missouri

Total and Per Farm Overview, 2017 and change since 2012

	2017	% change since 2012
Number of farms	493	-13
Land in farms (acres)	193,736	-15
Average size of farm (acres)	393	-2
Total	($)	
Market value of products sold	82,207,000	-20
Government payments	3,029,000	-8
Farm-related income	3,973,000	-19
Total farm production expenses	69,281,000	-29
Net cash farm income	19,928,000	+56
Per farm average	($)	
Market value of products sold	166,749	-8
Government payments (average per farm receiving)	10,375	+20
Farm-related income	15,703	-14
Total farm production expenses	140,530	-19
Net cash farm income	40,422	+79

1 Percent of state agriculture sales

Share of Sales by Type (%)

Crops	28
Livestock, poultry, and products	72

Land in Farms by Use (%) [a]

Cropland	51
Pastureland	28
Woodland	14
Other	6

Acres irrigated: 3
(Z)% of land in farms

Land Use Practices (% of farms)

No till	16
Reduced till	13
Intensive till	8
Cover crop	5

Farms by Value of Sales

	Number	Percent of Total [a]
Less than $2,500	184	37
$2,500 to $4,999	23	5
$5,000 to $9,999	37	8
$10,000 to $24,999	71	14
$25,000 to $49,999	58	12
$50,000 to $99,999	52	11
$100,000 or more	68	14

Farms by Size

	Number	Percent of Total [a]
1 to 9 acres	4	1
10 to 49 acres	75	15
50 to 179 acres	174	35
180 to 499 acres	152	31
500 to 999 acres	47	10
1,000 + acres	41	8

USDA **United States Department of Agriculture**
National Agricultural Statistics Service
www.nass.usda.gov/AgCensus

Figure 3.3. Census of Agriculture Information for Mercer County-2017 (2nd page)

Mercer County
Missouri, 2017
Page 2

2017 CENSUS OF AGRICULTURE *County Profile*

Market Value of Agricultural Products Sold

	Sales ($1,000)	Rank in State [b]	Counties Producing Item	Rank in U.S. [b]	Counties Producing Item
Total	**82,207**	**55**	**114**	**1,333**	**3,077**
Crops	**23,369**	**65**	**114**	**1,556**	**3,073**
Grains, oilseeds, dry beans, dry peas	21,811	63	112	1,108	2,916
Tobacco	-	-	4	-	323
Cotton and cottonseed	-	-	5	-	647
Vegetables, melons, potatoes, sweet potatoes	(D)	60	113	1,714	2,821
Fruits, tree nuts, berries	(D)	96	111	(D)	2,748
Nursery, greenhouse, floriculture, sod	(D)	97	108	(D)	2,601
Cultivated Christmas trees, short rotation woody crops	-	-	37	-	1,384
Other crops and hay	1,491	64	114	1,517	3,040
Livestock, poultry, and products	**58,838**	**24**	**114**	**844**	**3,073**
Poultry and eggs	23	82	112	1,529	3,007
Cattle and calves	(D)	(D)	113	(D)	3,055
Milk from cows	(D)	65	97	(D)	1,892
Hogs and pigs	(D)	9	111	(D)	2,856
Sheep, goats, wool, mohair, milk	195	35	111	796	2,984
Horses, ponies, mules, burros, donkeys	36	81	113	1,962	2,970
Aquaculture	-	-	43	-	1,251
Other animals and animal products	(D)	(D)	111	(D)	2,878

Total Producers [c] 841

Sex
Male 555
Female 286

Age
<35 51
35 – 64 477
65 and older 313

Race
American Indian/Alaska Native -
Asian 1
Black or African American -
Native Hawaiian/Pacific Islander 1
White 839
More than one race -

Other characteristics
Hispanic, Latino, Spanish origin 1
With military service 135
New and beginning farmers 173

Percent of farms that:

Have internet access **75**

Farm organically **(Z)**

Sell directly to consumers **1**

Hire farm labor **25**

Are family farms **94**

Top Crops in Acres [d]

Soybeans for beans	29,217
Forage (hay/haylage), all	22,244
Corn for grain	18,881
Wheat for grain, all	724
Corn for silage or greenchop	422

Livestock Inventory (Dec 31, 2017)

Broilers and other meat-type chickens	700
Cattle and calves	20,603
Goats	338
Hogs and pigs	(D)
Horses and ponies	226
Layers	643
Pullets	384
Sheep and lambs	499
Turkeys	-

See 2017 Census of Agriculture, U.S. Summary and State Data, for complete footnotes, explanations, definitions, commodity descriptions, and methodology.
[a] May not add to 100% due to rounding. [b] Among counties whose rank can be displayed. [c] Data collected for a maximum of four producers per farm. [d] Crop commodity names may be shortened; see full names at www.nass.usda.gov/go/cropnames.pdf. [e] Position below the line does not indicate rank.
(D) Withheld to avoid disclosing data for individual operations. (NA) Not available. (Z) Less than half of the unit shown. (-) Represents zero.

USDA is an equal opportunity provider, employer, and lender.

3.3 Land Use and Development

3.3.1 Development Since Previous Plan Update

Mercer County is the least populated county in the region, and one of the least populated counties in the state of Missouri. There has been no significant development in the last five years.

Table 3.4. County Population Growth, 2010-2023

Jurisdiction	Total Population 2010	Total Population 2023	2010-2023 # Change	2010-2023 % Change
Mercer County	3,785	3,538	-247	-6.525%
City of Princeton	1,166	1,007	-159	-13.63%
City of Mercer	318	263	-55	-17.3%

Source: U.S. Bureau of the Census, Decennial Census, Annual Population Estimates, 2021 American Community Survey 5-year Estimates; Population Statistics are for entire incorporated areas as reported by the Census bureau

Population decline is generally accompanied by a decrease in the number of housing units. See (**Table 3.5**) below. This table provides the change in numbers of housing units in the planning area from 2010 to 2023. As the table indicates, the number of housing units is declining as the population decline would suggest.

Table 3.5. Change in Housing Units, 2010-2023

Jurisdiction	Housing Units 2010	Housing Units 2023	2010-2023 # Change	2010-2023 % Change
Mercer County	2,144	1,931	-213	-9.93%
City of Princeton	634	546	-88	-13.88%
City of Mercer	237	145	-92	-3.88%

Source: U.S. Bureau of the Census, Decennial Census, 2021 American Community Survey 5-year Estimates; Population Statistics are for entire incorporated areas as reported by the U.S. Census Bureau

3.3.2 Future Land Use and Development

Mercer County

The population of Mercer County has been declining for at least the last 10 years. There has been little development in the County since the last Hazard Mitigation Plan was prepared. Due to a lack of development since the last Hazard Mitigation Plan update, there are no new risks or vulnerabilities to consider. Mercer County has experienced a population decline of 9.93% since 2010. No new development is expected to occur in known hazard areas, and no new facilities or infrastructure are planned for construction for the next five years.

City of Princeton, Missouri

The population of Princeton Missouri has been declining since the last hazard mitigation plan update, and there has been little to no development in the city since the last plan was written. The population of Princeton, MO has declined by 13.63% since 2010. There has been a new bank constructed on HWY 136 in the city of Princeton.

City of Mercer, Missouri

There have been no significant developments in the City of Mercer since the last version of the Hazard Mitigation Plan. Due to lack of development, there are no additional vulnerabilities or risks posed to this city. The population has declined by 3.88% since 2010. This lack of development

means that there are no new impacts or risks to consider since the last version of the Hazard Mitigation Plan.

Princeton R-V School District

The Princeton R-V School District has no current plans for construction, no plans for new bonds, but does have plans for minor facility improvements. The High School will receive new entry doors. There are tentative plans for new access control systems for all buildings. The Princeton R-V School District has seen a slight decline in enrollment over the years since the last Hazard Mitigation Plan, and employment has remained steady to a slight decline. Because there are no major projects planned to take place in the near future, there are no additional vulnerabilities to consider at this time.

North Mercer R-III

The North Mercer R-III School District has no current plans for construction or major facility improvements currently. There are tentative plans to build a new preschool since the existing preschool is located within a trailer on the school campus. The plan for a new preschool will be addressed in the possible mitigation actions within this plan but is still in the very early stages of planning, and at this time does not constitute an additional vulnerability. The enrollment of Mercer school has been declining within the last 10 years, they did have increased enrollment last year, however the overall trend is a decline in school enrollment. The staff requirements have remained steady since the last hazard mitigation plan. Due to the lack of changes expected to occur, there are no additional vulnerabilities to consider at this time.

3.4 Hazard Profiles, Vulnerability, and Problem Statements

Each hazard will be analyzed individually in a hazard profile. The profile will consist of a general hazard description, location, strength/magnitude/extent, previous events, future probability, a discussion of risk variations between jurisdictions, and how anticipated development could impact risk. At the end of each hazard profile will be a vulnerability assessment, followed by a summary problem statement.

Hazard Profiles

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the…location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

Each hazard identified in Section 3.1.4 will be profiled independently in this section in alphabetical order. The level of information presented in the profiles will vary by hazard based on the information available. With each update of this plan, new information will be incorporated to provide better evaluation and prioritization of the hazards that affect the planning area. Detailed profiles for each of the identified hazards include information categorized as follows:

- **Hazard Description:**

  This section consists of a general description of the hazard and the types of impacts it may have on a community or school/special district.

- **Geographic Location:**

  This section describes the geographic areas in the planning area that are affected by the hazard. Where available, maps will be utilized to indicate the specific locations of the planning area that are vulnerable to the subject hazard. For some hazards, the entire planning area is at

risk.

- **Strength/Magnitude/Extent:**

  This includes information about the strength, magnitude, and extent of a hazard. For some hazards, this is accomplished with description of a value on an established scientific scale or measurement system, such as an EF2 tornado on the Enhanced Fujita Scale. This section should also include information on the typical or expected strength/magnitude/extent of the hazard in the planning area. Strength, magnitude, and extent can also include the speed of onset and the duration of hazard events. Describing the strength/magnitude/extent of a hazard is not the same as describing its potential impacts on a community. Strength/magnitude/extent defines the characteristics of the hazard regardless of the people and property it affects.

- **Previous Occurrences:**

  This section includes available information on historic incidents and their impacts. Historic event records form a solid basis for probability calculations.

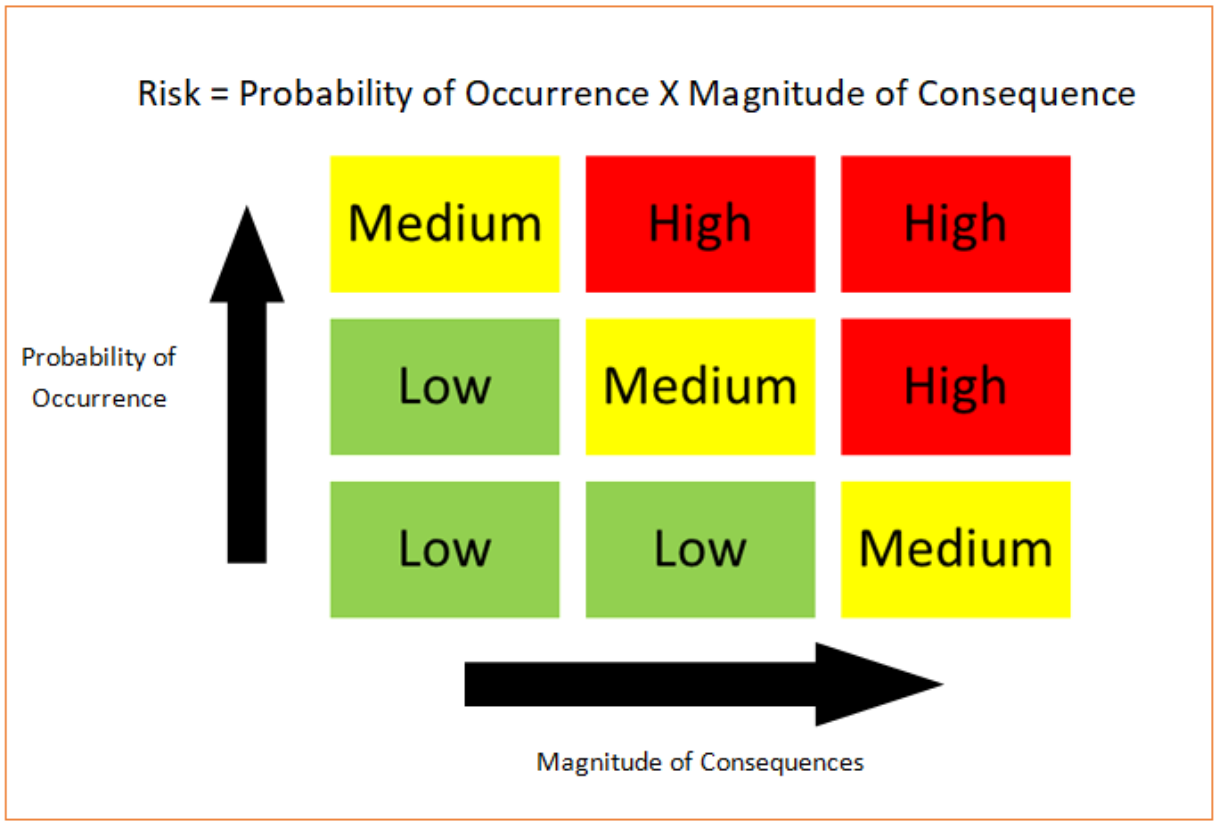
- **Probability of Future Occurrence:**

  The frequency of recorded past events is used to estimate the likelihood of future occurrences. Probability was determined by dividing the number of recorded events by the number of years of available data and multiplying by 100. This gives the percent chance of the event happening in any given year. For events occurring more than once annually, the probability has been reported as 100% in any given year, with a statement of the average number of events annually. For hazards such as drought that may have gradual onset and extended duration, probability can be based on the number of months in drought in a given time-period and expressed as the probability for any given month to be in drought.

- **Changing Future Conditions Considerations:**

  In addition to the probability of future occurrence, changing future conditions was also considered when determining the risk of each hazard. The planning committee also considered the effects of long-term changes in weather patterns and climate on the identified hazards. The NOAA climate-explorer tool was used to provide information for this particular part of the risk assessment. (**https://toolkit.climate.gov/tools/climate-explorer**)

Figure 3.4. Risk Calculator



Vulnerability Assessments

Requirement §201.6(c)(2)(ii) :[The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

Requirement §201.6(c)(2)(ii)(A) :The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.

Requirement §201.6(c)(2)(ii)(B) :[The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.

Requirement §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Requirement §201.6(c)(2)(ii): (As of October 1, 2008) [The risk assessment] must also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged in floods.

Following the hazard profile for each hazard will be the vulnerability assessment. The vulnerability assessment further defines and quantifies populations, buildings, critical facilities, and other community assets at risk of damage from natural hazards. The vulnerability assessments will be based on the best available county-level data, which is in the Missouri Hazard Mitigation Plan (2018). The county-level assessments in the State Plan were based on the following sources:

- Statewide GIS data sets compiled by state and federal agencies; and
- FEMA's HAZUS-MH loss estimation software.
- The Missouri Hazard Mitigation Viewer includes a Map Viewer with a legend of clearly labeled features, a north arrow,a base map that is either aerial imagery or a street map, risk assessment data symbolized the same as in the 2023 State Plan for easy reference, search and query capabilities, ability to zoom to county level data and capability to download PDF format maps. The Missouri Hazard Mitigation Viewer can be found at this link: http://bit.ly/MoHazardMitigationPlanViewer2023.

The vulnerability assessments in the Mercer County plan will also be based on:

- Written descriptions of assets and risks provided by participating jurisdictions;
- Existing plans and reports;
- Personal interviews with planning committee members and other stakeholders; and
- Other sources as cited.

Within the Vulnerability Assessment, the following sub-heading will be addresses:

- **Vulnerability Overview:**
  Each hazard included in the plan has a general statement of vulnerability. This statement defines if the hazard affects the entire region or if specific jurisdictions have greater vulnerabilities.

- **Potential Losses to Existing Development:**
  This section of the plan will provide, when data is available, the potential losses to existing development for each hazard. The rural nature of the region makes the available data an estimated value that may not accurately reflect the true vulnerability.

- **Previous and Future Development:**
  This section of the plan will include information about how changes in development have impacted the community's vulnerability to this hazard. Any changes in development that occurred in known hazard prone areas since the previous plan that have either increased or decreased the community's vulnerability will be described. Since Mercer County and all of the jurisdictions within the county are losing population, there is not much future development anticipated in the county.

- **Hazard Summary by Jurisdiction:**
  For hazard risks that vary by jurisdiction, this section will provide an overview of the variation and the factual basis for that variation.

Problem Statements

Each hazard analysis must conclude with a summary of the problems created by the hazard in the planning area, and possible ways to resolve those problems. Jurisdiction-specific information will be

provided in the cases where the risk varies across the planning area.

3.4.1 Flooding (Riverine and Flash)

Hazard Profile

Hazard Description

A flood is partial or complete inundation of normally dry land areas. Riverine flooding is defined as the overflow of rivers, streams, drains, and lakes due to excessive rainfall, rapid snowmelt, or ice. There are several types of riverine floods, including headwater, backwater, interior drainage, and flash flooding. Riverine flooding is defined as the overflow of rivers, streams, drains, and lakes due to excessive rainfall, rapid snowmelt or ice melt. The areas adjacent to rivers and stream banks that carry excess floodwater during rapid runoff are called floodplains. A floodplain is defined as the lowland and relatively flat area adjoining a river or stream. The terms “base flood” and “100- year flood” refer to the area in the floodplain that is subject to a one percent or greater chance of flooding in any given year. Floodplains are part of a larger entity called a basin, which is defined as all the land drained by a river and its branches.

Flooding caused by dam failure is discussed in Chapter 3.4.3. Levee failure is not addressed in the Mercer County Hazard Mitigation as there are no levees within the planning area that constitute a hazard and will not be addressed in this section.

A flash flood occurs when water levels rise at an extremely fast rate as a result of intense rainfall over a brief period, sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Flash flooding can happen in Special Flood Hazard Areas (SFHAs) as delineated by the National Flood Insurance Program (NFIP) and can also happen in areas not associated with floodplains.

Ice jam flooding is a form of flash flooding that occurs when ice breaks up in moving waterways, and then stacks on itself where channels narrow. This creates a natural dam, often causing flooding within minutes of the dam formation.

In some cases, flooding may not be directly attributable to a river, stream, or lake overflowing its banks. Rather, it may simply be the combination of excessive rainfall or snowmelt, saturated ground, and inadequate drainage. With no place to go, the water will find the lowest elevations – areas that are often not in a floodplain. This type of flooding, often referred to as sheet flooding, is becoming increasingly prevalent as development outstrips the ability of the drainage infrastructure to properly carry and disburse the water flow.

Most flash flooding is caused by slow-moving thunderstorms or thunderstorms repeatedly moving over the same area. Flash flooding is a dangerous form of flooding which can reach full peak in only a few minutes. Rapid onset allows little or no time for protective measures. Flash flood waters move at very fast speeds and can move boulders, tear out trees, scour channels, destroy buildings, and obliterate bridges. Flash flooding can result in higher loss of life, both human and animal, than slower developing river and stream flooding.

In certain areas, aging storm sewer systems are not designed to carry the capacity currently needed to handle the increased storm runoff. Typically, the result is water backing into basements, which damages mechanical systems and can create serious public health and safety concerns. This combined with rainfall trends and rainfall extremes all demonstrate the high probability, yet generally unpredictable nature of flash flooding in the planning area.

Although flash floods are somewhat unpredictable, there are factors that can point to the likelihood of flash floods occurring. Weather surveillance radar is being used to improve monitoring capabilities of intense rainfall. This, along with knowledge of the watershed characteristics, modeling techniques,

monitoring, and advanced warning systems has increased the warning time for flash floods.

Each county plan must describe participation in the NFIP for each participant, as applicable, in accordance with NFIP regulatory requirements. The following information must be provided for each participant.

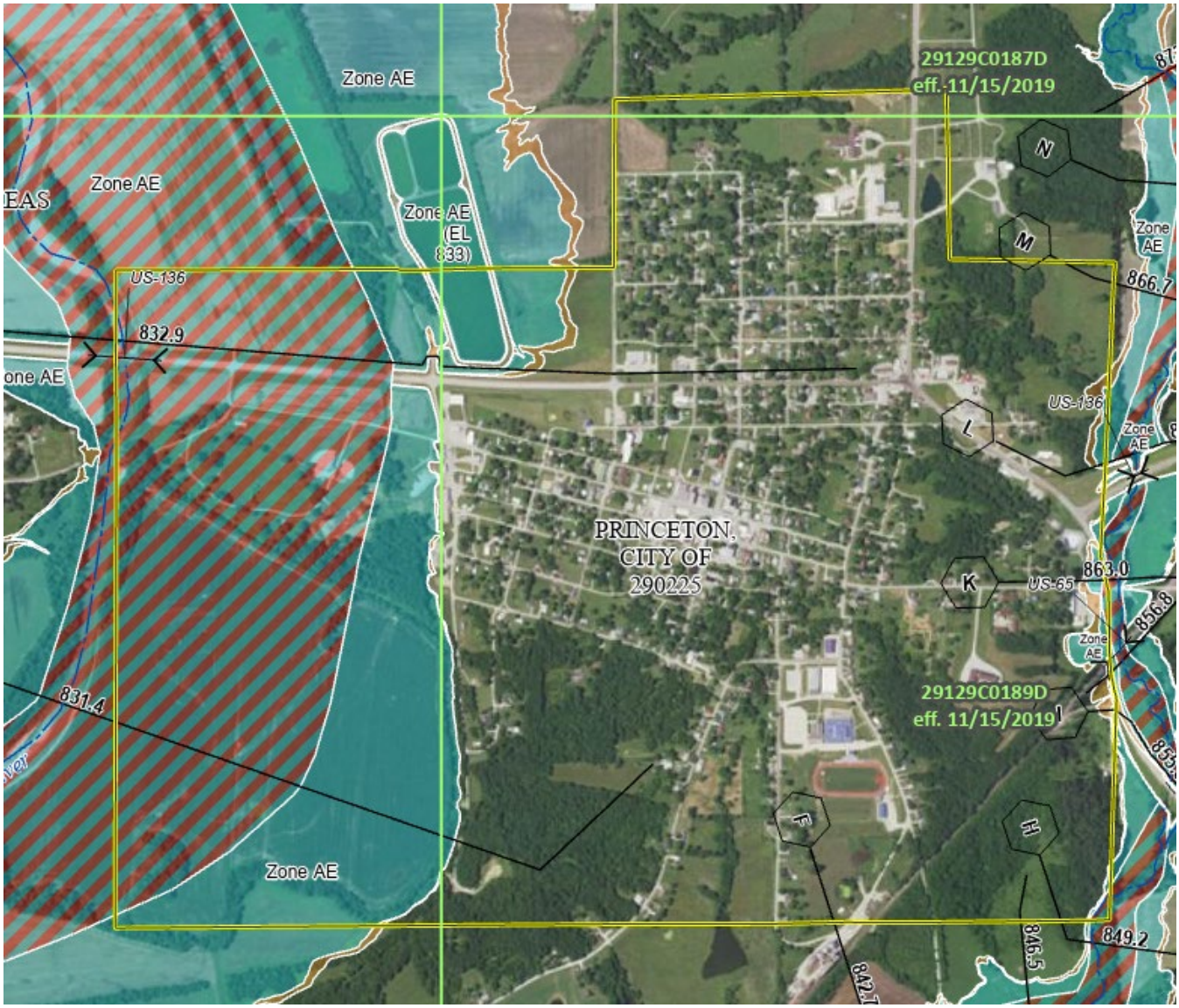
- Adoption of NFIP minimum floodplain management criteria via local regulation.
- Adoption of the latest effective Flood Insurance Rate Map (FIRM), if applicable.
- Implementation and enforcement of local floodplain management regulations to regulate and permit development in SFHAs.
- Appointment of a designee or agency to implement the addressed commitments and requirements of the NFIP.
- Description of how participants implement the substantial improvement/substantial damage provisions of their floodplain management regulations after an event.

Geographic Location

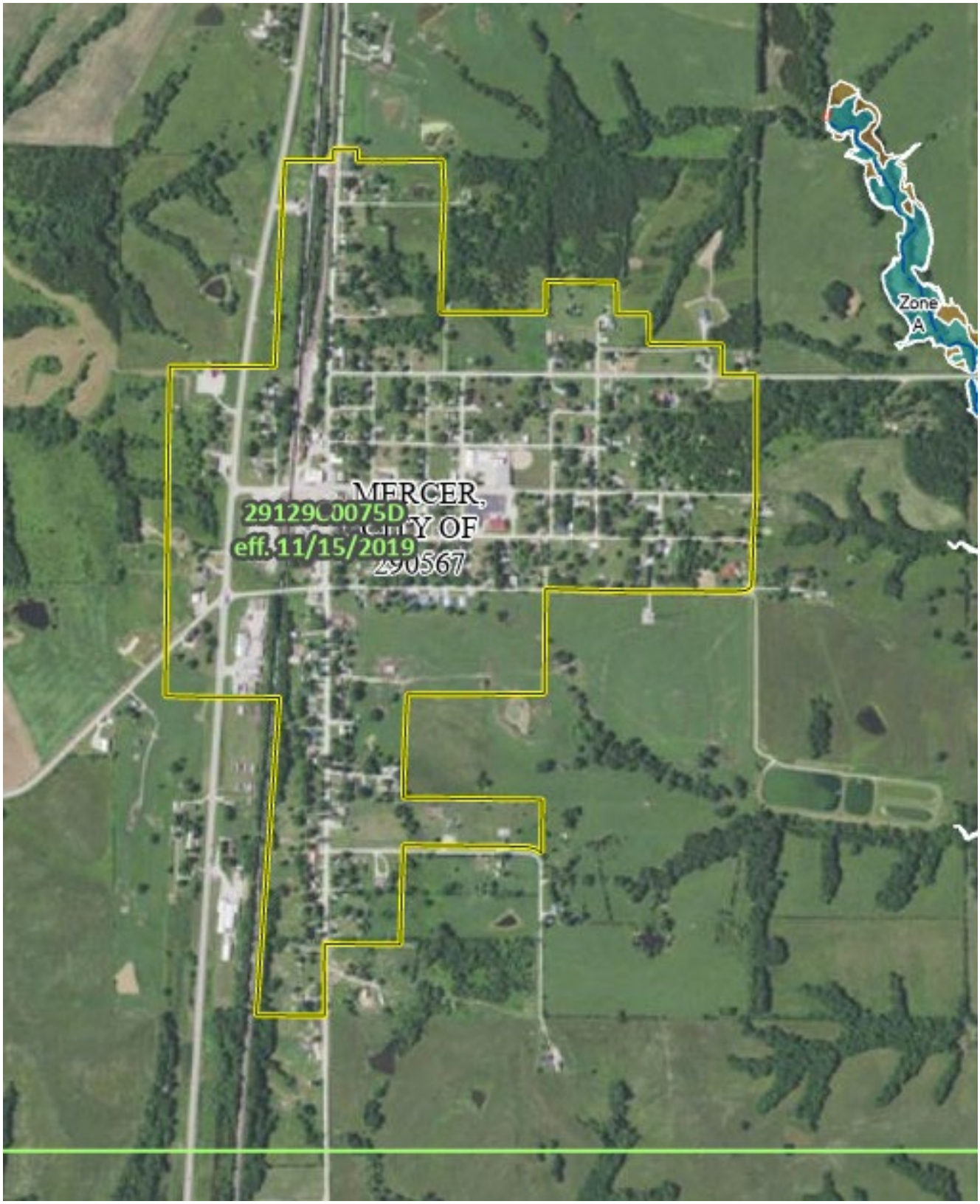
Riverine flooding is most likely to occur in Special Flood Hazard Areas (SFHAs). Flash flooding occurs in SFHAs and those locations in the planning area that are low-lying. They also occur in areas without adequate drainage to carry away the amount of water that falls during intense rainfall events.

Riverine flooding is most likely to occur in SFHAs. The following maps are from the most recent information from FEMA's National Flood Layer of Mercer County.

The City of Princeton



The City of Mercer



Lake Marie, Missouri

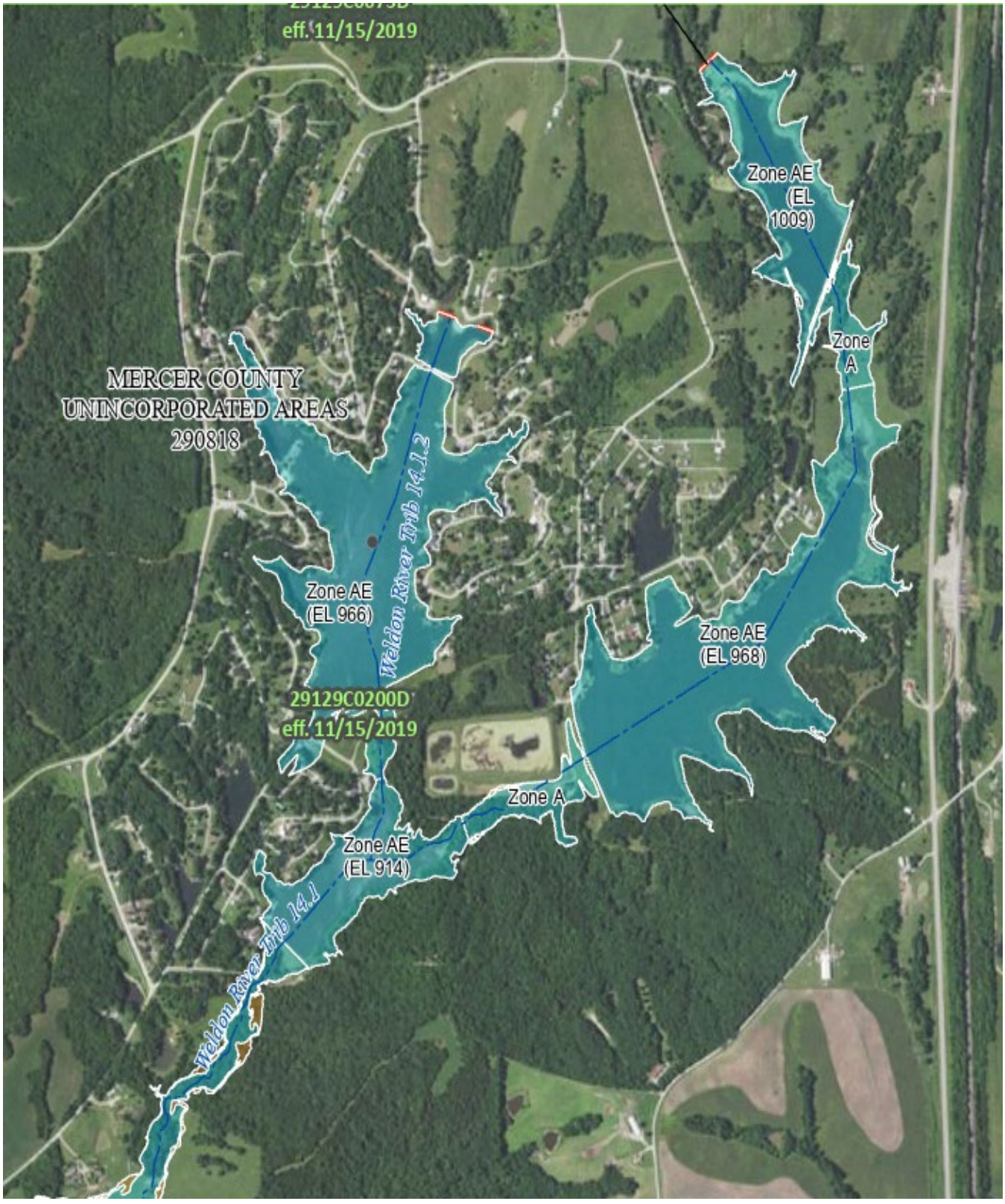


Table 3.6. Flood Events in Mercer County, 2003-2023

The following table provides the event narrative available for flood and flash flood events in Mercer County from the NCEI's website current as of 11/2023.

Date	Location	Event Narrative
6/12/2004	Mill Grove	State Route D was closed due to flooding on the road.
5/22/2005	Princeton	Heavy rains closed Route D near Highway 136.
7/13/2006	Mercer	Water flowing over road.
7/24/2008	Modena	State Highway D was closed due to high water.
5/15/2009	Princeton	State Route D was closed due to flooding on the road.
9/21/2010	Princeton	Flash flooding was reported at the electric co-op facility near Weldon River.
6/3/2014	Princeton	A ball field on the banks of the Weldon River west of Princeton was flooded.
8/9/2015	Princeton	There was some minor flash flooding on Hickland Street and Ada Street in Princeton.
5/28/2019	Princeton Kaufman Airport	Princeton received several hours of heavy rain, which caused significant flash flooding in the city. Damage estimates are unknown.
6/24/2021	Modena	Emergency management reported that gravel roads just west of Route U were running over with water.
6/24/2021	Princeton	An ambulance barn was evacuated due to flooding rains.
6/24/2021	Princeton Kaufman Airport	Water rescues occurred at Highway 136 and Highway 65 in Princeton.

Source: National Centers for Environmental Information, 11, 2023

Table 3.7. Mercer County NCEI Flood Events by Location, 2003-2023

Location	# of Events
Mercer County	
-Unincorporated Mercer County (unspecified)- 0 flood events	
-Unincorporated Mercer County (name of NCEI specified area)-0 flood events	
-Unincorporated County (name of NCEI specified area)- 0 flood events	
-Unincorporated County (name of NCEI specified area)- 0 flood events	
-Unincorporated County (name of NCEI specified area)- 0 flood events	
-Unincorporated County (name of NCEI specified area)- 0 flood events	
City of Princeton	1
-Princeton 1 flood events	
City of Mercer	
-City of Mercer (unspecified)- 0 flood events	

Source: National Centers for Environmental Information, 11/2023

Flash flooding occurs in SFHA's and those locations in the planning area that are low-lying. They can also occur in areas without adequate drainage to carry away the amount of water that falls during intense rainfall events. In five of the flash flood events the State Route D was impassable due to flooding. The ball field that was previously located along the banks of the Weldon River outside of Princeton was repeatedly flooded. This led to the city moving the ball field to a less flood prone area. There were reports of streets flooding in the city of Princeton due to heavy rains.

Table 3.8. Mercer County NCEI Flash Flood Events by Location, 2003-2023

Location	# of Events
Unincorporated Mercer County	
-Unincorporated County (unspecified)-0 flood events	4
-Unincorporated County (Mill Grove)- 2 flood events	
-Unincorporated County (Modena)- 2 flood events	
City of Princeton	
-City of Princeton (unspecified)- 4 flood events	6

-City of Princeton (Kaufman Airport)- 2 flood events	
City of Mercer	1
-City of Mercer (unspecified)- 1 flood events	

Source: National Centers for Environmental Information, 10/26/2023; Missouri Hazard Mitigation Plan 2023

Strength/Magnitude/Extent

Missouri has a long and active history of flooding over the past century, according to the 2023 State Hazard Mitigation Plan. Flooding along Missouri's major rivers generally results in slow-moving disasters. River crest levels are forecast several days in advance, allowing communities downstream sufficient time to take protective measures, such as sandbagging and evacuations. Nevertheless, floods exact a heavy toll in terms of human suffering and losses to public and private property. By contrast, flash flood events in recent years have caused a higher number of deaths and major property damage in many areas of Missouri.

According to the U.S. Geological Survey, two critical factors affect flooding due to rainfall: rainfall duration and rainfall intensity – the rate at which it rains. These factors contribute to a flood's height, water velocity and other properties that reveal its magnitude.

When roads and bridges are inundated by water, damage can occur as the water scours materials around bridge abutments and gravel roads. Floodwaters have been known to cause erosion undermining roadbeds. In some instances, steep slopes that are saturated with water may cause mud or rockslides onto roadways. These types of damage can cause costly repairs for state, county, and city road and bridge maintenance departments. When sewer back-up occurs, this can result in costly clean-up for home and business owners as well as present a health hazard.

National Flood Insurance Program (NFIP) Participation

Mercer County does not currently participate in the NFIP program. There is little interest in becoming a participant in NFIP due to lack of political support and interest on the part of members of the community. At such time as the population of Mercer County would have an interest in being a member of the NFIP the county will consider. (See Table 4.1)

The only jurisdiction within the planning area of Mercer County that participates in NFIP is the City of Princeton. Participation in the NFIP has a goal of reducing the impact of flooding on private and public structures. It does so by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. The city of Princeton currently has the City Administrator act as the floodplain administrator.

However, currently the City of Princeton does need to develop policies to comply with the current NFIP criteria. This deficit of regulations has been identified and complying with the new criteria has been added to the mitigation actions for the City of Princeton. (See Action P-9 in Chapter 4) The City of Princeton, in order to comply with NFIP standards, must develop a floodplain ordinance that:

- Adopt NFIP minimum floodplain management criteria via local regulation.
- Adopt the latest effective Flood Insurance Rate Map (FIRM)
- Implement and enforce local floodplain management regulations to regulate and permit development in SFHA's, if applicable.
- Develop ordinance to address the requirements of the NFIP.
- Develop procedure to implement the substantial improvement/substantial damage provisions of floodplain management after an event.

The City of Mercer does not currently participate in the NFIP. There is little interest in becoming a participant in NFIP due to lack of political support and interest on the part of members of the

community. There is also limited ability to participate due to lack of resources and personnel to administer the program.

Table 3.9. NFIP Participation in Mercer County

Community ID #	Community Name	NFIP Participant (Y/N/Sanctioned)	Current Effective Map Date	Regular-Emergency Program Entry Date
290225A	City of Princeton	Y	11/15/2019	2/14/1976

Source: NFIP Community Status Book,10/25/2023; PIVOT (information from STATE) Community Status Book | FEMA.gov; M= No elevation determined – all Zone A, C, and X: NSFHA = No Special Flood Hazard Area; E=Emergency Program

Table 3.10. NFIP Policy and Claim Statistics as of Date

Community Name	Policies in Force	Insurance in Force	Closed Losses	Total Payments
City of Princeton	1	0	0	$0

Source: NFIP Community Status Book,10/25/2023; PIVOT (information from STATE), Community Status Book | FEMA.gov *Closed Losses are those flood insurance claims that resulted in payment. Loss statistics are for the period from 1978-2017 (Missouri Hazard Mitigation Plan 2023)

Repetitive Loss/Severe Repetitive Loss Properties

Repetitive Loss Properties are those properties with at least two flood insurance payments of $1,000 or more in a 10-year period. According to the Flood Insurance Administration, jurisdictions included in the planning area have a combined total of zero repetitive loss properties. As of 12/11/2023 no properties have been mitigated, leaving zero un-mitigated repetitive loss properties.

Table 3.11. Mercer County Repetitive Loss Properties

Jurisdiction	# of Properties	Type of Property	# Mitigated	Building Payments	Content Payments	Total Payments	Average Payment	# of Losses
Unincorporated Mercer County	0	n/a	0	0	0	0	n/a	0
City of Princeton	0	n/a	0	0	0	0	n/a	0
City of Mercer	0	n/a	0	0	0	0	n/a	0

Source: Flood Insurance Administration as of 12/11/2023

Severe Repetitive Loss (SRL): A SRL property is defined it as a single family property (consisting of one-to-four residences) that is covered under flood insurance by the NFIP; and has (1) incurred flood-related damage for which four or more separate claims payments have been paid under flood insurance coverage with the amount of each claim payment exceeding $5,000 and with cumulative amounts of such claims payments exceeding $20,000; or (2) for which at least two separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property.

According to the Flood Insurance Administration, jurisdictions included in the planning area (only Princeton Participates) have zero repetitive loss properties, as there are zero damage claims on record for Mercer County. This information was also obtained from the Missouri Hazard Mitigation Viewer, and it reports the same information.

Previous Occurrences

The following table (table 3.12) has a listing of the disasters that have been declared in Mercer County for flooding. This information is from FEMA's website. According to this information, there were 11 flood events that occurred in Mercer County that were substantial enough to warrant a

disaster declaration.

Table 3.12. Disaster Declaration History for Mercer County Missouri

Disaster #	Disaster Type	Date
372	Heavy Rains, Tornadoes, & Flooding	April 19, 1973
407	Severe Storms & Flooding	November 1, 1993
995	Missouri Flooding, Severe Storm	June 10-October 25, 1995
1054	Severe Storms, Tornadoes, Hail, Flooding	May 13-June 23, 1995
1412	Severe Storms, Tornadoes, Flooding	April 24-June 10, 2002
1524	Severe Storms, Tornadoes, Flooding	May 18-31, 2004
1708	Severe Storms, Flooding	May 5-May 18, 2007
1773	Severe Storms, Flooding	June 1-August 13, 2008
1934	Severe Storms, Flooding, Tornadoes	June 12-July 31, 2010
4200	Severe Storms, Tornadoes, Straight-line Wind, Flooding	September 9-11, 2014
4451	Severe Storms, Tornadoes, Flooding	April 29-July 6, 2019

Source: FEMA Disaster Declarations

Table 3.13. NCEI Mercer County Flash Flood Events Summary, 2003-2023

Year	# of Events	# of Deaths	# of Injuries	Property Damages
2004	1	0	0	0
2005	1	0	0	0
2006	1	0	0	0
2008	1	0	0	0
2009	1	0	0	0
2010	1	0	0	0
2015	1	0	0	0
2019	1	0	0	0
2021	3	0	0	0

Source: NCEI, data accessed 12/11/2023

Table 3.14. NCEI Mercer County Riverine Flood Events Summary, 2003 to 2023

Year	# of Events	# of Deaths	# of Injuries	Property Damages	Crop Damages
6/3/2014	1	0	0	0	0

Source: NCEI, 12/11/2023

Table 3.15. Crop Insurance Claims Paid in Mercer County 2013-2023

Crop Year	Crop Name	Cause of Loss	Insurance Paid ($)
2013	Corn	Flood	$83,830
2014	Corn	Flood	$15,205
	Soybeans		$62,420
2015	No Claims		$0
2016	No Claims		$0
2017	No Claims		$0
2018	No Claims		$0
2019	Soybeans	Flood	$729
2020	No Claims		$0
2021	No Claims		$0
2022	No Claims		$0
2023	No Claims		$0
Total			$162,184

Source: USDA Risk Management Agency http://www.rma.usda.gov/data/cause

Probability of Future Occurrence

Flash Flooding

The probability of the planning area experiencing a flash flood in any given year was calculated by dividing the number of flash floods in the last 20 years by the number of years (20). The answer was multiplied by 100 to give a percent chance of a flash flood occurring in any given year.

$$\frac{\mathbf{11}}{\mathbf{20}} = \boldsymbol{x}(\mathbf{100})$$

This formula indicates that there is a 55% chance of Mercer County experiencing a flash flood in any given year.

Riverine Flooding

The probability of the planning area experiencing a flood in any given year was calculated by dividing the number of flood events in the last 20 years by the number of years (20). This answer was multiplied by 100 to give the percent chance of a flood occurring in any given year.

$$\frac{\mathbf{1}}{\mathbf{20}} = \boldsymbol{x}(\mathbf{100})$$

This formula indicates that there is a 5% chance of a riverine flood occurring in Mercer County in any given year.

Changing Future Conditions Considerations and The Impact of Climate Change

During the last fifty years, the number of above normal precipitation events in the Midwest have continued to increase. Therefore, the frequency of flooding is set to increase in the same fashion. There is a 90-100% probability of most areas in the United States to show an increase in precipitation by 5% or more, due to the effects of climate change.

Vulnerability

Vulnerability Overview

According to the State of Missouri Hazard Mitigation Plan, SEMA used the most recent release of Hazus, version 4.0 to model flood vulnerability and estimate flood losses for all 114 counties and the City of St. Louis due to depth of flooding. Additional hazard data inputs were utilized, as available, to perform Hazus Level 2 analyses. Mercer County's analysis was based on the available RiskMAP for the County.

To conduct the analysis and address limitations from the previous plan SEMA enhanced the Hazus analysis with a structure inventory dataset developed by the University of Missouri GIS Department (MSDIS) to indicate the number of structures exposed to the risk. MSDIS created a point and/or footprint dataset for every roof line in every county in the state of Missouri. This dataset is attributed with the type of structure i.e. Residential, Commercial, Etc.

Flooding presents a danger to life and property, often resulting in injuries, and in some cases, fatalities. Floodwaters themselves can interact with hazardous materials. Hazardous materials stored in large containers could break loose or puncture due to of flood activity. Examples are bulk propane tanks. When this happens, evacuation of citizens is necessary.

Public health concerns may result from flooding, requiring disease and injury surveillance. Community sanitation to evaluate flood-affected food supplies may also be necessary. Private water and sewage sanitation could be impacted, and vector control (for mosquitoes and other entomology concerns) may be necessary.

When roads and bridges are inundated by water, damage can occur as the water scours materials around bridge abutments and gravel roads. Floodwaters could also cause erosion undermining roadbeds. In some instances, steep slopes that are saturated with water may cause mud or rockslides onto roadways. These damages can cause costly repairs for state, county, and city road and bridge maintenance departments. When sewer back-up occurs, this can result in costly clean-up for home and business owners as well as present a health hazard.

Scour critical bridges were discussed in section 3.2.2 of this hazard mitigation plan.

Potential Losses to Existing Development

The 2023 Missouri Hazard Mitigation Plan used HAZUS data to analyze the county's vulnerability to flooding. A summary of the information is shown in the following table.

Table 3.1. HAZUS Estimates of Potential Losses for Mercer County

Data From State Plan	Mercer County
Countywide Building Exposure	$488,159,996
Structural Damage	$7,534,189
Loss Ratio	1.54%
Contents Loss	$9,205,886
Inventory Loss	$520,354
Total Direct Loss	$17,260,429
Total Income Loss	$68,084
Total Direct & Income Loss	$17,328,513
#HAZUS Building Risk	10
# Substantially Damaged	0
# Displaced People	166
# Shelter Needs	23

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.2. HAZUS Estimates of Potential Loss by Building Type for Mercer County

Residential		Agriculture		Commercial	Education	Government	Industrial
#	$	#	$	0	0	0	0
1	$293,344	18	$16,410,295	0	0	0	0

Source: *2023 Missouri State Hazard Mitigation Plan*

According to the 2023 Missouri State Hazard Mitigation Plan, the total population affected by flood would be 2 with a "Total Loss – HAZUS Layer" of $16,704,639.

Impact of Previous and Future Development

Due to lack of planned future development, and the declining population of the planning area, there are no future development plans that will lead to an increase in the vulnerability of the jurisdictions located in Mercer County. The population of Mercer County has been declining over the past decade, and this along with a lack of development, does not necessitate additional concerns about the planning area.

There have been no previous developments in the planning area that would increase the vulnerability to flooding.

Hazard Summary by Jurisdiction

Mercer County (Unincorporated)

There is very little in the way of risk as far as real property is concerned. Most flood events occur in the undeveloped "bottom ground" located around the rivers within the county. There are no plans for future development in any flood prone areas of the county.

City of Princeton

The city of Princeton does have some vulnerability to flash flooding, with some residents having flooding in the basements, and some of the roadways suffering damages from overflowing storm drains during especially heavy rains. The ambulance barn, which is a critical structure has been flooded more than once. The Doctor's office located in Princeton has also experienced flooding, and at one point during the last planning period, had to be relocated to Trenton, Missouri which is located south of Mercer County in Grundy County. Possible solutions will be addressed later in the Hazard Mitigation Plan.

City of Mercer

The city of Mercer does not have any structures that are especially vulnerable to flood. There are no plans for future development in the city of Mercer, so there are no additional vulnerabilities to consider.

Princeton R-V School District

The Princeton R-V School District is not located in a flood prone area of the county and does not suffer from any increased vulnerabilities to this hazard. There are no plans for future development in the Princeton School District, so therefore, there are no additional hazards to consider.

North Mercer R-III School District

The North Mercer R-III School District is not located in a flood prone area of the county and does not suffer from any increased vulnerabilities due to this hazard. There are no current plans for future development in the North Mercer School District, and therefore, there are no additional risks from hazards to consider.

Problem Statement

- In the City of Princeton, the ambulance barn has been flooded, due to flash floods on more than one occasion within the last 5 years. It is not in a floodplain, but it lies at the bottom of a very long hill, and the storm drains in the city are inadequate to handle flash flooding events. The ambulance barn could be relocated to a higher elevation, and the city of Princeton could possibly mitigate the hazard by replacing the storm drainage system.
- The roads within the city of Princeton have occasionally suffered damage due to flood waters during heavy rains. The storm drains are insufficient to handle heavy rain events within the City of Princeton. Asphalt has been damaged and on one occasion, the drain cover was washed out of the drain and posed a threat to traffic until the drain cover could be replaced. Again, the city of Princeton could replace the storm drains within the city.
- The Doctor's office in Princeton has flooded on occasion. Once the damage was extensive enough to necessitate relocation of the clinic to a nearby town until the damage to the building could be repaired. New storm drainage in the City of Princeton would potentially mitigate this hazard.

3.4.2 Dam Failure

Hazard Profile

Hazard Description

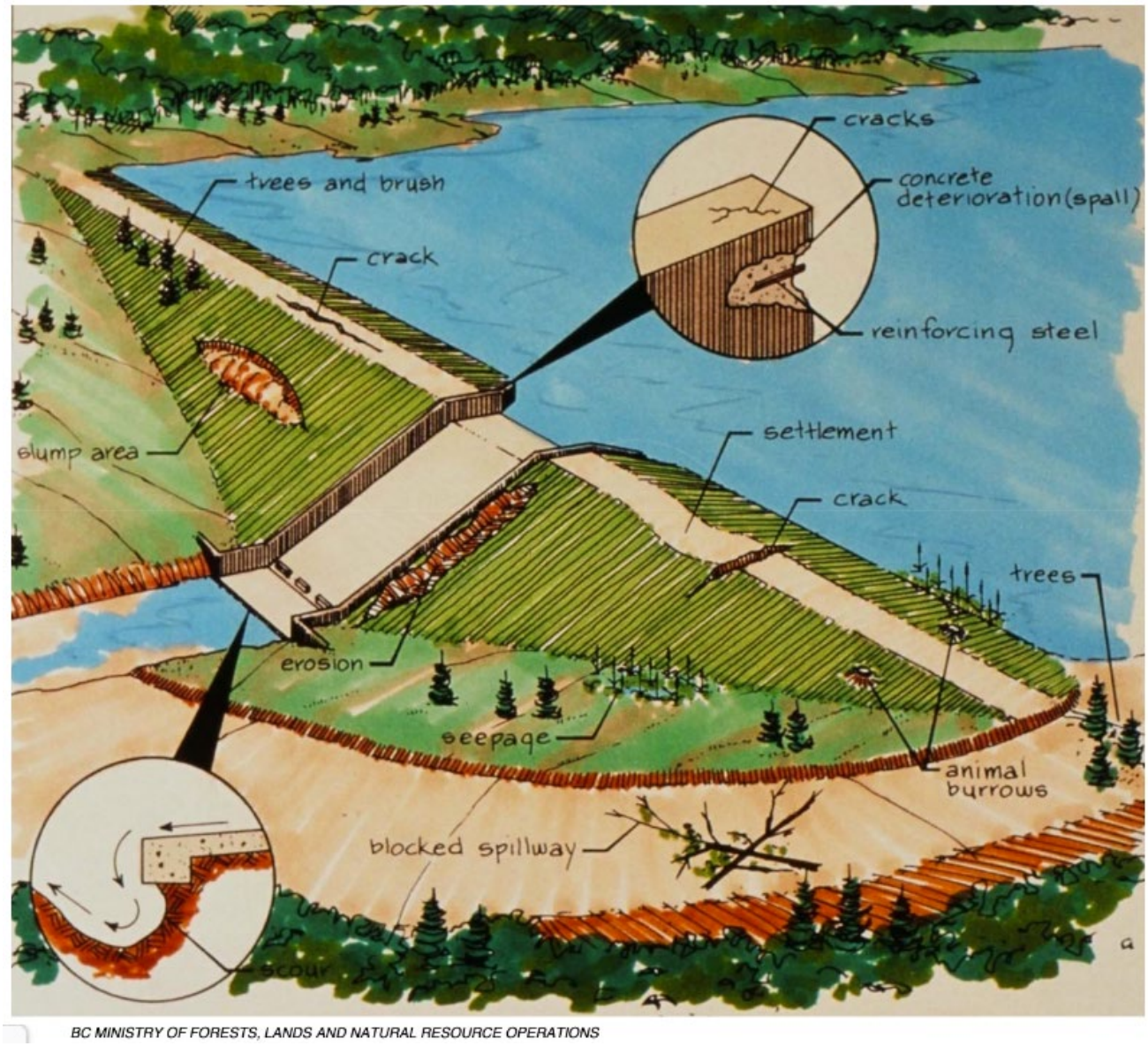
A dam is defined as a barrier constructed across a watercourse for storage, control, or diversion of water. Dams are designed to help with flood control, stabilize a grade, provide water for livestock, or fire protection, and/or for recreational activities. Dams are typically constructed of earth, rock, concrete, or mine tailings. Dam owners have primary responsibility for the safe design, operation, and maintenance of their dams. Dam owners also have the responsibility for inspections and for providing early warning of problems at the dam which could result in a dam failure.

A dam failure is characterized by an uncontrolled release of water from behind a dam. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, damage caused by wildfire, vandalism, and terrorism can all cause a dam to fail. The following figure (Figure 3.5.) illustrates some of the common causes of dam failure. When a dam failure occurs, an enormous amount of water is suddenly released, destroying infrastructure, and flooding the area downstream of the dam.

Dam failure can be caused by any of the following:

- Overtopping: Inadequate spillway design, debris blockage of spillways or settlement of the dam crest.
- Piping: Internal erosion caused by embankment leakage, foundation leakage and deterioration of pertinent structures appended to the dam.
- Erosion: Inadequate spillway capacity causing overtopping of the dam, flow erosion, and inadequate slope protection.
- Structural Failure: Caused by an earthquake, slope instability or faulty construction.

Figure 3.5. Causes of Dam Failure



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Table 3.3. MoDNR Dam Hazard Classification Definitions

Hazard Class	Definition
Class I	Represents the most severe threat to public safety based on the downstream environment
Class II	Represents a serious threat to public safety
Class III	Represents the least threat to public safety

Source: Missouri Department of Natural Resources, http://dnr.mo.gov/env/wrc/docs/rules_reg_94.pdf

Table 3.4. NID Dam Hazard Classification Definitions

The U.S. Army Corps of Engineers has compiled a National Inventory of Dams (NID) for the United States. The NID consists of dams meeting at least one of the following criteria:

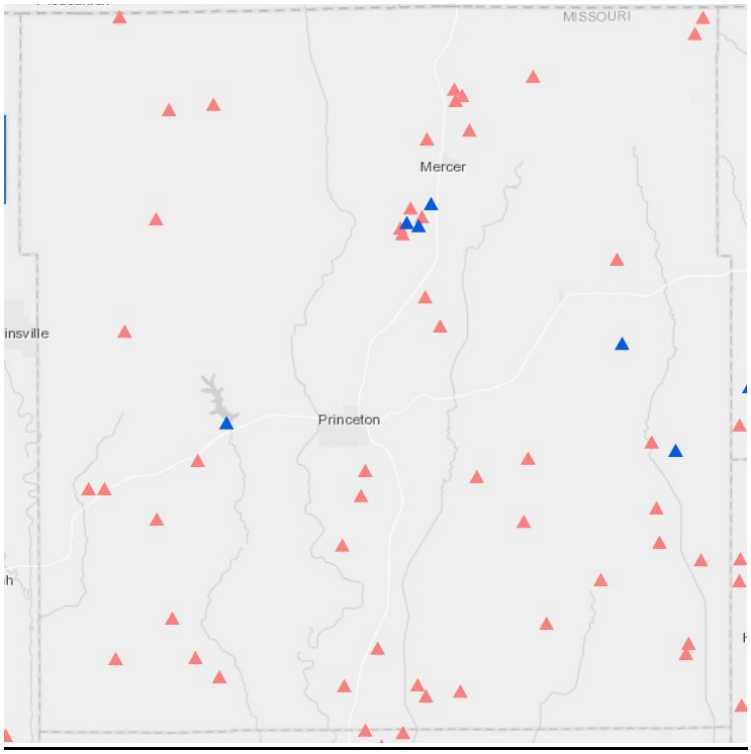
- High Hazard Classification – loss of human life is likely if the dam fails.
- Significant Hazard Classification – possible loss of human life and likely significant property or environmental destruction.
- Equal or exceed 25 feet in height and exceed 15 acre-feet in storage.
- Equal or exceed 50 acre-feet storage and exceed 6 feet in height.

Hazard Class	Definition
Low Hazard	Where dam failure or operational errors result in no probable loss of human life and low economic and/or environmental losses
Significant Hazard	Where dam failure or operational errors result in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns.
High Hazard	Where dam failure or operational errors will likely result in the loss of at least one human life.

Source: National Inventory of Dams

Geographic Location

Figure 3.6. Dams Located Within the Planning Area



Source: National Inventory of Dams

The above map shows all the dams located within the planning area. The dams marked in blue are State regulated dams, the ones in pink are unregulated dams.

The Missouri Dam and Reservoir Safety Program is leading an effort to help develop Emergency Action Plans, or EAPs, for regulated dams in the state. Completion of EAPs can help save lives and reduce property damage during a dam safety emergency. Plans increase preparedness by organizing emergency contact information and evacuation procedures into an official document and by providing enhanced communications between dam owners and local emergency management officials.

The Missouri Department of Natural Resources (MDNR) cross referenced with the National Dam

Inventory, there are 54 dams in Mercer County. Six dams are class I or class II or classified as High Hazard Dams. Only 4 of these dams are state regulated. None of these dams are USACE (US Army Corps of Engineers) built. None of these dams are owned or operated by the USACE either.

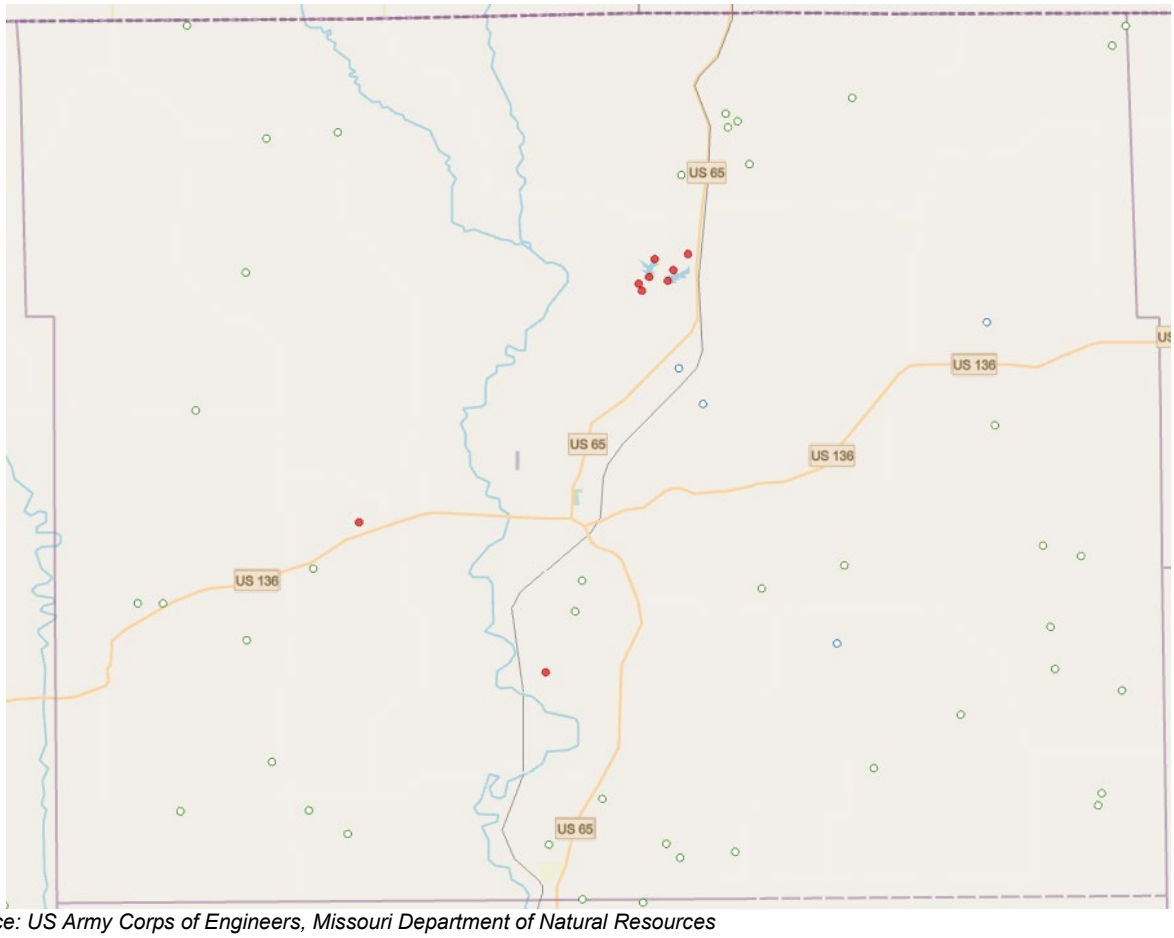
There are 48 low hazard dams in the planning area.

Table 3.5. High Hazard Dams in the Mercer County Planning Area

Dam Name	Emergency Action Plan (EAP)AP	Dam Height (Ft)	Max. Storage (Acre-Ft)	River	Nearest Downstream City	Distance To Nearest City (Miles)	Dam Owner
Lake Paho Dam	Yes	40	5,884	West Muddy Creek	Spickard	9	Mo Conservation
Lake Marie Dam	Yes	50	970	Pops Branch	Princeton	9	Lake Marie HOA
Berndt Lake Dam	Yes	58	410	Pops Branch	Princeton	14	Private Owner
Twin Lake Dam	Yes	51	52	Tr Pops Branch	Princeton	7	Private Owner
Berndt Lake Dam – nese, sec 25	No	30	32	Tr Pops Branch	Princeton	0	Private Owner
Berndt Lake Dam – swsw,sec 30	No	25	27	Tr Pops Branch	Princeton	0	Private Owner
Middle Lake Dam	No	45	385	Tribute to Little Medicine Creek	Unknown	n/a	Smithfield Farms
Kelly Enterprise Lake Dam	No	20	86	Tr Pops Branch	Princeton	0	Private Owner
Yowell Lake Dam	No	23	62	Weldon River	Mill Grove	4	Private Owner
Hidden Valley Lake Dam	No	26	195	Pops Branch	Princeton	8	Lake Marie Lot Owners Assoc.

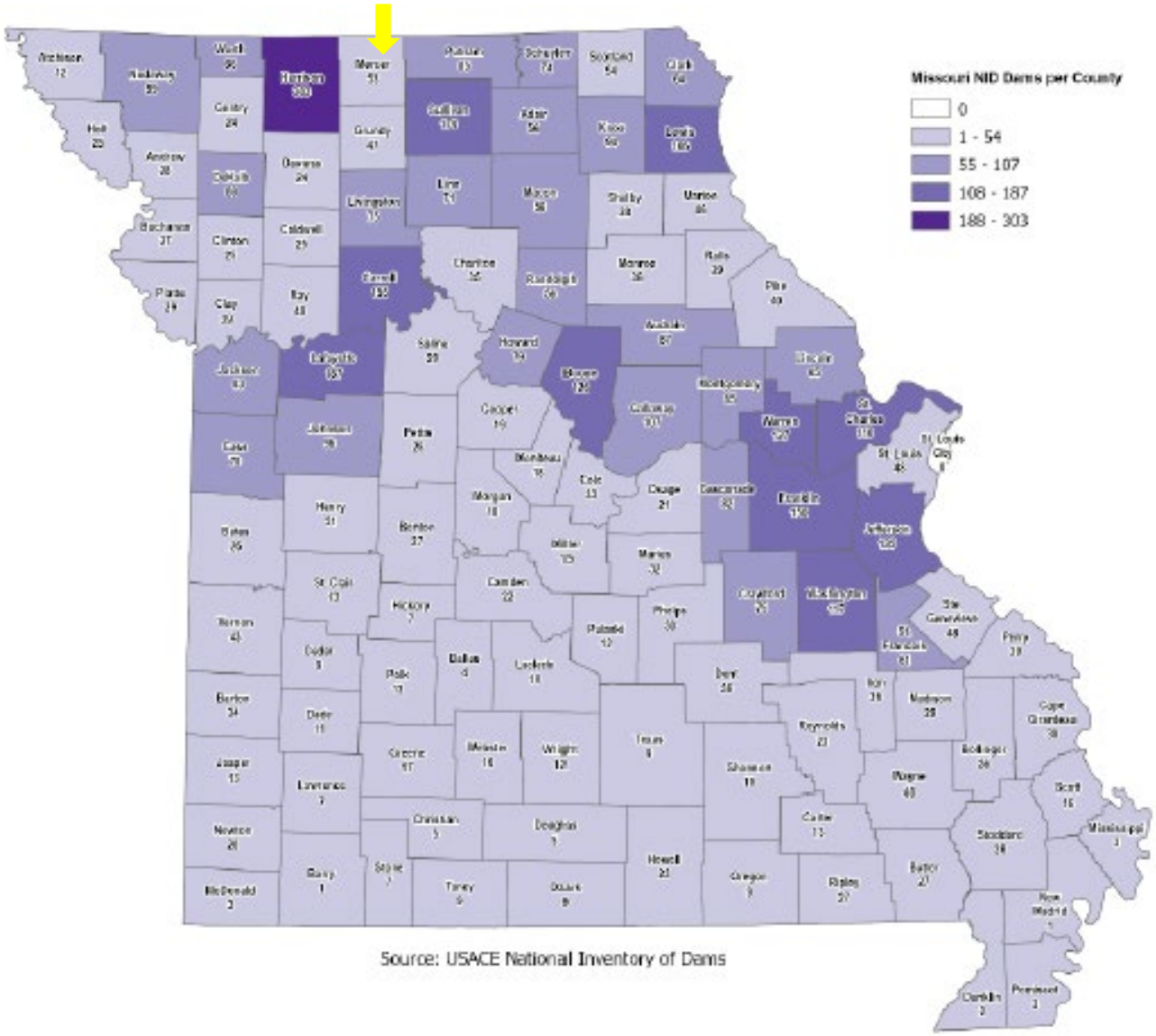
Sources: Missouri Department of Natural Resources, https://dnr.mo.gov/geology/wrc/dam-safety/damsinmissouri.htm and National Inventory of Dams, http://nid.usace.army.mil/cm_apex/f?p=838:12. Contact the MoDNR Dam and Reservoir Safety Program at 800-361-4827 to request the inundation maps for your county to show geographic locations at risk, extent of failure and to perform GIS analysis of those assets at risk to dam failure.

Figure 3.7. High Hazard Dam Locations in Mercer County and Areas Impacted in the Event of Breach.



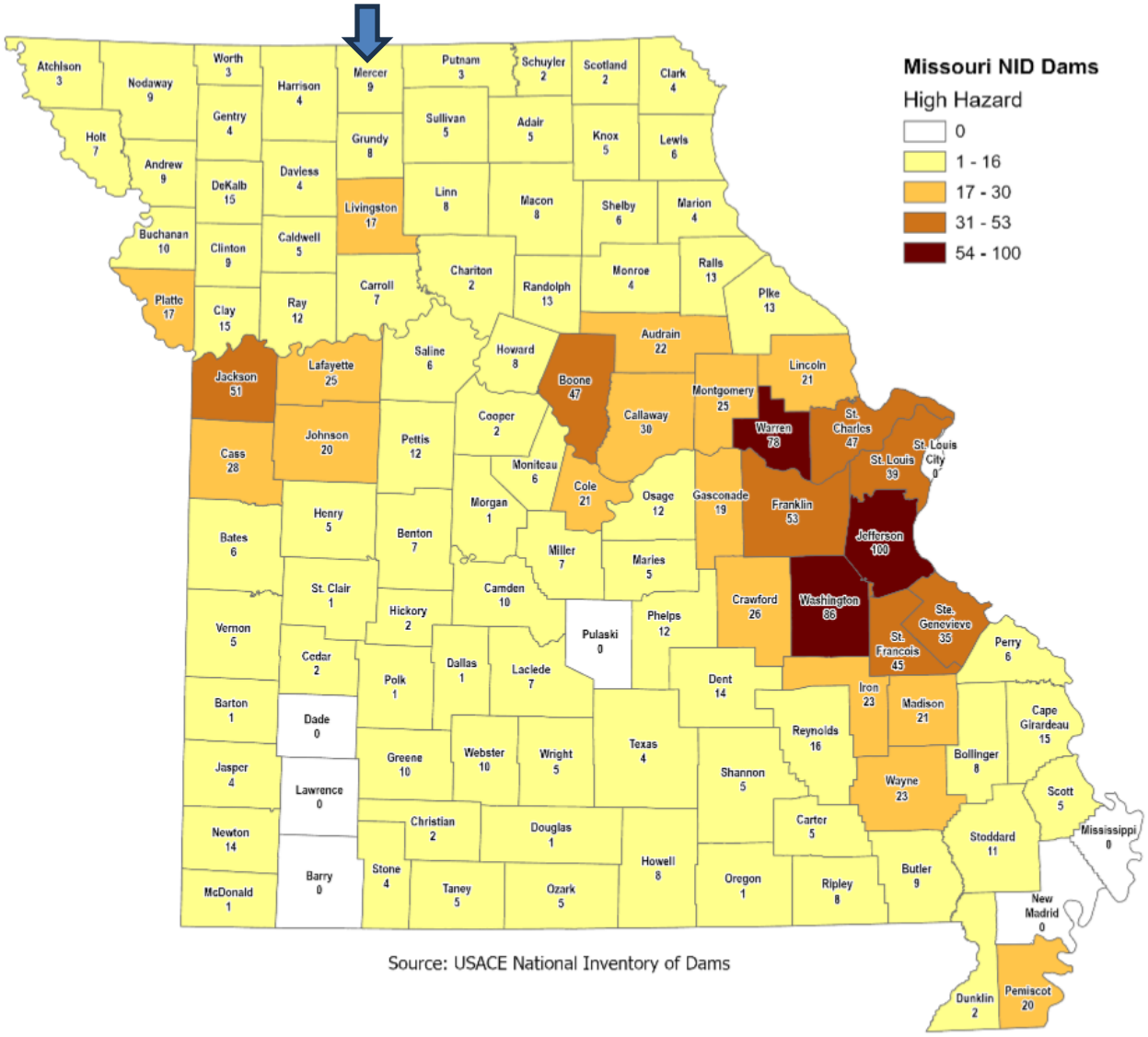
Source: US Army Corps of Engineers, Missouri Department of Natural Resources

Figure 3.8. Total Recorded Dams in Missouri by County



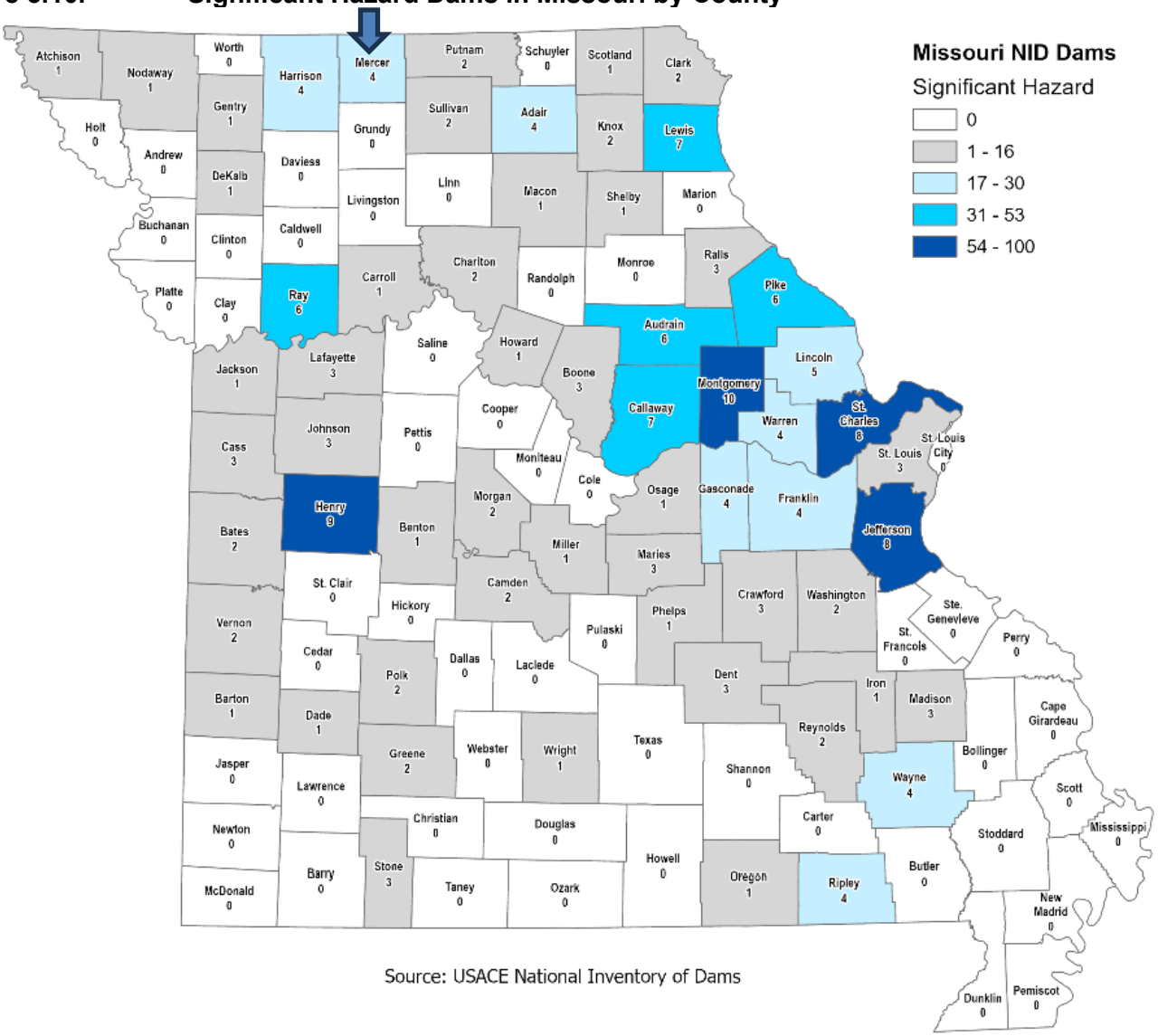
The previous figure (Figure 3.8) was taken from the 2023 Missouri State Hazard Mitigation Plan and shows that Mercer County has a total of 53 dams. Mercer County is indicated by a yellow arrow.

Figure 3.9. High Hazard Dams in Mercer County



The previous figure (Figure 3.9) was taken from the 2023 Missouri State Hazard Mitigation Plan and shows that Mercer County has a total of 9 High Hazard Dams. Mercer County is indicated by the blue arrow.

Figure 3.10. Significant Hazard Dams in Missouri by County



The previous figure (Figure 3.8) was taken from the 2023 Missouri State Hazard Mitigation Plan. It shows that Mercer County has a total of 4 Significant Hazard Dams within the county boundaries. Mercer County is indicated by a blue arrow.

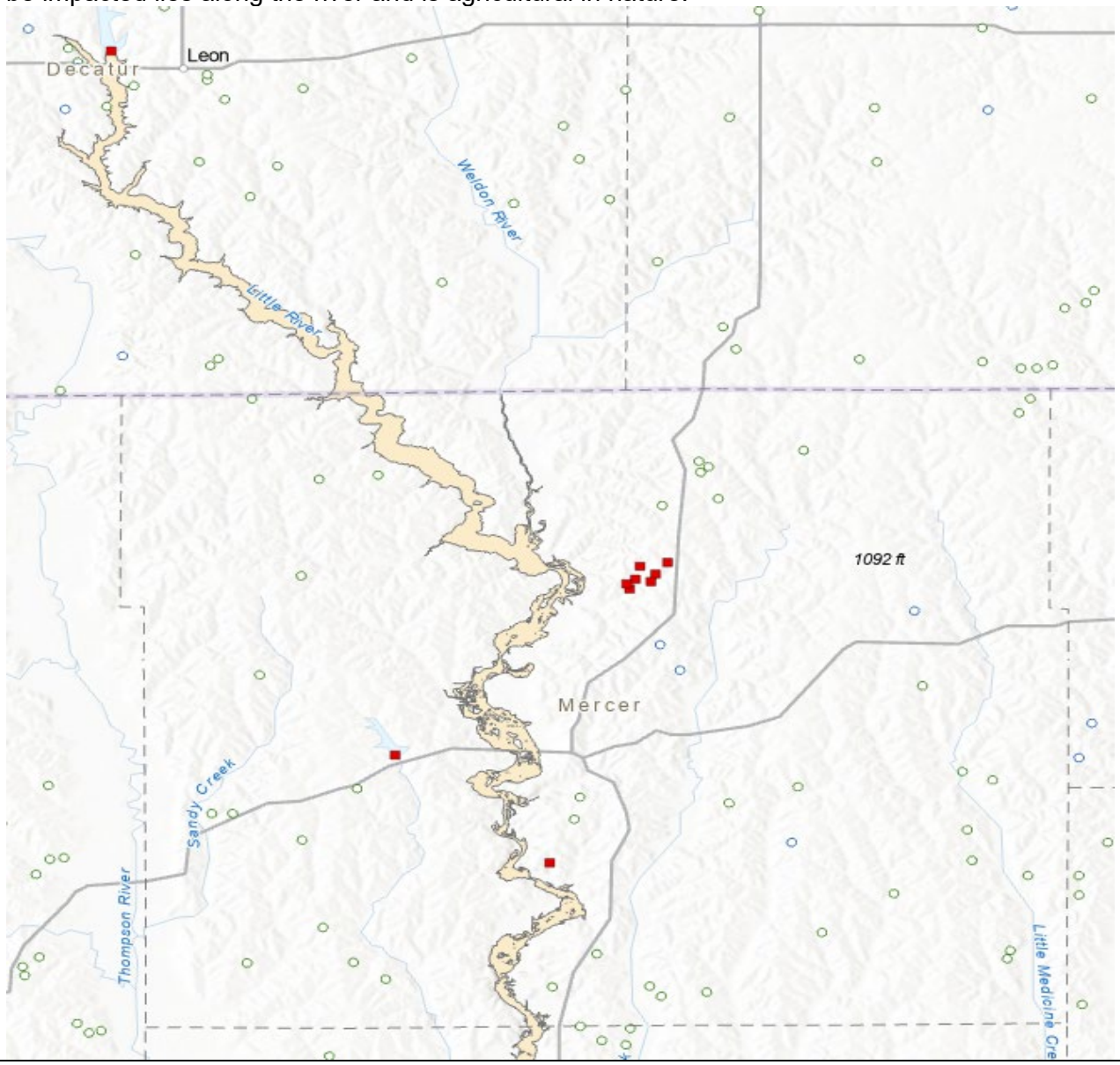
Table 3.6. Number and Types of Dams in Mercer County

National Inventory of Dams			State-Regulated Dams			Un-regulated Dams			Total
H	S	L	1	2	3	H	S	L	
9	4	40	2	2	2	6	4	38	

Upstream Dams Outside the Planning Area

Figure 3.11. Upstream Dams Outside Mercer County

The only upstream dam located outside of Mercer County that poses a hazard is The Little River Watershed Site M-1. It is an 1810-foot dam that is 61 feet tall. It is located at the southern side of Little River Lake between Decatur Iowa and Leon Iowa, north of HWY 69 in Iowa. If this dam were to fail, the inundation zone in Mercer County would be similar to a flood event. The area that would be impacted lies along the river and is agricultural in nature.



Source: US Army Corps of Engineers, Iowa Department of Natural Resources

Strength/Magnitude/Extent

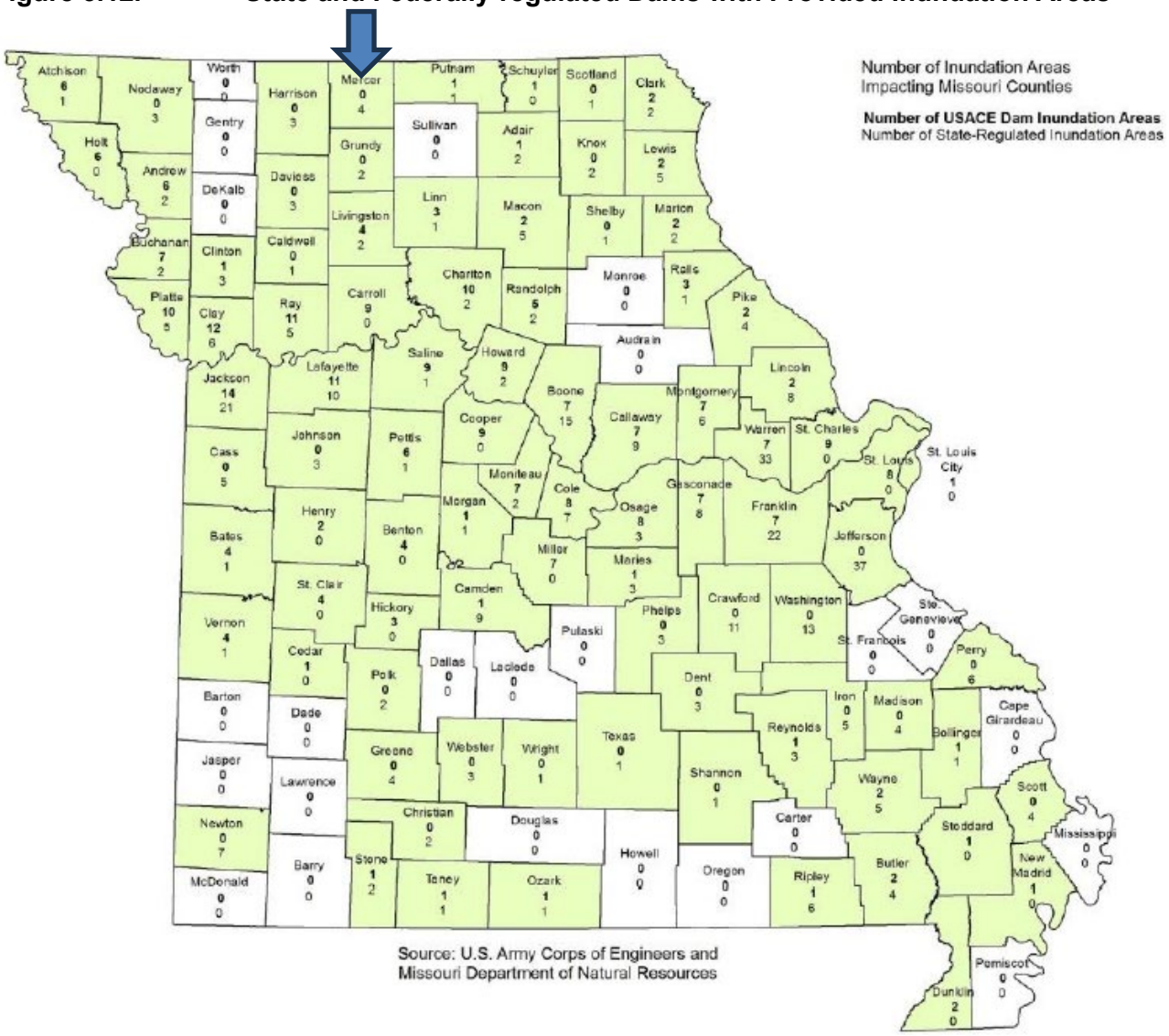
The strength/magnitude of dam failure would be similar in some cases to flood events (see the flood hazard vulnerability analysis and discussion). The strength/magnitude/extent of dam failure is related

to the volume of water behind the dam as well as the potential speed of onset, depth, and velocity. Note that for this reason, dam failures could flood areas outside of mapped flood hazards.

Catastrophic failure of a High Hazard/Class I dam has the potential to result in greater destruction due to the potential speed of onset and greater depth, extent, and velocity of flooding. Note that for this reason, dam failures could flood areas outside of mapped flood hazards.

The Missouri Department of Natural Resources was able to provide the available inundation maps for hazardous dams in the planning area for the following dams: Lake Paho Dam, Lake Marie Dam, Berndt Lake Dam, and Twin Lake Dam. These were the only dams that had an existing inundation zone map. They are shown in the following tables.

Figure 3.12. State and Federally-regulated Dams with Provided Inundation Areas



According to the 2023 Missouri State Hazard Mitigation Plan, there are 4 dams in Mercer County with provided inundation areas, these maps follow, and were provided by the Missouri Department of Natural Resources.

Figure 3.13. Inundation Zone of Lake Paho Dam

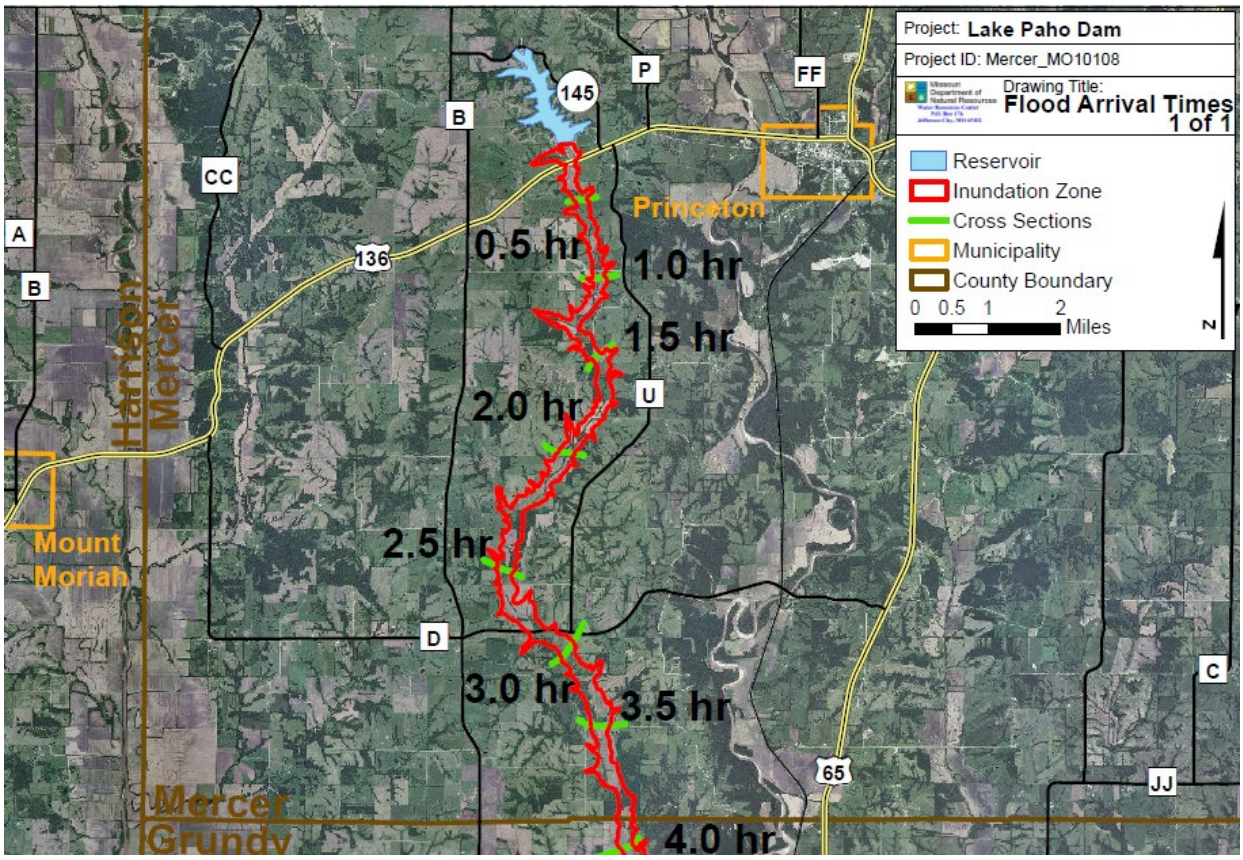


Figure 3.14. Inundation Zone of Lake Marie Dam

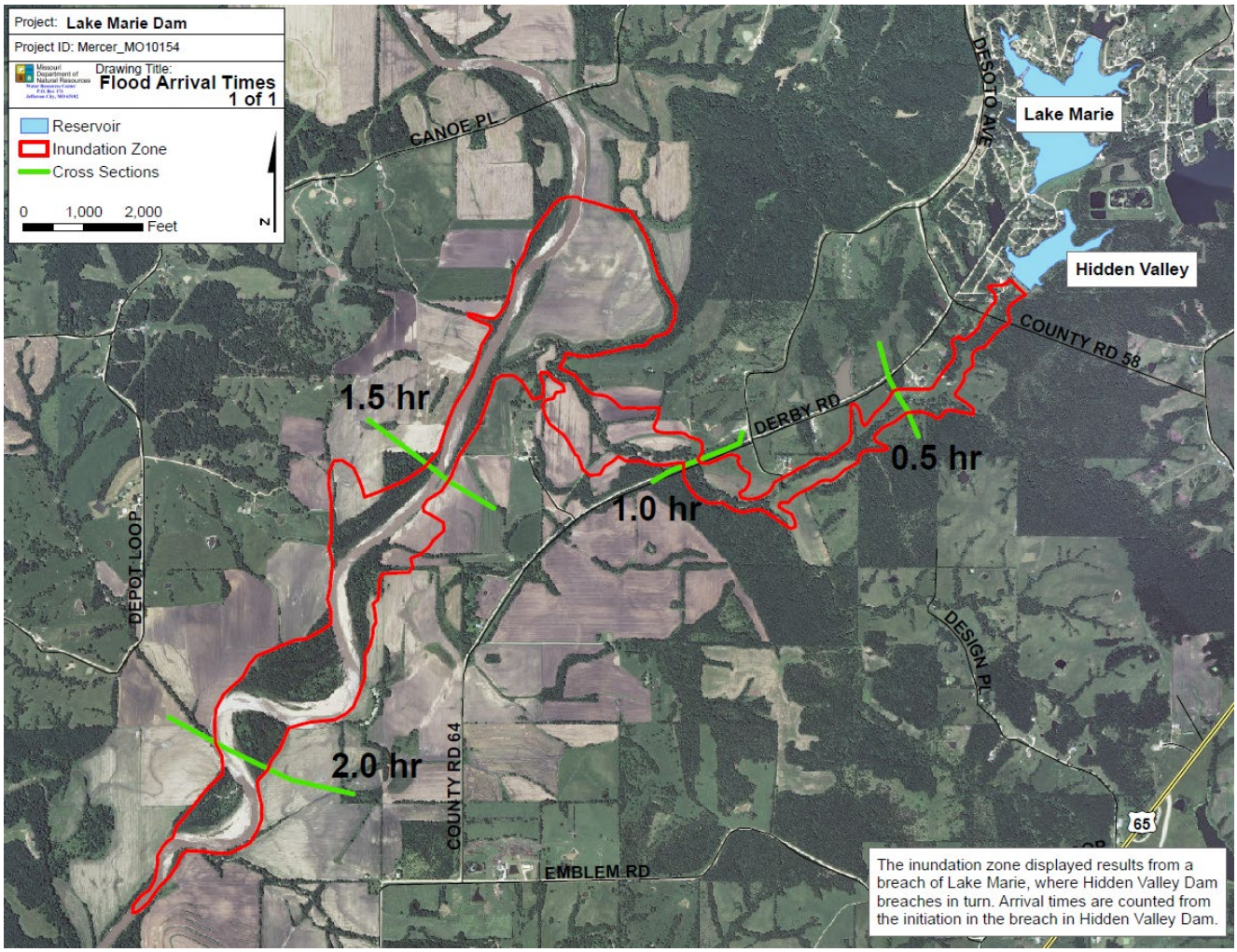


Figure 3.15. Inundation Zone of Berndt Lake Dam

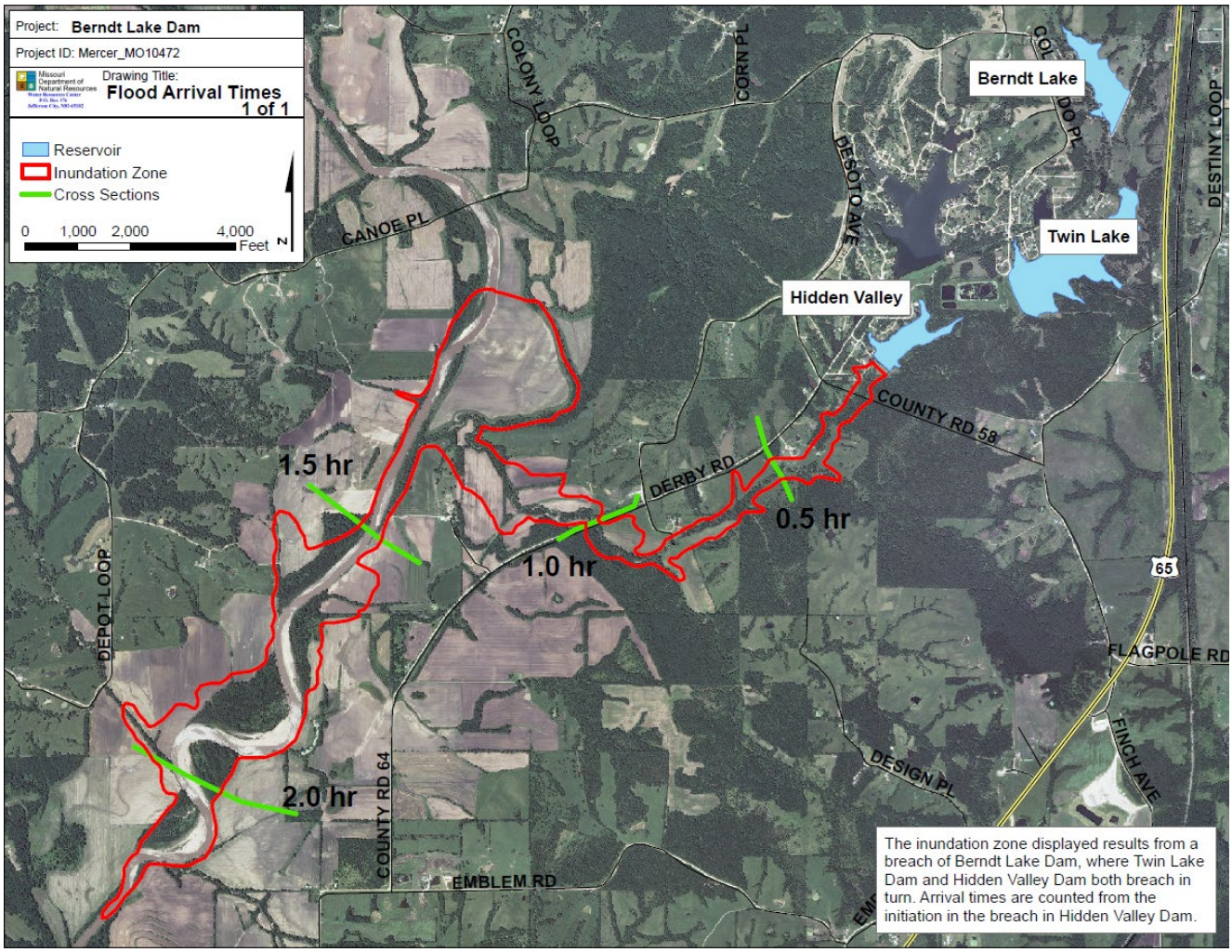
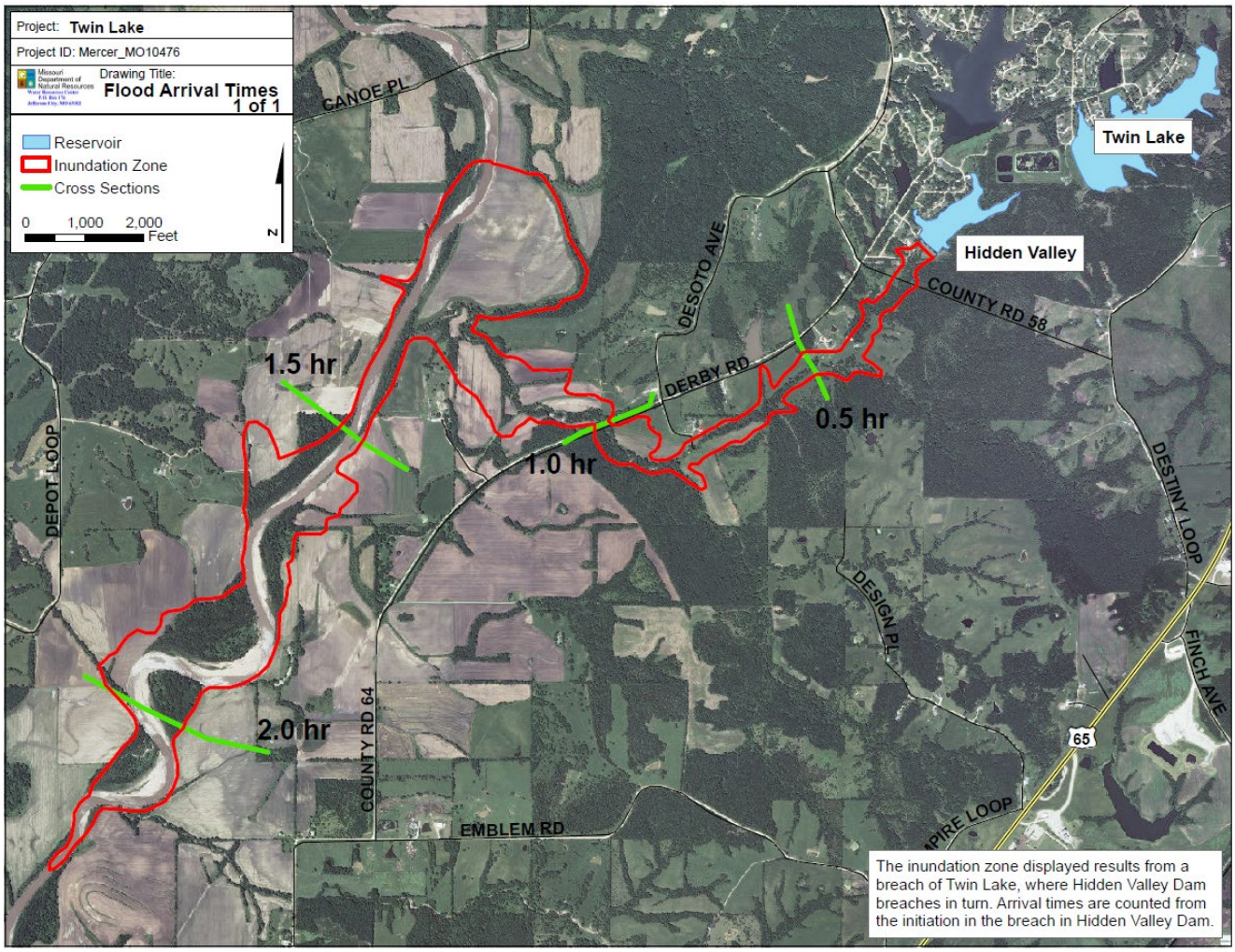


Figure 3.16. Inundation Zone of Twin Lake Dam



Previous Occurrences

According to Stanford University's National Performance of Dams Program and additional research there have been 86 incidents of dam failures in Missouri. One failure was recorded in 1917, all others in this data set occurred between 1975 and 2016. The table below provides a listing of recorded events that have taken place in Mercer County.

Over the years, dam failure has caused billions of dollars in damage and injured or killed thousands of people in the United States. One of the concerns in Missouri is the smaller dams. They have become an area of concern as they continue to age and deteriorate. Hundreds of dams throughout the state are in need of rehabilitation, however it is difficult to implement the necessary maintenance due to lack of funding and questions about ownership.

The following table shows the only prior known dam failure in the planning area of Mercer County. (Table 3.7)

Table 3.7. NPDP Dam Incidents

Name of Dam	Date	Type of Breach	Damage in $
Lake Marie Dam	7/8/1993	Embankment Erosion	None reported

Source: 2023 Missouri State Hazard Mitigation Plan (Table 3.49 Dam Incidents in Missouri)

Probability of Future Occurrence

Of the dams in Mercer County, there are only 6 that are state regulated, and none are USACE dams. Of the 6 state regulated dams in Mercer County, only 4 are required to have an emergency action plan in place. Due to the fact that most of the dams in the planning area are unregulated, and there is only one previous occurrence on record, calculating the probability of dam failure accurately is difficult.

$$\frac{\mathbf{1}}{\mathbf{100}} = \boldsymbol{x}(\mathbf{100})$$

According to the above formula, the probability of dam failure in Mercer County is 1% in any given year. However, due to lack of information about most of the dams and the age of most of the dams, and to allow for a risk assessment, the probability of this event has been included as less than 10%.

Changing Future Conditions Considerations and the Impact of Climate Change

According to the Missouri Hazard Mitigation Plan of 2023, there have been studies conducted to investigate the impact of climate change on dam safety. Flooding and the increased pressure that flooding places on dams is already linked to dam failure. The impacts of changing future conditions on dam failure will most likely be those related to changes in precipitation and flood likelihood. The projections about changes in future conditions suggest that precipitation may increase and occur in more extreme events, which could increase the risk of flooding, therefore adding stress on dams and increasing the likelihood of dam failure. These studies also conclude that the probability of total hydrological failure of a dam will increase in the future climate. Additionally, the extent and depth of flood waters will increase by the future dam break scenario.

Vulnerability

Vulnerability Overview

Most of Mercer County's vulnerability in the event of a dam failure is loss of agriculture assets. None of the school buildings appear to be at risk due to their location and elevation. Neither Mercer nor Princeton is in a dam inundation zone. There is a possibility that there might be limited road closures or damages downstream in the event of dam failure.

Potential Losses to Existing Development: (including types and numbers, of buildings, critical facilities, etc.)

Information concerning the vulnerability of Mercer County to dam failure is provided in the following table. (Table 3.8)

Table 3.8. Mercer County Estimated Numbers & Values of Structures & Population Vulnerable to Failure of State-Regulated Dams with Available Inundation Areas

# of Class 1 dams	# of Class 2 dams	# of Class 3 dams	Estimated # of Buildings	Estimated Total Building Exposure	
				Agricultural (1)	Residential (1)
4	9	40	2	$911,683	$294,344

Source: Missouri State Hazard Mitigation Plan 2023

Impact of Previous and Future Development

Due to the rural nature of Mercer County and the declining population over the last decade, there has been no significant development in the planning area. Therefore, there is no additional risk to consider within Mercer County. Likewise, there are no current plans for any significant development for any of the jurisdictions within the county, and therefore, there are no increased risks that must be considered in the next five years of the hazard mitigation plan.

Hazard Summary by Jurisdiction

Mercer County

The areas of Mercer County that are susceptible to damage from dam failure are mostly agricultural, with few structures or people at risk in the case of dam failure. This information is confirmed with the existing inundation zone maps for the area.

The rest of the jurisdictions in the planning area are not at risk in the event of dam failure. Neither the City of Princeton nor the City of Mercer are in an inundation zone. The Princeton R-V School District and the North Mercer R-III School District are also outside the inundation zone of any high hazard dams.

Problem Statement

- Fortunately, the rural nature of the county contributes to less vulnerabilities in the event of dam failure. While there may be some damage, the lack of new development and lack of structures present in the inundation zones assures that any damage would be limited in scope and less severe if the planning area were more developed.
- A lack of regular inspection/maintenance of un-regulated high hazard dams was noted by the Mitigation Planning Committee. Possible solutions include the development of a regular maintenance schedule, identification of qualified staff and/or consultant to assist, and maintenance report submittal requirements.

3.4.3 Earthquakes

Hazard Profile

Hazard Description

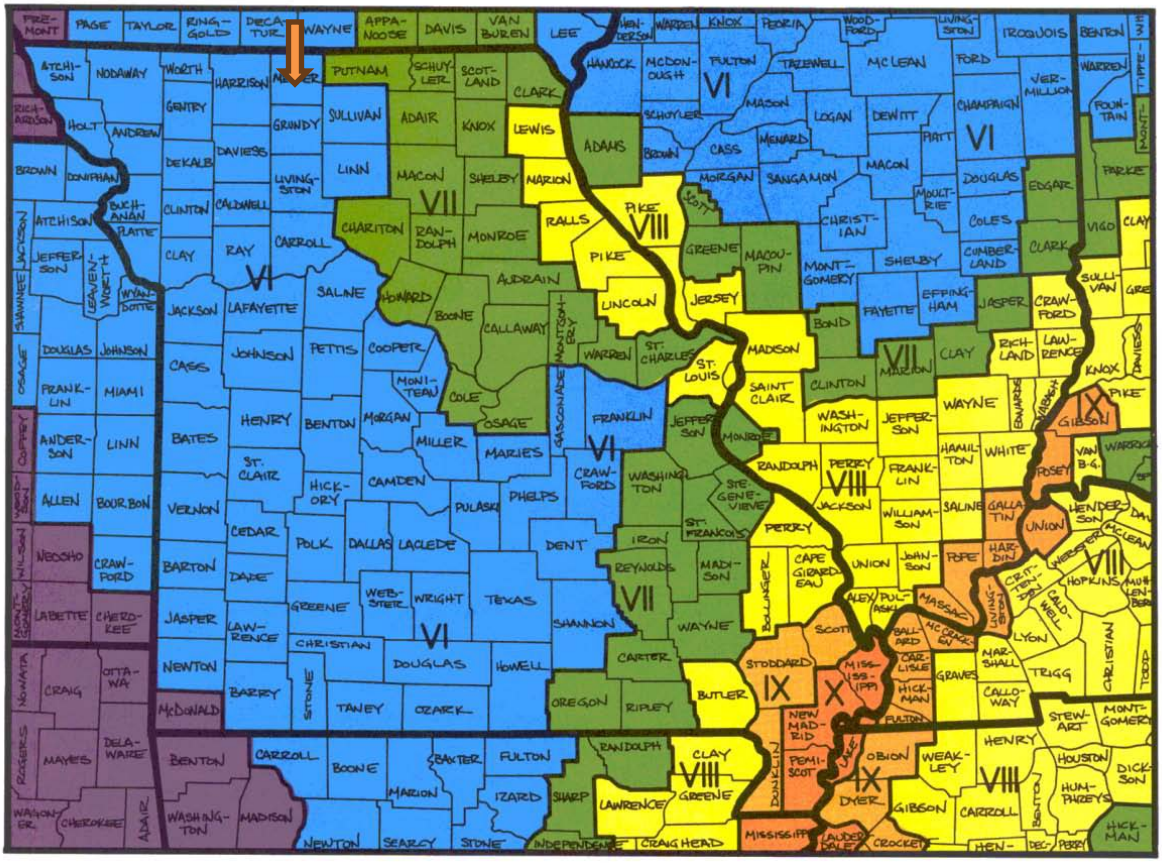
An earthquake is a sudden motion or trembling that is caused by a release of energy accumulated within or along the edge of the earth's tectonic plates. Earthquakes occur primarily along fault zones and tears in the earth's crust. Along these faults and tears in the crust, stresses can build until one side of the fault slips, generating compressive and shear energy that produces the shaking and damage to the built environment. The heaviest damage generally occurs nearest the earthquake epicenter, which is that point on the earth's surface directly above the point of fault movement. The composition of geologic materials between these points is a major factor in transmitting energy to buildings and other structures on the earth's surface.

Missouri holds the record for the most devastating earthquake in the history of post-settlement North America. The New Madrid 1811-1812 earthquake series included five earthquakes of magnitude 8.0 (Modified Mercalli Intensity Scale) or higher occurring in the period December 16, 1811, through February 7, 1812. These earthquakes affected an estimated 600,000 square kilometers. Movement was felt as far away as Quebec, and damage was reported in Charleston, South Carolina, and Washington D.C.

Geographic Location

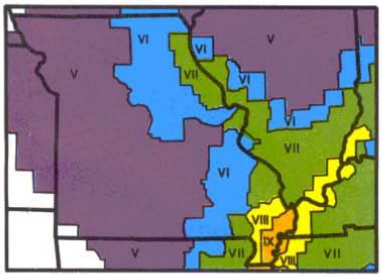
While the history of the New Madrid fault line and its potential for another major earthquake is well known and much studied, that threat lies far enough away from Mercer County that the effects of such an event would be negligible. However, another buried feature named the Nemaha uplift and its associated Humbolt fault stretch from Central Oklahoma to southeast Iowa across eastern Kansas and southeastern Nebraska. While this fault line is closer to Mercer County is closer than the New Madrid fault line, no Mercalli Intensity scale projections seem to be available, so the potential damage is not predictable.

Figure 3.17. Impact Zones for Earthquake Along the New Madrid Fault



This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude – 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.

6.7

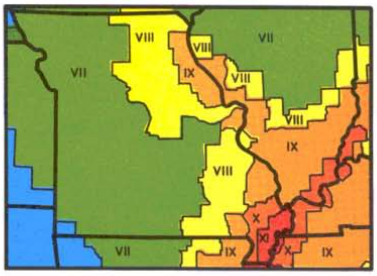


This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude – 6.7 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.

7.6

This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude – 8.6 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.

8.6



Source: https://sema.dps.mo.gov/docs/EQ_Map.pdf

Mercer County is indicated by an orange arrow.

Figure 3.18. Projected Earthquake Intensities

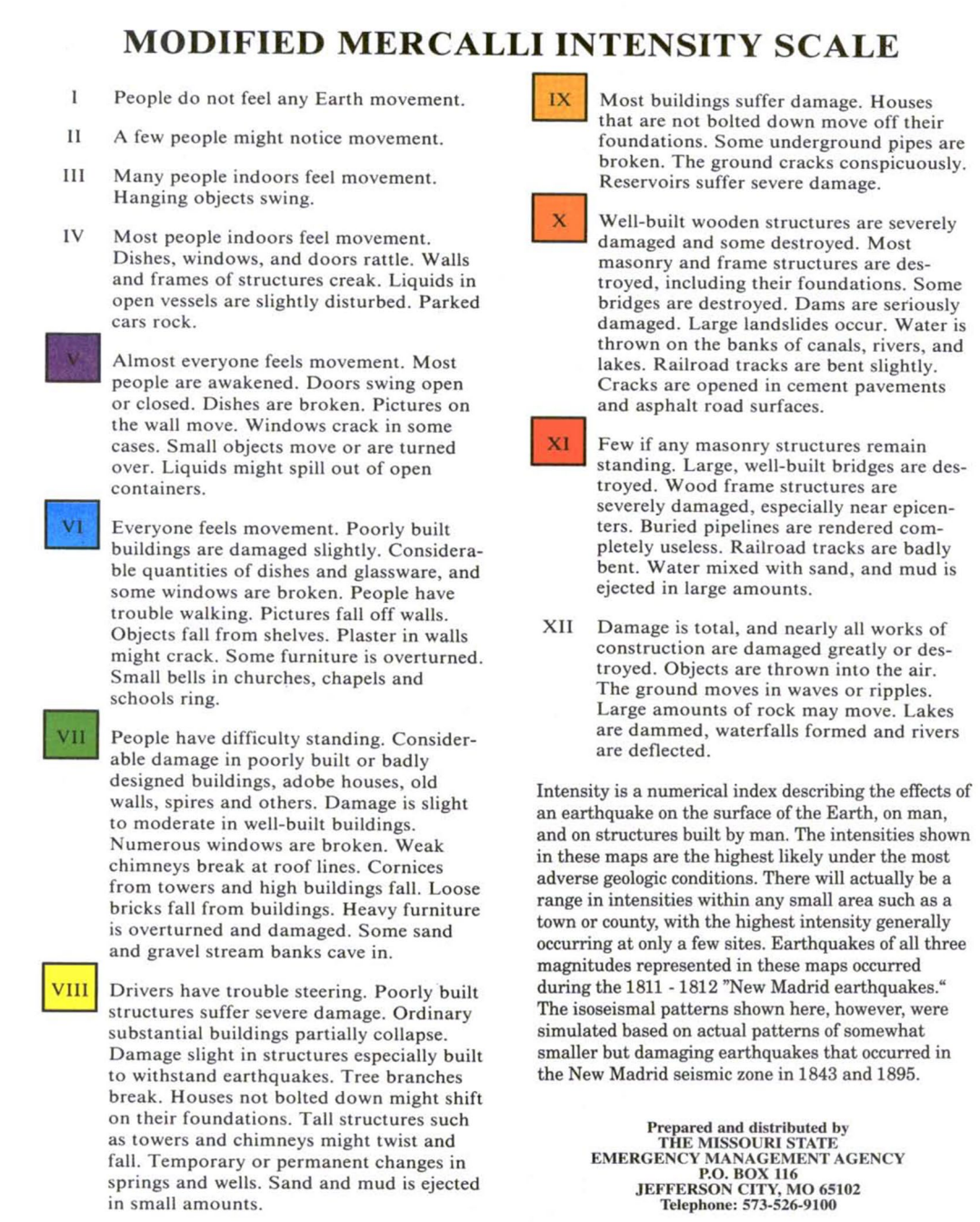
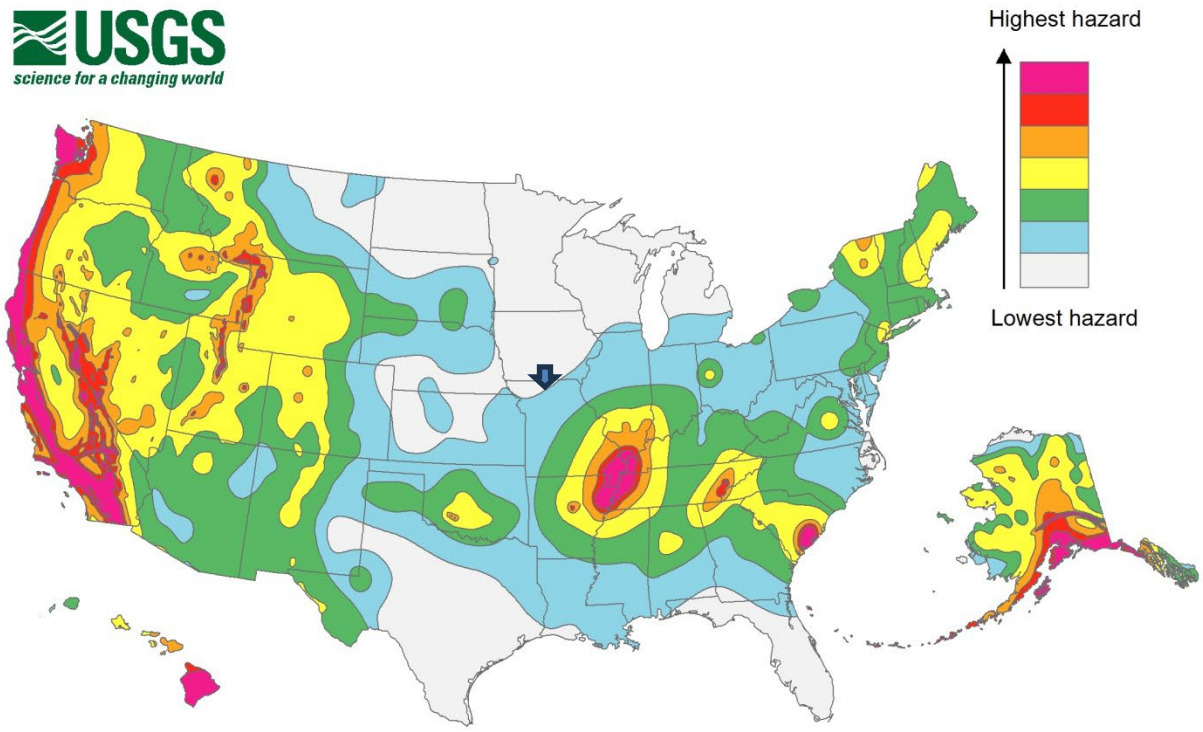


Figure 3.19. United States Seismic Hazard Map

United States Seismic Hazard Map



Source: United States Geological Survey at
https://earthquake.usgs.gov/hazards/hazmaps/conterminous/2014/images/HazardMap2014_lg.jpg

Mercer County is indicated by a blue arrow.

Strength/Magnitude/Extent

The extent or severity of earthquakes is generally measured in two ways: 1) the Richter Magnitude Scale is a measure of earthquake magnitude; and 2) the Modified Mercalli Intensity Scale is a measure of earthquake severity. The two scales are defined as follows.

Richter Magnitude Scale

The Richter Magnitude Scale was developed in 1935 as a device to compare the size of earthquakes. The magnitude of an earthquake is measured using a logarithm of the maximum extent of waves recorded by seismographs. Adjustments are made to reflect the variation in the distance between the various seismographs and the epicenter of the earthquakes. On the Richter Scale, magnitude is expressed in whole numbers and decimal fractions. For example, comparing a 5.3 and a 6.3 earthquake shows that the 6.3 quake is ten times bigger in magnitude. Each whole number increase in magnitude represents a tenfold increase in measured amplitude because of the logarithm. Each whole number step in the magnitude scale represents a release of approximately 31 times more energy.

Modified Mercalli Intensity Scale

The intensity of an earthquake is measured by the effect of the earthquake on the earth's surface. The intensity scale is based on the responses to the quake, such as people awakening, movement of furniture, damage to chimneys, etc. The intensity scale currently used in the United States is the Modified Mercalli (MM) Intensity Scale. It was developed in 1931 and is composed of 12 increasing levels of intensity. They range from imperceptible shaking to catastrophic destruction, and each of the twelve levels is denoted by a Roman numeral. The scale does not have a mathematical basis, but is based on observed effects. Its use gives the laymen a more meaningful idea of the severity.

Previous Occurrences

There have been 0 earthquakes recorded in Mercer County since 1931. This information was found at homefacts.com and was also listed in the previous Hazard Mitigation Plan for Mercer County.

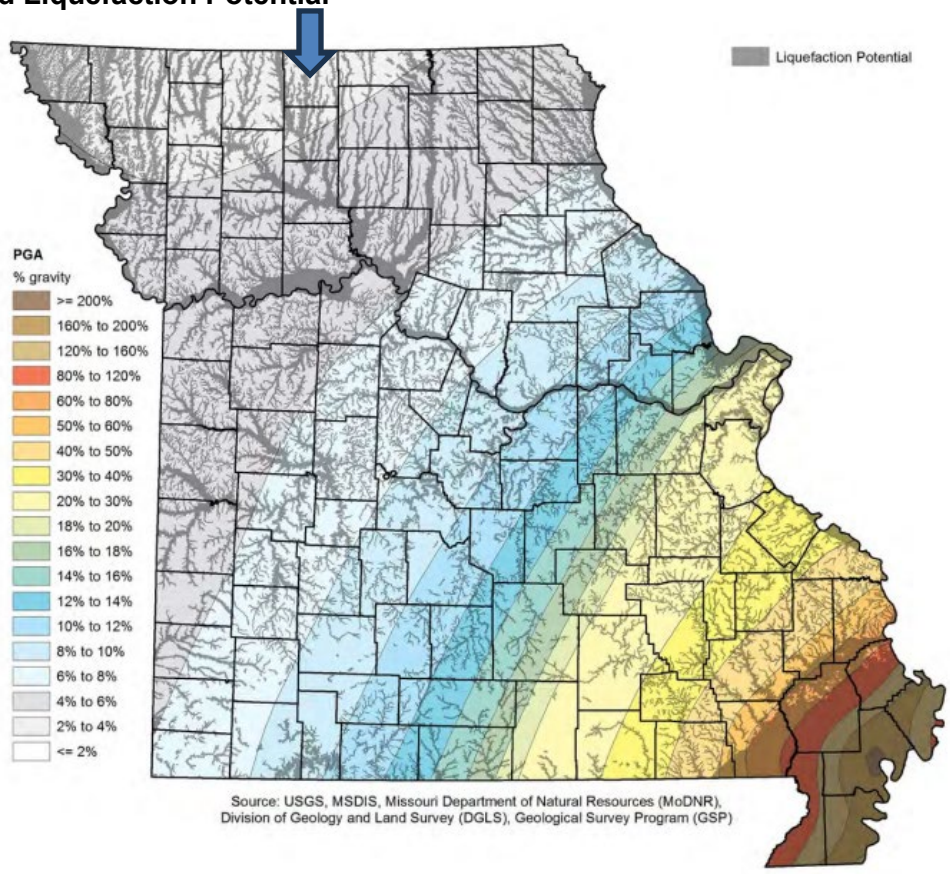
Probability of Future Occurrence

According to homefacts.com there is a very low risk level for Mercer County experiencing an earthquake. The probability of this occurring is 0.13% within the next 50 years.

2% Probability of Exceedence

The State Hazard Mitigation Plan ran a scenario, based on an event with a 2% probability of exceedance in 50 years, in order to determine the worst-case scenario. This scenario was equivalent to the 2,500 year earthquake scenario in HAZUS-MH. This methodology is based on the probabilistic seismic hazard shaking grids that were developed by the US Geological Survey (USGS) for the National Seismic Hazard Maps that are included with HAZUS-MH. The USGS maps provide estimates of peak ground acceleration and spectral acceleration at periods of 0.3 seconds and 0.1 seconds, respectively, which have a 2% probability of exceedance in the next 50 years. The most severe shaking is around the New Madrid Fault in Missouri. The following figure represents the potential for damage in areas with soils potentially susceptible to liquefaction.

Figure 3.20. HAZUS-MH Earthquake 2% Probability of Exceedance in 50 years – Ground Shaking and Liquefaction Potential



County	Cost Structural Damage	Cost Non-structural Damage	Cost Contents Damage	Inventory Loss	Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	Total Loss
Mercer	$293	$539	$121	$2	$191	$27	$41	$69	$1,282

Changing Future Conditions Considerations and the Impact of Climate Change

According to the Missouri Hazard Mitigation Plan 2023, scientists are beginning to believe that there may be a link between earthquakes and changing climate conditions. A change in the size of ice caps and sea-levels, this redistribution of weight over fault lines could potentially have an influence on earthquake occurrences. At this time, this is only conjecture, so recent earthquakes should not be linked with climate change. The Missouri HMP does state that early research indicated that more intense earthquakes and tsunamis may eventually be added to the adverse consequences that are caused by changing future conditions.

Vulnerability

Vulnerability Overview

The 2023 Missouri State Hazard Mitigation Plan provided an earthquake loss estimation for each county. The annualized loss scenario from the 2023 State Hazard Mitigation Plan is provided in the

following table (Table 3.9).

Table 3.9. Hazus-MH Earthquake Loss Estimation: Annualized Loss Scenario

County	Total Losses, in $ Thousands	Loss Per Capita, in $ Thousands	Loss Ratio, in $ per Million
Mercer	$1	$0.0004	$4

Source: Missouri Hazard Mitigation Plan 2023

According to the Overview of Residential Earthquake Insurance in 2022, 2.3% of Mercer County residents have earthquake insurance. According to this report, the percentage of coverage for earthquakes has been declining since 2014. The following table provides county specific information.

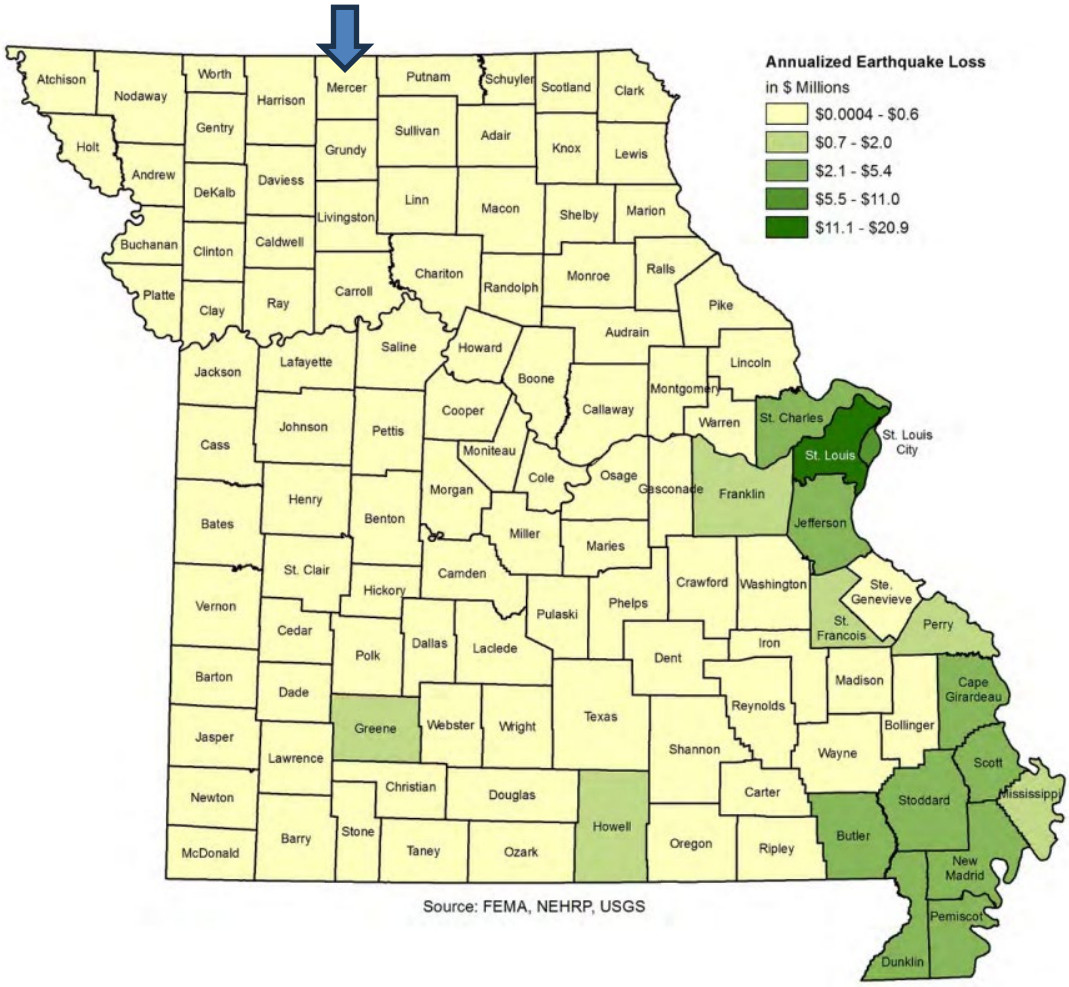
Table 3.10. Earthquake Coverage in Mercer County Missouri

Earthquake Exposures	Homeowners, Farm, Mobile Home Exposures	% With Earthquake Endorsement	Average Premium, All Earthquake	Average Premium, $110k-$140k Coverage
35	1,508	2.3%	$79	$30

Source: Missouri Department of Commerce & Insurance "Overview of Residential Earthquake Insurance 2022"

Potential Losses to Existing Development

Figure 3.21. HAZUS-MH Earthquake Loss Estimation: Annualized Loss Scenario – Direct Economic Losses to Buildings



Source: The 2023 Missouri State Hazard Mitigation Plan

Table 3.11. HAZUS-MH Earthquake Loss Estimation: Annualized Loss Scenario – Mercer County

Total losses, in $ Thousands	Loss Per Capita, in $ Thousands	Loss Ratio, in $ per Million
$1	$0.0004	$4

Source: Missouri State Hazard Mitigation Plan 2023

Table 3.12. HAZUS Earthquake Loss Estimation 2% Probability of Exceedance in 50 Years Scenario Results – Summary of Overall Impacts in Missouri

Type of Impact	Summary of Modeled Impacts
Total Buildings Damaged	Slight: 372,790 Moderate: 223,225 Extensive: 88,883 Complete: 47,549
Building and Income Related Losses	$51.4 billion
Total Economic Losses (includes building, income, and lifeline losses)	$63.4 billion
Casualties (based on 2AM time of occurrence)	Without requiring hospitalization: 15,454 Requiring hospitalization: 3,855 Life threatening: 512 Fatalities: 999
Casualties Based on 2PM time of occurrence)	Without requiring hospitalization: 21,732 Requiring hospitalization: 5,727 Life threatening: 833 Fatalities: 1.606
Casualties (based on 5PM time of occurrence)	Without requiring hospitalization: 15,480 Requiring hospitalization: 4.020 Life threatening: 574 Fatalities: 1,090
Damage to Schools	339 with at least moderate damage*
Damage to Medical Facilities	159 with at least moderate damage*
Damage to Fire Stations	194 with at least moderate damage*
Damage to Transportation Systems	819 highway bridges, at least moderate damage* 464 highway bridges, complete damage* 4 railroad bridges, moderate damage 12 airport facilities, moderate damage
Households without Power/Water Service (based on 2,375,611 households)	Power loss, Day 1: 364,335 Water loss, Day 1: 753,546 Water loss, Day 3: 730,857 Water loss, Day 7: 687,407 Water loss, Day 30: 549,352 Water loss, Day 90: 254,958
Displaced Households	48,730
Shelter Requirements	32,237 people out of 5,988,927 total population
Debris Generation	16.2 million tons

Source: Missouri State Hazard Mitigation Plan 2023

Figure 3.22. FEMA National Risk Index Loss Estimation: Annualized Loss Scenario for Mercer County

Annualized Frequency	Expected Annual Loss Buildings ($ thousands)	Expected Annual Loss-Fatalities	Expected Annual Loss-Population Equivalence	Expected Annual Loss- Total	Expected Annual Loss Rating
0.00020	$1	0.00001	$80	$1,572	Very Low

Source: 2023 Missouri State Hazard Mitigation Plan

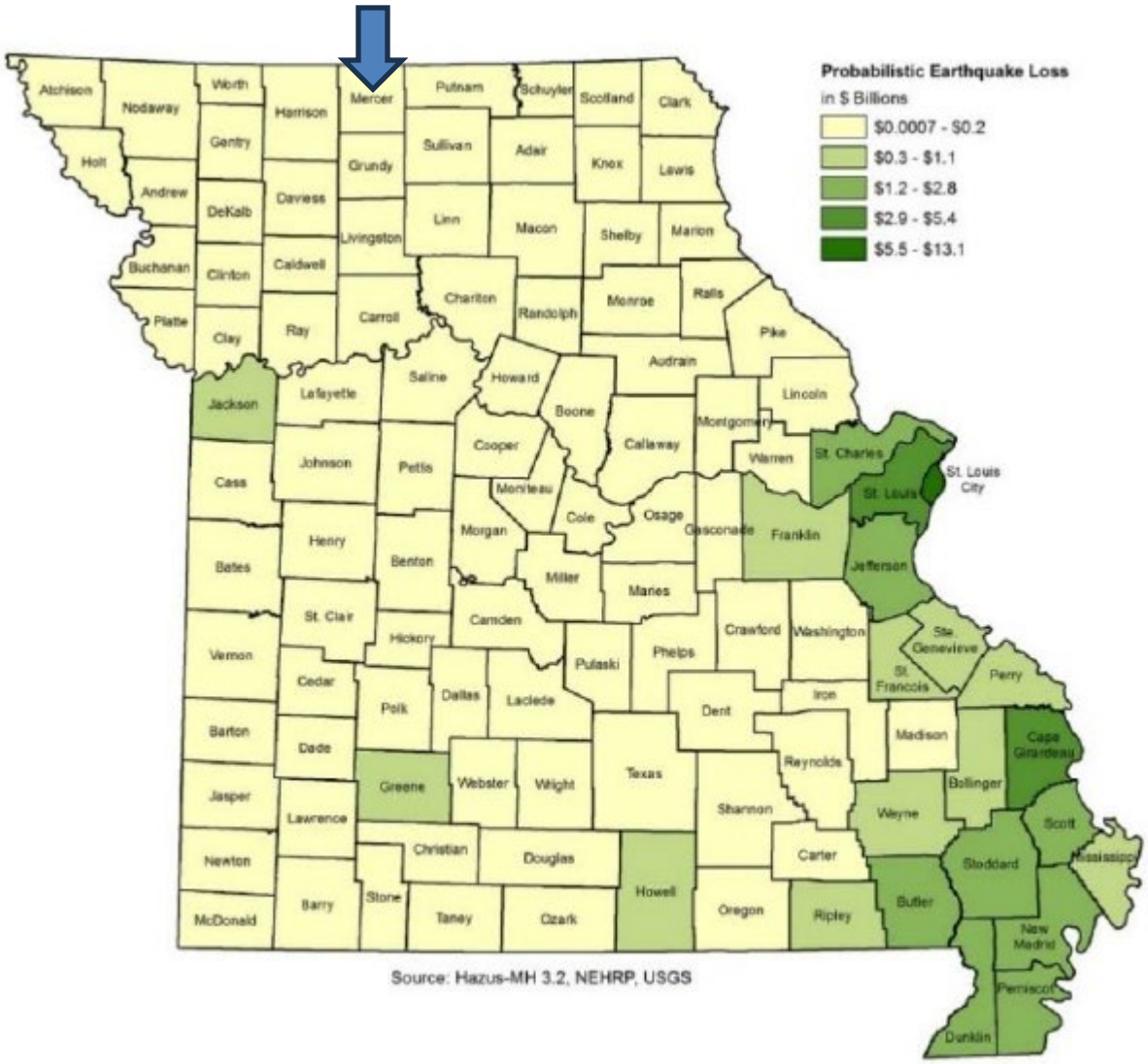
Figure 3.23. HAZUS-MH Earthquake Loss Estimation 2% Probability of Exceedance in 50

Years Scenario Direct Economic Losses Results for Mercer County (all values in thousands)

Cost Structural Damage	Cost Non-structural Damage	Cost Contents Damage	Inventory Loss	Loss Ratio %	Relocation Loss	Capital Related Loss	Wages Losses	Rental Income Loss	Total Loss
$293	$539	$121	$2	.21	$191	$27	$41	$69	$1,282

Source: 2023 Missouri State Hazard Mitigation Plan

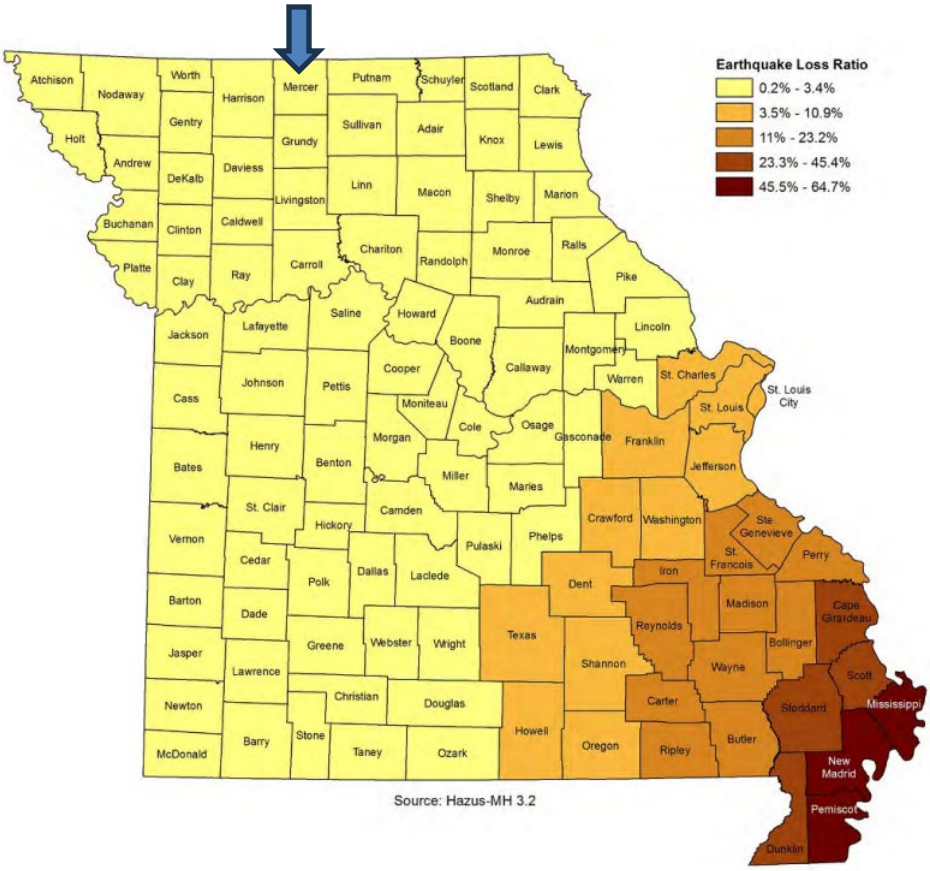
Figure 3.24. HAZUS-MH Earthquake Loss Estimation with a 2% Probability of Exceedance in 50 Years Scenario – Total Building Loss



Source: Missouri State Hazard Mitigation Plan 2023

Figure 3.25. HAZUS-MH Earthquake Loss Estimation with a 2% Probability of Exceedance

in 50 Years Scenario – Loss Ratio



Source: Missouri State Hazard Mitigation Plan 2023

Impact of Previous and Future Development

Any future development to the planning area while unexpected, would not increase the risk to an earthquake other than contributing to the overall exposure of what could become damaged as a result of an earthquake event.

Hazard Summary by Jurisdiction

Since the earthquake intensity is not likely to vary greatly throughout Mercer County, the risk will be the same throughout. However, damages could differ if there are structural variations in the planning area built environment. For example, older structures and those structures which are not in prime condition are likely to experience higher damages.

Since the earthquake intensity is not likely to vary greatly throughout the planning area, the risk will be the same throughout the planning area. According to Appendix C in the Missouri State Hazard Mitigation Plan, the damage to Tier II Facilities in Mercer County is estimated to be “None”, therefore no further information has been provided in this plan, as the risk to the planning area is very low. There are also no projected damages to roadways or bridges in the planning area.

Problem Statement

- There are some older buildings in the planning area, and a minority of people (5.3% as of 2014) purchase earthquake insurance. A possible solution for the lack of coverage would be to educate the residents of Mercer County on the relatively low cost of earthquake insurance in the county.
- The risk for damage from earthquakes is possible, but unlikely. History shows that any earthquakes perceived by the population were only minor shaking causing no damage. Residents should be aware that earthquakes can happen on any active fault, large or small. If an earthquake of a higher magnitude were to occur, the residents of Mercer County might feel some slight effects.
- Both school districts do conduct earthquake drills. These drills are done to educate students about what to do in the event of an earthquake.

3.4.4 Drought

Hazard Profile

Hazard Description

Drought is generally defined as a condition of moisture levels significantly below normal for an extended period of time over a large area that adversely affects plants, animal life, and humans. A drought period can last for months, years, or even decades. There are four types of drought conditions relevant to Missouri, according to the State Plan, which are as follows.

- Meteorological drought is defined in terms of the basis of the degree of dryness (in comparison to some "normal" or average amount) and the duration of the dry period. A meteorological drought must be considered as region-specific since the atmospheric conditions that result in deficiencies of precipitation are highly variable from region to region.

- Hydrological drought is associated with the effects of periods of precipitation (including snowfall) shortfalls on surface or subsurface water supply (e.g., streamflow, reservoir and lake levels, ground water). The frequency and severity of hydrological drought is often defined on a watershed or river basin scale. Although all droughts originate with a deficiency of precipitation, hydrologists are more concerned with how this deficiency plays out through the hydrologic system. Hydrological droughts are usually out of phase with or lag the occurrence of meteorological and agricultural droughts. It takes longer for precipitation deficiencies to show up in components of the hydrological system such as soil moisture, streamflow, and ground water and reservoir levels. As a result, these impacts also are out of phase with impacts in other economic sectors.

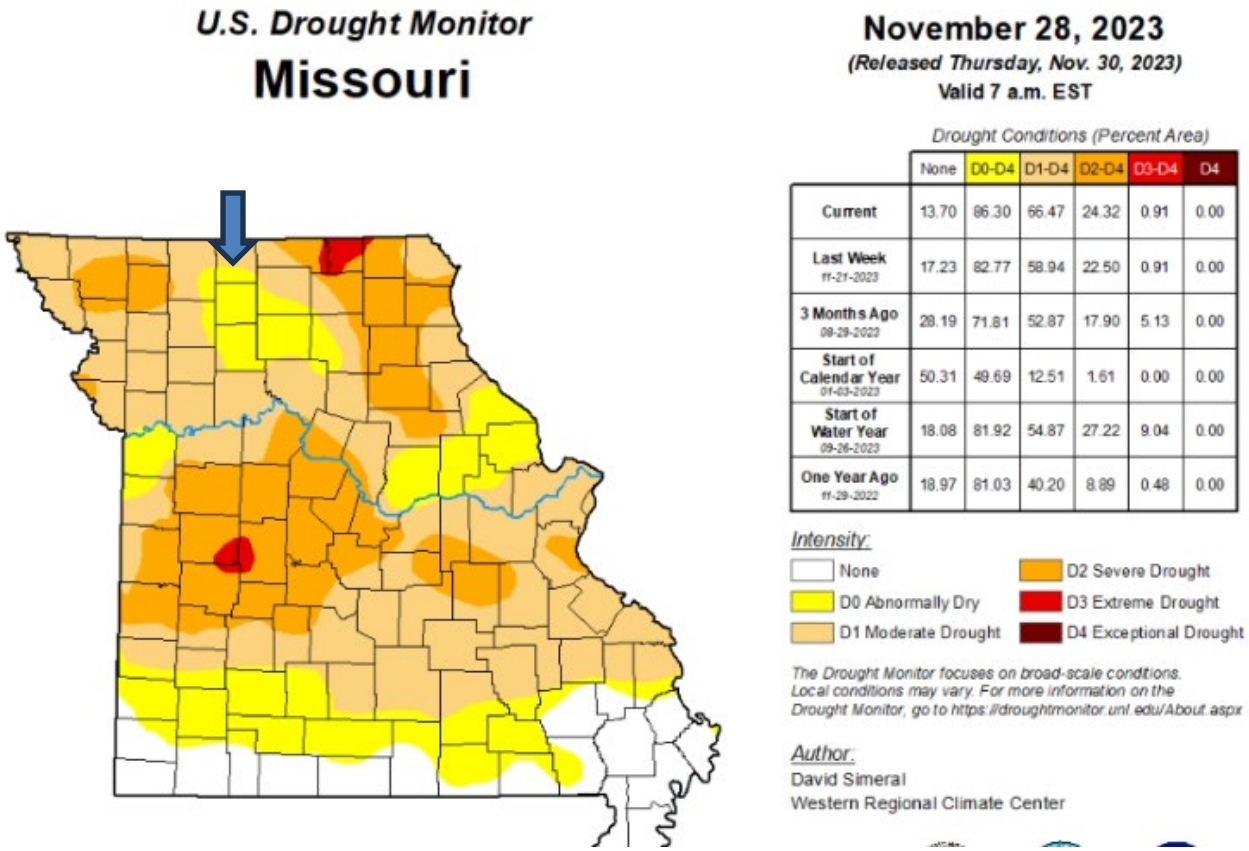
- Agricultural drought focus is on soil moisture deficiencies, differences between actual and potential evaporation, reduced ground water or reservoir levels, etc. Plant demand for water depends on prevailing weather conditions, biological characteristics of the specific plant, its stage of growth, and the physical and biological properties of the soil.

- Socioeconomic drought refers to when physical water shortage begins to affect people.

Geographic Location

Because of the broad scope of drought, all of Mercer County is susceptible to this hazard. Agricultural land is extremely vulnerable to drought impacts, and according to US Census data 78% of Mercer County total land area is classified as farmland, making the impact of drought one that is acutely felt by Mercer County residents. There is farmland throughout the county, and no plans for development, so the impacts of drought will remain the same.

Figure 3.26. U.S. Drought Monitor Map of Missouri on November 28, 2023



Source: U.S. Drought Monitor, https://droughtmonitor.unl.edu/Maps/MapArchive.aspx

The map provided above is a snapshot of the drought conditions for November 28, 2023. The conditions of drought will become worse over time if the area receives less than normal amounts of precipitation.

Strength/Magnitude/Extent

The Palmer Drought Indices measure dryness based on recent precipitation and temperature. The indices are based on a "supply-and-demand model" of soil moisture. Calculation of supply is relatively straightforward, using temperature and the amount of moisture in the soil. However, demand is more complicated as it depends on a variety of factors, such as evapotranspiration and recharge rates. These rates are harder to calculate. Palmer tried to overcome these difficulties by developing an algorithm that approximated these rates and based the algorithm on the most readily available data — precipitation and temperature.

The Palmer Index has proven most effective in identifying long-term drought of more than several months. However, the Palmer Index has been less effective in determining conditions over a matter of weeks. It uses a "0" as normal, and drought is shown in terms of negative numbers; for example, negative 2 is moderate drought, negative 3 is severe drought, and negative 4 is extreme drought. Palmer's algorithm also is used to describe wet spells, using corresponding positive numbers.

Palmer also developed a formula for standardizing drought calculations for each individual location based on the variability of precipitation and temperature at that location. The Palmer index can

therefore be applied to any site for which sufficient precipitation and temperature data is available.

The National Drought Mitigation Center uses a scale to show the intensity of drought that goes from D0 to D4. The following Figure shows the correlation of this scale to the Palmer Index. Reports from NCEI Storm Database use the D0-D4 scale in their narratives.

Figure 3.27. Drought Severity Classification

Category	Description	Possible Impacts	Palmer Drought Index
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered	-1.0 to -1.9
D1	Moderate Drought	Some damage to crops, pastures; streams, reservoirs, or wells low, some water shortages developing or imminent; voluntary water-use restrictions requested	-2.0 to -2.9
D2	Severe Drought	Crop or pasture losses likely; water shortages common; water restrictions imposed	-3.0 to -3.9
D3	Extreme Drought	Major crop/pasture losses; widespread water shortages or restrictions	-4.0 to -4.9
D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies	-5.0 or less

Previous Occurrences

According to the Drought Impact Reporter Dashboard, in the last 12 months, Mercer County had 4 occurrences of drought. These 4 occurrences are listed in order of most recent and are provided in addition to the table of occurrences, to provide anecdotal evidence of recent conditions and impacts from drought.

- 7/25/2023-8/24/2023: Missouri's Drought Assessment Committee met on July 25th as the drought continued. There were 8 fish kills that occurred across the state due to low water and reduced oxygen in the water. Record-breaking cattle sales took place. Conditions were determined to be favorable for aflatoxin in the corn crop, which could be fatal for livestock. The USACE warned of difficulty navigating the Mississippi River due to low water levels.

- 6/13/2023-7/13/2023: Governor Mike Parson announced "emergency" access to water and hay for farmers amid drought conditions. Farmers were able to access water from 25 state parks and 36 Missouri Department of Conservation areas. Additionally, they were able to access hay from 17 state parks. MoDOT allowed over-width hauling permits at no cost to help farmers and ranchers move hay.

- 6/7/2023-7/7/2023: Missouri's Drought Assessment Committee met on June 7th to discuss bulk water purchases and expansion of livestock grazing areas in an effort to help farmers and ranchers severely affected by the drought.

- 5/31/2023-5/1/2024: Governor Mike Parson signed an executive order extending Missouri's drought alert through May of 2024. This order activated the Missouri Drought Assessment Committee and requested that state and federal agencies participate as needed. This was in response to prolonged drought conditions throughout the state. Due to the drought, many farmers were forced to sell livestock early and were looking for alternative feed.

Table 3.13. Previous Occurrences of Drought in Mercer County 2003-2023

Location of Drought	Begin Date-End Date	Episode Narrative
Mercer County	7/1/2012-7/31/2012	Below normal precipitation continued through July, with D2 severe drought conditions across the county. Princeton reported 1.05 inches of rain for the month of July.
Mercer County	8/1/2012-8/31/2012	Below normal precipitation continued through August, with D3 extreme conditions across the county. Princeton reported 3.45 inches of rain for the month of August.
Mercer County	9/1/2012-9/30/2012	Extreme drought conditions prevailed across the county. Princeton measured 1.05 inches of rain.
Mercer County	10/1/2012-10/31/2012	Drought D3 conditions prevailed across the county. Princeton received 3.12 inches of rain.
Mercer County	11/1/2012-11/30/2012	Drought D2 conditions prevailed across the county. Princeton received 2.02 inches of rain.
Mercer County	12/1/2012-12/31/2012	Drought D2 conditions prevailed across the county. Princeton received 1.57 inches of precipitation.
Mercer County	1/1/2013-1/31/2013	Severe drought D2 conditions prevailed across the county. Princeton reported 1.56 inches of precipitation.
Mercer County	8/27/2013-8/31/2013	Severe drought conditions developed across Mercer County at the end of August. Princeton reported 0.33 inches of rain.
Mercer County	9/1/2013-9/30/2013	Severe D2 drought conditions persisted across the county. Princeton reported 3.63 inches of rain.
Mercer County	10/1/2013-10/31/2013	Severe D2 drought conditions continued across the county. Princeton received 1.97 inches of rain.
Mercer County	7/1/2018-7/31/2018	The abnormally dry summer continued into and through July for Mercer County. The Drought Monitor put the county in D3 and maintained it into August.
Mercer County	8/1/2018-8/31/2018	Mercer County reached or maintained D3 drought status for the entire month. While rain did move into the area through the month, the ground was dry enough from the below normal precipitation and above normal temperatures through the month to warrant D3 status maintenance. The direct impact to Mercer County is unclear, but statewide drought impacts are estimated around 2 billion dollars, per The University of Missouri Extension Center. The drought has also hurt pastures, with about three-quarters in poor or very poor conditions, according to the USDA report. Many pastures haven't been able to support grazing cattle, prompting farmers to feed cattle with hay that might normally be saved for winter. It's also hurt the hay crop, which is down about one-third from normal. The 2018 drought is turning out small corn ears. Some farmers are not waiting until harvest, instead trying to get the most out of the crop by baling it or cutting it for silage for cattle. Farmers can now clean out sediment in ponds to increase water-holding capacity. Ponds in the conservation program are built for erosion control.|||Sources: https://www.stltoday.com/news/local/govt-and-politics/from-drinking-water-to-farms-drought-s-effect-creeping-across/article_35440d14-a1c4-5f86-ac64-b5b63906fe57.html .||https://www.foxnews.com/us/drought-takes-toll-on-missouri-farmers-crops-cattle .||https://www.missouriruralist.com/weather/cattleman-turns-baling-corn-drought .||https://www.missouriruralist.com/conservation/3-

		conservation-restrictions-lifted-during-drought .
Mercer County	9/1/2018-9/30/2018	The drought of 2018 continued for Mercer County, however an influx of some moisture brought some minor relief to the county. Conditions improved from D3 to D2 during the month of September, but the impacts and losses of several crops were already felt across the region. The amount of damages is unknown at this point, but numerous farmers were unable to get full return from their crops.
Mercer County	6/20/2023-6/30/2023	After 2 months of relatively dry conditions portions of Missouri were brought into severe drought conditions. According to the Advanced Hydrologic Precipitation Service page there was a deficit of 2-5 inches across May and June which led to the declaration and maintenance of severe drought.
Mercer County	7/1/2023-7/31/2023	While some areas saw some average or above average rain through July, most of the area across eastern Kansas saw the severe drought conditions continue through the month of July. As of now, widespread drought impacts have not been reported.

Figure 3.28. Insured Crop Loss in Mercer County 2013-3023

In the past 10 years, Mercer County was subject to periods of drought that resulted in crop indemnities. The year of the highest losses was 2013, when a prolonged drought spanned three months in the summer. This prolonged drought resulted in a total of $5,172,087.58 worth of crop losses in Mercer County. The crops affected by drought in Mercer County in the last 10 years are: wheat, corn, soybeans, and grain sorghum. The following table provides the amount of drought losses in Mercer County for the last ten years.

Year	Crop	Losses
2023	Wheat	$6,202.00
	Soybeans	$137,086.00
2022	Corn	$130,476.50
	Soybeans	$924,381.00
2021	Corn	$49,338.00
	Soybeans	$16,118.00
2020	Corn	$110,909.35
	Grain Sorghum	$3,663.00
	Soybeans	$252,393.00
2019	Corn	$19,680.00
	Soybeans	$4,094.00
2018	Corn	$909,723.47
2017	Wheat	$1,855.00
	Corn	$160,848.00
	Soybeans	$246,252.00
2016	Corn	$19,202.00
	Soybeans	$5,484.00
2015	No Claims	$0
2014	Soybeans	$14,132.00
2013*	Corn	$2,495,505.58
	Soybeans	$2,676,582.00
Total		$8,183,924.90

Source: USDA Risk Management Agency usda.gov/en/information-tools/summary-of-business/cause-of-loss

Drought conditions have a large impact on the livestock producers of Mercer County as well. The market value of the county's livestock, poultry, and products was listed at $58,838,000 according to the most recent Census of Agriculture. Extended periods without precipitation can lead to shortages of pasture and hay crops. Ponds and wells that provide water for the animals can dry up, resulting in additional expenses or the liquidation of livestock herds.

Probability of Future Occurrence

Data from a 20-year period was available for analysis from the National Drought Mitigation Center. Using the available data, there were 63 months out of the 240-month period where all of Mercer County was experiencing at least a D1, Moderate Drought.

$$\frac{63}{240} = x(100)$$

These figures yield a probability of 26.25% of a moderate drought in Mercer County in any given year.

There were 21 months in which Mercer County experienced a drought rated as D2, or severe drought.

$$\frac{21}{240} = x(100)$$

This yields a probability of Mercer County experiencing a severe drought in any given year of 8.75%.

There were .75 months in which Mercer County experienced an Extreme drought or D3.

$$\frac{.75}{240} = x(100)$$

This yields a 3.65% chance of extreme drought occurring in Mercer County in any given year.

The Missouri Hazard Mitigation Plan 2018 lists Mercer County as having a medium-high risk for drought in any given year. The Missouri State Plan used four factors in determining overall vulnerability to drought. These factors are as follows: social vulnerability, crop exposure ratio, annualized crop claims paid, and likelihood of occurrence.

Changing Future Conditions Considerations and the Impact of Climate Change

Although drought is not predictable, long-range outlooks and predicted impacts of climate change could indicate an increased chance of drought. With an increase in annual temperatures due to a changing climate, droughts are more likely to occur through higher evaporation rates. With a likelihood of wetter springs there is an increased chance of dryer summers. The dryness is likely to reduce the river flow and may lead to a shortage of agricultural water availability. This has a large effect on the farm-dependent community.

A new analysis, performed for the Natural Resources Defense Council, examined the effects of climate change on water supply and demand in the contiguous United States. The study found that more than 1.100 counties will face higher risks of water shortages by mid-century as a result of climate change. Two of the principal reasons for the projected water constraints are shifts in precipitation and potential evapotranspiration (PET). Climate models project decreases in precipitation in many regions of the US, including areas that may currently be described as experiencing water shortages of some degree. This study shows a moderate risk of water shortages in 2050 for Mercer County with the effects of climate change.

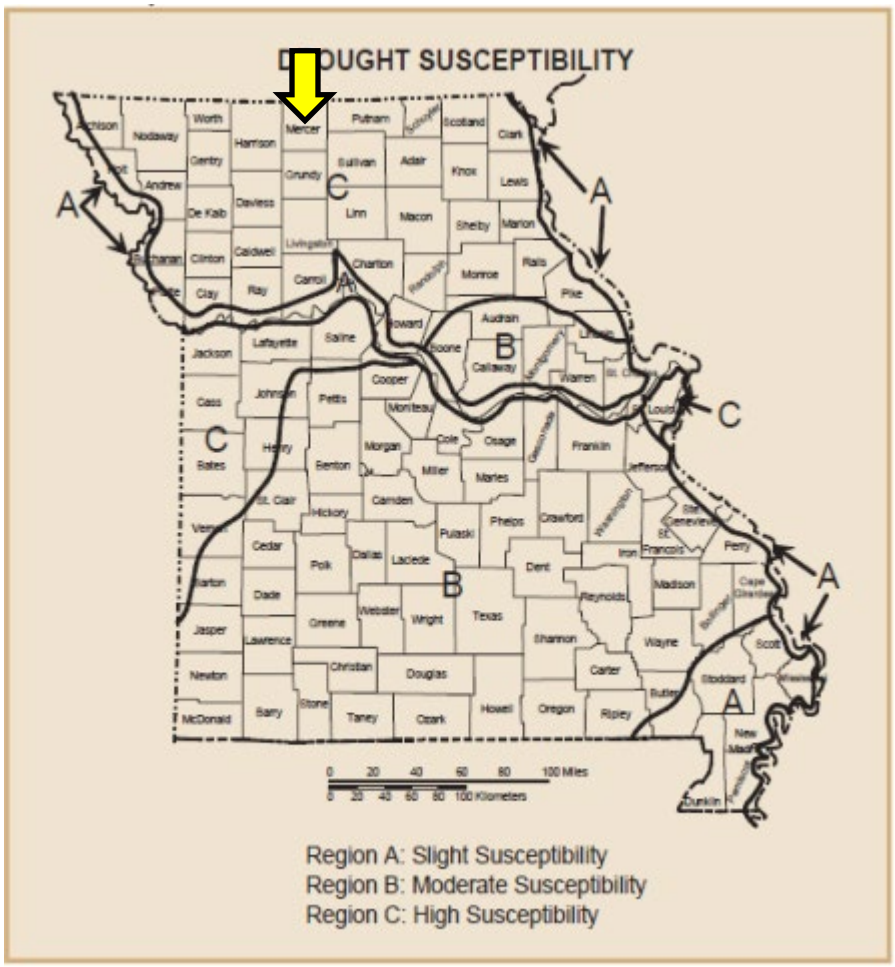
Vulnerability

Vulnerability Overview

The Missouri Drought Plan divided the state into four regions of susceptibility based on water resources and climate data. Most of northern Missouri, including Mercer County fell into region C. Region C was described as having severe surface and groundwater supply drought vulnerability. Surface water sources are likely to become inadequate during an extended period of drought. Groundwater resources are poor quality and typically only supply enough water for domestic needs. Irrigation is not feasible in this region. The following figure shows the regions of drought susceptibility.

Figure 3.29. Drought Susceptibility Regions of Missouri

The yellow arrow is oriented to indicate Mercer County.



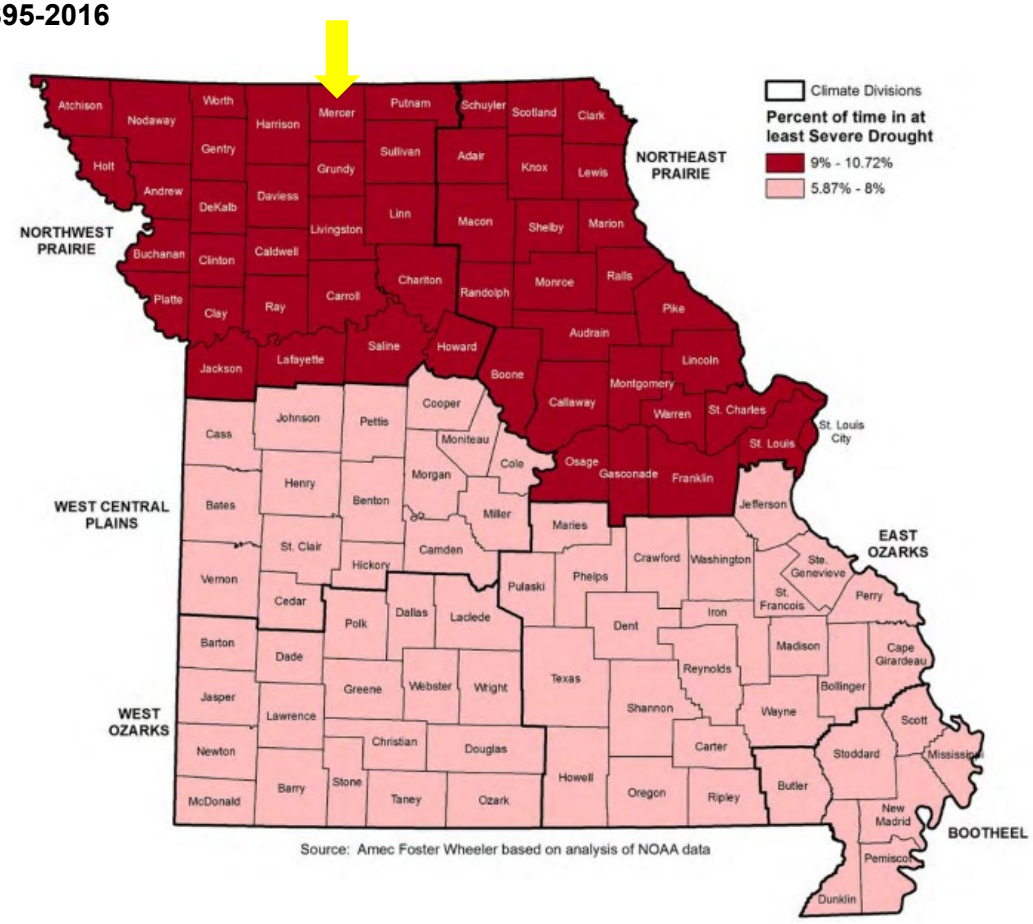
Source: Missouri Dept. of Natural Resources: Missouri Drought Plan

The Regions were designated as follows:

Region A: Slight Susceptibility
Floodplains of the Missouri & Mississippi Rivers consisting of saturated sand and Gravels (alluvial deposits).
Region B: Moderate Susceptibility
Groundwater resources are adequate to meet domestic and municipal water needs.
Region C: High Susceptibility
Groundwater resources are generally too mineralized and limited in production.

The Missouri Hazard Mitigation Plan 2018 lists Mercer County as having a medium-high risk for drought in any given year. The Missouri State Plan used four factors in determining overall vulnerability to drought. These factors are as follows: social vulnerability, crop exposure ratio, annualized crop claims paid, and likelihood of occurrence.

Figure 3.30. Drought Probability by Climate Division Based on Palmer Drought Severity Index 1895-2016



The Previous map is from the Risk Assessment Chapter of the Missouri State Hazard Mitigation Plan 2023. It shows the susceptibility of the counties in the state to drought. Mercer County (see yellow arrow) is classified as having severe drought vulnerability. The probability of drought in Mercer County based on USDM and SPEI data (1890-2021) is listed at 23.35%.

Surface water sources usually become inadequate during extended drought. The groundwater resources are normally poor, and typically supply enough water only for domestic needs. Irrigation is generally not feasible. When irrigation is practical, groundwater withdrawal may affect other uses. Surface water sources are used to supplement irrigation supplied by groundwater sources.

However, when drought vulnerability is determined at a county level, Mercer County is considered to have a medium rating for drought vulnerability. See the following figure (3.28). This map was copied from the

2023 Missouri State Hazard Mitigation Plan.

Figure 3.31. Missouri Drought Vulnerability by County

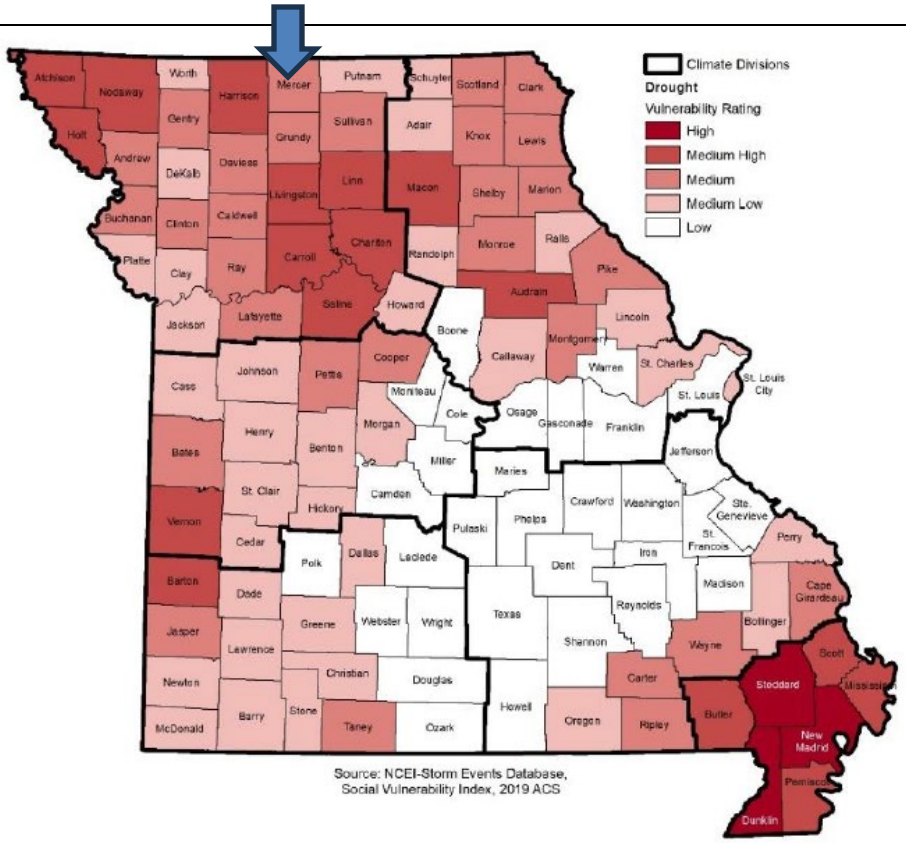


Table 3.14. Vulnerability in Mercer County to Drought

SOVI Index Rating	USDA RMA Total Drought Crop Claims	Average Annualized Crop Claims	USDA Claims Rating	2017 Crop Exposure	Crop Exposure Rating	Likelihood of Severe Drought	Drought Occurrence Rating	Total Rating	Total Rating (text) Drought
4	$34,297,913	$3,429,791	3	$23,369,000	2	0.54	3	12	Medium

Source: 2023 Missouri State Hazard Mitigation Plan

Potential Losses to Existing Development

The National Drought Monitor Center at the University of Nebraska at Lincoln summarized the potential impacts of drought as follows: Drought can create economic impacts on agriculture and related sectors, including forestry and fisheries. Because of the reliance of these sectors on surface and subsurface water supplies. In addition to losses in yields in crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. Drought can also bring increased problems with insects and disease to forests and reduce growth. The incidence of forest and range fires increases substantially during extended droughts, which in turn place both human and wildlife populations at higher levels of risk. Income loss is another indicator used in assessing the impacts of drought because so many sectors are affected. Finally, while drought is rarely a direct cause of death, the associated heat, dust, and stress can all contribute to increased mortality. In Mercer County and Northern Missouri in general, drought has

an especially significant effect on drinking water supplies. Ground water is scarce and unreliable in Northern Missouri and most water systems in the region obtain water from surface sources. During prolonged periods of drought, reservoirs may become depleted and stream levels may drop so low that water cannot be pumped from them – they may even go completely dry. The impacts of this can be severe.

Determining the costs associated with drought is difficult because of the diverse impacts of drought and the difficulty in establishing when droughts begin and end. For this analysis of vulnerability, the impacts on drought have been assessed through examining agricultural losses due to drought. Data is readily available on crop losses, but losses to livestock and other damages due to long term drought is not accessible. Based on crop losses over the last 11 years, Mercer County could expect to lose approximately $744,000 annually due to drought. (See Figure 3.19)

Impact of Previous and Future Development

Due to population decline, and lack of plans for future development in the planning area, there is no additional or lessened impact on Mercer County due to drought conditions.

Changing Future Conditions Considerations and the Impact of Climate Change

Although drought is not predictable, long-range outlooks and predicted impacts of climate change could indicate an increased chance of drought. With an increase in annual temperatures due to a changing climate, droughts are more likely to occur due to higher evaporation rates. With an increase in probability of wetter springs comes an increased likelihood of dryer summers. A dryer summer and higher temperatures would likely reduce the river flow and could potentially lead to a shortage of water availability, especially for agricultural purposes. This would have a large impact on Mercer County, which is largely agricultural.

A new analysis, performed for the Natural Resources Defense Council, studied the effects of climate change on water supply and demand in the United States. This study found that more than 1,100 counties will face higher risks of water shortages by mid-century as a result of climate change. Two principal causes for this are shifts in precipitation and potential evapotranspiration (PET). Climate models predict a decrease in precipitation in many regions of the United States, including areas that may already be described as experiencing water shortages to some degree. This study shows a moderate risk of water shortage in 2050 for Mercer County.

Hazard Summary by Jurisdiction

Mercer County

As was mentioned previously, the risk to agricultural assets is spread throughout the unincorporated portions of the county. Lake Paho, a conservation area near Princeton, has been used in the past for farmers that need water for their livestock. However, the effects of drought on the crops can be especially difficult in times of extreme drought.

City of Princeton

The city of Princeton provides water to the residents of Princeton and the residents of Mercer. Drought might impact gardens in town. Princeton is currently in the process of undergoing improvements to its water system, further information will be available once the new system is operational.

City of Mercer

The city of Mercer relies on Princeton for its water. When Princeton suffers a water shortage, so does Mercer.

Princeton R-V School District

The school district gets its water from the city of Princeton. There are no additional concerns for the school district than the city of Princeton.

North Mercer R-III

The north Mercer School District gets its water from the city of Princeton. There are no additional concerns for the school district in Mercer than the city of Princeton.

Problem Statement

- There have been two times since the last HMP for Mercer County that the city of Princeton had to restrict certain uses of water due to drought. The car washes were shut down, which is problematic for the county's largest employer: Smithfield. Car washes are important in hog production for biosecurity reasons. If a vehicle is travelling to more than one hog barn the potential for an outbreak of an infectious disease is heightened, and this could impact the day-to-day function of the operation.

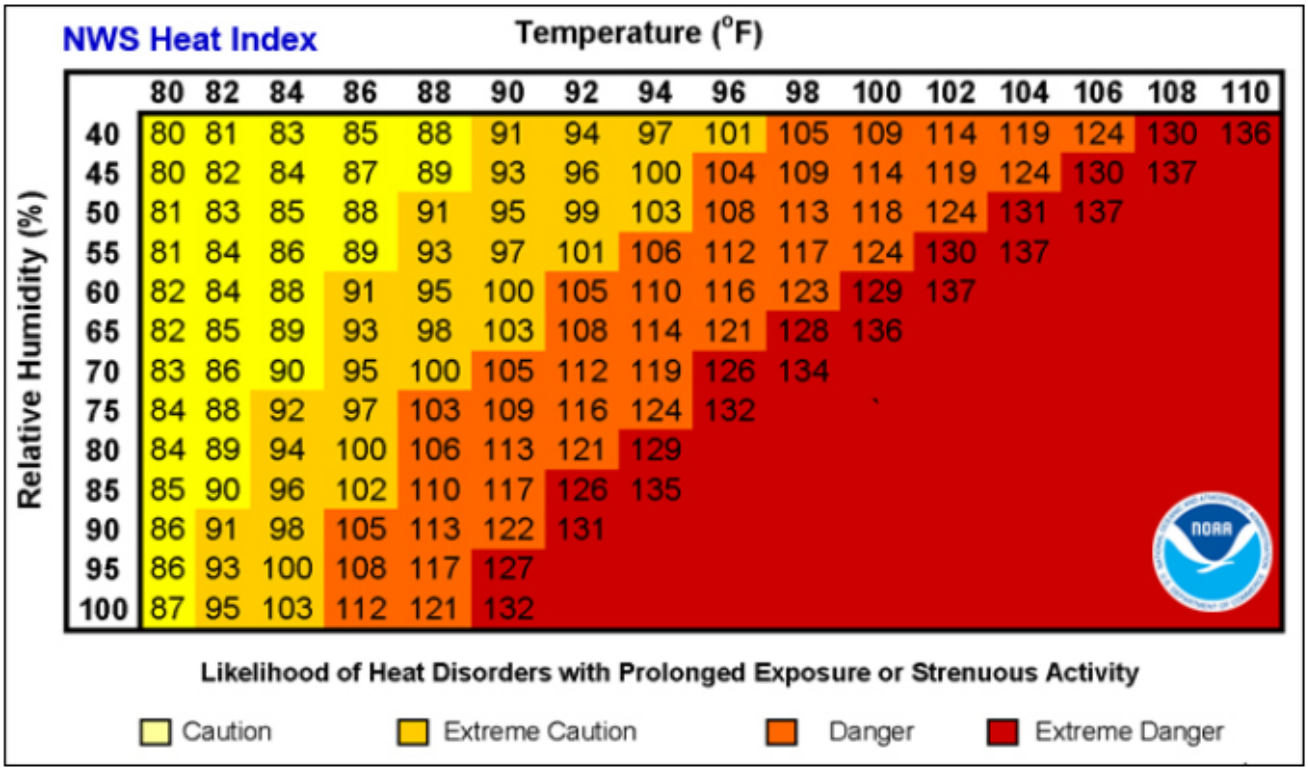
3.4.5 Extreme Temperatures

Hazard Profile

Hazard Description

Extreme temperature events, both hot and cold, can impact human health and mortality, natural ecosystems, agriculture and other economic sectors. According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Ambient air temperature is one component of heat conditions, with relative humidity being the other. The relationship of these factors creates what is known as the apparent temperature. The Heat Index chart shown in **Figure 3.10** uses both factors to produce a guide for the apparent temperature or relative intensity of heat conditions. Note: Exposure to direct sun can increase Heat Index Values by as much as 15º F corresponds to a HI that may cause increasingly severe heat disorders with continued exposure and/or physical activity.

Figure 3.32. Heat Index (HI) Chart



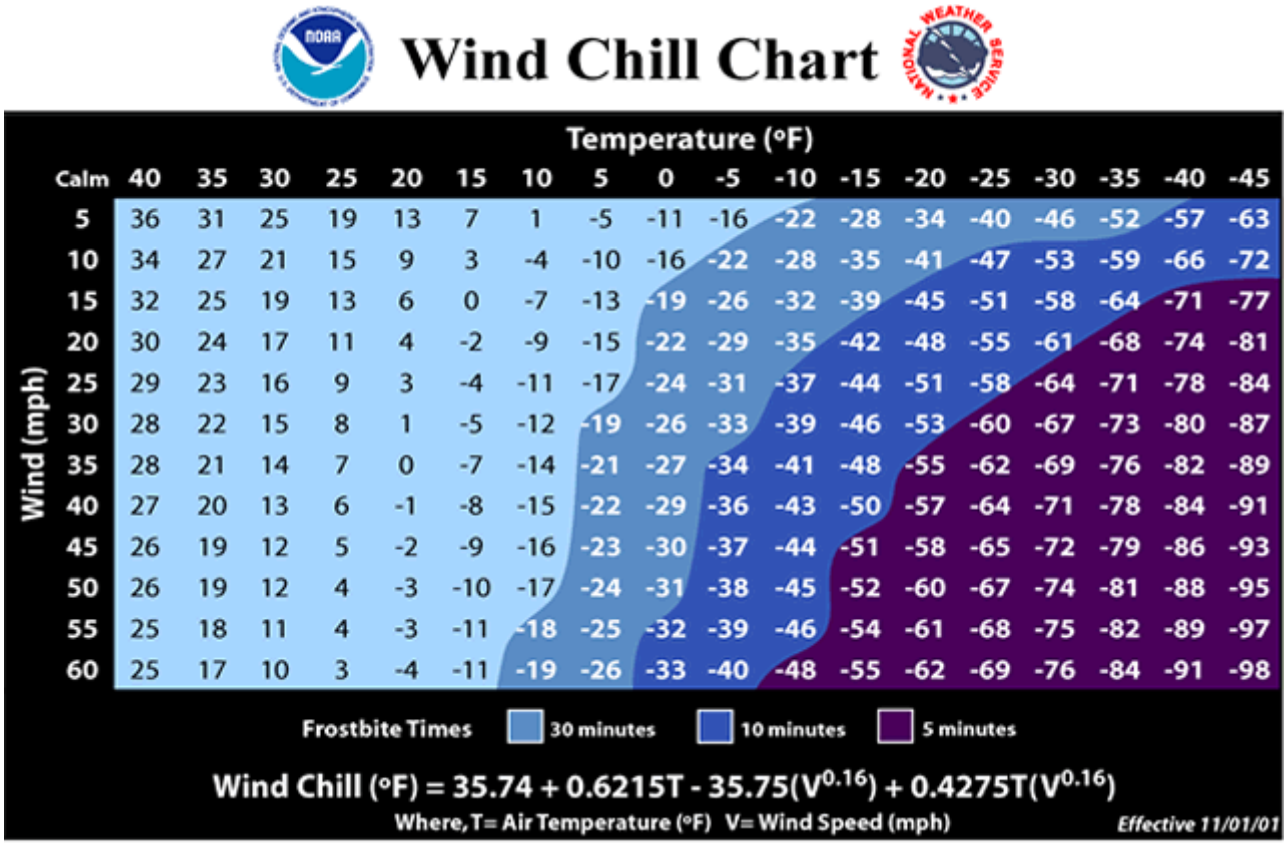
Source: National Weather Service (NWS); https://www.weather.gov/safety/heat-index
Note: Exposure to direct sun can increase Heat Index values by as much as 15°F. The shaded zone above 105°F corresponds to a HI that may cause increasingly severe heat disorders with continued exposure and/or physical activity.

Extreme cold often accompanies severe winter storms and can lead to hypothermia and frostbite in people without adequate clothing protection. Cold can cause fuel to congeal in storage tanks and supply lines, stopping electric generators. Cold temperatures can also overpower a building's heating system and cause water and sewer pipes to freeze and rupture. Extreme cold also increases the likelihood of ice jams on flat rivers or streams. When combined with high winds from winter storms, extreme cold becomes extreme wind chill, which is hazardous to health and safety.

The National Institute on Aging estimates that more than 2.5 million Americans are elderly and especially vulnerable to hypothermia, with the isolated elders being most at risk. About 10 percent of people over the age of 65 have some kind of bodily temperature-regulating defect, and 3-4 percent of all hospital patients over 65 are hypothermic.

Also at risk are those without shelter, those who are stranded, or who live in a home that is poorly insulated or without heat. Other impacts of extreme cold include asphyxiation (unconsciousness or death from a lack of oxygen) from toxic fumes from emergency heaters; household fires, which can be caused by fireplaces and emergency heaters; and frozen/burst pipes.

Figure 3.33. Wind Chill Chart



Source: https://www.weather.gov/safety/cold-wind-chill-chart

Winter storms, cold, frost, and freezing temperatures take a toll on crop production in the planning area. The following table illustrates the USDA's Risk Management Agency payments for insured crop losses in Mercer County resulting from cold conditions and snow for the past 10 years.

Table 3.15. Crop Insurance Claims Paid due to Cold Conditions or Snow 2013-2023

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2013	Wheat	Cold Wet Weather	$7580
	Soybeans		$7577
2014	Wheat	Cold Winter	$95,057
	Corn	Frost	$4,188
		Cold Wet Weather	$1,715
2015	Wheat	Freeze	$8,920
	Corn	Cold Wet Weather	$43,277
	Soybeans	Cold Wet Weather	$5,235
2016	No Claims		
2017	Corn	Cold Wet Weather	$634

	Soybeans	Cold Wet Weather	$4,248
2018	No Claims		
2019	Wheat	Cold Winter	$519
	Soybeans	Frost	$3,217
		Cold Wet Weather	$3,028
2020	No Claims		
2021	Corn	Cold Wet Weather	$10,999
	Soybeans	Cold Wet Weather	$14,886
2022	No Claims		
2023	No Claims		
Total			$211,080

Source: USDA Risk Management Agency usda.gov/en/information-tools/summary-of-business/cause-of-loss

Table 3.16. Crop Insurance Claims Paid due to Heat 2013-2023

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2013	Corn	Heat	$75,960
2014	No Claims		
2015	No Claims		
2016	No Claims		
2017	No Claims		
2018	Corn	Heat	$11,308
2019	No Claims		
2020	No Claims		
2021	Soybeans	Heat	$2,034
2022	Corn	Heat	$60,145
	Soybeans		$12,351
2023	Soybeans	Heat	$2,506
Total			$164,304

Source: USDA Risk Management Agency usda.gov/en/information-tools/summary-of-business/cause-of-loss

Geographic Location

Location within the county is not a factor when facing an extreme temperature event.

However, there are additional factors to consider when there is an extreme heat event. Specific climatic factors, such as temperature and humidity, along with wind and sun/shade determine the effects of this hazard. An individual's physical condition has a profound effect on their ability to deal with the effects of excessive heat. Illness or heavy exercise adds to the metabolic heat that the body must dissipate. Age is also a contributing factor. The accessibility of air-conditioned shelters is important to those falling into at-risk groups.

Strength/Magnitude/Extent

The National Weather Service (NWS) has an alert system in place (advisories or warnings) when the Heat Index is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. A common guideline for issuing excessive heat alerts is when for two or more consecutive days: (1) when the maximum daytime Heat Index is expected to equal or exceed 105 degrees Fahrenheit (°F); and the nighttime minimum Heat Index is 80°F or above. A heat advisory is issued when temperatures reach 105 degrees, and a warning is issued at 115 degrees.

The NWS Wind Chill Temperature (WCT) index uses advances in science, technology, and computer modeling to provide an accurate, understandable, and useful formula for calculating the dangers from winter winds and freezing temperatures. The figure below presents wind chill temperatures which are based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature.

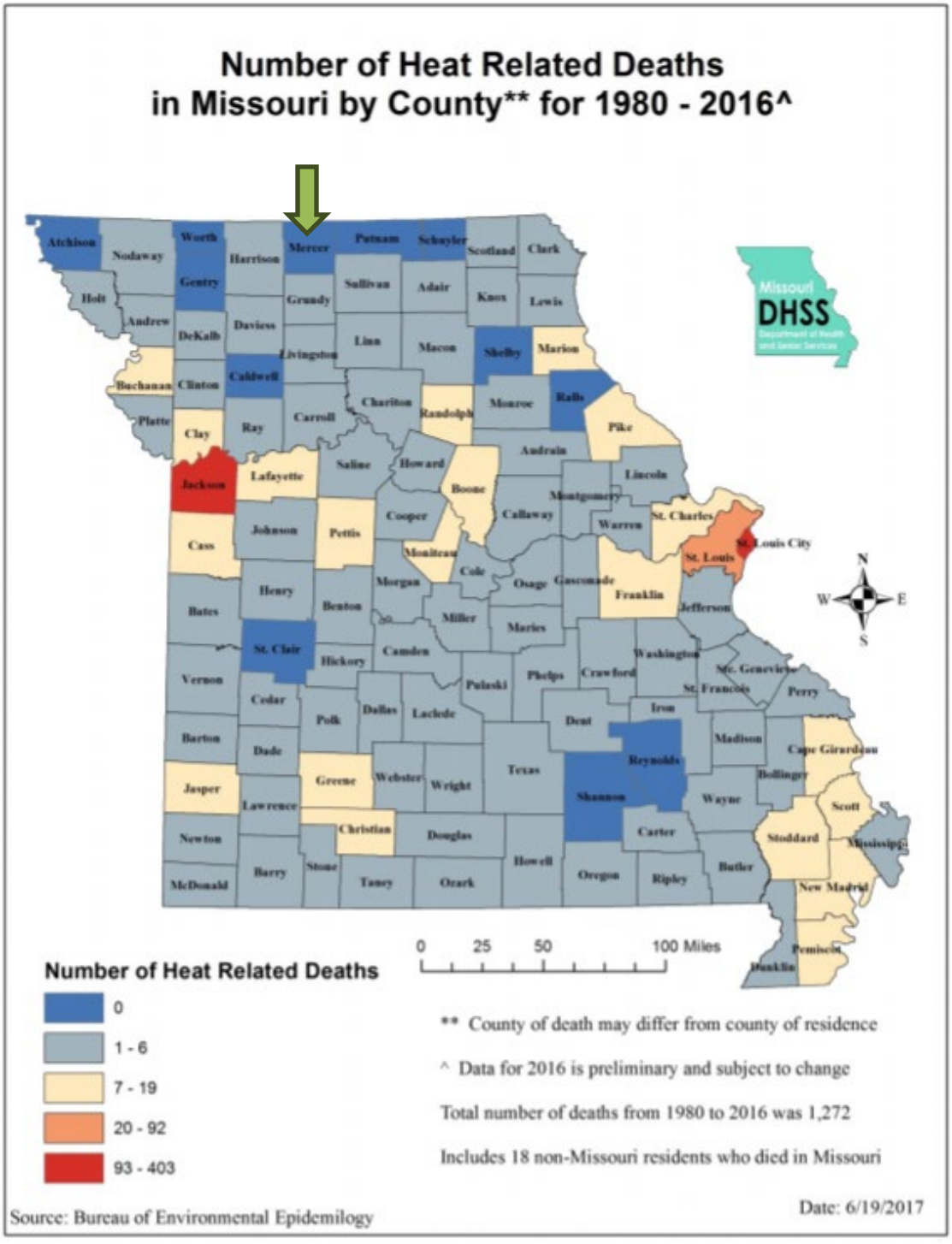
Previous Occurrences

Extreme heat can cause stress to crops and animals. According to USDA Risk Management Agency, losses to insurable crops during the time period between 2013 to 2023 were $164,304 in Mercer County. (See Table 3.18)

Extreme heat can cause stress to crops and animals. Extreme heat can also strain electricity delivery infrastructure, overloaded during peak use of air conditioning during extreme heat events. Another type of infrastructure damage from extreme heat is road damage. When asphalt is exposed to prolonged extreme heat, it can cause buckling of asphalt-paved roads, driveways, and parking lots.

From 1988-2011 there were 3.496 fatalities in the US attributed to extreme heat. This translates to an annual national average of 146 deaths. During the same period, there were no deaths in the planning area due to extreme heat, according to DHSS data. The National Weather Service stated that among natural hazards, no other natural disaster (not lightning, hurricanes, tornadoes, floods, or earthquakes) causes more deaths. Figure 3.13 shows the heat-related death rate for the state. Mercer County has had zero deaths due to heat according to this map.

Figure 3.34. Heat Related Deaths in Missouri 2000 - 2016



Source: https://health.mo.gov/living/healthcondiseases/hyperthermia/pdf/stat-report.pdf

Figure 3.35. Extreme Temperatures 2003-2023

Start of Event	Days in Duration	Episode Narrative
7/21/2005	5	Heat – Oppressive heat and humidity prevailed across the area from July 21 to July 25. Afternoon heat indices reached from 105 to 110 degrees. Kansas City International heat index reached 114 degrees on July 22nd and St. Joseph topped out at 113 degrees on July 22nd.
7/16/2006	5	Heat – Oppressive heat and humidity combined to produce afternoon and early evening heat indices from 105 to 115 degrees, from July 16th through July 20th. The highest computed heat index reached 121 degrees at Amity Missouri. Three males and one female died of heat related causes in Jackson County.
7/29/2006	3	Heat – Oppressive heat and humidity combined to produce heat indices from 105 to 115 degrees, from July 29th through July 31st.
8/1/2006	2	Heat – Oppressive heat and humidity continued from July…with heat indices from 105 to 115 degrees before ending on August 2nd. Two males aged 58 and 62 died due to the heat.
8/6/2007	11	Extreme Heat - An upper-level ridge of high pressure, persisted across the area from August 6th through August 17th. The combination of heat and humidity, produced heat index readings in the 105 to 115 degree range.
7/18/2012	8	Extreme Heat – An unusually strong upper level ridge of high pressure, dominated the central United States with very hot and dry conditions, from July 18th through 25th 2012. Temperatures topped out from 100 to 110 degrees.
1/5/2014	2	Cold-Windchill – A polar plunge of arctic air slammed into Kansas, bringing wind chill values to around 40º below zero for the morning of January 6.
2/6/2014	1	Extreme Cold/Windchill – Cold air and north winds combined to bring windchill values down to 30 degrees below zero.
2/14/2021	3	Extreme Cold/Windchill - On February 5, a cold air mass settled into the center part of the country, which caused temperatures to go below freezing. They would not return to the freezing/melting point until several weeks later. The worst of the cold snap occurred between February 14 through February 16. Aside from the cold air arrival, several inches of snow fell, which allowed the already historically cold airmass to hold together. Minimum temperatures on Monday the 15th and and Tuesday the 16th reached negative double digits, and daytime highs across the area failed to reach zero degrees. In Kansas City, this marked the first time for a negative high temperature since a previous historic cold air outbreak in December of 1989. Even more rare was the 10-20 mph wind that accompanied the cold airmass, which caused wind chills each day to approach the 20 to 30 degree below zero mark. ||Some benchmarks that were hit during this cold outbreak: New daily record low temperatures were established at Kansas City on February 15 and 16. On February 15 the low at Kansas City International Airport - the official measuring site - dropped to -10 degrees, which broke the previous record of -6 degrees from 1936. On February 15, Kansas City did not warm up to zero, making it the first sub-zero high temperature since December 22, 1989. On February 16 the overnight low dropped even lower, recording a temperature of -13 degrees. This broke the daily low of -8 degrees, set in 1979.
12/22/2022	2	Extreme Cold/Windchill – An Arctic air mass entered the region on the morning of December 22nd, plunging temperatures to below zero. Strong winds combined with the cold temperatures yielded wind chills between -25 and -40 below zero from roughly 10 am on 12/22 to noon on 12/23. A Wind Chill Warning was in effect across the entire CWA.

Probability of Future Occurrence

According to Heat.gov and FEMA's National Risk Index, Mercer County has had 12 Cold Waves in the last 16 years. The probability would be determined as follows:

$$\frac{12}{16} = x(100)$$

According to this formula, Mercer County has a 75% chance of experiencing a cold wave in any given year.

The probability of Mercer County experiencing a heat wave can be determined by the following formula. Mercer County has had, on average, 3 heat waves per year in the last sixteen years, a total of 48 events in all.

$$\frac{48}{16} = x(100)$$

Since this formula yields more than 100%, it should be stated that Mercer County has a 100% chance of experiencing at least one heat event per year, and will probably experience, on average, 3 or more per year.

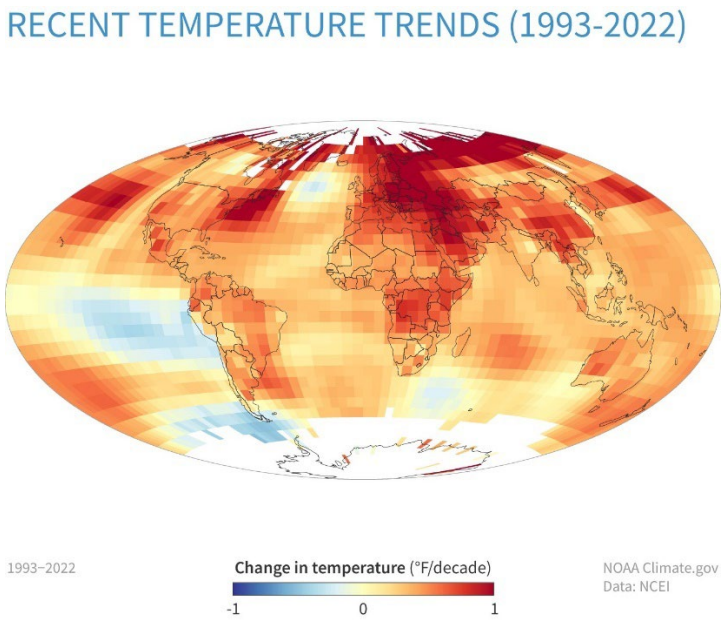
Changing Future Conditions Considerations and the Impact of Climate Change

By the end of the century, the temperatures are projected to continue to increase. The best-case scenario, with lower greenhouse has emissions, the temperatures are expected to exceed historic levels by the middle of the 21st century. If greenhouse gas emissions are not curbed, historically unprecedented warming is projected by the end of the century. Due to the change in climate, it is projected that by the middle of the 21st century, record breaking heat is likely to occur on a regular basis. This will lead to a higher frequency of heat waves.

The impacts of extreme temperatures are experienced more acutely by the elderly and other vulnerable populations. High temperatures are often higher in urban areas, of which Mercer County has none. There is a higher demand for electricity as people try and keep cool. This increased demand adds a strain to electricity providers and could potentially lead to an increase in the number of power outages.

Additionally, air quality and water quality can be adversely affected by an increase in temperatures. Mercer County is mostly agricultural, and the strain placed on crops and livestock could increase along with the temperature.

Figure 3.36. Global Temperature Trends 1993-2022



Vulnerability

Vulnerability Overview

Those at greatest risk for heat-related illness include infants and children up to five years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. However, even young and healthy individuals are susceptible if they participate in strenuous physical activities during hot weather. In agricultural areas, the exposure of farm workers, as well as livestock, to extreme temperatures is a major concern.

Table 3.17. Typical Health Impacts of Extreme Heat

Heat Index (HI)	Disorder
80-90° F (HI)	Fatigue possible with prolonged exposure and/or physical activity
90-105° F (HI)	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and/or physical activity
105-130° F (HI)	Heatstroke/sunstroke highly likely with continued exposure

Source: National Weather Service Heat Index Program, www.weather.gov/os/heat/index.shtml

Table 3.18. Population, Percent of Population over 65, and SOVI Data for Mercer County

Total Population (2015 ACS)	Total Population Rating	Percentage of Population over 65	Percent of Population over 65 Rating	SOVI Ranking	SAVI Rating
3,617	1	22.5	4	Medium-High	4

Source: Missouri State Hazard Mitigation Plan 2023

Table 3.19. Likelihood of Occurrence and Overall Vulnerability Rating for Extreme Temperatures in Mercer County

Heat					Cold				
Total Events	Likelihood of Occurrence	Likelihood Rating	Total Vulnerability	Total Vulnerability Description	Total Events	Likelihood of Occurrence	Likelihood Rating	Total Vulnerability	Total Vulnerability Description
16	0.62	1	10	Medium	7	0.28	2	11	Medium High

Source: Missouri State Hazard Mitigation Plan 2023

Potential Losses to Existing Development

According to USDA Risk Management Agency, losses to insurable crops due to heat during the 10-year period from 2008-2017 were $164,304. This amounts to an annual cost of $14,937. Losses for livestock farmers are harder to estimate. Deaths can occur, but heat stressed animals can lose weight. Higher costs for water and other utilities can put an economic burden on the producer.

Roads can be damaged from both extreme heat and freezing temperatures. Whether due to expansion-related buckling and asphalt softening from very hot temperatures, extreme temperatures are hard on Mercer County's roadways. These types of losses are difficult to determine successful mitigation strategies to prevent.

Impact of Previous and Future Development

All the jurisdictions that are participating in the Mercer County Hazard Mitigation Plan are experiencing population decline. Due to this factor, the planning area will not see an increase in the

strain on electricity infrastructure.

Hazard Summary by Jurisdiction

Those at greatest risk for heat-related illness and deaths include children up to five years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. To determine jurisdictions within the planning area with populations more vulnerable to extreme heat, demographic data was obtained from the 2020 Census on population percentages in each jurisdiction comprised of those under 5 years of age and those 65 years of age or older. Data was not available for overweight individuals or individuals on certain medications that might exacerbate their susceptibility to heat. The following table below provides a summary of the vulnerable populations within the participating jurisdictions. Note that the Princeton R-V school district and the North Mercer R-III school district were omitted from the table. The students and the employees of the school districts are not customarily in the at-risk age groups.

Table 3.20. Mercer County Population Under Age 5 and Over Age 65, 2020 Census Data

Jurisdiction	Population Under 5	Population 65 and over
Mercer County	258	770
City of Princeton	73	221
City of Mercer	20	89

Source: U.S. Census Bureau, American Community Survey

The schools in the planning area have improved their facilities by adding air conditioning and other upgrades to maintain an environment that is safe for the county's youth. The same is true for the nursing home and elderly housing facilities in the planning area. At this time, there is no formal cooling center available, but there is a senior center, public library, county health department, and clinic where residents could go to cool down in the event of extreme heat.

Neither of the schools has a policy for closure due to extreme heat as all the buildings have air conditioning. However, both Princeton R-V School District and North Mercer R-III have closed due to extreme cold weather. Most of the school buses in both districts are diesel powered and could break down if the temperature is too low. This type of closure is determined on a case-by-case basis and in some cases a late start to the school day is called for, as long as the forecast calls for a high enough temperature that a bus breakdown is unlikely to occur.

There is no formal plan in either of the cities in the planning area for extreme heat or cold. According to anecdotal evidence, people in the community tend to check on their neighbors if there is concern about their well-being.

Problem Statement

- All jurisdictions within the planning area are equally susceptible to damage stemming from a heat wave as these types of events tend to be regional in nature. The large percentage of residents that are over 65 years of age means that many are at risk during extreme heat events. The rural nature of the county does work in its favor, as statistically more deaths occur in urban areas during a heat wave.
- Mercer County does include mitigation strategies which include the opening of cooling centers in case of severe heat event. As with extreme cold temperatures, special consideration must be given to the potential impact on the young, disabled, and elderly populations. Overutilization

of the electric power grid during heat waves can lead to brownouts or power failures. Mercer County should continue to address the needs of the elderly and those populations without air conditioning during sustained high temperatures. Availability of heating and cooling centers will reduce the threat of heat stroke due to hyperthermia and effects of extreme cold, hypothermia, in vulnerable groups of the population.

3.4.6 Severe Thunderstorms Including High Winds, Hail, and Lightning

Hazard Profile

Hazard Description

Thunderstorms

A thunderstorm is defined as a storm that contains lightning and thunder which is caused by unstable atmospheric conditions. When cold upper air sinks and warm moist air rises, storm clouds or 'thunderheads' develop resulting in thunderstorms. This can occur singularly, as well as in clusters or lines. The National Weather Service defines a thunderstorm as "severe" if it includes hail that is one inch or more, or wind gusts that are at 58 miles per hour or higher. At any given moment across the world, there are about 1,800 thunderstorms occurring. Severe thunderstorms most often occur in Missouri in the spring and summer, during the afternoon and evenings, but can occur at any time. Other hazards associated with thunderstorms are heavy rains resulting in flooding (discussed separately in **Section 3.4.1**) and tornadoes (discussed separately in **Section 3.4.8**).

High Winds

A severe thunderstorm can produce winds causing as much damage as a weak tornado. The damaging winds of thunderstorms include downbursts, microbursts, and straight-line winds. Downbursts are localized currents of air blasting down from a thunderstorm, which induce an outward burst of damaging wind on or near the ground. Microbursts are minimized downbursts covering an area of less than 2.5 miles across. They include a strong wind shear (a rapid change in the direction of wind over a short distance) near the surface. Microbursts may or may not include precipitation and can produce winds at speeds of more than 150 miles per hour. Damaging straight-line winds are high winds across a wide area that can reach speeds of 140 miles per hour.

Lightning

All thunderstorms produce lightning which can strike outside of the area where it is raining and is has been known to fall more than 10 miles away from the rainfall area. Thunder is simply the sound that lightning makes. Lightning is a huge discharge of electricity that shoots through the air causing vibrations and creating the sound of thunder.

Hail

According to the National Oceanic and Atmospheric Administration (NOAA), hail is precipitation that is formed when thunderstorm updrafts carry raindrops upward into extremely cold atmosphere causing them to freeze. The raindrops form into small frozen droplets. They continue to grow as they come into contact with super-cooled water which will freeze on contact with the frozen rain droplet. This frozen droplet can continue to grow and form hail. As long as the updraft forces can support or suspend the weight of the hailstone, hail can continue to grow before it hits the earth.

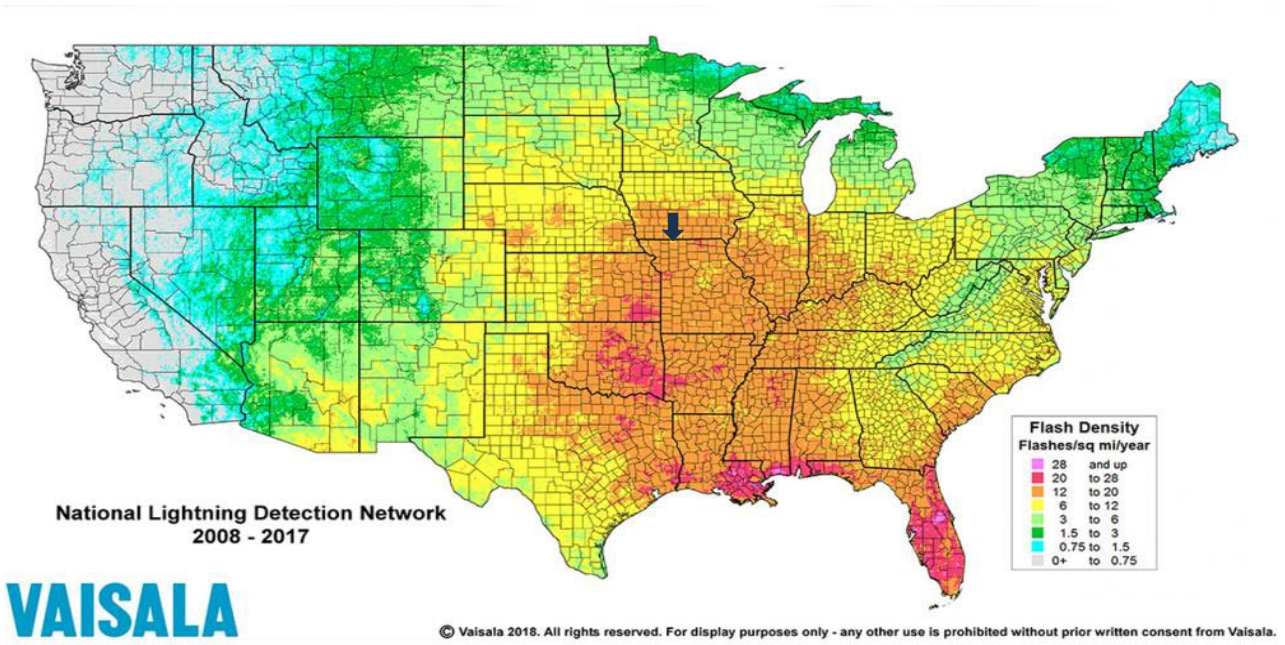
At the time when the updraft can no longer support the hailstone, it will fall down to the earth. For example, a ¼" diameter or pea sized hail requires updrafts of 24 miles per hour, while a 2 ¾" diameter or baseball sized hail requires an updraft of 81 miles per hour. According to the NOAA, the largest hailstone in diameter recorded in the United States was found in Vivian, South Dakota on July 23, 2010. It was eight inches in diameter, almost the size of a soccer ball. Soccer-ball-sized hail is the exception, but even small pea-sized hail can do damage.

Geographic Location

Thunderstorms/high winds/hail/lightning events are an area-wide hazard that can happen anywhere in the county. Although these events occur similarly throughout the planning area, they are more frequently reported in more urbanized areas. In addition, damage is more likely to occur in more densely developed areas. The majority of Mercer County is rural.

The location of Mercer County makes it likely to experience a lightning storm. The following figure illustrates that Mercer County can expect 12-20 lightning strikes per square mile each year.

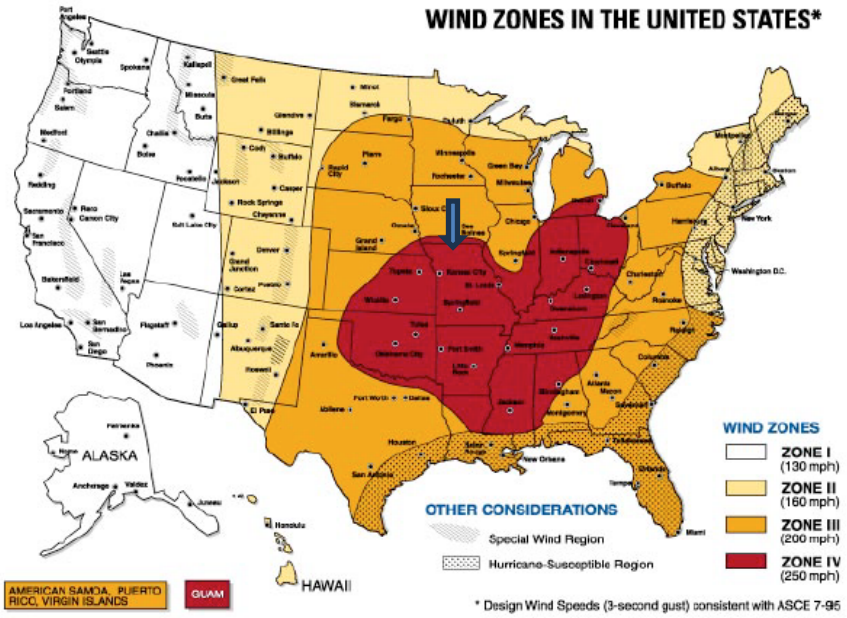
Figure 3.37. Location and Frequency of Lightning in Missouri



Source: National Weather Service, http://www.vaisala.com/en/products/thunderstormandlightningdetectionsystems/Pages/NLDN.aspx . Note: indicate location of planning area with a colored square or arrow.

The following figure (Figure 3.30) shows the various wind zones in the United States. The entire state of Missouri falls into Zone IV. This means that the risk of extreme windstorms is the greatest, and the wind could be as high as 250 mph.

Figure 3.38. Wind Zones in the United States



Source: FEMA 320, Taking Shelter from the Storm, 3rd edition, https://www.fema.gov/pdf/library/ism2_s1.pdf

Strength/Magnitude/Extent

Based on information provided by the Tornado and Storm Research Organization (TORRO), **Table 3.23** below describes typical damage impacts of the various sizes of hail.

Table 3.21. Tornado and Storm Research Organization Hailstorm Intensity Scale

Intensity Category	Diameter (mm)	Diameter (inches)	Size Description	Typical Damage Impacts
Hard Hail	5-9	0.2-0.4	Pea	No damage
Potentially Damaging	10-15	0.4-0.6	Mothball	Slight general damage to plants, crops
Significant	16-20	0.6-0.8	Marble, grape	Significant damage to fruit, crops, vegetation
Severe	21-30	0.8-1.2	Walnut	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
Severe	31-40	1.2-1.6	Pigeon's egg > squash ball	Widespread glass damage, vehicle bodywork damage
Destructive	41-50	1.6-2.0	Golf ball > Pullet's egg	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
Destructive	51-60	2.0-2.4	Hen's egg	Bodywork of grounded aircraft dented, brick walls pitted
Destructive	61-75	2.4-3.0	Tennis ball > cricket ball	Severe roof damage, risk of serious injuries
Destructive	76-90	3.0-3.5	Large orange > Soft ball	Severe damage to aircraft bodywork
Super Hailstorms	91-100	3.6-3.9	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
Super Hailstorms	>100	4.0+	Melon	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Source: Tornado and Storm Research Organization (TORRO), Department of Geography, Oxford Brookes University
Notes: In addition to hail diameter, factors including number and density of hailstones, hail fall speed and surface wind speeds affect severity. http://www.torro.org.uk/site/hscale.php

Straight-line winds are defined as any thunderstorm wind that is not associated with rotation (i.e., is not a tornado). It is these winds, which can exceed 100 miles per hour, which represent the most common type of severe weather. They are responsible for most wind damage related to thunderstorms. Since thunderstorms do not have narrow tracks like tornadoes, the associated wind damage can be extensive and affect entire (and multiple) counties. Objects like trees, barns, outbuildings, high-profile vehicles, and power lines/poles can be toppled or destroyed, and roofs, windows, and homes can be damaged as wind speeds increase.

The onset of thunderstorms with lightning, high wind, and hail is generally rapid. Duration is less than six hours and warning time is generally six to twelve hours. Nationwide, lightning kills 75 to 100 people each year. Lightning strikes can also start structural and wildland fires, as well as damage electrical systems and equipment.

Previous Occurrences

Table 3.22. Mercer County Thunderstorm Events, 2013-2023

Date	Estimated Wind (Knots/mph)	Locations	Deaths/ Injuries	Property Damage ($)
5/19/2013	52	Princeton	0	0
6/3/2014	52	Princeton	0	0
6/3/2014	61	Princeton Kaufman Airport	0	0
6/3/2014	61	Princeton	0	0
6/29/2014	52	Princeton	0	0
6/30/2014	52	Princeton	0	0
6/30/2014	61	Princeton Powells AR	0	0
7/7/2014	52	Mercer	0	0
6/11/2015	52	Mill Grove	0	0
7/13/2015	52	Goshen	0	0
7/13/2015	52	Goshen	0	0
11/11/2015	61	Ravanna	0	0
9/19/2016	52	Half Rock	0	0
6/15/2017	52	Princeton	0	0
5/19/2018	61	Mill Grove	0	10,000
5/19/2018	70	Modena	0	10,000
5/19/2018	52	Princeton Powells AR	0	0
6/2/2018	52	Goshen	0	0
6/26/2020	70	Mercer	0	0
3/10/2021	61	Modena	0	0
6/20/2021	52	Princeton	0	0
6/21/2022	52	Goshen	0	0
6/21/2022	52	Princeton	0	0
3/31/2023	56	Mill Grove	0	0
6/29/2023	52	Mill Grove	0	0
6/29/2023	52	Mill Grove	0	0
6/29/2023	52	Princeton	0	0

Table 3.23. Mercer County Hail Events, 2013-2023

Date	Magnitude	Location	Death/Injury	Property Damage ($)
5/24/2004	0.75	Princeton	No	0
5/24/2004	2.5	Princeton	No	$25,000
5/24/2004	1.75	Princeton	No	0
5/24/2004	.75	Princeton	No	0
6/12/2004	1.75	Princeton	No	0
6/12/2004	1	Mill Grove	No	0
6/12/2004	1.25	Princeton	No	0
8/25/2004	1	Saline	No	0
10/29/2004	.88	Princeton	No	0
3/30/2005	.88	Princeton	No	0
5/12/2005	1	Princeton	No	0
6/4/2005	1	Princeton	No	0
6/4/2005	.88	Princeton	No	0
9/13/2005	.88	Ravanna	No	0
9/13/2005	1.25	Ravanna	No	0
9/19/2005	1	Princeton	No	0
9/19/2005	1	Mercer	No	0
3/7/2006	.88	Princeton	No	0
3/30/2006	.75	Princeton	No	0
4/18/2006	1.75	Mill Grove	No	0
4/18/2006	.75	Princeton	No	0
4/18/2006	1	Princeton	No	0
4/18/2006	1	Princeton	No	0
4/18/2006	1.75	Princeton	No	0
6/10/2006	.75	Princeton	No	0
6/10/2006	.75	Princeton	No	0
4/10/2008	.75	Half Rock	No	0
6/8/2008	1	Princeton Kaufman Airport	No	0
6/12/2008	1.75	Princeton	No	0
6/12/2008	1	Princeton	No	0
4/25/2009	.88	Princeton	No	0
6/1/2009	.75	Goshen	No	0
5/11/2011	.88	Princeton	No	0
6/9/2011	.75	Princeton	No	0
5/24/2012	1	Modena	No	0
5/24/2012	.88	Princeton	No	0
6/20/2013	1	Cleopatra	No	0
7/2/2013	1	Mercer	No	0
6/3/2014	1.75	Princeton	No	0
6/30/2014	1	Princeton	No	0
6/11/2015	.88	Mercer	No	0
10/6/2016	.75	Princeton Kaufman Airport	No	0
5/19/2018	2.75	Modena	No	0
5/19/2018	1	Mill Grove	No	0
5/19/2018	2	Mill Grove	No	0
5/28/2018	.88	Princeton	No	0
8/6/2018	1.75	Ravanna	No	0
6/20/2021	1.75	Mercer	No	0
6/20/2021	1	Princeton	No	0
5/17/2022	1	Mercer	No	0
3/31/2023	1.5	Princeton	No	0
3/31/2023	1.75	Modena	No	0

Table 3.24. Mercer County High Wind Events

Date	Magnitude	Location	Death/Injury	Property Damage ($)
11/11/2015	52mph	Mercer County	No	0
12/15/2021	56mph	Mercer County	No	0

Table 3.25. Mercer County Lightning Events

Date	Magnitude	Location	Death/Injury	Property Damage ($)
There are no reports available in NCEI database for Lightning Events				

"Limitations to the use of NCEI reported lightning events include the fact that only lightning events that result in fatality, injury and/or property and crop damage are in the NCEI.

The tables below summarize past crop damages as indicated by crop insurance claims. The tables illustrate the magnitude of the impact on the planning area's agricultural economy.

Table 3.26. Crop Insurance Claims Paid in Mercer County from Thunderstorms, Lightning, Wind, Excess/Winds, and Hail [2014-2023]

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid ($)
2014	Corn	Hail	$373,461
	Soybeans	Hail	$363,564.70
2015	Corn	Wind	$404
2018	Corn	Hail	$18,778
	Soybeans	Hail	$79,368.50
2019	Corn	Hail	$39,435.50
	Soybeans	Hail	$520.75
	Soybeans	Wind/Excess Wind	$1,288
2020	Soybeans	Wind/Excess Wind	$1,747
Total			$878,567.45

Source: USDA Risk Management Agency, Insurance Claims, https://www.rma.usda.gov/data/cause

Table 3.27. Presidential Declarations in Mercer County Including High Winds or Severe Storms, 1975 to Present

Date	Disaster Number	Incident Type	Type of Assistance
July 9, 1993	DR 995	Flooding, Severe Storm	IA & PA
June 2, 1995	DR 1054	Severe Storm, Tornadoes, Hail, Flooding	IA & PA
May 6, 2002	DR 1412	Severe Storms, Tornadoes	PA & IA
June 11, 2004	D 1524	Tornadoes, Severe Storms, Flooding	IA & PA
August 17, 2010	DR 1934	Severe Storms, Flooding, and Tornadoes	PA
October 31, 2014	DR 4200	Severe Storms, Tornadoes, Straight-line Winds, Flooding	PA

Source: Missouri State Hazard Mitigation Plan 2018

Probability of Future Occurrence

The probability of an event occurring in Mercer County can be calculated by dividing the number of events by the amount of years in the sample, and multiplying the answer by 100 to determine the percent chance of an event.

Thunderstorm Probability:

$$\frac{27}{11} = x(100)$$

The probability of a thunderstorm occurring in Mercer County is almost 100% in any given year. Based on this calculation, it is likely that Mercer County will experience 2.5 thunderstorms, on average, each year.

High Wind Probability:

$$\frac{2}{11} = x(100)$$

The probability of a high wind event occurring in Mercer County, based on the NCEI data and using the above formula is 18.2%.

Hail Probability:

$$\frac{32}{11} = x(100)$$

The probability of hail occurring in Mercer County, based on NCEI data, and counting events that took place on the same date, regardless of jurisdiction, as one event is almost 100%. According to the previous calculation Mercer County could expect to receive 2.9 hailstorms on average every year.

Lightning Probability:

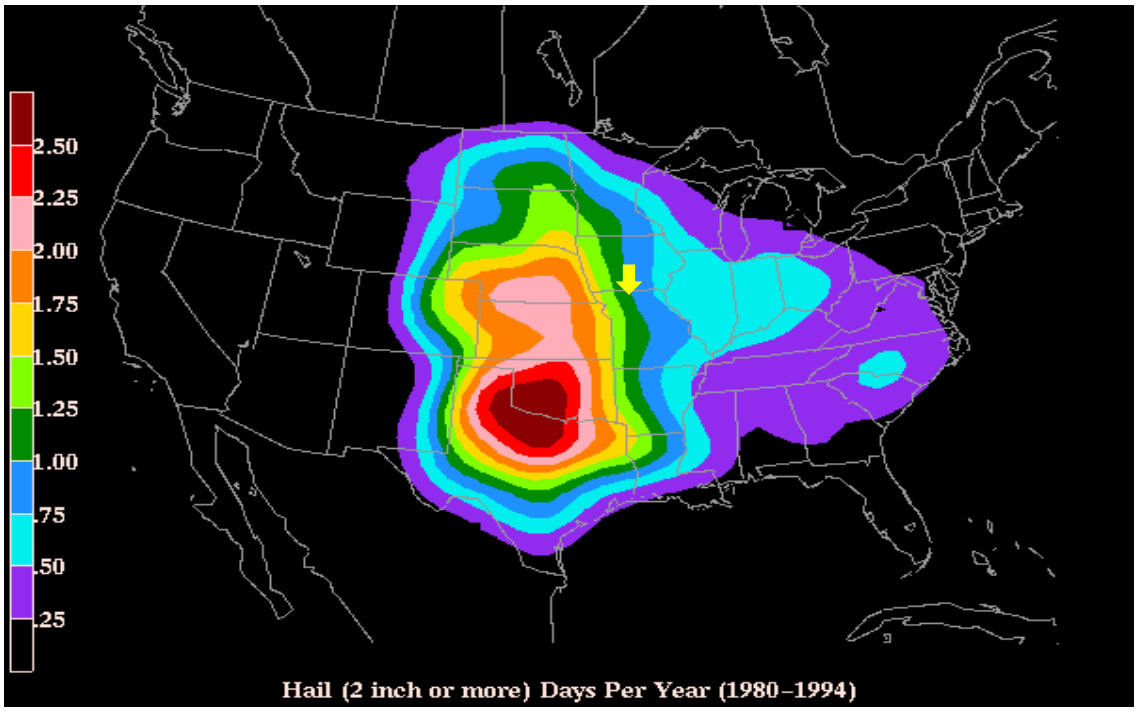
The probability of lightning occurring in Mercer County, based on NCEI data, is not possible to calculate. The NCEI only records lightning events that have resulted in damage or death, and per this metric, no events have occurred within the planning area within the last 10 years. However, lightning occurs in Mercer County during every thunderstorm. Therefore, the calculation for determining the probability of lightning would be the same as the probability of a thunderstorm.

$$\frac{27}{11} = x(100)$$

The probability of lightning occurring in Mercer County is almost 100% in any given year. It is likely that Mercer County will experience lightning at least once annually, however the extent of damage due to lightning is impossible to predict.

Figure 3.39. Annual Hailstorm Probability (2" diameter or larger), U 1980- 1994

The location of Mercer County is indicated with a yellow arrow. The County is located within the green zone, showing the probable occurrence of hail 2 inches in diameter occurring 1.25 times per year.



Source: NSSL, http://www.nssl.noaa.gov/users/brooks/public_html/bighail.gif Note:

Changing Future Conditions Considerations and the Impact of Climate Change

As temperatures increase with climate change, the severity of storms is likely to increase, as warm air is the key component of thunderstorms. Due to higher levels of convection, there could be a higher frequency and severity of storm events.

Vulnerability

Vulnerability Overview

Severe thunderstorm losses are usually attributed to the associated hazards of hail, downburst winds, lightning, and heavy rains. Losses due to hail and high wind are typically insured losses that are localized and do not result in presidential disaster declarations. However, in some cases, impacts are severe and widespread and assistance outside state capabilities is necessary. Hail and wind also can have devastating impacts on crops. Severe thunderstorms/heavy rains that lead to flooding are discussed in the flooding hazard profile. Hailstorms cause damage to property, crops, and the environment, and can injure and even kill livestock. In the United States, hail causes more than $1 billion in damage to property and crops each year. Even relatively small hail can shred plants to ribbons in a matter of minutes. Vehicles, roofs of buildings and homes, and landscaping are also commonly damaged by hail. Hail has been known to cause injury to humans, occasionally fatal injury.

In general, assets in the County vulnerable to thunderstorms with lightning, high winds, and hail include people, crops, vehicles, and built structures. Although this hazard results in high annual losses, private property insurance and crop insurance usually cover the majority of losses.

Considering insurance coverage as a recovery capability, the overall impact on jurisdictions is reduced.

Most lightning damages occur to electronic equipment located inside buildings. But structural damage can also occur when a lightning strike causes a building fire. In addition, lightning strikes can cause damages to crops, if fields or forested lands are set on fire. Communications equipment and warning transmitters and receivers can also be knocked out by lightning strikes. http://www.vaisala.com/en/products/thunderstormandlightningdetectionsystems/Pages/NLDN.aspx and http://www.lightningsafety.noaa.gov/

The Missouri State Hazard Mitigation Plan of 2018 gives Mercer County an overall rating of Medium-High vulnerability to this hazard.

The previous table was taken from the state hazard mitigation plan. From the statistical data collected, six factors were considered in determining overall vulnerability to thunderstorms, i.e. lightning. The factors considered were as follows: housing density, building exposure, percentage of mobile homes, social vulnerability, likelihood of occurrence, and average annual property loss. The state plan provided a rating of 1 through 5, and assigned this rating to each factor. The rating values used in the state plan were:

1. Low
2. Low-medium
3. Medium
4. Medium-High
5. High

Potential Losses to Existing Development

The factors that were used to determine the vulnerability that Mercer County has are summarized in the following tables:

Table 3.28. Mercer County Exposure to Severe Thunderstorms

Total Building Exposure (HAZUS)	Building Exposure Rating	Housing Density	Housing Density Rating	SOVI Ranking	SOVI Ranking Rating	Percent Mobile Homes	Percent Mobile Homes Rating
$426,966,000	1	4.68	1	Medium High	4	3.9	3

Source: 2023Missouri State Hazard Mitigation Plan

Table 3.29. Annualized Property Loss and Associated Ratings for Mercer County

High Wind		Hail		Lightning	
Total Annualized Property Loss	Total Annualized Property Loss Rating	Total Annualized Property Loss	Total Annualized Property Loss Rating	Total Annualized Property Loss	Total Annualized Property Loss Rating
$2,538	1	$962	1	$0	1

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.30. Thunderstorm Vulnerability Ratings for Mercer County

Total Sum of All Factor Ratings	Overall Vulnerability Rating for Thunderstorms	Overall Vulnerability Rating for Thunderstorms Description
15	1	Low

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.31. High Wind, Hail, and Lightning Events, Likelihood of Occurrence, and Associated Ratings (Mercer County)

Total Number of Events	Likelihood of Occurrence	Likelihood of Occurrence Rating	Total Number of Events	Likelihood of Occurrence	Likelihood of Occurrence Rating	Total Number of Events	Likelihood of Occurrence	Likelihood of Occurrence Rating
High Wind			Hail			Lightning		
46	1.77	1	74	2.85	1	0	0.00	1

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.32. Annualized Severe Thunderstorm Damages for Mercer County

High Wind		Hail		Lightning	
Annualized Property Loss	Annualized Property Loss Ratio	Annualized Property Loss	Annualized Property Loss Ratio	Annualized Property Loss	Annualized Property Loss Ratio
$2,538	0.0000059	$962	0.00000225	$0	0.000000000

Source: 2023 Missouri State Hazard Mitigation Plan

The main potential loss to the county due to thunderstorms is damage to crops. Using the tables above, the average annual loss to crops and property in Mercer County is $92,356.75.

Previous and Future Development

Additional Development results in the exposure of more homes and businesses to the threat of damage from thunderstorms. With the declining population in Mercer County and its jurisdictions, there is no significant development planned. Therefore, there is no additional vulnerability in homes or businesses in the planning area. The area of land that is susceptible to crop damage due to thunderstorms is expected to remain steady.

Hazard Summary by Jurisdiction

The hazards from thunderstorms are county-wide. There is no one jurisdiction that has an increased vulnerability to storms within the county.

Problem Statement

The best hope for residents when severe weather strikes is an early warning system. Additional public awareness also includes coverage by local media sources. Local governments and school districts should encourage residents to purchase weather radios to ensure that everyone has sufficient access to information in times of severe weather.

A community wide shelter program should be adopted for residents who do not have adequate shelter in their homes. Residents should also be encouraged to plan for severe weather and have a clear idea of where to go in the event of a severe storm. If their home lacks a safe space during severe weather, they should have an alternative plan to take shelter if necessary.

Early warnings and available safe rooms will reduce the number of residents at risk of injury or death from this type of hazard.

3.4.7 Severe Winter Weather

Hazard Profile

Hazard Description

A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall, and cold temperatures. The National Weather Service describes different types of winter storm events as follows.

- **Blizzard**—Winds of 35 miles per hour or more with snow and blowing snow reducing visibility to less than ¼ mile for at least three hours.
- **Blowing Snow**—Wind-driven snow that reduces visibility. Blowing snow may be falling snow and/or snow on the ground picked up by the wind.
- **Snow Squalls**—Brief, intense snow showers accompanied by strong, gusty winds. Accumulation may be significant.
- **Snow Showers**—Snow falling at varying intensities for brief periods of time. Some accumulation is possible.
- **Freezing Rain**—Measurable rain that falls onto a surface with a temperature below freezing. This causes it to freeze to surfaces, such as trees, cars, and roads, forming a coating or glaze of ice. Most freezing-rain events are short lived and occur near sunrise between the months of December and March.
- **Sleet**—Rain drops that freeze into ice pellets before reaching the ground. Sleet usually bounces when hitting a surface and does not stick to objects.

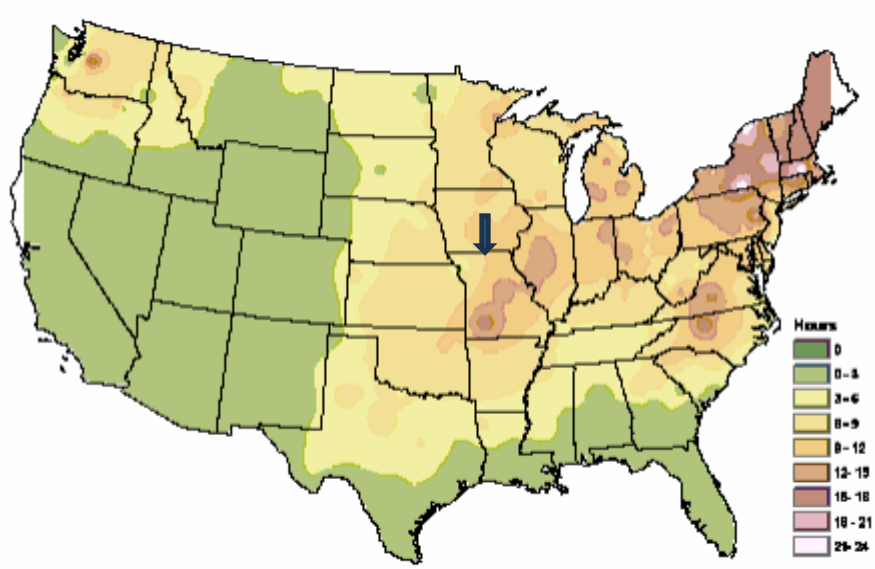
Geographic Location

Like thunderstorms, severe winter weather events tend to occur over wide geographic areas, encompassing an entire county or a large group of counties. According to SEMA, severe winter weather events such as snow, ice storms, and extreme cold can cause injuries, deaths, and property damage in a variety of ways. Winter storms are considered deceptive killers due to the fact that most deaths that occur are not directly related to the storm. Causes of death can range from traffic accidents due to driving in adverse conditions to heart attacks caused by overexertion while shoveling snow. Hypothermia or frostbite may be considered the most direct cause of death and injuries attributed to winter storms and/or severe cold.

Economic costs are difficult to measure. Heavy accumulations of ice can bring down trees, electric power lines and poles, telephone lines and communications towers. Crops, trees, and livestock can be killed or injured due to deep snow, ice, or severe cold. Buildings and automobiles may be damaged from falling tree limbs, power lines, and poles. Local governments, homeowners, business owners, and power companies can be faced with spending millions of dollars for restoration or services, debris removal, and landfill hauling.

Mercer County, shown in the map below (Figure 3.32) to receive between 8 and 9 hours of freezing per year. Freezing rain events typically last less than six hours but can last more than 24 hours, increasing the risk for catastrophic damage. High winds also contribute to the amount of damage sustained during freezing rain events.

Figure 3.40. NWS Statewide Average Number of Hours per Year with Freezing Rain



Source: American Meteorological Society. "Freezing Rain Events in the United States." http://ams.confex.com/ams/pdfpapers/71872.pdf

Strength/Magnitude/Extent

Severe winter storms include heavy snowfall, ice, and strong winds which can push the wind chill well below zero degrees in the planning area.

For severe weather conditions, the National Weather Service issues some or all of the following products as conditions warrant across the State of Missouri. NWS local offices in Missouri may collaborate with local partners to determine when an alert should be issued for a local area.

- Winter Weather Advisory — Winter weather conditions are expected to cause significant inconveniences and may be hazardous. If caution is exercised, these situations should not become life threatening. Often the greatest hazard is to motorists.
- Winter Storm Watch — Severe winter conditions, such as heavy snow and/or ice are possible within the next day or two.
- Winter Storm Warning — Severe winter conditions have begun or are about to begin.
- Blizzard Warning — Snow and strong winds will combine to produce a blinding snow (near zero visibility), deep drifts, and life-threatening wind chill.
- Ice Storm Warning -- Dangerous accumulations of ice are expected with generally over one quarter inch of ice on exposed surfaces. Travel is impacted, and widespread downed trees and power lines often result.
- Wind Chill Advisory -- Combination of low temperatures and strong winds will result in wind chill readings of -20 degrees F or lower.
- Wind Chill Warning -- Wind chill temperatures of -35 degrees F or lower are expected. This is a life-threatening situation.

Previous Occurrences

Table 3.33. NCEI Mercer County Winter Weather Events Summary, [insert inclusive dates]

Type of Event	Inclusive Dates	Magnitude	# of Injuries	Property Damages	Crop Damages
Winter Storm	1/4/2004	6-7 inches of snow	0	0	0
Winter Storm	2/5/2004	6-8 inches of snow	0	0	0
Winter Storm	1/3/2005	¼ inches of ice	0	0	0
Ice Storm	1/5/2005	¼ - ¾ inches of ice; 3 inches of snow	0	0	0
Winter Weather	1/20/2006	Wintry mix of sleet, freezing rain, & snow	0	0	0
Ice Storm	11/29/2006	¼ - ½ inch of ice accumulation	0	0	0
Ice Storm	12/1/2007	¼ - 2/5 inch of ice	0	0	0
Ice Storm	12/10-12/11/2007	¾ inch of accumulation of freezing rain	0	10000	0
Winter Storm	12/22/2007	9 inches of snow, blizzard conditions	0	0	0
Heavy Snow	2/5-2/6/2008	6-10 inches snow, drifts up to 3 ft. high	0	0	0
Winter Storm	12/16-12-17-2008	3-6 inches of snow, some drifting	0	0	0
Ice Storm	12/18/2008	¼ - ½ inch ice accumulation	0	0	0
Blizzard	12/7-12/9/2009	Heavy snow, ice, blizzard conditions	0	0	0
Winter Storm	1/6-1/7/2010	3-6 inches, drifting snow, extreme cold	0	0	0
Winter Storm	2/21/2010	Heavy snow, sleet, ice, rain, flooding	0	0	0
Winter Weather	1/10-1/11/2011	4-8 inches of snow	0	0	0
Blizzard	2/1/2011	3-6 inches of snow	0	0	0
Winter Storm	2/24-2/25/2011	6-7 inches of snow, with up to 1 in. sleet	0	0	0
Winter Weather	1/11-1/12/2012	1-3 inches of snow	0	0	0
Winter Weather	2/13/2012	1-4 inches of snow	0	0	0
Winter Weather	2/23/2012	½ - 2 inches of snow	0	0	0
Blizzard	12/20/2012	Thunderstorm turned to ice	0	0	0
Winter Storm	2/21-2/22/2013	Thunder with 3 inches of snow per hour	0	0	0
Winter Weather	5/2-5/3/2013	2-6 inches of snow	0	0	0
Cold/Wind Chill	1/5-1/6/2014	Windchill up to -30° F	0	0	0
Heavy Snow	2/4-2/5/2014	Heavy Snow up to 12 inches in areas	0	0	0
Extreme Cold/ Wind Chill	2/6/2014	Windchill up to -30° F	0	0	0
Heavy Snow	1/31/-2/1/2015	Snow accumulation over two days	0	0	0
Winter Storm	12/27-12/28/2015	Up to an inch of sleet, 3-4 inches snow	0	0	0
Ice Storm	1/15-1/16/2017	Ice accumulation-dangerous driving	0	0	0
Blizzard	11/25/2018	6-8 inches of snow, strong winds	0	0	0
Winter Storm	1/11-1/12/2019	5-8 inches of snow	0	0	0
Winter Storm	1/10-1/11/2020	¼ - ½ inch of ice	0	0	0
Winter Storm	4/16-4/17/2020	6-12 inches of snow	0	0	0
Winter Storm	12/29/2020	Freezing rain	0	0	0
Winter Storm	1/25/2021	6 inches of snow	0	0	0
Extreme Cold/ Wind Chill	2/14-2/16/2021	Record low temperatures in the area for a three-day period	0	0	0
Winter Storm	1/1/2022	6 inches of snow in some areas	0	0	0
Winter Storm	1/14-1/15/2022	6-8 inches of snow	0	0	0
Extreme Cold/ Wind Chill	12/22-12/23/2022	Wind chills between -25 & -40° F	0	0	0

Source: NCEI, data accessed 12/11/2023

Since the majority of Mercer County is agricultural, losses due to winter storms need to be included in the plan. The following chart shows the amount of insurance claims paid in Mercer County because of cold conditions and snow.

Table 3.34. Crop Insurance Claims Paid in Mercer County as a Result of Cold Conditions and Snow (20013-2023)

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid ($)
2013	No Claims		$0
2014	Wheat	Cold Winter	$95,057
2015	No Claims		$0
2016	No Claims		$0
2017	No Claims		$0
2018	No Claims		$0
2019	Wheat	Cold Winter	$544
	Soybeans	Frost	$3,217
2020	No Claims		$0
2021	No Claims		$0
2022	No Claims		$0
2023	No Claims		$0
Total			$98,818

Source: USDA Risk Management Agency, https://www.rma.usda.gov/data/cause

The following table provides information about previous presidential disasters in the planning area between 1975 and the present.

Table 3.35. Presidential Declarations for Severe Winter Weather in Mercer County (1975-2023)

Declaration Date	Disaster Number	Incident Type	Type of Assistance
December 12, 2007	DR 3281	Severe Winter Storms	PA
December 27, 2007	DR 1736	Severe Winter Storms	PA
January 30, 2009	DR 3303	Severe Winter Storms	PA

Source: 2018 Missouri State Hazard Mitigation Plan

Probability of Future Occurrence

There were 40 events in the planning area in the last 20 years. The duration of these events can vary from hours to several days. While it is highly likely that Mercer County will experience a winter weather event in any given year, the severity of the event could vary from a nuisance to a life-threatening situation.

$$\frac{40}{20} = x(100)$$

The probability of Mercer County experiencing a winter storm each year is 100%. With a likelihood of the planning area experiencing, on average, 2 winter storm events per year.

Changing Future Conditions Considerations and the Impact of Climate Change

With higher average temperatures occurring across the globe due to climate change, one might assume that winters would be milder. However, with the increase in the atmosphere's water-holding capacity, there is an increased likelihood of heavy snow events. Changes in the jet stream patterns can also result in allowing pools of very cold air to sink further south than usual. In summation, the changing climate could result in more severe storms, both in duration and amount of precipitation.

Vulnerability

Vulnerability Overview

Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse utility lines and communication towers, as well as make transportation difficult and hazardous. Ice can also become a problem on roadways if the air temperature is high enough that precipitation falls as freezing rain rather than snow.

Buildings with overhanging tree limbs are more vulnerable to damage during winter storms when limbs fall. Businesses experience loss of income as a result of closure during power outages. In general, heavy winter storms increase wear and tear on roadways though the cost of such damages is difficult to determine. Businesses can experience loss of income as a result of closure during winter storms.

Overhead power lines and infrastructure are also vulnerable to damages from winter storms. In particular, ice accumulation during winter storm events may cause damage to power lines due to the ice weight on the lines and equipment. Damage also occurs to lines and equipment from falling trees and tree limbs weighted down by ice. Potential losses could include the cost of repair or replacement of damaged facilities and lost economic opportunities for businesses.

Secondary effects from loss of power could include burst water pipes in homes without electricity during winter storms. Public safety hazards include the risk of electrocution from downed power lines. Specific amounts of estimated losses are not available due to the complexity and multiple variables associated with this hazard. Standard values for loss of service for utilities reported in FEMA's 2009 BCA Reference Guide, the economic impact as a result of loss of power is $126 per person per day of lost service.

The following table provides information specific to Mercer County's vulnerability to severe winter weather. The Score provided rates the community's vulnerability based on the scale of 1=low, 2=medium low, 3=medium, 4=medium-high, and 5=high. All of the factors were then combined to determine the overall vulnerability rating. As the following chart indicated, Mercer County received a medium-high rating of 4 overall.

Table 3.36. Vulnerability Analysis of Mercer County to Severe Winter Weather

Total Building Exposure (HAZUS)	Building Exposure Rating	Housing Density	Housing Density Rating	SOVI Ranking	SOVI Rating
$426,966,000	1	4.68	1	Medium High	4

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.37. Additional Statistical Data Compiled for Vulnerability Analysis of Mercer County

Total Number of Winter Weather Events	Likelihood of Occurrence	Likelihood of Occurrence Rating	Total Annualized Property Loss	Total Annualized Property Loss Rating	Overall Vulnerability Rating	Overall Vulnerability Rating Description
46	1.77	2	$19,615	1	9	Medium Low

Source: 2023 Missouri State Hazard Mitigation Plan

Table 3.38. Annualized Severe Winter Weather Damages in Mercer County

Annualized Blizzard Property Loss ($)	Annualized Heavy Snow Property Loss ($)	Annualized Ice Storm Property Loss ($)	Annualized Winter Storm Property Loss ($)	Annualized Winter Weather Property Loss ($)	Total Annualized Winter Weather Property Loss ($)
$0	$19,231	$385	$0	$0	$19,615

Source: 2023 Missouri State Hazard Mitigation Plan

Potential Losses to Existing Development

The following table provides the common data elements for the analysis of severe winter weather. The total property loss column represents a combination of NCEI and FEMA PA funds. For declared events, the PA damage figures were used in lieu of NCEI data. NCEI damages represent early estimates, and the FEMA PA funds represent actual expenditures. It should be noted that the information in the following table is from the 2018 State Hazard mitigation plan which used a set of data from a different period of years that was used earlier in this section.

Previous and Future Development

Due to the declining population in Mercer County, there are no new developments to consider, and no previous developments to consider, in terms of increased vulnerability. The lack of development in the county ensures that there are no new vulnerabilities to consider.

Hazard Summary by Jurisdiction

All jurisdictions within the county are equally susceptible to damage stemming from severe winter weather, particularly snow and ice events. In the event of a severe winter storm, 26-50% of any given jurisdiction may be at risk of damage. In the case of extreme cold temperatures, special consideration must be given to the potential impact upon the young, disabled, and elderly populations.

Problem Statement

Severe winter weather is a concern for Mercer County. It affects all jurisdictions. The electrical grid and the roadways are the most affected by severe winter weather. Shelters with auxiliary power supplies should be available to residents affected by power outages.

3.4.8 Tornado

Hazard Profile

Hazard Description

Essentially, tornadoes are a vortex storm with two components of winds. The first is the rotational winds that can measure up to 500 miles per hour, and the second is an uplifting current of great strength. The dynamic strength of both these currents can cause vacuums that can overpressure structures from the inside.

Although tornadoes have been documented in all 50 states, most of them occur in the central United States. The unique geography of the central United States allows for the development of thunderstorms that spawn tornadoes. The jet stream, which is a high-velocity stream of air, determines which area of the central United States will be prone to tornado development. The jet stream normally separates the cold air of the north from the warm air of the south. During the winter, the jet stream flows west to east from Texas to the Carolina coast. As the sun "moves" north, so does the jet stream, which at summer solstice flows from Canada across Lake Superior to Maine. During its move northward in the spring and its recession south during the fall, the jet stream crosses Missouri, causing large thunderstorms that breed tornadoes.

Tornadoes spawn from the largest thunderstorms. The associated cumulonimbus clouds can reach heights of up to 55,000 feet above ground level and are commonly formed when Gulf air is warmed by solar heating. The moist, warm air is overridden by the dry cool air provided by the jet stream. This cold air presses down on the warm air, preventing it from rising, but only temporarily. Soon, the warm air forces its way through the cool air and the cool air moves downward past the rising warm air. This air movement, along with the deflection of the earth's surface, can cause the air masses to start rotating. This rotational movement around the location of the breakthrough forms a vortex, or funnel. If the newly created funnel stays in the sky, it is referred to as a funnel cloud. However, if it touches the ground, the funnel officially becomes a tornado.

A typical tornado can be described as a funnel-shaped cloud that is "anchored" to a cloud, usually a cumulonimbus that is also in contact with the earth's surface. This contact on average lasts 30 minutes and covers an average distance of 15 miles. The width of the tornado (and its path of destruction) is usually about 300 yards. However, tornadoes can stay on the ground for upward of 300 miles and can be up to a mile wide. The National Weather Service, in reviewing tornadoes occurring in Missouri between 1950 and 1996, calculated the mean path length at 2.27 miles and the mean path area at 0.14 square mile.

The average forward speed of a tornado is 30 miles per hour but may vary from nearly stationary to 70 miles per hour. The average tornado moves from southwest to northeast, but tornadoes have been known to move in any direction. Tornadoes are most likely to occur in the afternoon and evening but have been known to occur at all hours of the day and night.

Geographic Location

Tornadoes are cyclical windstorms often associated with the Midwestern areas of the United States. The entire planning area is susceptible to this type of hazardous event. Any person or structure located within Mercer County is at risk from a tornado. The amount of damage depends on the following factors:

- The strength of the tornado.
- The tornado's proximity to the person or structure.

- The strength of the structure.
- How well a person is sheltered.

Strength/Magnitude/Extent

Tornadoes are the most violent of all atmospheric storms and are capable of tremendous destruction. Wind speeds can exceed 250 miles per hour and damage paths can be more than one mile wide and 50 miles long. Tornadoes have been known to lift and move objects weighing more than 300 tons a distance of 30 feet, toss homes more than 300 feet from their foundations, and siphon millions of tons of water from water bodies. Tornadoes also can generate a tremendous amount of flying debris or "missiles," which often become airborne shrapnel that causes additional damage. If wind speeds are high enough, missiles can be thrown at a building with enough force to penetrate windows, roofs, and walls. However, the less spectacular damage is much more common.

Tornado magnitude is classified according to the EF- Scale (or the Enhance Fujita Scale, based on the original Fujita Scale developed by Dr. Theodore Fujita, a renowned severe storm researcher). The EF-Scale (see Table 3.39) attempts to rank tornadoes according to wind speed based on the damage caused. This update to the original F Scale was implemented in the U.S. on February 1, 2007.

Table 3.39. Enhanced F Scale for Tornado Damage

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest ¼-mile (mph)	3 Second Gust (mph)	EF Nu	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

Source: The National Weather Service, www.spc.noaa.gov/faq/tornado/ef-scale.html

The wind speeds for the EF scale and damage descriptions are based on information on the NOAA Storm Prediction Center as listed in **Table 3.40**. The damage descriptions are summaries. For the actual EF scale, it is necessary to look up the damage indicator (type of structure damaged) and refer to the degrees of damage associated with that indicator. Information on the Enhanced Fujita Scale's damage indicators and degrees or damage is located online at www.spc.noaa.gov/efscale/ef-scale.html.

Table 3.40. Enhanced Fujita Scale with Potential Damage

Enhanced Fujita Scale			
Scale	Wind Speed (mph)	Relative Frequency	Potential Damage
EF0	65-85	53.5%	Light. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported damage (i.e. those that remain in open fields) are always rated EF0).
EF1	86-110	31.6%	Moderate. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111-135	10.7%	Considerable. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes complete destroyed; large trees snapped or uprooted; light object missiles generated; cars lifted off ground.

EF3	136-165	3.4%	Severe. Entire stores of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some
EF4	166-200	0.7%	Devastating. Well-constructed houses and whole frame houses completely levelled; cars thrown and small missiles generated.
EF5	>200	<0.1%	Explosive. Strong frame houses levelled off foundations and swept away; automobile-sized missiles fly through the air in excess of 300 ft.; steel reinforced concrete structure badly damaged; high rise buildings have significant structural deformation; incredible phenomena will occur.

Source: NOAA Storm Prediction Center, http://www.spc.noaa.gov/efscale/ef-scale.html

Enhanced weather forecasting has provided the ability to predict severe weather likely to produce tornadoes days in advance. Tornado watches can be delivered to those in the path of these storms several hours in advance. The lead time for actual tornado warnings is about 30 minutes. Tornadoes have been known to change paths very rapidly, thus limiting the time in which to take shelter. Tornadoes may not be visible on the ground if they occur after sundown or due to blowing dust or driving rain and hail.

Previous Occurrences

There are limitations to the use of NCEI tornado data that must be noted. For example, one tornado may contain multiple segments as it moves geographically. A tornado that crosses a county line or state line is considered a separate segment for the purposes of reporting to the NCEI. Also, a tornado that lifts off the ground for less than 5 minutes or 2.5 miles is considered a separate segment. If the tornado lifts off the ground for greater than 5 minutes or 2.5 miles, it is considered a separate tornado. Tornadoes reported in Storm Data and the Storm Events Database are in segments.

Table 3.41. Recorded Tornadoes in Mercer County, 1993 – Present

Date	Beginning Location	Ending Location	Length (miles)	Width (yards)	F/EF Rating	Death	Injury	Property Damage	Crop Damages
5/29/2004	Mill Grove	Mill Grove	3	100	F0	0	0	0	0
7/19/2010	Princeton	Princeton	0.1	25	EF0	0	0	500	0
6/29/2014	Princeton	Ravanna	6.31	300	EF1	0	0	0	0
11/11/2015	Princeton	Princeton	0.25	40	EF0	0	0	0	0
3/6/2017	Goshen	Princeton	10.34	100	EF1	0	0	0	0
								Total Damage:	$500

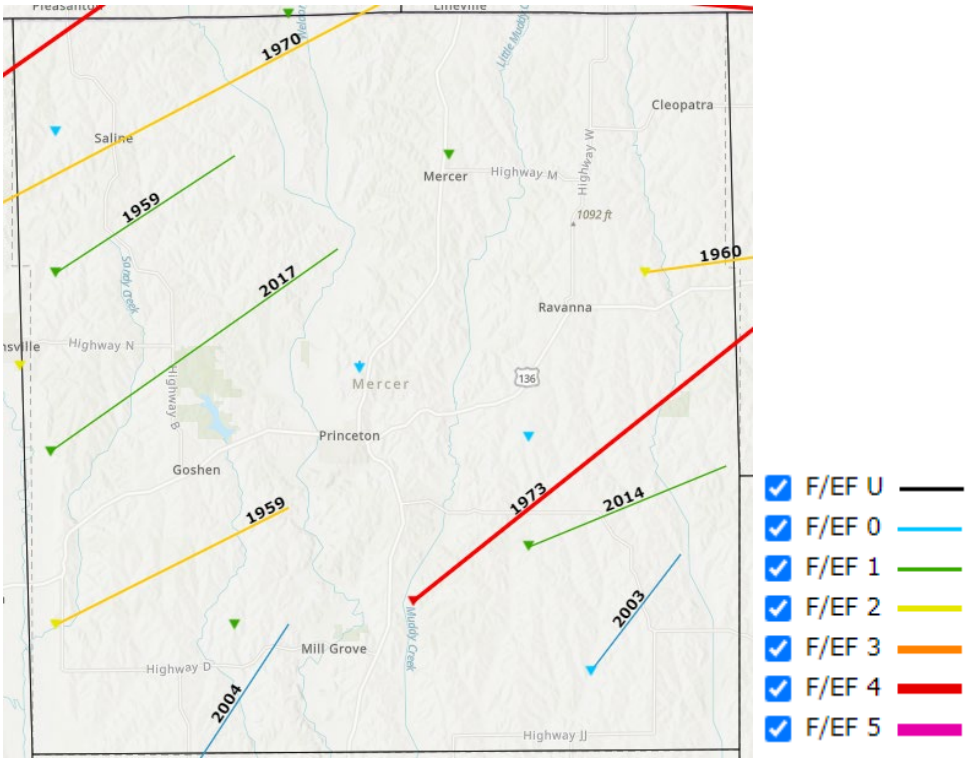
Source: National Centers for Environmental Information, http://www.NCEI.noaa.gov/stormevents/

- Narrative of 7/19/2010 Storm:
  Thunderstorms erupted the evening of July 19th, along a stationary front that was draped across southern Iowa. The storms quickly moved south into north central Missouri. The storms took on a supercell character, due to strong directional and speed shear, coupled with unstable atmospheric conditions. An initial report of a funnel cloud was received just before 9 pm north of Mercer, Missouri, with numerous reports of funnel clouds, tornadoes, and wind damage. Emergency management officials scoured the areas across which these supercell thunderstorms tracked but found little damage. Though eight separate reports of tornadoes were received, tornado damage of EF0 only could be confirmed approximately 5 miles east of Princeton, where a shed was destroyed, 3 miles southwest of Milan, where the roof was torn from a garage, and in the town of Harris, where a roof was blown off. Aside from these tornadoes, straight line winds destroyed two camper trailers, and blew in a garage door, 10 miles northeast of Atlanta. In Atlanta, quarter sized hail was reported twice during the night. ||The severe weather threat ended, only to be replaced by

flash flooding, as thunderstorms continued to track across the same areas of northeast Missouri, during the overnight hours. The hardest hit was the Kirksville area, where radar estimated rainfall of 8 to 10 inches. A survey of both automated and manually read rain guages, measured anywhere from 3 to 6 inches across portions of Putnam, Sullivan, Adair, and Macon Counties, with at least one measurement of 9.13 inches being reported 1 mile south of Kirksville. Other reports include: 3.39 inches 2 miles north of Moberly, 3.46 inches in Atlanta, 3.70 inches 5 miles northeast of Mercer, 4.33 inches near Lancaster, 4.53 inches at the official NWS observing site in Kirksville, 4.65 inches in Milan, 4.80 inches in Green City, 5.10 inches near Unionville, 6.19 inches in Novinger and 6.01 inches in Livonia. The heavy rains caused numerous creeks and streams to exceed flood stage across the area.

- Narrative of 6/29/2014 Storm:
  An extremely unstable environment was in place during this time period. On the evening of the 29th, several super cell thunderstorms producing tornadoes tracked across northwestern and northern Missouri producing multiple weak tornadoes. Storms erupted again the evening of the 30th and again produced several weak tornadoes across northern Missouri. The storms eventually evolved into a southward advancing line on the evening of June 30th, producing another weak tornado in the Kansas City metropolitan area.
- Narrative of 11/11/2015 Storm:
  On the afternoon of November 11th, a dry line pushed through the area, bringing very strong westerly winds to portions of western and northwestern Missouri. Several locations reported winds up to 60 to 70 mph, unrelated to thunderstorms. The majority of the damage caused by these winds were done to trees and power lines, although there were some outbuildings and other structural damage as a result of these synoptic straight-line winds. Along and ahead of the dry line thunderstorms formed and created some minor wind damage.
- Narrative of 3/6/2017:
  On the evening of March 6, 2017, a line of severe thunderstorms formed, then moved into eastern Kansas and western and central Missouri. Ahead of and along this line of storms supercells formed and produced large hail, damaging winds, and several tornadoes. Officially there were 11 tornadoes recorded in the EAX portion of Missouri, with a 12th tornado recorded in Leawood, Kansas, on the Kansas side of the EAX CWA. The most notable of the tornadoes were the EF-2 and EF-3 tornadoes that impacted Smithville, Missouri and Oak Grove, Missouri respectively. According to news reports there were 12 injuries associated with the Oak Grove tornado, but despite the widespread significant damage there were no fatalities. As the line of storms moved eastward several embedded supercells and mesovortices produced several more tornadoes across northern and central Missouri. By the end of the event, officially there were four EF-1 tornadoes, one EF-2 tornado (Smithville, MO), one EF-3 (Oak Grove, MO), and five EF-0 tornadoes in Missouri. The Leawood Kansas tornado was rated EF-0 as well, rounding out the 12 confirmed tornadoes in the EAX CWA from that evening.

Figure 3.41. Mercer County Map of Historic Tornado Events



Source: mrcc.purdue.edu/gismaps/cntytorn#

Table 3.42. Crop Losses Due to Tornado in Mercer County 2013-2023

Year of Loss	Crop	Amount in Damage ($)
2013	No claims	$0
2014	No claims	$0
2015	No claims	$0
2016	No claims	$0
2017	No claims	$0
2018	No claims	$0
2019	No claims	$0
2020	No claims	$0
2021	No claims	$0
2022	No claims	$0
2023	No claims	$0
Total $0		

Source: USDA.gov Cause of Loss Historical Data Files

According to the USDA Risk Management Agency, there have been no indemnity payments to Mercer County farmers in the last 10 years for losses due to tornado events. It is possible that any damage that occurred from tornadic activity was listed as wind damage or excess precipitation which usually accompanies the storms that spawn tornadoes.

Probability of Future Occurrence

There have been 5 tornadoes recorded in Mercer County in the last 20 years according to the NCEI.

$$\frac{5}{20} = x(100)$$

According to the available data, and the above formula, the probability of Mercer County experiencing

a tornado in any given year is 25%.

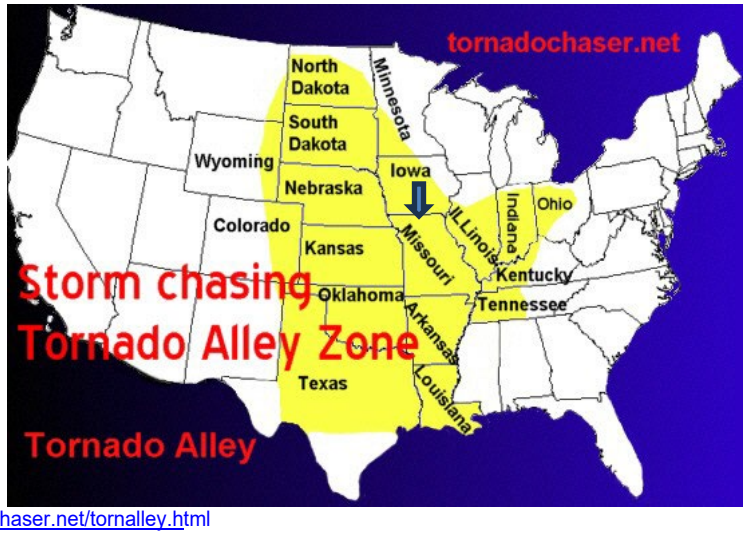
Changing Future Conditions Considerations and the Impact of Climate Change

According to the Missouri State Hazard Mitigation Plan, scientists do not know how the frequency and severity of tornadoes will change. Research published in 2015 suggests that changes in heat and moisture content in the atmosphere, brought on by a warming world, could be playing a role in making tornado outbreaks more common and severe in the US. The research concluded that the number of days with large outbreaks has been increasing since the 1950's and that densely concentrated tornado outbreaks are on the rise. It is notable that the research shows that the area of tornado activity is not expanding, but rather the areas already subject to tornado activity are seeing more densely packed tornadoes. Because Mercer County experiences approximately one tornado every four years, and based on the research, the frequency of such events could increase in the future.

Vulnerability

Vulnerability Overview

Figure 3.42. Tornado Alley in the U.S.



Source: http://www.tornadochaser.net/tornalley.html

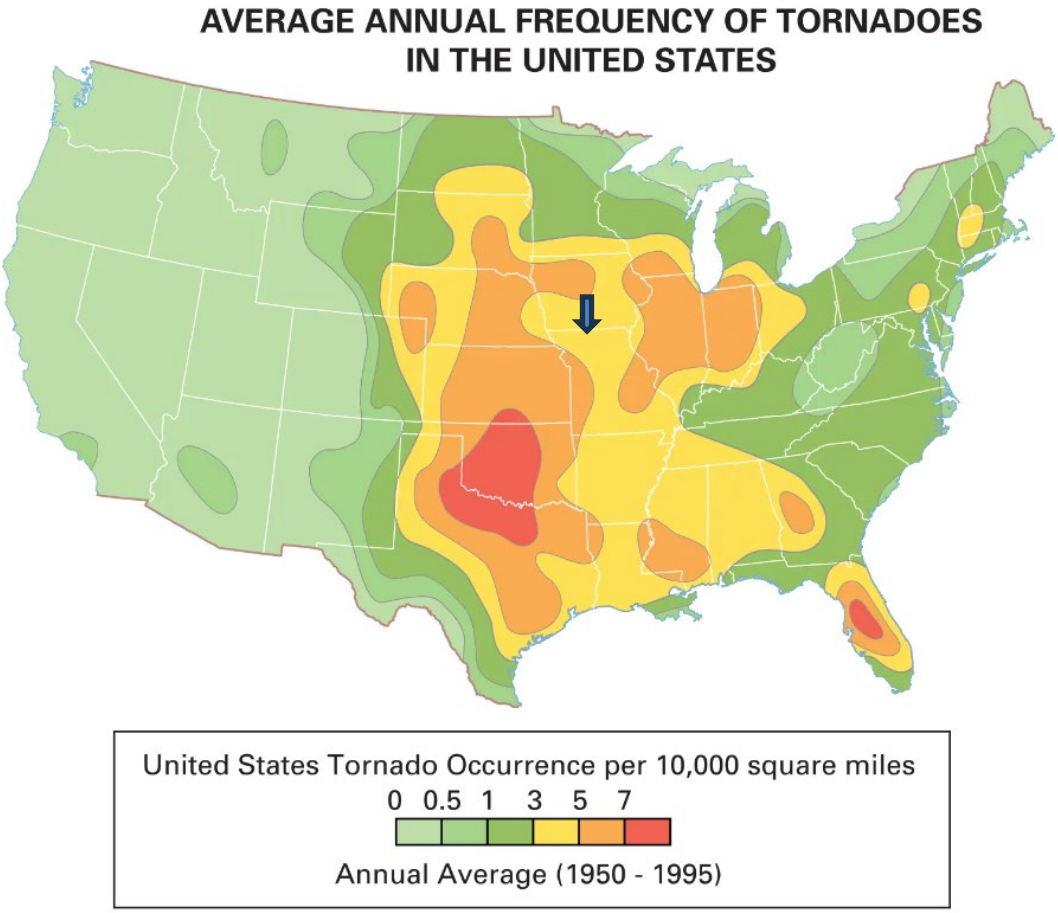
Although the boundaries of Tornado Alley, shown in Figure 3.33 are debatable, depending on which criteria you use: frequency, intensity, or events per unit area, the region from central Texas, northward to northern Iowa, and from central Kansas and Nebraska east to western Ohio is often collectively known as Tornado Alley. Meteorologically, the region is ideally situated for the formation of supercell thunderstorms, often the producers of violent (EF-2 or greater) tornadoes.

Overall, most tornadoes (around 77%) in the United States are considered weak (EF-0 or EF-1) and about all tornadoes in the United States (95%) are below EF-3 intensity. The remaining small percentage of tornadoes are categorized as violent (EF-3 and above). Of these violent storms, only a few (0.1% of all tornadoes) achieve EF-5 status, with estimated winds over 200 mph and nearly complete destruction. However, given that on average over 1,000 tornadoes hit the United States each year, 20 could be expected to be violent and one might possibly be so intense as to be described as incredible.

The following, Figure 3.34, shows the average annual frequency of tornadoes in the United States.

Mercer County lies in the northern part of Missouri and falls within the range of 3-5 occurrences per year. While this is not consistent with the historical reports of tornadoes within the planning area, it is important to consider that the planning area does fall within a region that could potentially experience more tornadic activity than is historically documented.

Figure 3.43. Average Annual Frequency of Tornadoes in the United States



Source: Encyclopedia Britannica, Inc.; www.britannica.com

In the 2018 update to its hazard mitigation plan, the State of Missouri looked at several sources: HAZUS building exposure value data, population density, and mobile home data from the US Census (2015 ACS), the calculated Social Vulnerability Index for Missouri Counties from the Hazards and Vulnerability Research Institute in the Department of Geography at the University of South Carolina, and storm events data (1950 to December 31, 2016) from the National Centers for Environmental Information (NCEI). It is important to realize that one limitation to the NCEI data is that many tornadoes that might have occurred in uninhabited areas, as well as some in inhabited areas, may not have been reported. In addition, NOAA data cannot show a realistic frequency distribution of different Fujita scale tornado events, except for those occurring in recent years. Therefore, the model used for this analysis was based purely on tornado frequency and historic losses in the state of Missouri.

From the data collected, six factors were considered in determining overall vulnerability to tornadoes as follows: building exposure, population density, social vulnerability, percentage of mobile homes, likelihood of occurrence, and annual property loss. Based on the natural breaks in the statistical data, a rating value of 1 through 5 was assigned to each factor. These ratings correspond to the following

descriptive terms:

- Low
- Low-medium
- Medium
- Medium-high
- High

Once the ranges were determined and applied to all factors considered in the analysis, the ratings were combined to determine an overall vulnerability rating for tornadoes. The following table provides the vulnerability rating.

Table 3.43. Ranges for Tornado Combined Vulnerability Rating

	Low (1)	Low-medium (2)	Medium (3)	Medium-High (4)	High (5)
Tornado Combined Vulnerability	7-10	11-12	13-14	15-16	17-21

Source: 2023 Missouri State Hazard Mitigation Plan

The following table (Table 3.44) provides the building exposure, population density, SOVI index ranking, percentage of mobile homes, and associated vulnerability rating.

Table 3.44. Building Exposure, Population Density, SOVI, and Mobile Home Data for Mercer County

Total Building Exposure (HAZUS)	$426,966,000
Exposure Rating	1
Population Density	7.97
Population Rating	1
SOVI Index Rating	Medium High
SOVI Rating	4
Percent Mobile Homes	3.9%
Mobile Home Rating	3

Source: 2023 Missouri State Hazard Mitigation Plan

The following table (Table 3.45) provides additional information obtained from the NCEI to complete the overall vulnerability analysis and the total overall vulnerability rating for tornadoes according to the 2018 Missouri State Hazard Mitigation Plan.

Table 3.45. Likelihood of Occurrence, Annual Property Loss, and Overall Vulnerability for Tornadoes in Mercer County

Total Number of Tornadoes	16
Likelihood of Occurrence	0.222
Likelihood of Occurrence Rating	2
Total Annualized Property Loss	$5,959
Total Annualized Property Loss Rating	1
Overall Vulnerability Rating	12
Overall Vulnerability Rating Description	Medium Low

Source: 2023 Missouri State Hazard Mitigation Plan

The Missouri State Hazard Mitigation Plan of 2023 gives Mercer County a Medium-low vulnerability rating for damage from tornadoes.

Potential Losses to Existing Development

The rural nature of Mercer County lessens the likelihood of a tornado striking a densely populated area. The 2010 US Census data showed a population density of 8 people per square mile and a housing density of 5 units per square mile. This means that most damage would probably occur to agricultural assets.

The last 20 years have seen 17 tornadoes, according to the Missouri State Hazard Mitigation Plan of 2018. None of these tornadoes has exceeded an EF-1 in intensity. The damage from these lower scale storms is usually light to moderate which again limits the potential losses to the county. The total annualized property loss is $6,403. This significantly low figure is most likely the result of the rural nature of the planning area.

Previous and Future Development

The county has seen a decrease in population since the last Census. The lack of development in the planning area would indicate that there is no additional assets at risk to consider at this time.

Hazard Summary by Jurisdiction

City of Princeton

The City of Princeton has a higher population density than the rest of the surrounding areas of the County. This would mean that a tornado within the city limits would have more people and property at risk than in the unincorporated parts of the county. There have been no tornadoes within the city limits thus far. Many of the homes and buildings in Princeton are old and would therefore be more susceptible to damage from a tornado.

City of Mercer

The City of Mercer has a higher population density than the rest of the surrounding areas of the county. This would mean that a tornado within the city limits would have more people and property at risk than in the unincorporated parts of the county. There have been no tornadoes within the city limits reported previously. Many of the homes and buildings in Mercer are old and would therefore be more susceptible to damage from a tornado.

Princeton R-V School District & North Mercer RIII

Both schools are located within the city limits. Both schools perform annual disaster drills, but neither school has a storm shelter available.

Problem Statement

- Neither school district in Mercer County has a storm shelter that has been built to withstand the damaging effects of a tornado.

- The preschool at North Mercer R-III is located in a mobile home on the school grounds. This type of structure would be unsafe if a tornado were to touch down near the school.

- Many of the homes and businesses in the planning area lack a storm shelter or basement to take shelter in, if there was a tornado in the county.

3.4.9 Wildfire

Hazard Profile

Hazard Description

The fire incident types for wildfires include: 1) natural vegetation fire, 2) outside rubbish fire, 3) special outside fire, and 4) cultivated vegetation, crop fire.

The Forestry Division of the Missouri Department of Conservation (MDC) is responsible for protecting privately owned and state-owned forests and grasslands from wildfires. To accomplish this task, eight forestry regions have been established in Missouri for fire suppression. The Forestry Division works closely with volunteer fire departments and federal partners to assist with fire suppression activities. Currently, more than 900 rural fire departments in Missouri have mutual aid agreements with the Forestry Division to obtain assistance in wildfire protection if needed.

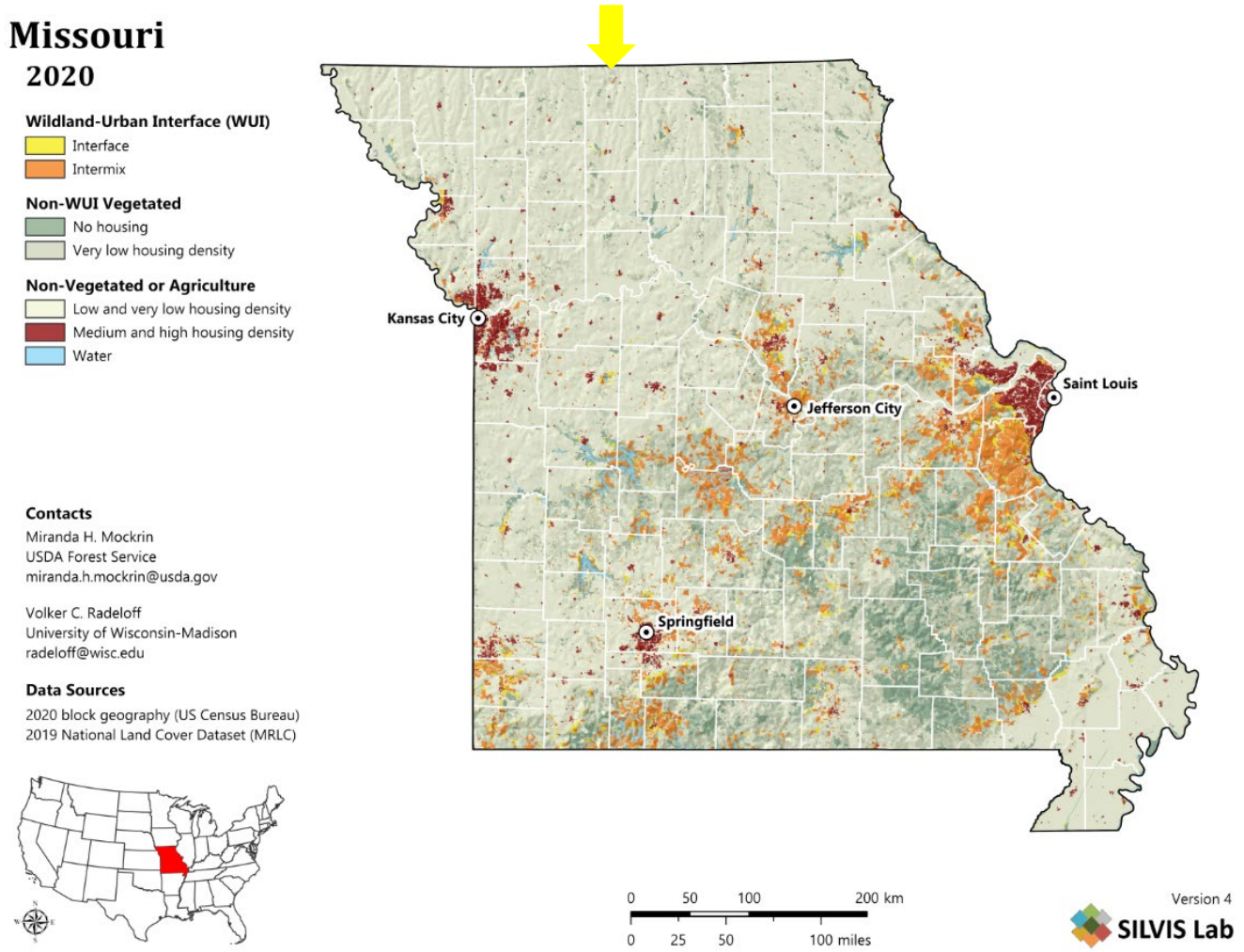
Most of Missouri fires occur during the spring season between February and May. The length and severity of wildland fires depend largely on weather conditions. Spring in Missouri is usually characterized by low humidity and high winds. These conditions result in higher fire danger. In addition, due to the recent lack of moisture throughout many areas of the state, conditions are likely to increase the risk of wildfires. Drought conditions can also hamper firefighting efforts, as decreasing water supplies may not prove adequate for firefighting. It is common for rural residents burn their garden spots, brush piles, and other areas in the spring. Some landowners also believe it is necessary to burn their forests in the spring to promote grass growth, kill ticks, and reduce brush. Therefore, spring months are the most dangerous for wildfires. The second most critical period of the year is fall. Depending on the weather conditions, a sizeable number of fires may occur between mid-October and late November.

Geographic Location

The term refers to the zone of transition between unoccupied land and human development and needs to be defined in the plan. Within the WUI, there are two specific areas identified: 1) Interface and 2) Intermix. The interface areas are those areas that abut wildland vegetation and the Intermix areas are those areas that intermingle with wildland areas.

The previous map (Figure 3.35) shows the Wildland-Urban Interface for Mercer County. The entire Northwest Region is comparable to Mercer County with low risk for damages in the area. There is one area of Intermix within the planning area where human development and wildland areas intermingle. The zone at risk is around Lake Marie, which is southwest of Mercer. The bulk of the county is designated as having NonWUI vegetation of varying percent as illustrated on the map. (Mercer County is designated with a yellow arrow). Since damages due to wildfires would be higher in communities with more wildland-urban interface (WUI) areas, Mercer County is relatively safe from destruction due to wildfires.

Figure 3.44. Missouri Wildland-Urban Interface (WUI)



Strength/Magnitude/Extent

Wildfires damage the environment, killing some plants and occasionally animals. Firefighters have been injured or killed, and structures can be damaged or destroyed. The loss of plants can heighten the risk of soil erosion and landslides. Although Missouri wildfires are not the size and intensity of those in the Western United States, they could impact recreation and tourism in and near the fires.

Wildland fires in Missouri have been mostly a result of human activity rather than lightning or some other natural event. Wildfires in Missouri are usually surface fires, burning dead leaves on the ground or dried grasses. They sometimes do “torch” or “crown” out in certain dense evergreen stands like eastern red cedar and shortleaf pine. However, Missouri does not have the extensive stands of evergreens found in the western US that fuel the large fire storms seen on television news stories.

While very unusual, crown fires can and do occur in Missouri native hardwood forests during prolonged periods of drought combined with extreme heat, low relative humidity, and high wind. Tornadoes, high winds, wet snow, and ice storms in recent years have placed a large amount of woody material on the forest floor that causes wildfires to burn hotter and longer. These conditions also make it more difficult for fire fighters to suppress fires safely.

Often wildfires in Missouri go unnoticed by the public because the sensational fire behavior that captures the attention of television viewers is rare in the state. Yet, from the standpoint of destroying

homes and other property, Missouri wildfires can be quite destructive.

Previous Occurrences

According to records kept by the Missouri Department of Conservation during a 10-year sample period, between 2014-2023, there were a total of 95 wildfires that burned a total of 2,530 acres in Mercer County. The largest single wildfire in the study period occurred on April 19, 2015, when 327 acres burned. It took four hours for the Mercer County Fire Protection District to control the fire, and the response required mutual aid from the Medicine Creek Fire Protection District. This information was obtained from the Missouri Department of Conservation Wildfire Reporting Information.

Table 3.46. Wildfire Reports in Mercer County Missouri by Cause; Totals

Fire Reporting Agency	Cause	# of Fires	Acres Burned
Mercer County FPD	Debris	29	824.847
Mercer County FPD	Equipment	3	21.897
Mercer County FPD	Miscellaneous	14	784.068
Mercer County FPD	Not Reported	8	183.507
Mercer County FPD	Smoking	3	107.377
Mercer County FPD	Unknown	26	392.295
North Harrison FD		1	199.332
Spickard FPD		12	16.996

Source: Missouri Department of Conservation Wildfire Report

Probability of Future Occurrence

The probability of a wildfire occurring in the planning area in any given year is calculated by dividing the number of occurrences by the number of years in the study and multiplying the product by 100 to determine the percentage of probability.

$$\frac{95}{10} = x(100)$$

Based on previous occurrences, the estimated number of wildfires per year in Mercer County would be estimated to be approximately 9.5 per year.

Changing Future Conditions Considerations and the Impact of Climate Change

As average temperatures and the number of droughts increase with climate change, wildfire events are likely to increase. This may lead to extreme devastation but may also help with natural forest productivity. The limited forested areas of the county may limit the local effects.

Drier temperatures may reduce the number of days for prescribed burns. Reduction of prescribed burning will allow for growth of understory vegetation; this could provide additional fuel for destructive wildfires.

Drought is also anticipated to increase in frequency and intensity during summer months under projected future scenarios. Drought can lead to dead or dying vegetation and landscaping material close to structures which creates fodder for wildfires, even within rural settings.

Vulnerability

Vulnerability Overview

The Missouri State Hazard Mitigation Plan, 2018 has the following information about Mercer County provided in the following table, (Table 3.46).

Table 3.47. Statistical Data for Wildfire Vulnerability for Mercer County

Number of Wildfires 2004-2021	Likelihood of Occurrence (#/year)	Total Acres Burned	Average Annual Acreage Burned
105	5.8	2,432.61	135.1

Source: Missouri Hazard Mitigation Plan 2023

The National Fire Incident Reporting System (NFIRS) data was used to determine the vulnerability reported in the state plan. However, only 61% of fire departments in Missouri reported to the NFIRS, and therefore the data contained in this report may not be complete.

Potential Losses to Existing Development

The following table provides county specific information with estimated numbers and values of structures and population vulnerable to wildfire.

Table 3.48. Estimated Numbers and Values of Structures and Population Vulnerable to Wildfire in Mercer County

Type of Structure	Number of Structures	Value of Structures	Population
Agricultural	23	$18,242,848	267
Commercial	2	$549,775	
Residential	95	$17,660,445	

Source: 2023 Missouri State Hazard Mitigation Plan

The Missouri State Hazard Mitigation Plan of 2023 also provides the following information regarding potential loss estimates. It is in the following table (Table 3.45).

Table 3.49. Wildfire Potential Loss Estimates

Total WUI Acreage	Total Structure Value Within WUI	Average Value/Acre Within WUI	Average Annual Acreage Burned	Potential Loss
1,247.65	$18,242,848	$14,622	135.15	$1,976.059

Source: 2023 Missouri State Hazard Mitigation Plan

Impact of Previous and Future Development

The area of WUI in Mercer County is sparsely populated. There has been no additional development in this Intermix area or any plans to do so in the near future. None of the jurisdictions in the planning area are located within an intermix zone.

Hazard Summary by Jurisdiction

Mercer County is mostly agricultural in nature. Due to the agricultural nature of the county, much of the land is open and unpopulated. Therefore, the risk to human life is minimal. The City of Princeton is the largest jurisdiction, with the most structures, and is therefore the most at risk to damage from a wildfire. The City of Mercer is the next largest jurisdiction, there is a slight increased risk to damage from a wildfire within the city limits. The risk to the school districts is based upon the town in which they are located.

Problem Statement

- There are two fire departments within Mercer County. They are both volunteer fire departments, and rely on volunteers showing up when they receive notification that there is a need. The fire departments should confirm mutual aid agreements with each other, and departments located within neighboring counties.

4 MITIGATION STRATEGY 4.1
4.1 Goals 4.1
4.2 Identification and Analysis of Mitigation Actions 4.2
4.3 Implementation of Mitigation Actions 4.5

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 [updated] 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 Mitigation Planning Policy Guide (2023)*

- **Goals** are broad, long-term policy and vision statements that explain what is to be achieved by implementing the mitigation strategy.

- A **mitigation action** is a measure, project, plan, or activity proposed to reduce current and future vulnerabilities described in the risk assessment.

When reviewing the mitigation actions of the 2018 Plan and considering new actions for this 2024 update, the emphasis was placed on those actions that would reduce the risk to existing buildings, structures, and infrastructure. Limiting risk to existing areas of redevelopment and any new development areas was addressed by MPC in the evaluation of this update's mitigation actions.

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 Mercer County's existing hazard mitigation plan approved by FEMA on August 21, 2019. Therefore, the goals from the 2019 Mercer County Hazard Mitigation Plan were reviewed to see if they were still valid, feasible, practical, and applicable to the defined hazard impacts. The MPC conducted a discussion session during their second meeting to review and update the plan goals. To ensure that the goals developed for this update were comprehensive and supported State goals, the 2023 State Hazard Mitigation Plan goals were reviewed. The MPC also reviewed the goals from current surrounding county plans. The MPC determined that the following goals, which modified the goals from the prior Mercer County Plan, would be the following:

- Goal 1: Protect the lives, property, and livelihoods of all citizens.
- Goal 2: Manage growth in designated hazard areas through sustainable policies, principles, and

practices.

- Goal 3: Ensure continued operation of government and emergency functions in a disaster.
- Goal 4: Maintain economic activities essential to the survival and recovery from natural hazards.
- Goal 5: Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property.

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.

During the second 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 mitigating risks in the planning area.

The focus of Meeting #3 was an update of the mitigation strategy. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during Meeting #3:

- 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 Meeting #3, 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. Prior to Meeting #3, the list of actions for each jurisdiction was emailed to that 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 made;
- 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 were 11 completed actions, 22 continuing actions (either ongoing or modified), and 7 deleted actions. The following table provides a breakdown of the actions considered and the MPC's determination of whether the actions have been completed, are ongoing, or will be deleted.

Source: Completed/Retained Ongoing Removed

Table 4.1. Status & Actions from Previous Plan

Status	Action from previous plan
Completed & Retained: jurisdictions will continue to provide info.	(C1, P2, M2) Publicize the availability of hazard information to real estate agents, builders, developers, and homeowners.
Ongoing: This is an ongoing process.	Conduct Storm Spotter training classes for local Emergency Personnel and interested members of the public.
Completed & Retained: This is reviewed annually.	Develop a county-wide inventory of emergency shelters and safe rooms.
Ongoing: This is completed through the Sheriff's Office.	Emergency Management will arrange for training on safety audits and hazard mitigation for facilities using state and federal training resources and grant funding.
Ongoing: This is completed through ambulance & fire districts.	Provide opportunities for training so local businesses are equipped to develop their own emergency plans.
Ongoing: The City of Princeton participates, County will consider.	Implement NFIP
Completed & Retained:	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit them with local libraries.
Completed & Retained: County will update as needed.	Maintain local library repositories with the latest available publications.
Completed & Retained: County & Bridge requires this, will continue to do so.	Ensure the use of best management practices for channel and drainage systems maintenance.
Ongoing: coordination between dispatch services, ambulance, fire districts, and sheriff's office.	Coordinate and conduct a standalone event to educate the public about emergency preparedness and early warning systems.
Completed & Retained: coordination between dispatch services, ambulance, fire districts, & sheriff's office.	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.
Removed: The county will initiate grant proposals as needed.	This was removed as it did not address any of the hazards in the plan.
Completed & Retained: State University extension Personnel are available.	Make local government experts available to property owners to offer hazard audits of vulnerable structures.
Completed & Retained: Handled by LEPC Committee.	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.

Ongoing: The county considers this an ongoing activity for the LEPC committee.	Acquire a generator through a grant for a shelter site.
Removed: Both cities considered this unreasonable.	(P1, M1) Adopt an ordinance requiring the construction of safe rooms within new public buildings such as schools, libraries, community centers, etc.
Ongoing: The cities will continue to work with the county to provide information.	(P3, M3) Develop individual, community specific shelter and safe room inventories.
Removed: Lack of interest in communities.	(P4, M4, MS4, PS4) Invite SEMA mitigation specialists to present information.
Ongoing: Both city work departments utilize best practices.	(P5, M5) Ensure the use of best management practices for channel and drainage systems maintenance.
Ongoing:	(P7, M7) Form committee to assess storm water management plans and facilitate development of such plans where there is a need.
Ongoing: Lack of funding has prevented action to this point.	(P8, M8) Install warning sirens with automated units that have battery back-up.
Ongoing: Princeton is the only jurisdiction with NFIP status. They will continue to participate.	Continue participation in NFIP.
Ongoing: Both schools will attempt to secure funding through grants.	(MS1, PS1) Develop a shelter plan to address improving existing shelter assets and construction of new ones.
Completed & Removed:	(MS2, PS2) Implement the Red Cross “pillowcase program”.
Completed & Ongoing: Both schools due annual drills.	(MS3, PS3) Participate in the “Great American Shake Up” Earthquake drill.

Table 4.2 provides a summary of the action statuses for each jurisdiction:

Table 4.2. Action Status Summary

Jurisdiction	Completed Actions	Continuing Actions (ongoing or modify)	Deleted Actions
Mercer County	8	6	1
City of Princeton	1	6	2
City of Mercer	0	6	2
Princeton R-V	1	2	1
Mercer R-III	1	2	1

Table 4.3. Summary of Completed and Deleted Actions from the Previous Plan

Completed Actions	Completion Details (date, amount, funding source)
Publicize the availability of hazard information too real estate agents, builders, developers, and homeowners.	The county and city have continued to provide updated information when needed; N/A.
Develop a county-wide inventory of emergency shelters and safe rooms.	This is completed and reviewed annually; N/A.
Obtain free publications from REMA, NWS, USGS, and other federal agencies and deposit them with local libraries.	This was completed in 2019; N/A.

Maintain local library repositories with the latest available publications.	This has been reviewed annually; N/A.
Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.	Local agencies work together at least annually since 2018; N/A.
Make local government experts available to property owners to offer hazard audits of vulnerable structures.	MU Extension personnel are available when needed; N/A.
Form committee to assess storm water management plans and facilitate development of such plans where there is a need.	This is handled by the LEPC Committee; N/A.
Participate in the "Great American Shake Up" Earthquake Drill.	This is completed. Both schools continue to hold earthquake drills annually.
Implement the Red Cross "pillowcase program".	This was completed in school districts in 2019; N/A.
Deleted Actions	**Reason for Deletion**
Adopt an ordinance requiring the construction of safe rooms within new public buildings such as schools, libraries, community centers, etc.	This action was determined to be unpopular politically and potentially restrictive to development.
Invite SEMA mitigation specialists to present information.	The jurisdictions decided to delete this action due to lack of interest in their respective communities.

Source: Previously approved County Hazard Mitigation Plan; and Assessment of Previously Proposed Actions Worksheets

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 2023 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 worksheets are attached to this plan as Appendix C. 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 **Evaluation Rating** Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
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)	

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **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.

Mercer County Actions

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure
Problem being Mitigated:	Development in hazard prone areas
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1) & Manage growth in designated hazard areas through sustainable policies, principles, and practices (2)
Action/Project Number:	C-1
Name of Action or Project:	Publicize the availability of hazard information to real estate agents, builders, developers, and homeowners.
Mitigation Category:	Prevention Public Education
Action or Project Description:	Publicize the availability of hazard information. This will provide financial institutions, real estate professionals, developers, and homeowners with the tools they need to determine how best to protect their property from the negative impacts of hazards in the county.
Estimated Cost:	$0
Benefits:	It costs nothing to post notices about the availability of this information. Due to the low cost and ease of implementation (requiring no lengthy timeline to accomplish) this action was given a high priority.
Plan for Implementation	
Responsible Organization/Department:	County Commission
Supporting Organization/Department:	Mercer County Emergency Management
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	General operating budget, staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Public notices will be posted at the County Courthouse and City Halls, and on government web sites and Facebook pages.
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	This was completed with the previous HMP plan. The county intends to maintain this policy, progress will be monitored at the HMP Committee meeting in 2025.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornadoes
Problem being Mitigated:	Storm awareness and warning capability.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1)
Action/Project Number:	C-2
Name of Action or Project:	Conduct Storm Spotter training classes to local Emergency Personnel and interested members of the public.
Mitigation Category:	Emergency Services
Action or Project Description:	Provide Storm Spotter Training to local Emergency Personnel and interested members of the public, through the National Weather Service office in Pleasant Hill.
Estimated Cost:	$0
Benefits:	The classes cost the county nothing and result in trained storm spotters. The low cost and high benefit made this action a high priority.
Plan for Implementation	
Responsible Organization/Department:	Mercer County Emergency Management
Supporting Organization/Department:	Local Fire Departments
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	General operating budget, staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will arrange storm spotter trainings with the National Weather Service.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This has been completed previously, the County will arrange for a new training in 2025.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado
Problem being Mitigated:	Lack of readily available, organized, and useful information on available shelters and safe rooms. With this information, 911 could advise individuals displaced by disaster of the closest available shelter. In addition, emergency management and incident commanders will have access to information detailing the locations, assets, and limitations of shelters as they relate to the needs imposed by a given situation. The safe room data will enable responders to move quickly, locate potential survivors in the wake of a hazard event. The coordinator will facilitate updates and further discussion on shelters and safe rooms at the plan maintenance meetings.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1); Ensure continued operation of government and emergency functions in a disaster (3)
Action/Project Number:	C-3
Name of Action or Project:	Develop a detailed *county-wide* inventory of emergency shelters and saferooms.
Mitigation Category:	Prevention Public Education
Action or Project Description:	Develop a detailed *county-wide* inventory of emergency shelters and saferooms. Appoint a Shelter Coordinator. Work with representatives from each community to develop a list of shelters and saferooms. Including: • Shelter/Safe room location • Contact Information • Facility information (capacity, amenities, stored supplies, etc.) • Cooling & Heating Centers If the location has a generator or the capacity to interface with a portable generator. This information will be shared with the public to raise awareness of where they could take shelter in the event of an emergency or during events of extreme temperatures by publicizing the inventory in the local newspaper, the senior center, the health clinic, doctors office, and other public places in the county.
Estimated Cost:	$0
Benefits:	Being a matter that could adequately be handled by volunteers, there is great benefit at no cost.
Plan for Implementation	
Responsible Organization/Department:	Mercer County Emergency Management
Supporting Organization/Department:	City governments and school districts.
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	General operating budget and staff time

Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management shall survey each community and school district for shelter options.
Progress Report	
Action Status:	Completed & Retained
Report of Progress:	Mercer County will continue updating storm shelter information on an annual basis. This will be assessed at the annual HMP Committee meeting in 2025.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquake, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Lack of education on hazard impacts and mitigation strategies.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1), Maintain economic activities essential to the survival and recovery from natural hazards (4), Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	C-4
Name of Action or Project:	Emergency Management will arrange for training on safety audits and hazard mitigation for facilities using state and federal training resources and grant funding.
Mitigation Category:	Emergency Services
Action or Project Description:	Provide opportunities for training to administrators and employees of critical facilities to develop self-inspection processes to assure that the building infrastructure is earthquake, flood, and tornado resistant. Engage local government, utility, and response agency experts to accomplish this and build a rapport between agencies.
Estimated Cost:	$0-?
Benefits:	This action was determined to have a low cost and great potential benefits. This action was seen as very important and as it does not necessarily require capital outlay by any jurisdiction it was given a high priority.
Plan for Implementation	
Responsible Organization/Department:	Mercer County Emergency Management
Supporting Organization/Department:	SEMA/FEMA, Red Cross
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Staff hours and general operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	Trainings arranged by Emergency Management
Progress Report	
Action Status:	Ongoing
Report of Progress:	This action is ongoing and will be implemented in the future. The progress of this action will be determined at the annual HMP Committee meeting in 2025, and further progress will be assessed.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire.
Problem being Mitigated:	Lack of education on emergency planning in the private sector.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1), Maintain economic activities essential to the survival and recovery from natural hazards (4), Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	C-5
Name of Action or Project:	Provide opportunities for training so local businesses are equipped to develop their own emergency plans.
Mitigation Category:	Education and Outreach
Action or Project Description:	Emergency Management will arrange for training on emergency planning for facilities using state and federal training resources and grant funding.
Estimated Cost:	$0-?
Benefits:	This action was determined to have a low cost and great potential benefits. This action was seen as very important and as it does not necessarily require capital outlay by any jurisdiction it was given a high priority.
Plan for Implementation	
Responsible Organization/Department:	Mercer County Emergency Management
Supporting Organization/Department:	Partner Agencies: SEMA
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Staff hours and general operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	Trainings arranged by Emergency Management
Progress Report	
Action Status:	Ongoing
Report of Progress:	This is completed through the Ambulance, and Fire Districts. Continued training opportunities will be documented at the 2025 HMP Committee Meeting.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Severe Thunderstorms
Problem being Mitigated:	Unregulated development in floodplains.
Action or Project	
Applicable Goal Statement:	Manage growth in designated hazard areas through sustainable policies, principles, and practices (2)
Action/Project Number:	C-6
Name of Action or Project:	Implement NFIP
Mitigation Category:	Prevention
Action or Project Description:	The county will join the NFIP, adopt floodplain regulations, and appoint a floodplain administrator.
Estimated Cost:	$0
Benefits:	The committee determined that this is an inevitable necessity rather than an urgent one. It is their determination that most flooding takes place in the City of Princeton which does currently participate in the NFIP. If the county eventually participated in the NFIP they would alleviate concerns about real estate disclosures and loan applications if located outside of the City of Princeton.
Plan for Implementation	
Responsible Organization/Department:	Mercer County Commission
Supporting Organization/Department:	SEMA, Mercer County Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Adoption of NFIP regulations, appointment of a Floodplain Administrator.
Progress Report	
Action Status:	Ongoing
Report of Progress:	There has been no progress on obtaining NFIP status for Mercer County. The necessity of completing this action will be revisited at the HMP Committee Meeting in 2025.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Drought, Wildfire
Problem being Mitigated:	Lack of public knowledge about hazards and lack of preparedness from the effects of hazards in the planning area.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	C-7
Name of Action or Project:	Develop policy to monitor drought conditions at the county level.
Mitigation Category:	Prevention
Action or Project Description:	Develop a plan to monitor drought conditions on a regular basis, and identify areas at risk of wildfire. As part of this plan, design policies in conjunction with city officials, to: • conserve water supplies during drought conditions • restrict burning during dry conditions • make this information available to the public
Estimated Cost:	$0
Benefits:	Zero cost, all benefit. This was considered a good action with far reaching benefits.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	PWSD #1
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	Staff time and general operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	County and city officials
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorm, Severe Winter Weather, Tornado, Wildfire.
Problem being Mitigated:	Lack of public knowledge about hazards.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	C-8
Name of Action or Project:	Maintain local library repositories with the latest available publications.
Mitigation Category:	Education and Outreach
Action or Project Description:	Maintain local library repositories with the latest available publications.
Estimated Cost:	$0
Benefits:	No cost, high benefit. This was considered a good action that is easy to accomplish and was therefore given a high priority.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	SEMA, FEMA, NWS, USGS
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management orders materials from providers.
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	The continued compliance with this plan will be determined at the annual HMP Committee meeting.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Severe Thunderstorms
Problem being Mitigated:	Drainage channel/system degradation
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1)
Action/Project Number:	C-9
Name of Action or Project:	Ensure the use of best management practices for channel and drainage systems
Mitigation Category:	Natural Systems Protections
Action or Project Description:	Best management practices for drainage system maintenance will be incorporated into work specs for any construction or maintenance taking place on or near any drainage channel or system
Estimated Cost:	$0
Benefits:	These practices do not carry much cost but can save money on maintenance by mitigation existing problems and preventing future ones. County Road and Bridge and City Street Maintenance Departments can adopt these practices, which are essentially standard operating procedures which do not carry the burden of significant extra costs. This practice was given a high priority.
Plan for Implementation	
Responsible Organization/Department:	County Commission, City of Princeton, City of Mercer
Supporting Organization/Department:	County Road and Bridge Department
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	Staff time and county operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	City of Princeton, City of Mercer, County Road & Bridge Department
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	The use of best practices for managing drainage system maintenance has been incorporated in how the county and cities maintain their systems.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Inadequacies and gaps in the public warning systems and lack of knowledge of preparing for hazard events.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1); Educate and inform the public about he risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	C-10
Name of Action or Project:	Emergency Services
Mitigation Category:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire
Action or Project Description:	This event will include: • guest speaker(s), meteorologists, storm chasers, Red Cross disaster experts, etc. • information on weather radios, possibly affordable models on display. • High school student volunteers to help install warning apps on devices of less tech-savvy attendees.
Estimated Cost:	$0
Benefits:	Due to the lack of direct monetary burden this action was found cost effective. This action was considered important but not urgent.
Plan for Implementation	
Responsible Organization/Department:	Mercer County Emergency Management
Supporting Organization/Department:	School Districts, Fire Departments
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will arrange an event, advertise it, invite SEMA and NWS speakers, Fire and EMS Personnel and coordinate with the schools for space to conduct the event and volunteers to help the public with smart phone apps.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This activity has not been planned, as it has a medium priority, the HMP Committee will revisit planning and holding this event at the annual meeting.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Lack of integrated training between response agencies
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1); Ensure continued operation of government and emergency functions in a disaster (3); Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	C-11
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.
Mitigation Category:	Emergency Services
Action or Project Description:	Design and implement joint training or drills between agencies, public, and private entities (including schools and businesses). Publicize county or citywide drills
Estimated Cost:	$0-?
Benefits:	The low cost and high payout made this action attractive. This action was seen as important but one that would take some time for appropriate preliminary planning activities and logistics.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	Police, Fire, EMS, businesses and schools, nursing homes, etc.
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	Mercer County staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will plan and execute tabletop and full-scale exercises.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This action has not yet taken place. It will require sufficient time to plan and execute a successful event, due to the medium priority, the HMP Committee will reassess at the next annual meeting to determine a potential future date to execute this action.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado
Problem being Mitigated:	Lack of information on the part of the public.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property.
Action/Project Number:	C-12
Name of Action or Project:	Make local government experts available to property owners to offer hazard audits of vulnerable structures.
Mitigation Category:	Education and Outreach
Action or Project Description:	Individuals wishing to have a safety audit of their property may request one from Emergency Management or the University of Missouri Extension.
Estimated Cost:	$0
Benefits:	No cost, 100% benefit. The MU Extension office is available to help with these requests.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	NA
Action/Project Priority:	Low
Timeline for Completion:	2024
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management refers people to the appropriate experts.
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	This is currently available to the citizens of Mercer County. At the annual HMP Committee update, the committee will ensure that this service is still available.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Severe Thunderstorms
Problem being Mitigated:	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1), Manage growth in designated hazard areas through sustainable policies, principles, and practices.
Action/Project Number:	C-13
Name of Action or Project:	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Commissioners, city council members, road and bridge and street department heads will review maps of their respective jurisdictions and highlight problem areas. These problem areas will then be investigated and mitigation actions to address those problems will be suggested and selected by the appropriate jurisdictions. Part of this process will be consultation with MoDOT, NDR, the Army Corps of Engineers, and seeking grant funding from such agencies as USDA and CDBG.
Estimated Cost:	$0
Benefits:	Zero cost, 100% benefit. This project was considered to have a low priority because drainage issues are not the worst hazard the county deals with.
Plan for Implementation	
Responsible Organization/Department:	County Commission
Supporting Organization/Department:	MoDOT, DNR, Army Corps of Engineers, CDBG, USDA, City representatives
Action/Project Priority:	Low
Timeline for Completion:	2026
Potential Fund Sources:	CDBG, USDA, MoDOT
Local Planning Mechanisms to be Used in Implementation, if any:	Committee formed of commissioners, city council members, and maintenance department heads
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	This action was handled by the LEPC Committee, the HMP Committee will reassess the need for updated plans if applicable at the next annual meeting.

Action Worksheet	
Name of Jurisdiction:	Mercer County
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorm, Earthquake, Extreme Temperature, Tornado, Severe Winter Weather
Problem being Mitigated:	Lack of access to power, especially by vulnerable individuals in the event of a prolonged power outage.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property. (5)
Action/Project Number:	C-14
Name of Action or Project:	Acquire a generator through a grant for a shelter site.
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Identify a suitable shelter site that needs a generator (via the information compiled in Action C3). Apply for grant. Obtain generator. Make this site available for the public as a heating/cooling shelter.
Estimated Cost:	$30,000-$75,000
Benefits:	Grant funding rather than in-house expenditures makes this action attractive. As such an inventory does not yet exist, this project was seen as having a high priority.
Plan for Implementation	
Responsible Organization/Department:	Mercer County Emergency Management
Supporting Organization/Department:	FEMA/SEMA, BRIC, CDBG
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	Grant Funding through FEMA/SEMA, BRIC, CDBG, USDA Rural Development
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Ongoing
Report of Progress:	This action was not undertaken due to the cost of the matching contribution; however, the HMP considers this a priority; the feasibility of funding will be reexamined at the next annual HMP Committee meeting.

City of Princeton

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure
Problem being Mitigated:	Development in hazard prone areas
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1) & Manage growth in designated hazard areas through sustainable policies, principles, and practices (2)
Action/Project Number:	P-1
Name of Action or Project:	Publicize the availability of hazard information to real estate agents, builders, developers, and homeowners.
Mitigation Category:	Prevention Public Education
Action or Project Description:	Publicize the availability of hazard information. This will provide financial institutions, real estate professionals, developers, and homeowners with the tools they need to determine how best to protect their property from the negative impacts of hazards in the county.
Estimated Cost:	$0
Benefits:	It costs nothing to post notices about the availability of this information. Due to the low cost and ease of implementation (requiring no lengthy timeline to accomplish) this action was given a high priority.
Plan for Implementation	
Responsible Organization/Department:	County Commission
Supporting Organization/Department:	Mercer County Emergency Management
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	General operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	Public notices will be posted at the County Courthouse and City Halls, and on government web sites and Facebook pages.
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	This was completed with the previous HMP plan. The county intends to maintain this policy, progress will be monitored at the HMP Committee meeting in 2025.

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado
Problem being Mitigated:	Lack of pre-disaster organization of sheltering options.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1), Ensure continued operation of government and emergency functions in a disaster (3)
Action/Project Number:	P-2
Name of Action or Project:	Develop individual, community specific shelter and safe room inventories.
Mitigation Category:	Prevention Public Education
Action or Project Description:	Develop individual, community specific shelter and safe room inventories. • Appoint a shelter coordinator for the city • Work with representatives from community groups such as local churches and schools to designate spaces suitable for emergency sheltering. Work with the county shelter coordinator to create and maintain the county-wide shelter inventory. The inventory of shelters will contain, at a minimum, the following information: • Shelter location, • Contact information, • Facility information including capacity and amenities such as showers, kitchen, stored supplies, etc. Note: every designated shelter space need not be perfectly suited for sheltering. The sheltering plan can include actions such as pursuing funding to improve existing shelter areas that are less than ideal. Funds and assistance may be sought for such items as: • Electrical work to enable location to provide power, • Obtaining an onsite generator, • Renovation and additions for existing shelter locations, • Other actions that may be identified and incorporated into both the shelter plan and the HMP. Publicize by including in the utility bills the location and type of shelters that may be used by the public during extreme weather. Storm shelters would offer protection from severe thunderstorms, tornadoes, and high winds. Heating/cooling shelters would offer citizens protection during extreme winter weather or extreme temperatures.
Estimated Cost:	$0 (initially)
Benefits:	Being a matter that could be adequately handled by volunteers or made part of an employee's existing duties, there is great benefit at no cost. As there is no shelter inventory or any shelter plans in Mercer County now, this project was seen as having a high priority.
Plan for Implementation	
Responsible Organization/Department:	City council or appointed representative
Supporting Organization/Department:	Red Cross, Local Churches and Schools, Mercer County Emergency Management

Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Staff time and general operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	Designation of a Municipal/School Shelter Coordinator who will develop an inventory of spaces available for use as emergency shelters and safe rooms, and develop a simple set of standard operating guidelines and procedures for activating and operating those shelters and safe rooms.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This has not been started due to lack of interest in volunteering for the role of shelter coordinator, the HMP Committee will attempt to find a volunteer and progress will be reported at the annual HMP Committee meeting.

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire.
Problem being Mitigated:	Lack of public knowledge about hazards and lack of preparedness from the effects of hazards in the planning area. Lack of resources available to educate the public on efforts they could make to mitigate their risks from certain hazards.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	P-3
Name of Action or Project:	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit them with local libraries.
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide information (from FEMA) to all residents about hazard preparedness for all hazards faced in the county. • Flooding (riverine and flash) • Dam Failure • Earthquakes: information on how to conduct an earthquake drill, the importance of having emergency supplies, and other related information from FEMA • Drought: what to do in the event of a drought, the importance of conserving water, and • Extreme Temperatures: • Severe Thunderstorms: • Severe Winter Weather: • Tornado: • Wildfire:
Estimated Cost:	$0
Benefits:	Zero cost, all benefit. This was considered a good action with far reaching benefits.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	SEMA, FEMA, NWS, USGS
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	General Operating Budget & staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will order materials from providers.

Progress Report	
Action Status:	Completed/Retained
Report of Progress:	The HMP Committee will determine if the Emergency Management has provided the most recent information with local libraries at the annual meetings.

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Severe Thunderstorms
Problem being Mitigated:	Drainage channel/system degradation
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1)
Action/Project Number:	P-4
Name of Action or Project:	Ensure the use of best management practices for channel and drainage systems
Mitigation Category:	Natural Systems Protections
Action or Project Description:	Best management practices for drainage system maintenance will be incorporated into work specs for any construction or maintenance taking place on or near any drainage channel or system
Estimated Cost:	$0
Benefits:	These practices do not carry much cost but can save money on maintenance by mitigation existing problems and preventing future ones. County Road and Bridge and City Street Maintenance Departments can adopt these practices, which are essentially standard operating procedures which do not carry the burden of significant extra costs. This practice was given a high priority.
Plan for Implementation	
Responsible Organization/Department:	County Commission, City of Princeton, City of Mercer
Supporting Organization/Department:	County Road and Bridge Department
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	General operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	City of Princeton, City of Mercer, County Road & Bridge Department
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	The use of best practices for managing drainage system maintenance has been incorporated in how the county and cities maintain their systems.

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Lack of integrated training between response agencies
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1); Ensure continued operation of government and emergency functions in a disaster (3); Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	P-5
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.
Mitigation Category:	Emergency Services
Action or Project Description:	Design and implement joint training or drills between agencies, public, and private entities (including schools and businesses). Publicize county or citywide drills
Estimated Cost:	$0-?
Benefits:	The low cost and high payout made this action attractive. This action was seen as important but one that would take some time for appropriate preliminary planning activities and logistics.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	Police, Fire, EMS, businesses and schools, nursing homes, etc.
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	Staff time and general operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will plan and execute tabletop and full-scale exercises.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This action has not yet taken place. It will require sufficient time to plan and execute a successful event, due to the medium priority, the HMP Committee will reassess at the next annual meeting to determine a potential future date to execute this action.

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado
Problem being Mitigated:	Lack of information on the part of the public.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property.
Action/Project Number:	P-6
Name of Action or Project:	Make local government experts available to property owners to offer hazard audits of vulnerable structures.
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Individuals wishing to have a safety audit of their property may request one from Emergency Management or the University of Missouri Extension.
Estimated Cost:	$0
Benefits:	No cost, 100% benefit. The MU Extension office is available to help with these requests.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	NA
Action/Project Priority:	Low
Timeline for Completion:	2024
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management refers people to the appropriate experts.
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	This is currently available to the citizens of Mercer County. At the annual HMP Committee update, the committee will ensure that this service is still available.

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Severe Thunderstorms
Problem being Mitigated:	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1), Manage growth in designated hazard areas through sustainable policies, principles, and practices.
Action/Project Number:	P-7
Name of Action or Project:	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Commissioners, city council members, road and bridge and street department heads will review maps of their respective jurisdictions and highlight problem areas. These problem areas will then be investigated and mitigation actions to address those problems will be suggested and selected by the appropriate jurisdictions. Part of this process will be consultation with MoDOT, NDR, the Army Corps of Engineers, and seeking grant funding from such agencies as USDA and CDBG.
Estimated Cost:	$0
Benefits:	Zero cost, 100% benefit. This project was considered to have a low priority because drainage issues are not the worst hazard the county deals with.
Plan for Implementation	
Responsible Organization/Department:	County Commission
Supporting Organization/Department:	MoDOT, DNR, Army Corps of Engineers, CDBG, USDA, City representatives
Action/Project Priority:	Low
Timeline for Completion:	2026
Potential Fund Sources:	CDBG, USDA, MoDOT
Local Planning Mechanisms to be Used in Implementation, if any:	Committee formed of commissioners, city council members, and maintenance department heads
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	This action was handled by the LEPC Committee, the HMP Committee will reassess the need for updated plans if applicable at the next annual meeting.

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Lack of warning about hazards.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1)
Action/Project Number:	P-8
Name of Action or Project:	Install warning sirens with automated units that have battery back-up.
Mitigation Category:	Prevention Public Education
Action or Project Description:	Get a bid for sirens. Apply for grant. Obtain grant. Obtain sirens.
Estimated Cost:	$20,000-$50,000
Benefits:	Grant funding rather than in-house expenditures makes this action attractive. As tornadoes and other hazards cause a lot of public anxiety, and early warning lessens risks to hazards, warning sirens are considered very important.
Plan for Implementation	
Responsible Organization/Department:	City Emergency Management Director
Supporting Organization/Department:	FEMA/SEMA, CDBG, USDA
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	FEMA or ARPA Grant Funding; BRIC, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Ongoing
Report of Progress:	This action was retained, but due to lack of resources for match funding, has not been completed. This will be reassessed at the annual HMP Committee Meeting.

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Severe Thunderstorms
Problem being Mitigated:	Lack of compliance with NFIP requirements.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1) & Manage growth in designated hazard areas through sustainable policies, principles, and practices (2)
Action/Project Number:	P-9
Name of Action or Project:	Adopt FIRM and update or adopt floodplain ordinance to meet all NFIP requirements
Mitigation Category:	Natural Systems
Action or Project Description:	Develop the floodplain ordinance in Princeton to comply with NFIP standards by: • Adopting NFIP minimum floodplain management criteria via local regulation • Adopting the latest effective Flood Insurance Rate Map (FIRM) • Implement and enforce local floodplain management regulations to regulate and permit development in SFHA's, if applicable • Develop ordinance to address the requirements of the NFIP • Develop procedure to implement the substantial improvement/substantial damage provisions of floodplain management after an event
Estimated Cost:	$0
Benefits:	Complying with the NFIP ensures that the citizens of Mercer County will continue to have access to NFIP insurance.
Plan for Implementation	
Responsible Organization/Department:	The City of Princeton, Mayor, and Aldermen
Supporting Organization/Department:	n/a
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	The existing general operating budget.
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	City of Princeton
Risk / Vulnerability	
Hazard(s) Addressed:	Drought, Wildfire
Problem being Mitigated:	Lack of public knowledge about hazards and lack of preparedness from the effects of drought and wildfire in the planning area.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	P-10
Name of Action or Project:	Develop policy to monitor drought conditions and reduce risk to wildfire
Mitigation Category:	Prevention
Action or Project Description:	Develop a plan to monitor drought conditions on a regular basis and identify areas at risk of wildfire. As part of this plan, design policies in conjunction with county officials to: • Conserve water supplies during drought conditions • Restrict burning during dry conditions • Make this information available to the public
Estimated Cost:	$0
Benefits:	Zero cost, all benefit. This was considered a good action with far reaching benefits.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management, City of Princeton, Water Department
Supporting Organization/Department:	(Water District) PWSD #1, County Commission, City Water Department
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Staff time and general operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	County and city officials
Progress Report	
Action Status:	New
Report of Progress:	n/a

City of Mercer

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure
Problem being Mitigated:	Development in hazard prone areas
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1) & Manage growth in designated hazard areas through sustainable policies, principles, and practices (2)
Action/Project Number:	M-1
Name of Action or Project:	Publicize the availability of hazard information to real estate agents, builders, developers, and homeowners.
Mitigation Category:	Prevention; Public Education
Action or Project Description:	Publicize the availability of hazard information. This will provide financial institutions, real estate professionals, developers, and homeowners with the tools they need to determine how best to protect their property from the negative impacts of hazards in the county.
Estimated Cost:	$0
Benefits:	It costs nothing to post notices about the availability of this information. Due to the low cost and ease of implementation (requiring no lengthy timeline to accomplish) this action was given a high priority.
Plan for Implementation	
Responsible Organization/Department:	County Commission
Supporting Organization/Department:	Mercer County Emergency Management
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Public notices will be posted at the County Courthouse and City Halls, and on government web sites and Facebook pages.
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	This was completed with the previous HMP plan. The county intends to maintain this policy, progress will be monitored at the HMP Committee meeting in 2025.

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado
Problem being Mitigated:	Lack of pre-disaster organization of sheltering options.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1), Ensure continued operation of government and emergency functions in a disaster (3)
Action/Project Number:	M-2
Name of Action or Project:	Develop individual, community specific shelter and safe room inventories.
Mitigation Category:	Prevention Public Education
Action or Project Description:	Develop individual, community specific shelters and safe room inventories. • Appoint a shelter coordinator for the city, • Work with representatives from community groups such as local churches and schools to designate spaces suitable for emergency sheltering. Work with the county shelter coordinator to create and maintain the county-wide shelter inventory. The inventory of shelters will contain, at a minimum, the following information: • Shelter location, • Contact information, • Facility information including capacity and amenities such as showers, kitchen, stored supplies, etc. Note: every designated shelter space need not be perfectly suited for sheltering. The sheltering plan can include actions such as pursuing funding to improve existing shelter areas that are less than ideal. Funds and assistance may be sought for such items as: • Electrical work to enable location to provide power, • Obtaining an onsite generator, • Renovation and additions for existing shelter locations, • Other actions that may be identified and incorporated into both the shelter plan and the HMP. Publicize by including in the utility bills the location and type of shelters that may be used by the public during extreme weather. Storm shelters would offer protection from severe thunderstorms, tornadoes, and high winds. Heating/cooling shelters would offer citizens protection during extreme winter weather or extreme temperatures.
Estimated Cost:	$0 (initially)
Benefits:	Being a matter that could be adequately handled by volunteers or made part of an employee's existing duties, there is great benefit at no cost. As there is no shelter inventory or any shelter plans in Mercer County now, this project was seen as having a high priority.
Plan for Implementation	
Responsible Organization/Department:	City council or appointed representative
Supporting Organization/Department:	Red Cross, Local Churches and Schools, Mercer County Emergency Management

Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Staff time; General Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	Designation of a Municipal/School Shelter Coordinator who will develop an inventory of spaces available for use as emergency shelters and safe rooms, and develop a simple set of standard operating guidelines and procedures for activating and operating those shelters and safe rooms.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This has not been started due to lack of interest in volunteering for the role of shelter coordinator, the HMP Committee will attempt to find a volunteer and progress will be reported at the annual HMP Committee meeting.

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire.
Problem being Mitigated:	Lack of public knowledge about hazards and lack of preparedness from the effects of hazards in the planning area. Lack of information available about how to mitigate the risks from hazards that could affect residents of the city.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	M-3
Name of Action or Project:	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit them with local libraries.
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide information (from FEMA) to all residents about hazard preparedness and mitigation measure that could be undertaken to prevent future losses for all hazards faced in the county. • Flooding (riverine and flash) • Dam Failure • Earthquakes: information on how to conduct an earthquake drill, the importance of having emergency supplies, and other related information from FEMA • Drought: what to do in the event of a drought, the importance of conserving water, and • Extreme Temperatures: • Severe Thunderstorms: • Severe Winter Weather: • Tornado: • Wildfire:
Estimated Cost:	$0
Benefits:	Zero cost, all benefit. This was considered a good action with far reaching benefits.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	SEMA, FEMA, NWS, USGS
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	Staff time; General Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will order materials from providers.

Progress Report	
Action Status:	Completed/Retained
Report of Progress:	The HMP Committee will determine if the Emergency Management has provided the most recent information with local libraries at the annual meetings.

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Severe Thunderstorms
Problem being Mitigated:	Drainage channel/system degradation
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1)
Action/Project Number:	M-4
Name of Action or Project:	Ensure the use of best management practices for channel and drainage systems
Mitigation Category:	Natural Systems Protections
Action or Project Description:	Best management practices for drainage system maintenance will be incorporated into work specs for any construction or maintenance taking place on or near any drainage channel or system
Estimated Cost:	$0
Benefits:	These practices do not carry much cost but can save money on maintenance by mitigation existing problems and preventing future ones. County Road and Bridge and City Street Maintenance Departments can adopt these practices, which are essentially standard operating procedures which do not carry the burden of significant extra costs. This practice was given a high priority.
Plan for Implementation	
Responsible Organization/Department:	County Commission, City of Princeton, City of Mercer
Supporting Organization/Department:	County Road and Bridge Department
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	City of Princeton, City of Mercer, County Road & Bridge Department
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	The use of best practices for managing drainage system maintenance has been incorporated in how the county and cities maintain their systems.

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Lack of integrated training between response agencies
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1); Ensure continued operation of government and emergency functions in a disaster (3); Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	M-5
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.
Mitigation Category:	Emergency Services
Action or Project Description:	Design and implement joint training or drills between agencies, public, and private entities (including schools and businesses). Publicize county or citywide drills
Estimated Cost:	$0-?
Benefits:	The low cost and high payout made this action attractive. This action was seen as important but one that would take some time for appropriate preliminary planning activities and logistics.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	Police, Fire, EMS, businesses and schools, nursing homes, etc.
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	Staff time and general operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will plan and execute tabletop and full-scale exercises.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This action has not yet taken place. It will require sufficient time to plan and execute a successful event, due to the medium priority, the HMP Committee will reassess at the next annual meeting to determine a potential future date to execute this action.

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado
Problem being Mitigated:	Lack of information on the part of the public.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property.
Action/Project Number:	M-6
Name of Action or Project:	Make local government experts available to property owners to offer hazard audits of vulnerable structures.
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Individuals wishing to have a safety audit of their property may request one from Emergency Management or the University of Missouri Extension.
Estimated Cost:	$0
Benefits:	No cost, 100% benefit. The MU Extension office is available to help with these requests.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	NA
Action/Project Priority:	Low
Timeline for Completion:	2024
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management refers people to the appropriate experts.
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	This is currently available to the citizens of Mercer County. At the annual HMP Committee update, the committee will ensure that this service is still available.

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Severe Thunderstorms
Problem being Mitigated:	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1), Manage growth in designated hazard areas through sustainable policies, principles, and practices.
Action/Project Number:	M-7
Name of Action or Project:	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Commissioners, city council members, road and bridge and street department heads will review maps of their respective jurisdictions and highlight problem areas. These problem areas will then be investigated and mitigation actions to address those problems will be suggested and selected by the appropriate jurisdictions. Part of this process will be consultation with MoDOT, NDR, the Army Corps of Engineers, and seeking grant funding from such agencies as USDA and CDBG.
Estimated Cost:	$0
Benefits:	Zero cost, 100% benefit. This project was considered to have a low priority because drainage issues are not the worst hazard the county deals with.
Plan for Implementation	
Responsible Organization/Department:	County Commission
Supporting Organization/Department:	MoDOT, DNR, Army Corps of Engineers, CDBG, USDA, City representatives
Action/Project Priority:	Low
Timeline for Completion:	2026
Potential Fund Sources:	CDBG, USDA, MoDOT
Local Planning Mechanisms to be Used in Implementation, if any:	Committee formed of commissioners, city council members, and maintenance department heads
Progress Report	
Action Status:	Completed/Retained
Report of Progress:	This action was handled by the LEPC Committee, the HMP Committee will reassess the need for updated plans if applicable at the next annual meeting.

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding/Severe Thunderstorms/ Severe Winter Weather/ Tornado
Problem being Mitigated:	The City of Mercer lacks the equipment to adequately clean up after certain hazards or to maintain the roadways, which are almost all gravel.
Action or Project	
Applicable Goal Statement:	Ensure continued operation of government and emergency functions in a disaster. (3)
Action/Project Number:	M-8
Name of Action or Project:	Obtain equipment to clear debris, grade roads, remove snow
Mitigation Category:	Emergency Services
Action or Project Description:	The City of Mercer would like to obtain a tractor with attachments for the purpose of clearing the streets, cleaning up debris after storms, and grading the streets in town.
Estimated Cost:	$75,000-$90,000
Benefits:	By having the necessary equipment to clear the roadways after a hazard event the City of Mercer would be able to: • Provide access to residents by emergency services by keeping the roads clear, • Provide residents with safe roadways in town during or after a hazard, • Maintain proper drainage to roadways by keeping ditches free from debris. The purchase of this equipment would also allow the city of Mercer to maintain the streets, which would prevent certain hazards from causing as much damage, prevent accidents, and allow for better drainage.
Plan for Implementation	
Responsible Organization/Department:	City of Mercer City Council
Supporting Organization/Department:	n/a
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	City of Mercer and USDA grant
Local Planning Mechanisms to be Used in Implementation, if any:	City of Mercer, City Council
Progress Report	
Action Status:	New
Report of Progress:	NA

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Lack of warning about hazards.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1)
Action/Project Number:	M-9
Name of Action or Project:	Install warning sirens with automated units that have battery back-up.
Mitigation Category:	Prevention Public Education
Action or Project Description:	Get a bid for sirens. Apply for grant. Obtain grant. Obtain sirens.
Estimated Cost:	$20,000-$50,000
Benefits:	Grant funding rather than in-house expenditures makes this action attractive. As tornadoes and other hazards cause a lot of public anxiety, and early warning lessens risks to hazards, warning sirens are considered very important.
Plan for Implementation	
Responsible Organization/Department:	City Emergency Management Director
Supporting Organization/Department:	FEMA/SEMA, CDBG, USDA
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	SEMA/FEMA Grant Funding; CDBG, BRIC, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	Ongoing
Report of Progress:	This action was retained, but due to lack of resources for match funding, has not been completed. This will be reassessed at the annual HMP Committee Meeting.

Action Worksheet	
Name of Jurisdiction:	City of Mercer
Risk / Vulnerability	
Hazard(s) Addressed:	Drought, Wildfire
Problem being Mitigated:	Lack of public knowledge about hazards and lack of preparedness from the effects of drought and wildfire in the planning area.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	M-10
Name of Action or Project:	Develop policy to monitor drought conditions and reduce risk to wildfire
Mitigation Category:	Prevention
Action or Project Description:	Develop a plan to monitor drought conditions on a regular basis and identify areas at risk of wildfire. As part of this plan, design policies in conjunction with county officials to: • Conserve water supplies during drought conditions • Restrict burning during dry conditions • Make this information available to the public
Estimated Cost:	$0
Benefits:	Zero cost, all benefit. This was considered a good action with far reaching benefits.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management, City of Mercer
Supporting Organization/Department:	(Water District) PWSD #1, County Commission, City Water Department
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Staff time and general operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	County and city officials
Progress Report	
Action Status:	New
Report of Progress:	n/a

Princeton R-V School District

Action Worksheet	
Name of Jurisdiction:	Princeton R-V School District
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire.
Problem being Mitigated:	Lack of public knowledge about hazards and lack of preparedness from the effects of hazards in the planning area.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	PS-1
Name of Action or Project:	Obtain free publications from FEMA's Protective Actions Research and Ready Kids (ready.gov/kids) to educate the students on how to prepare for, keep safe during, and recover from a disaster.
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide information (from FEMA's Protective Actions Research and ready.gov/kids) to all students about hazard preparedness and mitigation efforts they could take to reduce the effects of all hazards faced in the county. • Flooding (riverine and flash) • Dam Failure • Earthquakes: information on how to conduct an earthquake drill, the importance of having emergency supplies, and other related information from FEMA • Drought: what to do in the event of a drought, the importance of conserving water, and • Extreme Temperatures: • Severe Thunderstorms: • Severe Winter Weather: • Tornado: • Wildfire: Create an outreach program about the various hazards that could pose a risk to the school district and possible mitigation activities in homes, schools, and businesses to reduce the risks from hazards.
Estimated Cost:	$0
Benefits:	Zero cost, all benefit. This was considered a good action with far reaching benefits.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	FEMA, Princeton R-V Administration
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	Staff time and general operating budget

Local Planning Mechanisms to be Used in Implementation, if any:	School will obtain publications from fema.gov and ready.gov/kids
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Princeton R-V School District
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Inadequacies and gaps in the public warning systems and lack of knowledge of preparing for hazard events.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1); Educate and inform the public about he risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	PS-2
Name of Action or Project:	Coordinate and conduct a standalone event to educate the public about emergency preparedness and early warning systems.
Mitigation Category:	Emergency Services
Action or Project Description:	This event will include: • guest speaker(s), meteorologists, storm chasers, Red Cross disaster experts, etc. • information on weather radios, possibly affordable models on display. • High school student volunteers to help install warning apps on devices of less tech-savvy attendees.
Estimated Cost:	$0
Benefits:	Due to the lack of direct monetary burden this action was found cost effective. This action was considered important but not urgent.
Plan for Implementation	
Responsible Organization/Department:	Mercer County Emergency Management
Supporting Organization/Department:	School Districts, Fire Departments
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will arrange an event, advertise it, invite SEMA and NWS speakers, Fire and EMS Personnel and coordinate with the schools for space to conduct the event and volunteers to help the public with smart phone apps.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This activity has not been planned, as it has a medium priority, the HMP Committee will revisit planning and holding this event at the annual meeting.

Action Worksheet	
Name of Jurisdiction:	Princeton R-V School District
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Lack of integrated training between response agencies
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1); Ensure continued operation of government and emergency functions in a disaster (3); Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	PS-3
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.
Mitigation Category:	Emergency Services
Action or Project Description:	Design and implement joint training or drills between agencies, public, and private entities (including schools and businesses). Publicize county or citywide drills
Estimated Cost:	$0-?
Benefits:	The low cost and high payout made this action attractive. This action was seen as important but one that would take some time for appropriate preliminary planning activities and logistics.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	Police, Fire, EMS, businesses and schools, nursing homes, etc.
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will plan and execute tabletop and full-scale exercises.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This action has not yet taken place. It will require sufficient time to plan and execute a successful event, due to the medium priority, the HMP Committee will reassess at the next annual meeting to determine a potential future date to execute this action.

Action Worksheet	
Name of Jurisdiction:	Princeton R-V School District
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperatures, Severe Winter Weather, Severe Thunderstorm, Tornado
Problem being Mitigated:	There is not a community safe room in Princeton, Missouri.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens
Action/Project Number:	PS-4
Name of Action or Project:	Construct community safe-room on Princeton R-V's property.
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Develop plans and construct a community saferoom on the Princeton R-V school's campus. There is no safe room open to the public at this time in the City of Princeton. This safe room could also function as a cooling station and warming station in the event of extreme temperatures.
Estimated Cost:	$100,000-$150,000
Benefits:	The construction of a saferoom in the City of Princeton would protect the lives of its citizens. By having it constructed on school grounds, the children attending the school would be protected from hazardous events. Due to the lack of an existing community safe room in Princeton this was seen as a high benefit for the population that lives near the school.
Plan for Implementation	
Responsible Organization/Department:	Princeton R-V administration
Supporting Organization/Department:	Princeton R-V school board
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	SEMA, FEMA: BRIC, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	NA

Action Worksheet	
Name of Jurisdiction:	Princeton R-V School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake, Severe Thunderstorms, Tornadoes
Problem being Mitigated:	Lack of awareness about certain hazards and how such an event may affect the region. Lack of knowledge on mitigation efforts that could be undertaken to reduce the risk to lives and property within the school district.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens
Action/Project Number:	PS-5
Name of Action or Project:	Participate annually in disaster drills with all students and staff.
Mitigation Category:	Prevention Public Education
Action or Project Description:	The schools will incorporate these drills into a day with information and activities promoting awareness of seismic hazards and disaster preparedness. They will also be given information about actions they could undertake to reduce the risk to lives and property.
Estimated Cost:	$0
Benefits:	The lack of cost means this action can only be beneficial. This action was determined to warrant immediate implementation.
Plan for Implementation	
Responsible Organization/Department:	School District/Administration
Supporting Organization/Department:	NA
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Incorporation into school activities.
Progress Report	
Action Status:	Ongoing
Report of Progress:	The schools have completed these drills annually and will continue to do so.

North Mercer R-III School District

Action Worksheet	
Name of Jurisdiction:	Mercer R-III School District
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire.
Problem being Mitigated:	Lack of public knowledge about hazards and lack of preparedness from the effects of hazards in the planning area.
Action or Project	
Applicable Goal Statement:	Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	MS-1
Name of Action or Project:	Obtain free publications from FEMA's Protective Actions Research and Ready Kids (ready.gov/kids) to educate the students on how to prepare for, keep safe during, and recover from a disaster.
Mitigation Category:	Education and Outreach
Action or Project Description:	Provide information (from FEMA's Protective Actions Research and ready.gov/kids) to all students about hazard preparedness and mitigation efforts they could take to reduce the effects of all hazards faced in the county. • Flooding (riverine and flash) • Dam Failure • Earthquakes: information on how to conduct an earthquake drill, the importance of having emergency supplies, and other related information from FEMA • Drought: what to do in the event of a drought, the importance of conserving water, and • Extreme Temperatures: • Severe Thunderstorms: • Severe Winter Weather: • Tornado: • Wildfire: Create an outreach program about the various hazards that could pose a risk to the school district and possible mitigation activities in homes, schools, and businesses to reduce the risks from hazards. Build an emergency kit with the elementary students.
Estimated Cost:	$0
Benefits:	Zero cost, all benefit. This was considered a good action with far reaching benefits.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	FEMA, Mercer R-III Administration
Action/Project Priority:	High
Timeline for Completion:	2024

Potential Fund Sources:	Staff time and general operating budget
Local Planning Mechanisms to be Used in Implementation, if any:	School will obtain publications from fema.gov and ready.gov/kids
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	North Mercer R-III School District
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Inadequacies and gaps in the public warning systems and lack of knowledge of preparing for hazard events.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1); Educate and inform the public about he risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	MS-2
Name of Action or Project:	Coordinate and conduct a standalone event to educate the public about emergency preparedness and early warning systems.
Mitigation Category:	Emergency Services
Action or Project Description:	This event will include: • guest speaker(s), meteorologists, storm chasers, Red Cross disaster experts, etc. • information on weather radios, possibly affordable models on display. • High school student volunteers to help install warning apps on devices of less tech-savvy attendees.
Estimated Cost:	$0
Benefits:	Due to the lack of direct monetary burden this action was found cost effective. This action was considered important but not urgent.
Plan for Implementation	
Responsible Organization/Department:	Mercer County Emergency Management
Supporting Organization/Department:	School Districts, Fire Departments
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Staff time; General Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will arrange an event, advertise it, invite SEMA and NWS speakers, Fire and EMS Personnel and coordinate with the schools for space to conduct the event and volunteers to help the public with smart phone apps.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This activity has not been planned, as it has a medium priority, the HMP Committee will revisit planning and holding this event at the annual meeting.

Action Worksheet	
Name of Jurisdiction:	North Mercer R-III School District
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Winter Weather, Tornado, Wildfire
Problem being Mitigated:	Lack of integrated training between response agencies
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens (1); Ensure continued operation of government and emergency functions in a disaster (3); Educate and inform the public about the risks of hazards and the techniques available to reduce danger to life and property (5)
Action/Project Number:	MS-3
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.
Mitigation Category:	Emergency Services
Action or Project Description:	Design and implement joint training or drills between agencies, public, and private entities (including schools and businesses). Publicize county or citywide drills
Estimated Cost:	$0-?
Benefits:	The low cost and high payout made this action attractive. This action was seen as important but one that would take some time for appropriate preliminary planning activities and logistics.
Plan for Implementation	
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	Police, Fire, EMS, businesses and schools, nursing homes, etc.
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	Staff time; General Operating Budget
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Management will plan and execute tabletop and full-scale exercises.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This action has not yet taken place. It will require sufficient time to plan and execute a successful event, due to the medium priority, the HMP Committee will reassess at the next annual meeting to determine a potential future date to execute this action.

Action Worksheet	
Name of Jurisdiction:	North Mercer R-III School District
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperatures, Severe Winter Weather, Severe Thunderstorm, Tornado
Problem being Mitigated:	There is no community safe-room in the City of Mercer and the North Mercer R-III preschool is currently located in a single-wide trailer.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens
Action/Project Number:	MS-4
Name of Action or Project:	Construct community safe-room on North Mercer R-III's property.
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Develop plans and construct a community saferoom on the North Mercer R-III campus. The preschool at north Mercer is currently held in a single-wide trailer on the school grounds. The school would like to build a new structure that could house the preschool in addition to functioning as a community storm shelter in the event of a hazard. The construction of this safe room, heating/cooling shelter would protect the citizens of Mercer from: • Extreme temperatures • Severe Winter Weather • Severe Thunderstorms • Tornado
Estimated Cost:	$100,000-$750,000
Benefits:	The construction of a saferoom in the City of Mercer would protect the lives of its citizens. By having it constructed on school grounds, the children attending the school would be protected from hazardous events. Due to the lack of an existing community safe room in Mercer this was seen as a high benefit for the population that lives near the school.
Plan for Implementation	
Responsible Organization/Department:	North Mercer R-III administration
Supporting Organization/Department:	North Mercer R-III school board
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	SEMA, FEMA; CDBG, BRIC, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	NA
Progress Report	
Action Status:	New
Report of Progress:	NA

Action Worksheet	
Name of Jurisdiction:	North Mercer R-III School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake, Severe Thunderstorm, Tornadoes
Problem being Mitigated:	Lack of awareness about certain hazards and how such an event may affect the region.
Action or Project	
Applicable Goal Statement:	Protect the lives, property, and livelihoods of all citizens
Action/Project Number:	MS-5
Name of Action or Project:	Participate annually in hazard drills with all students and staff.
Mitigation Category:	Prevention Public Education
Action or Project Description:	The schools will incorporate disaster drills into a day with information and activities promoting awareness of seismic hazards and disaster preparedness.
Estimated Cost:	$0
Benefits:	The lack of cost means this action can only be beneficial. This action was determined to warrant immediate implementation.
Plan for Implementation	
Responsible Organization/Department:	School District/Administration
Supporting Organization/Department:	NA
Action/Project Priority:	High
Timeline for Completion:	2024
Potential Fund Sources:	Staff time
Local Planning Mechanisms to be Used in Implementation, if any:	Incorporation into school activities.
Progress Report	
Action Status:	Ongoing
Report of Progress:	The schools have completed these drills annually and will continue to do so.

Table 4.4. Mitigation Action Matrix

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
	Prevention Public Education							
C1, P1, M1	Publicize the availability of hazard information to real estate agents, builders, developers, and homeowners.	MC, P, M	High	1, 5	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire	Yes	Yes	Yes
C3	Develop a county-wide inventory of emergency shelters and safe rooms.	MC	High	1, 3	Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado			
P2, M2	Develop individual, community specific shelter saferoom inventories.	P, M	High	1,3	Earthquake, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado			
C12, P6, M6	Make local government experts available to property owners to offer hazard audits of vulnerable structures.	MC, P, M	Low	1	Flooding, Dam Failure, Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado			
P8, M9	Install warning sirens with automated units that have battery back-up.	P, M	High	1	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire			

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
PS5, MS5	Conduct earthquake and tornado drills at the schools at least once annually.	PS, MS	High	1, 5	Earthquake, Tornado, Severe Thunderstorm			
	Structure and Infrastructure Projects							
C14	Acquire a generator through a grant for a shelter site.	MC	High	5	Severe Thunderstorms, Earthquake, Extreme Temperature, Tornado, Severe Winter Weather			
PS4, MS4	Develop plans and construct a community saferoom on Princeton's and Mercer's School Campus.	PS, PS	High	1	Severe Thunderstorms, Earthquake, Extreme Temperatures, Severe Winter Weather, Tornadoes		Yes	
	Natural Systems Protection							
C6	Implement NFIP	MC	Medium	1, 2	Flooding, Dam Failure, Severe Thunderstorms	Yes	Yes	Yes
C9, P4, M4	Ensure the use of best management practices for channel and drainage systems maintenance.	MC, P, M	High	1	Flooding, Dam Failure, Severe Thunderstorms			
C13, P7, M7	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.	MC, P, M	High	1, 2	Flooding, Dam Failure, Severe Thunderstorms			
P8	Continue participation in NFIP, maintain flood plain protections,	P	High	1, 2, 5	Flooding, Dam Failure, Severe Thunderstorms		Yes	Yes
M8	Obtain equipment to clear debris, grade roads, remove snow.	M	High	3	Flooding, Severe Thunderstorms, Severe Winter Weather, Tornado			
P9	Adopt floodplain ordinances to meet all NFIP requirements	P	High	1,2	Flooding, Dam Failure, Severe Thunderstorms	Yes	Yes	Yes
	Emergency Services							

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
C4	Emergency Management will arrange for training on safety audits and hazard mitigation for facilities using state and federal training resources and grant funding.	MC	High	1, 4, 5	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire			
C11, P5, M5, PS3, MS3	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.	MC	High	1, 4, 5	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire			
	Education and Outreach							
C2	Conduct Storm Spotter training classes for local Emergency Personnel and interested members of the public.	MC	High	1	Severe thunderstorms, Severe Winter Weather, Tornadoes			
C7, M3, P3	Obtain free publications from FEMA, NES, USGS, and other federal and state agencies and deposit them with local libraries.	MC	High	5	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire			
PS1, MS1	Obtain publications from FEMA's Protective Actions Research and Ready Kids (ready.gov/kids) to provide materials for before, during, and after a disaster preparedness. Build an emergency kit with the elementary students.	PS MS	High	5	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorm, Severe Winter Weather, Tornado, Wildfire			

#	Action	Jurisdiction	Priority	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
C5	Provide opportunities for training so local businesses are equipped to develop their own emergency plans.	MC	High	4, 5	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire			
C8	Maintain local library repositories with the latest available publications.	MC	High	5	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire			
C10, PS2, MS2	Coordinate and conduct a standalone event to educate the public about emergency preparedness and early warning systems.	MC	High	5	Flooding, Dam Failure, Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire			

5 PLAN MAINTENANCE PROCESS

5 PLAN MAINTENANCE PROCESS 5.1

5.1 Monitoring, Evaluating, and Updating the Plan 5.1

5.1.1 Responsibility for Plan Maintenance 5.1

5.1.2 Plan Maintenance Schedule 5.2

5.1.3 Plan Maintenance Process 5.2

5.2 Incorporation into Existing Planning Mechanisms 5.3

5.3 Continued Public Involvement 5.4

This chapter provides an overview of the overall strategy for plan maintenance and outlines the method and schedule for monitoring, updating, and evaluating the plan. The chapter also discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement.

5.1 Monitoring, Evaluating, and Updating the Plan

44 CFR Requirement 201.6(c)(4): The plan maintenance process shall include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

5.1.1 Responsibility for Plan Maintenance

The State Emergency Management Agency (SEMA) requires that Hazard Mitigation Plans be reviewed periodically to ensure that goals and objectives are being considered. Revisions to the actions or strategies may be required, as well as acknowledging completed successful mitigations. This section of the Mercer County Multi-jurisdictional Hazard Mitigation Plan provides the process to review, revise, and update the plan.

- Meet annually, and after a disaster event, to monitor and evaluate the implementation of the plan;
- Act as a forum for hazard mitigation issues;
- Disseminate hazard mitigation ideas and activities to all participants;
- Pursue the implementation and update of this plan;
- Keep the concept of mitigation in the forefront of community decision making by identifying plan recommendations when other community goals, plans, and activities overlap, influence, or directly affect increased community vulnerability to disasters;
- Report on plan progress and recommended changes to the County Commissioners and governing bodies of participating jurisdictions; and
- Inform and solicit input from the public.
- The process by which the plan will be evaluated for effectiveness is discussed in the **Plan Maintenance Process** section of this chapter.

The MPC is an advisory body and can only make recommendations to county, city, town, or district elected officials. Its primary duty is to see the plan successfully carried out and to report to the community governing boards and the public on the status of plan implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation proposals,

hearing stakeholder concerns about hazard mitigation, passing concerns on to appropriate entities, and posting relevant information in areas accessible to the public.

5.1.2 Plan Maintenance Schedule

The MPC agrees to meet annually and after a state or federally declared hazard event as appropriate to monitor progress and update the mitigation strategy. The Mercer County Emergency Management Director will be responsible for initiating the plan reviews and will invite members of the MPC to the meeting.

In coordination with all participating jurisdictions, the Emergency Management Director will be responsible for initiating a five-year written update of the plan to be submitted to the Missouri State Emergency Management Agency (SEMA) and FEMA Region VII per Requirement §201.6(c)(4)(i) of the Disaster Mitigation Act of 2000, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule.

5.1.3 Plan Maintenance Process

Progress on the proposed actions can be monitored by evaluating changes in vulnerabilities identified in the plan. The MPC during the annual meeting should review changes in vulnerability identified as follows:

- Decreased vulnerability as a result of implementing recommended actions,
- Increased vulnerability as a result of failed or ineffective mitigation actions,
- Increased vulnerability due to hazard events, and/or
- Increased vulnerability as a result of new development (and/or annexation).

Future 5-year updates to this plan will include the following activities:

- Consideration of changes in vulnerability due to action implementation,
- Documentation of success stories where mitigation efforts have proven effective,
- Documentation of unsuccessful mitigation actions and why the actions were not effective,
- Documentation of previously overlooked hazard events that may have occurred since the previous plan approval,
- Incorporation of new data or studies with information on hazard risks,
- Incorporation of new capabilities or changes in capabilities,
- Incorporation of growth data and changes to inventories, and
- Incorporation of ideas for new actions and changes in action prioritization.

In order to best evaluate any changes in vulnerability as a result of plan implementation, the participating jurisdictions will adopt the following process:

- Each proposed action in the plan identified an individual, office, or agency responsible for action implementation. This entity will track and report on an annual basis to the jurisdictional MPC member on action status. The entity will provide input on whether the action as implemented meets the defined objectives and is likely to be successful in reducing risk.
- If the action does not meet identified objectives, the jurisdictional MPC member will determine necessary remedial action, making any required modifications to the plan.

Changes will be made to the plan to remedy actions that have failed or are not considered

feasible. Feasibility will be determined after a review of action consistency with established criteria, time frame, community priorities, and/or funding resources. Actions that were not ranked high but were identified as potential mitigation activities will be reviewed as well during the monitoring of this plan. Updating of the plan will be accomplished by written changes and submissions, as the MPC deems appropriate and necessary. Changes will be approved by the Mercer County Commissioners and the governing boards of the other participating jurisdictions.

5.2 Incorporation into Existing Planning Mechanisms

44 CFR Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

Where possible, plan participants, including school and special districts, will use existing plans and/or programs to implement hazard mitigation actions. Those existing plans and programs were described in Section 2 of this plan. Based on the capability assessments of the participating jurisdictions, communities in Mercer County will continue to plan and implement programs to reduce losses to life and property from hazards. This plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing actions, where possible, through the following plans:

- Regional Comprehensive Economic Development Strategy (CEDS)
- Rural Regional Transportation Plans
- Comprehensive or master plans of participating jurisdictions
- Ordinances of participating jurisdictions
- Mercer County Emergency Operations Plan
- Other plans and policies outlined in the capability assessment sections for each jurisdiction in Section 2 of this plan.

The MPC members involved in updating these existing planning mechanisms will be responsible for integrating the findings and actions of the mitigation plan, as appropriate. The MPC is also responsible for monitoring this integration and incorporation of the appropriate information into the five-year update of the multi-jurisdictional hazard mitigation plan.

Additionally, after the annual review of the Hazard Mitigation Plan, the Mercer County Emergency Management Director will provide the updated Mitigation Strategy with current status of each mitigation action to the Mercer County Commission as well as all Mayors, City Clerks, and School District Superintendents. The Emergency Management Director will request that the mitigation strategy be incorporated, where appropriate, in other planning mechanisms.

Table 5.1 below lists the planning mechanisms by jurisdiction into which the Hazard Mitigation Plan will be integrated.

Table 5.1. Planning Mechanisms Identified for Integration of Hazard Mitigation Plan

Jurisdiction	Planning Mechanisms	Integration Process for Previous Plan	Integration Process for Current Plan
Mercer County	CEDS, LEPC, Council Budgeting Session, Regional Transportation	Annual review, county emergency plan review	Annual CEDS Review, regional transportation plan

	Plan		
City of Princeton	CEDS, Emergency Plans, Regional transportation plan, city ordinances, floodplain ordinance	Annual review	Annual CEDS Review, emergency plan review, regional transportation plan
City of Mercer	CEDS, Emergency Plans, regional transportation plan, city ordinances	Annual review	Annual CEDS Review, emergency plan review, regional transportation plan
Princeton R-V	Master Plan, School Emergency Plan, Weapons Policy	Plan reviews	Board review of Master Plan and Emergency Plan
North Mercer R-III	Master Plan, School Emergency Plan, Weapons Policy	Plan reviews	Board review of Master Plan and Emergency Plan

5.3 Continued Public Involvement

44 CFR Requirement §201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.

The hazard mitigation plan update process provides an opportunity to publicize success stories resulting from the plan's implementation and seek additional public comment. Information about the annual reviews will be posted in the local newspaper, as well as on the Mercer County website following each annual review of the mitigation plan and will solicit comments from the public based on the annual review. When the MPC reconvenes for the five-year update, it will coordinate with all stakeholders participating in the planning process. Included in this group will be those who joined the MPC after the initial effort, to update and revise the plan. Public notices will be posted, and public participation will be actively solicited, at a minimum, through available website postings and press releases to local media outlets, primarily newspapers.

Appendix A: Sources

- 2020 Block Geography (US Census Bureau) & National Land Cover Dataset (MRLC)
- American Meteorological Society
- BC Ministry of Forests, Lands, and Natural Resource Operations
- County and local Comprehensive Plans to the extent available
- County Emergency Management
- County Flood Insurance Rate Map, FEMA
- Data Collection Questionnaires completed by each jurisdiction.
- Decennial Census
- DESE
- Department of Geography
- Encyclopedia Britannica, Inc.
- Environmental Protection Agency
- Federal Emergency Management Agency (FEMA)
- Flood Insurance Administration
- Flood Insurance Study, FEMA
- Hazards US (HAZUS)
- Iowa Department of Natural Resources
- Mercer County LEPC
- Missouri Department of Commerce & Insurance
- Missouri Department of Conservation
- Missouri Department of Health and Human Services; health.mo.gov
- Missouri Department of Natural Resources
- Missouri Department of Transportation
- Missouri Division of Fire Marshal Safety
- Missouri Hazard Mitigation Plans (2013, 2018, and 2023)
- Missouri Public Service Commission
- National Agricultural Statistics Service (Agriculture production/losses)
- National Centers for Environmental Information
- National Drought Mitigation Center Drought Reporter
- National Fire Incident Reporting System (NFIRS)
- National Inventory of Dams
- National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI);
- National Weather Service
- NFIP Community Status Book
- Oxford Brooks University
- Previously approved Mercer County Hazard Mitigation Plan (2019)
- Purdue University
- SEMA
- SILVIS Lab, Department of Forest Ecology and Management, University of Wisconsin
- State of Missouri GIS data
- Tornado and Storm Research Organization (TORRO)
- United States Geological Survey (USGS)
- US Army Corps of Engineers
- US Bureau of the Census and Annual population estimates

- US Community Survey, 2022
- US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics
- US Department of Transportation
- US Drought Monitor
- US Fish and Wildlife Service
- www.tornadochaser.net
- www.weather.gov

Appendix B: Planning Documentation & Invitations

Letters of invitation to participate in the Mercer County HMP were sent out on September 14th to the following individuals and businesses:

- Neighboring communities:
    - City of Lineville, IA
    - City of Cainsville, MO
    - City of Spickard, MO
- Local and regional agencies involved in hazard mitigation activities:
    - Princeton Ambulance District
    - Princeton Fire Department
    - Princeton Clinic
    - Mercer Fire Department
    - Sheriff of Mercer County
- Agencies with the authority to regulate development:
    - The floodplain administrator of Princeton
    - The City of Princeton
    - The City of Mercer
    - Mercer County officials
    - Public Water District #1
- Businesses & Academia
    - Princeton R-V School District
    - North Mercer R-III School District
    - Smithfield Farms
    - Grundy Electric
    - The Famous
    - Shelter Insurance
    - Farm Bureau Insurance
    - Mercer County Title Co.
    - The Princeton Chamber of Commerce
    - Dollar General
    - The Hometown Café
    - Our Store
    - Mercer Grocery Store
- Other private and non-profit interests, including underserved/vulnerable populations
    - The Methodist Church of Princeton & Mercer
    - The Christian Church of Princeton
    - The catholic Church of Princeton
    - Mercer Assembly of God
    - The Mercer County Food Pantry
    - The Princeton Housing Authority
    - Bristol Manor (senior living)
    - Pearl's II (senior living)
    - The Senior Center

A copy of this letter can be found on the next page.

Green Hills
Regional Planning Commission
810 Washington Street, Trenton, Missouri 64683
660-359-3096 GHRPC.org Fax: 660-776-3900

September 14, 2023

To whom it may concern:

This letter is to invite you to participate in the Mercer County Hazard Mitigation Planning Process.

What is the hazard mitigation planning process? It is the process that state and local leaders and interested citizens go through to understand the risks that we face in our county and how we can reduce these risks. The goal is to develop a plan that will, "reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from natural disasters."

This is an ongoing process with the requirement that plans for each county be updated at least every 5 years. The Green Hills Planning Commission has been contracted to assist in the development and creation of this plan for Mercer County.

The local mitigation planning process has three steps:

Step 1 – Public Involvement – Planning creates a way to solicit and consider input from a diverse section of our community. This will ideally promote discussion about creating a safer, more disaster-resilient community.

Step 2 – Risk Assessment – The mitigation plan should identify natural hazards and risks that could impact our community. This could be based on historical experience or by simply being aware of the risks that we may face as a community.

Step 3 – Mitigation Strategy – This is based on public input, identified risks, and available capabilities. The strategy will include our approach for implementing mitigation activities that are cost-effective, technically feasible, and environmentally sound.

Please consider attending the public meeting at the Mercer County Health Department, (basement level) on **Thursday, October 5, 2023, from 5:00 PM to 6:30 PM.** In the meantime, please do not hesitate to contact me if you have any questions or concerns.

Thank you,

Amanda George
Assistant Planner Hazard Mitigation & TAC
amanda@ghrpc.org / 660-359-5636 ext. 25

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810 Washington Street, Trenton, Missouri 64683
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«First_Name» «Last_Name»
«Company_Name»
«Address_Line_1»
«City»,«State» «ZIP_Code»

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In short, this is the process where, if done correctly, our county will have a plan to prevent any future natural disasters from having devastating consequences. There is a survey that you could complete, you could review the plan once it is written and provide feedback, or you could attend one or more of the meetings. If you are interested in participating in any way, please contact me to discuss what you are available to do.

This is an ongoing process with the requirement that plans for each county be updated at least every 5 years. The Green Hills Planning Commission has been contracted to assist in the development and creation of this plan for Mercer County. Once the plan is complete and approved by both the State Emergency Management Agency (SEMA) and the Federal Emergency Management Agency (FEMA) our county and the jurisdictions within are eligible for Hazard Mitigation Assistance Grants.

The Local Mitigation Planning Process has the Following Steps:

Step 1 – Organize the Planning Process and Resources– Planning creates a way to solicit and consider input from a diverse section of our community. This will ideally promote discussion about creating a safer, more disaster-resilient community.

Step 2 – Risk Assessment – This step is where the planning team would identify the characteristics and potential consequences of hazards. This includes understanding where the hazard may occur and what people, property, or community assets may be in harm's way.

Step 3 – Develop a Mitigation Strategy – At this stage of the plan the planning team would set priorities and develop long-term strategies for avoiding or minimizing the undesired effects of disasters. The plan would be built around our community's strengths and goals.

Step 4 – Adopt and Implement the Plan – Bring the plan to life by adopting it and implementing the mitigation actions outlined in the strategy.

The Benefits of Hazard Mitigation:

- Protecting public safety and preventing loss of life and injury.
- Reducing damage to existing and future development.
- Preventing damage to our community's unique economic, cultural, and environmental assets.

Please contact me if you are interested in taking part in the Hazard Mitigation Plan for Mercer County or if you have any questions.

Thank you,

Amanda George
Assistant Planner
Hazard Mitigation & Transportation Advisory Committee
Green Hills Regional Planning Commission
810 Washington St.
Trenton, MO 64683
(660) 359-5636 ext. 25 or text (660) 953-0815
amanda@ghrpc.org

Green Hills
Regional Planning Commission
810 Washington Street, Trenton, Missouri 64683
660-359-3096 GHRPC.org Fax: 660-776-3900

Mayor Alan Tharp
City of Spickard
PO Box 77
Spickard, MO 64673

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While your community is not part of Mercer County, we are close enough that you may have some thoughts or concerns about hazards that you might like to address. A new requirement for hazard mitigation planning is to invite jurisdictions that are close enough that they may be impacted by hazards in our county or vice versa. In fact, if there ever is a large-scale disaster it is possible that our jurisdiction would be required to work together. By participating in our hazard mitigation planning process, we could better coordinate our combined resources.

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810 Washington Street, Trenton, Missouri 64683
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Mayor Jack Shields
City of Lineville
PO Box 180
Lineville, IA 50147

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Mayor Michael Parkhurst
City of Cainsville
1413 Old Mill Rd
Cainsville, MO 64632

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Trenton, MO 64683
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amanda@ghrpc.org

Mercer County Hazard Mitigation Sign In Sheet October 5, 2023 Meeting Time: 5:00pm- 6:00 pm

Printed Name	Job/Title	Jurisdiction	Round-trip Mileage	Commute Time	Survey Y/N
Tracy Meinecke	City Clerk	Mercer	20	10	
Tony Willett	City Clerk	Princeton/Mercer	20	1min	
GINA FINNEY	Mercer Co Hlth Dept	Mercer Adm			
Cheston Easter	1st District Comm	Mercer	Ø	Ø	
Wade Hall	N. Mercer Superintendent	Mercer	Ø	Ø	
Lisa Colson	LHRPC				
Amanda George	LHRPC		Ø	Ø	
Jerry Gardner	School Superintendent	Mercer			

- Risk Assessment

Mercer County Hazard Mitigation Sign In Sheet November 13, 2023 Meeting Time: 9:30AM

Printed Name	Job/Title	Jurisdiction	Round-trip Mileage	Commute Time
Judy Hamilton	County Clerk	Mercer County		
Jerry D. Allen	Pre. Commissioner	Mercer County		
Cheston Easter	Assoc Commissioner	Mercer County		
ZACHARY MARTIN	Assoc Commissioner	Mercer County		
GINA FINNEY	NCHD Administrator	Mercer County		
Jerry Girdner	School Superintendent	Mercer County		

Hazard Mitigation Meeting
City of Princeton

Public Meeting
8:00AM - 9:00AM

11/14/2023

Name	Job/Title	Survey Completed? Y/N
Amanda George	GHRPC Planner	Y
Jami McCain	Deputy City Clerk	yes
Cory Willett	City Clerk	yes
Jay Goodbody	SUPERINTENDENT	YES
[illegible]	City Clerk	yes

Mercer County Hazard Mitigation Sign In Sheet 1/25/24

Printed Name	Job/Title	Jurisdiction	Round-trip Mileage	Commute Time
Amanda George	Planner	Princeton RV		30 min.
Jerry Girdner	School Superintendent	Princeton RV	—	—
Cory Willett	City Clerk	City of Princeton		
Jami McCain	Deputy City Clerk	City of Princeton		
Wade Hall	Superintendent	Mercer R-3		

1/25/24

Mercer County Hazard Mitigation Sign In Sheet

Printed Name	Job/Title	Jurisdiction	Round-trip Mileage	Commute Time
Amanda George	HMP Planner	Mercer Co.		1:30
Tracy Meinecke	city clerk	City of Mercer		

Mercer County Hazard Mitigation Sign In Sheet

Jan 29, 2024
10 AM - 10:45 AM

Printed Name	Job/Title	Jurisdiction	Round-trip Mileage	Commute Time
Amanda George	GHRPC Planner		46	25min
Judy Hamilton	County Clerk	Mercer Co		
Jerry Allen	Pres. Commissioner	Mercer Co.		
Cheston Easter	Assoc. Comm.	Mercer Co.		
Zachary Martin	Assoc Comm.	Mercer Co.		

Ready Business.

Risk Assessment Table

(1) Asset or Operation at Risk	(2) Hazard	(3) Senario (Location, Timing, Magitude)	(4) Oportunities for Prevention or Mitigation	(5) Probability (L, M, H)	Impacts with Existing Mitigation (L, M, H)					(11) Overall Hazard Rating
					(6) People	(7) Property	(8) Operations	(9) Environment	(10) Entity	
Princeton Schools	Dam Failure		NO opportunities	L	L	L	L	L	L	L-L
Princeton Schools	Drought			L	L	L	L	L	L	L-L
Princeton Schools	Earthquake		Drills	L	H	H	H	H	H	L-H
Princeton Schools	Extreme Temperatures		Air & Heat School closures	H	M	L	H	L	L	H-H
Princeton Schools	Flooding		NO construction in flood plains Proper drainage	H	M	H	M	H	H	H-H
Princeton Schools	Severe Winter Weather		School closures Campus treatment Weather Tracking	H	H	H	H	H	H	H-H
Princeton Schools	Severe Thunderstorms		Weather Tracking Drills students & Shelter in Staff place	H	H	H	H	H	H	H-H
Princeton Schools	Tornados		Weather Tracking Drills	H	H	H	H	H	H	H-H
Princeton Schools	Wildfire		Safe building materials Follow burn bans	L	H	H	H	H	H	L-H

Ready Business

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~~School Building~~										
Mercer School	Dam failure		No oportunities	L	L	L	L	L	L	L-L
Mercer School	Drought			L	L	L	L	L	L	L-L
Mercerschool	Earthquake		-Drills	L	H	H	H	H	H	L-H
Mercer School	Extreme Temp		- Air & Heat - school closure	H	M	L	H	L	L	H-H
Mercer School	Flooding		-Not in flood Plain -Proper Drainage	H	M	H	M	H	H	H-H
Mercer School	Severe Winter Weather		- School Closures - Campus Treatments - Track weather	H	H	H	H	H	H	H-H
Mercer School	Severe Thunderstorm		- Drills with Students & Staff - Track weather - Disrupt day w/ open campus	H	H	H	H	H	H	H-H
Mercer School	Wildfire		- Location of School - Used as many fire proof materials as possible - adhere to burn bans	L	H	H	H	H	H	L-H

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Bridges & Roads	Dam Failure	Spring	n/a	L	L	L	M	L	H	L
n/a	Drought	Sommer	n/a	M	M	M	M	H	M	M
Courthouse	Earthquake	Princeton	n/a	L	H	H	H	L	H	H
n/a	Extreme Temp	Sommer/Winter	n/a	H	M	L	M	H	L	M
Country Farm Roads	Flooding	Spring/Fall	n/a	M	M	L	M	L	M	M
Bridges & Roads	Severe Winter	Winter	n/a	H	M	L	M	H	L	M
Courthouse	Thunderstorm Tornado	Princeton	n/a	L	H	H	H	L	H	H
Bridges	Wild Fire	Sommer	~~n/a~~ mowing	M	L	M	L	M	L	L

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1	Dam failure			Low	L	M	L	M	L	LM
	Drought			H	H	H	H	H	H	H
	Earthquake			L	L	M	L	L	L	LM
	Extreme temp			H	H	H	H	H	H	H
	Flooding			M	L	M	L	L	L	LM
	Severe winter weather			H	H	H	H	H	H	H
	Severe thunderstorm			H	H	H	H	H	H	H
	Wild fire			L	M	M	M	M	M	LM

Ready Business.

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					(6) People	(7) Property	(8) Operations	(9) Environment	(10) Entity	
	Flash Flood	Princeton	Storm Drain	H	M	H	H	H	H	HH
	River Flooding	Princeton		H	L	L	L	M	L	HM
	Wild Fire	Princeton		L	M	M	H	M	H	LH
	Dam Failure	Princeton		L	L	L	L	L	L	LL
	Drought	Princeton	Conserve water	L	L	L	M	M	M	LM
	Earthquake	Princeton		L	L	L	M	L	L	LM
	Extreme Temps	Princeton	Cooling centers Shelter	H	M	M	H	L	H	MH
	Thunder Storm	Princeton	Clean up.	H	M	M/H	M	L	L	HM
	Tornado	Princeton	Community Shelter	H	L	H	H	H	H	HH
	Severe Winter	Princeton		H	H	L	H	H	H	HH

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					(6) People	(7) Property	(8) Operations	(9) Environment	(10) Entity	
	Flash Flood	Princeton	Storm. Drain	H	M	H	H	H	H	HH
	River Flooding	Princeton		H	L	L	L	M	L	HM
	Wild Fire	Princeton		L	M	M	H	M	H	LH
	Dam failure	Princeton		L	L	L	L	L	L	LL
	Drought	Princeton	Conserve Water	L	L	L	M	M	M	LM
	Earthquake	Princeton		L	L	L	M	L	L	LM
	Extreme Temps	Princeton	Cooling Center Shelter	H	M	M	H	L	H	MH
	Thunderstorm	Princeton	Clean up	H	M	M/H	M	L	L	HM
	Tornado	Princeton	Community Shelter	H	L	H	H	H	H	HH
	Severe Winter	Princeton		H	H	L	H	H	H	HH

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					(6) People	(7) Property	(8) Operations	(9) Environment	(10) Entity	
	FLASH FLOOD	PRINCETON	STORM DRAIN	H	M	H	H	H	H	HH
	RIVER FLOOD	PRINCETON		H	L	L	L	M	L	H M
	WILD FIRE	PRINCETON		L	M	M	H	M	M	L H
	DAM FAILURE	PRINCETON		L	L	L	L	L	L	L L
	DROUGHT	PRINCETON	CONSERVE WATER	L	L	L	M	M	M	L M
	EARTH QUAKE	PRINCETON		L	L	L	M	L	L	L M
	EXTREME TEMPS	PRINCETON	COOLING CENTER SHELTER	H	M	M	H	L	H	H H
	THUNDER STORM	PRINCETON	CLEAN UP	H	M	M/H	M	L	L	H M
	TORNADO	PRINCETON	COMMUNITY SHELTER	H	L	H	H	H	H	H H
	SEVERE WINTER	PRINCETON		H	H	L	H	H	H	H H

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					(6) People	(7) Property	(8) Operations	(9) Environment	(10) Entity	
	flashflood	Mercer	needs Drainage	H	L	L	L	L	L	H/L
	River Flood	Mercer		L	L	L	L	L	L	LL
	Wildfires	Mercer	little Risk	L	L	M	L	L	L	LM
	Dam failure	Mercer	little Risk	L	L	L	L	L	L	LL
	Drought	Mercer	Conserve water	L	L	L	L	M	M	LM
	Earth quake	Mercer	None	L	L	L	M	L	L	LM
	Ext. temps	Mercer		H	M	L	L	L	L	HM
	thunderstorms	Mercer	Code enforcement	H	M	H	M	L	L	HH
	tornados	Mercer	Com. Shelter	M	H	H	H	H	H	MH
	Severe winter weather	mercer	Debris Removal Snow Removal	H	H	M	H	H	H	HH

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					(6) People	(7) Property	(8) Operations	(9) Environment	(10) Entity	
	Flash Flood	Mercer - Heavy	needs drainage	H	L	L	L	L	L	HL
	River Flood	mercer-		L	L	L	L	L	L	LL
	Wildfires		Little Risk	L	L	M	L	L	L	LM
	Dam Failure		Little Risk	L	L	L	L	L	L	LL
	Drought		conserve water	L	L	L	L	M	M	LM
	Earthquake		none	L	L	L	M	L	L	Lm
	Ext. Temps			H	M	L	L	L	L	HM
	Thunderstorms →		code enforcement	H	M	H	M	L	L	HH
	Tornadoes		comm. shelter	M	H	H	H	H	H	MH
	Severe Winter Weather		debris removal - snow removal	H	H		H	H	H	HH

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	Flash flood	Princeton	Storm drains roads wash	H	M	H	H	H	H	HH
	River Flooding	Princeton		H	L	L	L	M	L	HM
	Wildfires	Princeton		L	M	M	H	M	H	LH
	Dam Failure	Princeton		L	L	L	L	L	L	LL
	Drought	Princeton	conserve water	L	L	L	M	M	M	LM
	Earthquake	Princeton	none	L	L	L	M	L	L	LM
	Ext. Temps	Princeton	cooling center shelter	H	L	M	H	L	H	HH
	Thunderstorm		cleanup	H	M	M/H	M	L	L	HM
	Tornadoes		community shelter	H	L	H	H	H	H	HH
	Severe Winter Weather			H	H	L	H	H	H	HH



Press Release:

Public Meeting Scheduled for Mercer County Hazard Mitigation Plan

Contact: Amanda George, (660) 359-5936 ext. 25, amanda@ghrpc.org

Mercer County, Missouri

A public meeting to discuss the Hazard Mitigation Plan for Mercer County has been scheduled:

County Multi-Jurisdictional Hazard Mitigation Plan Meeting

At the Mercer County Health Department

305 West Main Street

Princeton, MO 64673

Thursday, October 5, 2023

5:00 PM – 6:30 PM

A Hazard Mitigation Plan is a process designed to reduce the loss of life and property during times of hazardous events.

A successful hazard mitigation plan is dependent on the involvement of stakeholders in the community. Once the plan is completed and approved by both the Missouri State Emergency Management Agency (SEMA) and the Federal Emergency Management Agency (FEMA) Mercer County will remain eligible for FEMA hazard mitigation assistance funding.

The public is invited to participate in the planning process. All comments received from the public will be documented and considered for inclusion in the plan.

Please contact Amanda George, the Hazard Mitigation Planner for the Green Hills Regional Planning Commission if you have any questions.

Green Hills
Regional Planning Commission
810 Washington Street, Trenton, Missouri 64683
660-359-3096 GHRPC.org Fax: 660-776-3900

Mayor Michael Parkhurst
City of Cainsville
1413 Old Mill Rd
Cainsville, MO 64632

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While your community is not part of Mercer County, we are close enough that you may have some thoughts or concerns about hazards that you might like to address. A new requirement for hazard mitigation planning is to invite jurisdictions that are close enough that they may be impacted by hazards in our county or vice versa. In fact, if there ever is a large-scale disaster it is possible that our jurisdiction would be required to work together. By participating in our hazard mitigation planning process, we could better coordinate our combined resources.

This is an ongoing process with the requirement that plans for each county be updated at least every 5 years. The Green Hills Planning Commission has been contracted to assist in the development and creation of this plan for Mercer County. Once the plan is complete and approved by both the State Emergency Management Agency (SEMA) and the Federal Emergency Management Agency (FEMA) our county and the jurisdictions within are eligible for Hazard Mitigation Assistance Grants.

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Please contact me if you are interested in taking part in the Hazard Mitigation Plan for Mercer County or if you have any questions.

Thank you,

Amanda George
Assistant Planner
Hazard Mitigation & Transportation Advisory Committee
Green Hills Regional Planning Commission
810 Washington St.
Trenton, MO 64683
(660) 359-5636 ext. 25 or text (660) 953-0815
amanda@ghrpc.org

Green Hills
Regional Planning Commission
810 Washington Street, Trenton, Missouri 64683
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Mayor Jack Shields
City of Lineville
PO Box 180
Lineville, IA 50147

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Mayor Alan Tharp
City of Spickard
PO Box 77
Spickard, MO 64673

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Lynnette Allen
Shelter Insurance
706 W Main
Princeton,MO 64673

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Steve Mason
Chief's Tavern
100 N Jefferson
Princeton,MO 64673

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Jeff Girdner
Girdner Post & Lumber LLC
14853 US-65
Mercer,MO 64661

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First Christian Church
901 E Main St
Princeton,MO 64673

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Princeton Resource Center
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Mercer County Food Pantry
802 E Main St
Princeton,MO 64673

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Patsy Holt
Princeton Housing Authority
801 E Hickland
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Thank you,

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Princeton,MO 64673

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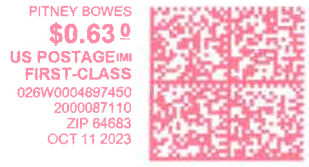
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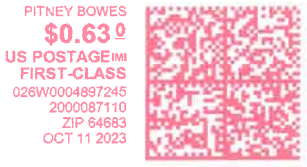
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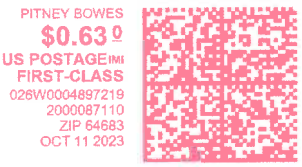
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Billy Fisher

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Lynnette Allen

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Mayor Alan Tharp
City of Spickard
PO Box 77
Spickard, MO 64673

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Mayor Jack Shields
City of Lineville
PO Box 180
Lineville, IA 50147

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Mayor Michael Parkhurst

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Mayor Michael Parkhurst
City of Cainsville
1413 Old Mill Rd
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Princeton Resource Center
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Mercer County Food Pantry
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Appendix C

- Data Collection Questionnaires
- Assessment of Previously Proposed Actions
- STAPLEE Worksheets
- Natural Hazard Questionnaires

Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For Local Governments

County: Mercer

Jurisdiction: Mercer County

Return by: Judy Hamilton, Mercer Co. Clerk

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Judy Hamilton

Phone: 660 748 3425

Email: mcclerk@grm.net

Date: 8-16-23

Please return questionnaires by mail, email, or fax to:

Name: Amanda George Assistant Planner SEMA, TAC

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Fax: 660-776-3900

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
Comprehensive Plan	Date:	
Builder's Plan	Date:	
Capital Improvement Plan	Date:	
City Emergency Operations Plan	Date:	
County Emergency Operations Plan	Date:	
Local Recovery Plan	Date:	
County Recovery Plan	Date:	
City Mitigation Plan	Date:	
County Mitigation Plan	Date: 2018 - 2023	Prepared by: Green Hills Reg Planning Com.
Debris Management Plan	Date:	
Economic Development Plan	Date:	
Transportation Plan	Date:	
Land-use Plan	Date:	
Flood Mitigation Assistance (FMA) Plan	Date:	
Watershed Plan	Date:	
Firewise or other fire mitigation plan	Date:	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date:	

Element	Yes, No, N/A	Comments and/or Weblink
Policies/Ordinance		
Zoning Ordinance		
Building Code	Version: N/A	
Floodplain Ordinance	Date:	
Subdivision Ordinance		
Tree Trimming Ordinance		
Nuisance Ordinance		
Stormwater Ordinance		
Drainage Ordinance		
Site Plan Review Requirements		
Historic Preservation Ordinance		
Landscape Ordinance		
Program		
Zoning/Land Use Restrictions		
Codes Building Site/Design		
Hazard Awareness Program		
National Flood Insurance Program (NFIP)		
NFIP Community Rating System (CRS) program		If so, what is your current level rating?
National Weather Service (NWS) Storm Ready Certification		
Firewise Community Certification		
Building Code Effectiveness Grading (BCEGs)		
ISO Fire Rating	Rating:	
Economic Development Program		
Land Use Program		
Public Education/Awareness		
Property Acquisition		
Planning/Zoning Boards		
Stream Maintenance Program		
Tree Trimming Program		
Engineering Studies for Streams (Local/County/Regional)		

Element	Yes, No, N/A	Comments and/or Weblink
Mutual Aid Agreements		
Studies/Reports/Maps		
Hazard Analysis/Risk Assessment (City)		
Hazard Analysis/Risk Assessment (County)		
Evacuation Route Map		
Critical Facilities Inventory		
Vulnerable Population Inventory		
Land Use Map		
Staff/Department		**Full Time or Part Time?**
Building Code Official	No	
Building Inspector	No	
Mapping Specialist (GIS)		
Engineer	No	
Development Planner	No	
Public Works Official	No	
Emergency Management Coordinator	Vacant	Presiding Comm.
NFIP Floodplain Administrator		
Emergency Response Team		
Hazardous Materials Expert		
Local Emergency Planning Committee	Yes	Chester Easter, Chair
County Emergency Management Commission		
Sanitation Department		
Transportation Department		
Economic Development Department		
Housing Department		
Historic Preservation		
Non-Governmental Organizations (NGOs)	**Is there a local chapter? Yes or No**	
American Red Cross	Yes	
Salvation Army	No	
Veterans Groups	Yes	
Local Environmental Organization		

Element	Yes, No, N/A	Comments and/or Weblink
Homeowner Associations	No	
Neighborhood Associations		
Chamber of Commerce	Yes	Amy Cool / Kelly Bertrand
Community Organizations (Lions, Kiwanis, etc.	No	
Financial Resources		**Is your jurisdiction able to? Yes or No**
Apply for Community Development Block Grants		
Fund projects thru Capital Improvements funding		No
Authority to levy taxes for specific purposes		Yes
Fees for water, sewer, gas, or electric services		No
Impact fees for new development		No
Incur debt through general obligation bonds		No
Incur debt through special tax bonds		No
Incur debt through private activities		No
Withhold spending in hazard prone areas		No

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	
Builder's Plan	
Capital Improvement Plan	
Local Recovery Plan	
County Recovery Plan	
Debris Management Plan	
Economic Development Plan	
Transportation Plan	
Land-use Plan	
Watershed Plan	
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)

   Commission:
   Presiding
   1st Dist
   2nd Dist

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

   N/A

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants. NA

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers. NA

5. How many outdoor warning sirens are in your community?

   2 Cities: Mercer / Princeton

   How are they activated (indicate responsible department/personnel)?

   Dispatch - Courthouse
   802 E Main
   Princeton Mo 64673

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.

   No

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards?

   As stated in Plan

   Please provide address locations:

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

11. Please list major employers in your jurisdiction with an estimated number of employees.

Smithfield

ORM Network

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - **RF**	Drought - **D**
Levee Failure - **LF**	Extreme Temperature - **ET**
Dam Failure - **DF**	Severe Thunderstorm (incl. winds, hail, lightning) - **ST**
Earthquake - **EQ**	Severe Winter Weather (incl. snow, ice, severe cold) - **SWW**
Land Subsidence / Sinkholes - **LSS**	Tornadoes - **T**
Drought - **D**	Wildfire - **WF**

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities
Hospitals and other medical facilities
Police stations
Fire station
Emergency Operations Centers

High Potential Loss Facilities
Power plants
Dams/levees
Military installations
Hazardous material sites
Schools
Shelters
Day care centers
Nursing homes
Main government buildings

Transportation and Lifeline
Highways, bridges, and tunnels
Railroads and facilities
Bus facilities
Airports
Water treatment facilities
Natural gas facilities and pipelines
Oil facilities and pipelines
Communications facilities

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						
Sheriffs Department	802 E Main St, Princeton Mo					
Mercer Fire station	22832 Main St, Mercer Mo					
MercerCo. Fire Station	201 N Fullerton, Princeton Mo					
St Lukes Mercer Co Clinic	400 N Fullerton, Princeton Mo					
Mercer Co Health Dept.	305 W Main St. Princeton Mo					
Mercer Co Ambulance	201 W Hickland St, Princeton Mo					

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, military installations, hazardous materials sites, shelters, day care centers, nursing homes, main government buildings (Do not include schools—they will be reported by the school districts)						
Pearls II	611 N College, Princeton Mo					
MC Courthouse	802E Main St Princeton Mo					
NW Electric Powerstation	13960 Hwy BB, Mercer Mo					
" "	14678 Hwy Z, Mercer Mo					
" "	20709 US Hwy 136, Princeton Mo					
" "	14395 US Hwy 136, Princeton					
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
City of Princeton Water Treatment	401 N Fulcher, Princeton Mo					
Gem Networks - Central Comm. Office	201 Chestnut, Princeton Mo					
Gem Networks	22796 Cherry St Mercer					
MFA Oil	18530 Fedora Loop Princeton					
Gem Network Bus Office	1001 Kentucky Princeton					

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards
Smithfield Hog Division	17999 US Hwy 65, Princeton				
GRM Networics	1001 Kentucky, Princeton				

Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For Local Governments

County: Mercer

Jurisdiction: City of Princeton

Return by: Oct 5, 2023

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Cory Willett

Phone: (660) 748 4375

Email: Cityprin@grm.net

Date: 9/12/23

Please return questionnaires by mail, email, or fax to:

Name: Amanda George Assistant Planner SEMA, TAC

Address: Green Hills Regional Planning Commission, 810 Washington St., Trenton, MO 64683

Email: amanda@ghrpc.org

Fax: 660-776-3900

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
Comprehensive Plan	Date:	
Builder's Plan	Date:	
Capital Improvement Plan	Date:	
City Emergency Operations Plan	Date:	
County Emergency Operations Plan	Date:	
Local Recovery Plan	Date:	
County Recovery Plan	Date:	
City Mitigation Plan	Date:	
County Mitigation Plan	Date:	
Debris Management Plan	Date:	
Economic Development Plan	Date:	
Transportation Plan	Date:	
Land-use Plan	Date:	
Flood Mitigation Assistance (FMA) Plan	Date:	
Watershed Plan	Date:	
Firewise or other fire mitigation plan	Date:	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date:	

Element	Yes, No, N/A	Comments and/or Weblink
Policies/Ordinance		
Zoning Ordinance		
Building Code	Version:	
Floodplain Ordinance	Date:	
Subdivision Ordinance	NO	
Tree Trimming Ordinance	NO	
Nuisance Ordinance	yes	
Stormwater Ordinance	yes	
Drainage Ordinance	yes	
Site Plan Review Requirements	NO	
Historic Preservation Ordinance	NO	
Landscape Ordinance	NO	
Program		
Zoning/Land Use Restrictions	NO	
Codes Building Site/Design	yes	
Hazard Awareness Program	NO	
National Flood Insurance Program (NFIP)	yes	
NFIP Community Rating System (CRS) program	no	If so, what is your current level rating?
National Weather Service (NWS) Storm Ready Certification	yes	
Firewise Community Certification	no	
Building Code Effectiveness Grading (BCEGs)	NO	
ISO Fire Rating	Rating: 8	
Economic Development Program	NO	
Land Use Program	NO	
Public Education/Awareness		
Property Acquisition		
Planning/Zoning Boards		
Stream Maintenance Program		
Tree Trimming Program		
Engineering Studies for Streams (Local/County/Regional)		

Element	Yes, No, N/A	Comments and/or Weblink
Mutual Aid Agreements		
Studies/Reports/Maps		
Hazard Analysis/Risk Assessment (City)		
Hazard Analysis/Risk Assessment (County)		
Evacuation Route Map		
Critical Facilities Inventory		
Vulnerable Population Inventory		
Land Use Map		
Staff/Department		**Full Time or Part Time?**
Building Code Official	yes	FT
Building Inspector	yes	FT
Mapping Specialist (GIS)	NO	NA
Engineer	NO	NA
Development Planner	NO	NA
Public Works Official	yes	FT
Emergency Management Coordinator	yes	FT
NFIP Floodplain Administrator	yes	FT
Emergency Response Team	yes	FT
Hazardous Materials Expert	NO	NA
Local Emergency Planning Committee	yes	
County Emergency Management Commission		
Sanitation Department		
Transportation Department		
Economic Development Department		
Housing Department		
Historic Preservation		
Non-Governmental Organizations (NGOs)	**Is there a local chapter? Yes or No**	
American Red Cross	yes	
Salvation Army	NO	
Veterans Groups	yes	

Element	Yes, No, N/A	Comments and/or Weblink
Local Environmental Organization		
Homeowner Associations	NO	
Neighborhood Associations	NO	
Chamber of Commerce	yes	
Community Organizations (Lions, Kiwanis, etc.	yes	

Financial Resources	Is your jurisdiction able to? Yes or No
Apply for Community Development Block Grants	yes
Fund projects thru Capital Improvements funding	yes
Authority to levy taxes for specific purposes	yes
Fees for water, sewer, gas, or electric services	yes
Impact fees for new development	NO
Incur debt through general obligation bonds	yes
Incur debt through special tax bonds	
Incur debt through private activities	NO
Withhold spending in hazard prone areas	NO

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	
Builder's Plan	
Capital Improvement Plan	
Local Recovery Plan	
County Recovery Plan	
Debris Management Plan	
Economic Development Plan	
Transportation Plan	
Land-use Plan	
Watershed Plan	
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)

   Mayor - 1
   Council - 4

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

   none

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

   none

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.

5. How many outdoor warning sirens are in your community?

   2

   How are they activated (indicate responsible department/personnel)?

   Sheriffs Dept

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.

   NO

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards? Court house Basement

   Please provide address locations: 802 E. Main St, Princeton, MO 64

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

NONE

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

NONE

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

none

11. Please list major employers in your jurisdiction with an estimated number of employees.

Smithfield - ?
GRM ?

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - **RF**	Drought - **D**
Levee Failure - **LF**	Extreme Temperature - **ET**
Dam Failure - **DF**	Severe Thunderstorm (incl. winds, hail, lightning) - **ST**
Earthquake - **EQ**	Severe Winter Weather (incl. snow, ice, severe cold) - **SWW**
Land Subsidence / Sinkholes - **LSS**	Tornadoes - **T**
Drought - **D**	Wildfire - **WF**

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities
Hospitals and other medical facilities
Police stations
Fire station
Emergency Operations Centers

High Potential Loss Facilities
Power plants
Dams/levees
Military installations
Hazardous material sites
Schools
Shelters
Day care centers
Nursing homes
Main government buildings

Transportation and Lifeline
Highways, bridges, and tunnels
Railroads and facilities
Bus facilities
Airports
Water treatment facilities
Natural gas facilities and pipelines
Oil facilities and pipelines
Communications facilities

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						
Dr. Harts office	400 Fullerton					
City Hall	507 W. Main					
Fire Station	201 N. Fullerton					
Sheriff Dept	802 E. Main					
Health Dept	305 W. Main					
Ambulance Barn	201 W. Hickland					
Princeton RV School	1008 Coleman.					

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, military installations, hazardous materials sites, shelters, day care centers, nursing homes, main government buildings (Do not include schools—they will be reported by the school districts)						
Pearls II	611 N College					
City Hall	507 W. Main					
GRM	1001 Kentucky					
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
City of Princeton WT treatment	401 N Fullerton					
MFA Oil	18530 Fedora Loop					
[illegible]						
UPG Gas	601 Stewart St					

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards
GRM	1001 Kentucky				
Smithfield	17999 Hwy 60				

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction. Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	City of Princeton
Type of event	Flood
Nature and magnitude of event	1
Location	Princeton
Date of event	
Injuries	none
Deaths	none
Property damage	Streets
Infrastructure damage	
Crop damage	yes
Business/economic impacts	
Road/school/other closures	yes - Roads
Other damage	Ball Fields
Insured losses	
Federal/state disaster relief funding	yes Fema - 4451 DR-MO
Source of information	
Comments	

Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For Local Governments

County: Mercer

Jurisdiction: City of Mercer

Return by: _____

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Tracy Melnecke

Phone: 660 382-4210

Email: citymrcr@grm.net

Date: 9/28/23

Please return questionnaires by mail, email, or fax to:

Name: Jennifer Wyckoff, Hazard Mitigation Planner

Address: Green Hills Regional Planning Commission, 1104 Main Street, Trenton, MO 64683

Email: Jennifer@ghrpc.org

Fax: 660-359-3096

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
Comprehensive Plan	Date:	
Builder's Plan	Date: N/A	
Capital Improvement Plan	Date: N/A	
City Emergency Operations Plan	Date: Yes	
County Emergency Operations Plan	Date: N/A	
Local Recovery Plan	Date: N/A	
County Recovery Plan	Date: N/A	
City Mitigation Plan	Date: N/A	
County Mitigation Plan	Date: N/A	
Debris Management Plan	Date: N/A	
Economic Development Plan	Date: N/A	
Transportation Plan	Date: N/A	
Land-use Plan	Date: N/A	
Flood Mitigation Assistance (FMA) Plan	Date: N/A	
Watershed Plan	Date: N/A	
Firewise or other fire mitigation plan	Date: N/A	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date: N/A	

Element	Yes, No, N/A	Comments and/or Weblink
Policies/Ordinance		
Zoning Ordinance	NO	
Building Code	Version: NO	
Floodplain Ordinance	Date: NO	
Subdivision Ordinance	N/A	
Tree Trimming Ordinance	N/A	
Nuisance Ordinance	YES	
Stormwater Ordinance	YES	
Drainage Ordinance	NO	
Site Plan Review Requirements	NO	
Historic Preservation Ordinance	NO	
Landscape Ordinance	NO	
Program		
Zoning/Land Use Restrictions	NO	
Codes Building Site/Design	NO	
Hazard Awareness Program	NO	
National Flood Insurance Program (NFIP)	NO	
NFIP Community Rating System (CRS) program	NO	If so, what is your current level rating?
National Weather Service (NWS) Storm Ready Certification	NO	
Firewise Community Certification	NO	
Building Code Effectiveness Grading (BCEGs)	NO	
ISO Fire Rating	Rating: NA	
Economic Development Program	NO	
Land Use Program	NO	
Public Education/Awareness	NO	
Property Acquisition	NO	
Planning/Zoning Boards	NO	
Stream Maintenance Program	NO	
Tree Trimming Program	NO	
Engineering Studies for Streams (Local/County/Regional)	NO	

Element	Yes, No, N/A	Comments and/or Weblink
Mutual Aid Agreements	No	
Studies/Reports/Maps		
Hazard Analysis/Risk Assessment (City)	NO	
Hazard Analysis/Risk Assessment (County)	NO	
Evacuation Route Map	NO	
Critical Facilities Inventory	NO	
Vulnerable Population Inventory	NO	
Land Use Map	NO	
Staff/Department		**Full Time or Part Time?**
Building Code Official	no	
Building Inspector	no	
Mapping Specialist (GIS)	no	
Engineer	yes	
Development Planner	no	
Public Works Official	no	
Emergency Management Coordinator	no	
NFIP Floodplain Administrator	no	
Emergency Response Team	no	
Hazardous Materials Expert	no	
Local Emergency Planning Committee	no	
County Emergency Management Commission	no	
Sanitation Department	no	
Transportation Department	no	
Economic Development Department	no	
Housing Department	no	
Historic Preservation	no	
Non-Governmental Organizations (NGOs)	**Is there a local chapter? Yes or No**	
American Red Cross	no	
Salvation Army	no	
Veterans Groups	yes (American Legion	
Local Environmental Organization	no	

Element	Yes, No, N/A	Comments and/or Weblink
Homeowner Associations	no	
Neighborhood Associations	no	
Chamber of Commerce	no	
Community Organizations (Lions, Kiwanis, etc.	no	

Financial Resources	Is your jurisdiction able to? Yes or No
Apply for Community Development Block Grants	yes
Fund projects thru Capital Improvements funding	no
Authority to levy taxes for specific purposes	yes
Fees for water, sewer, gas, or electric services	yes
Impact fees for new development	no
Incur debt through general obligation bonds	yes
Incur debt through special tax bonds	yes
Incur debt through private activities	no
Withhold spending in hazard prone areas	N/A

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	N/A
Builder's Plan	N/A
Capital Improvement Plan	N/A
Local Recovery Plan	N/A
County Recovery Plan	N/A
Debris Management Plan	N/A
Economic Development Plan	N/A
Transportation Plan	N/A
Land-use Plan	N/A
Watershed Plan	N/A
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	N/A

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)
   4 members

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education. N/A

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants. NA

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers. N/A

5. How many outdoor warning sirens are in your community? 1

   How are they activated (indicate responsible department/personnel)? Mercer Co Sheriffs Office

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe.
   no

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards? North Mercer R-III tornado Shelter
   ? FEMA Standards

   Please provide address locations:
   22931 Main St Mercer Mo 64661

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

None

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

N/A

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

N/A

11. Please list major employers in your jurisdiction with an estimated number of employees.

N/A

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

N/A

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

N/A

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - **RF**	Drought - **D**
Levee Failure - **LF**	Extreme Temperature - **ET**
Dam Failure - **DF**	Severe Thunderstorm (incl. winds, hail, lightning) - **ST**
Earthquake - **EQ**	Severe Winter Weather (incl. snow, ice, severe cold) - **SWW**
Land Subsidence / Sinkholes - **LSS**	Tornadoes - **T**
Drought - **D**	Wildfire - **WF**

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities
Hospitals and other medical facilities
Police stations
Fire station
Emergency Operations Centers

High Potential Loss Facilities
Power plants
Dams/levees
Military installations
Hazardous material sites
Schools
Shelters
Day care centers
Nursing homes
Main government buildings

Transportation and Lifeline
Highways, bridges, and tunnels
Railroads and facilities
Bus facilities
Airports
Water treatment facilities
Natural gas facilities and pipelines
Oil facilities and pipelines
Communications facilities

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, military installations, hazardous materials sites, shelters, day care centers, nursing homes, main government buildings (Do not include schools—they will be reported by the school districts)						
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards

Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For School Districts and Educational Institutions

County: Mercer

School District / Educational Institution Name: Princeton R-V

Return by: _____

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs.

Prepared by: Jerry Girdner

Phone: 6660 748 3211

Email: JGirdner@tigertown.K12.MO.US

Date: 7-25-23

Please return questionnaires by mail, email, or fax to:

Name: Amanda George, Assistant Planner SEMA, TAC

Address: Green Hills Regional Planning Commission, 810 Washington St, Trenton, MO 64683

Email: amanda@ghrpc.org

Fax: 660-776-3900

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	Yes	July 2022	
Capital Improvement Plan	Yes	December 2019	
School Emergency Plan Shelter in place protocols Evacuation protocols	Yes	July 2022	
Weapons Policy	Yes	July 2023	

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Superintendent	
Emergency Manager	Yes	Superintendent	
Grant Writer	Yes	Superintendent	
Public Information Officer	Yes	Superintendent	

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Y	
Local funds	Y	
General obligation bonds	Y	Pending on Election
Special tax bonds	N	
Private activities/donations	Y	
State and federal funds	Y	

Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.

   Yes @ Office

2. Does your school buildings' have NOAA Weather Radios?

   Yes

3. List any past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect facilities or provide education regarding hazards that could occur.

   None

4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.

   None

5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?

   NO

6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? Please list the buildings and the improvement.

   Yes New → Football Field, Press Box, Maintenance Barn, Pre School
   Stacy weight room, Parking

7. Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?

   The city is constructing New Ball fields for Softball and Baseball. Out of the flood Plain

8. What percentage is your projected enrollment expected to increase or decrease in the next five years?

   Stable NO [redacted]
   change

9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.

   NO

VULNERABILITY ASSESSMENT

Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - **RF**	Drought - **D**
Levee Failure - **LF**	Extreme Temperature - **ET**
Dam Failure - **DF**	Severe Thunderstorm (incl. winds, hail, lightning) - **ST**
Earthquake - **EQ**	Severe Winter Weather (incl. snow, ice, severe cold) - **SWW**
Land Subsidence / Sinkholes - **LSS**	Tornadoes - **T**
Drought - **D**	Wildfire - **WF**

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable or not available, enter "N/A". Add as many rows as needed. **If you have this data in GIS formats, or other formats, please provide in lieu of this.**

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
Jr Hs	1008 E Coleman	24156	5,072,000	600,000	1000	All (-) RF,LF LSS/
Elementary PK	225 S. College	35,000	7,952,000	1,000,000	1000	
Bus Garage	1402 E main	5,000	600,000	100,000	100	
Stacy	1010 E Coleman	15,127	3,300,000	250,000	500	
Vo-Ag	205 S College	7,341	1,100,000	500,000	200	
Football Field Press Box	225 S. College	2,000	250,000	50,000	50	
Maintenance Barn	225 S. College	6,000	400,000	60,000	100	

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards

HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	Flood Heavy Rain
Nature and magnitude of event	
Location	All
Date of event	May 29 2019
Injuries	-
Deaths	-
Property damage	Yes
Infrastructure damage	Yes
Crop damage	- Yes
Business/economic impacts	yes
Road/school/other closures	Roads Closed to Busses
Other damage	Yes
Insured losses	Yes
Federal/state disaster relief funding	NO
Source of information	
Comments	

Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For School Districts and Educational Institutions

County: Mercer

School District /
Educational Institution Name: North Mercer R-III School District

Return by: _____

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs.

Prepared by: Wade Hall

Phone: (660) 382 – 4214 Ext. 222

Email: whall@northmercer.k12.mo.us

Date: 7/25/23

Please return questionnaires by mail, email, or fax to:

Name: Amanda George, Assistant Planner SEMA, TAC

Address: Green Hills Regional Planning Commission, 810 Washington St, Trenton, MO 64683

Email: amanda@ghrpc.org

Fax: 660-776-3900

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	Yes	2023	Continuous School Improvement Plan (CSIP)
Capital Improvement Plan	Yes	2023	CSIP Goal about Finance
School Emergency Plan Shelter in place protocols Evacuation protocols	Yes	2022/23	Updated last year
Weapons Policy	Yes	2023/24	Board/Handbook Policies

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Wade Hall - Superintendent	
Emergency Manager	Yes	Wade Hall - Superintendent	
Grant Writer	No	NA	
Public Information Officer	Yes	Wade Hall – Superintendent Aimee Huse - Principal	

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Y	
Local funds	Y	
General obligation bonds	Y	
Special tax bonds	Y	
Private activities/donations	Y	

State and federal funds	Y	

Additional Capabilities Questions

1. Are your buildings equipped with a public address (PA) system or other emergency alert system? Please describe.

   Yes.
   Our building has a PA system that connects to classrooms, hallways, and exterior speakers that runs through our phone system.

   We also have an emergency alert system that runs throughout the entire building which notifies those inside if a fire, tornado, or earthquake is occurring.

2. Does your school buildings' have NOAA Weather Radios?
   We used to but not currently.

3. List any past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect facilities or provide education regarding hazards that could occur.

   - We are currently resealing our roofs to help protect from the elements.
   - Updated emergency exit procedures for every classroom in 2022-23
   - We had a retaining wall/draining system on the West side of our old gymnasium to prevent washout from precipitation

4. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities.
   - We had a retaining wall/draining system on the West side of our old gymnasium to prevent washout from precipitation
   -

5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?
   - To my knowledge our buildings do not have rooms designed for tornado shelters. We place students in classrooms and locker rooms that are in the inner most part of the building that do not have any windows

6. Did your school district / institution make any additions to buildings or construction new buildings since the last plan update (2010)? Please list the buildings and the improvement.

   - Our Agriculture building was constructed since the last plan update
   - Weight Room

7. Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?

   - We are looking into constructing a new preschool building in the next 5 years.
     - The only hazard I could imagine would be inclement weather

8. What percentage is your projected enrollment expected to increase or decrease in the next five years?

   - Potentially decrease 7-10%

9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.

   - No, we rely upon the Mercer County Sheriff's Department for our security needs

VULNERABILITY ASSESSMENT

Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - **RF**	Drought - **D**
Levee Failure - **LF**	Extreme Temperature - **ET**
Dam Failure - **DF**	Severe Thunderstorm (incl. winds, hail, lightning) - **ST**
Earthquake - **EQ**	Severe Winter Weather (incl. snow, ice, severe cold) - **SWW**
Land Subsidence / Sinkholes - **LSS**	Tornadoes - **T**
Drought - **D**	Wildfire - **WF**

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable or not available, enter "N/A". Add as many rows as needed. **If you have this data in GIS formats, or other formats, please provide in lieu of this.**

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
Mercer High School	Attached as PDF					ST, SWW, T, EQ, RF
Elementary	Attached as PDF					ST, SWW, T, EQ, RF
Old Gymnasium	Attached as PDF					ST, SWW, T, EQ, RF
Band Room	Attached as PDF					ST, SWW, T, EQ, RF
Music and Library	Attached as PDF					ST, SWW, T, EQ, RF
Bus Barn	Attached as PDF					ST, SWW, T, EQ, RF

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
New Gymnasium Addition	Attached as PDF					ST, SWW, T, EQ, RF
Playground Equipment	Attached as PDF					ST, SWW, T, EQ, RF
Fencing	Attached as PDF					ST, SWW, T, EQ, RF
Pre-School Building	Attached as PDF					ST, SWW, T, EQ, RF
Agriculture Building	Attached as PDF					ST, SWW, T, EQ, RF
Electronic Sign & Brick Frame	Attached as PDF					ST, SWW, T, EQ, RF
Weight Room	Attached as PDF					ST, SWW, T, EQ, RF

HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	Hailstorm
Nature and magnitude of event	Severe Thunderstorm
Location	North Mercer High School
Date of event	2014/15
Injuries	0
Deaths	0
Property damage	Hail Damage to Roof
Infrastructure damage	NA
Crop damage	NA
Business/economic impacts	NA
Road/school/other closures	NA
Other damage	NA
Insured losses	$105,126
Federal/state disaster relief funding	$0
Source of information	Insurance Claim Documentation
Comments	

HISTORIC HAZARD EVENTS (continued)

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	Wind Damage
Nature and magnitude of event	Severe Thunderstorm
Location	Mercer High School
Date of event	2018-19
Injuries	0
Deaths	0
Property damage	Wind Damage to Roof
Infrastructure damage	NA
Crop damage	NA
Business/economic impacts	NA
Road/school/other closures	NA
Other damage	NA
Insured losses	$1570
Federal/state disaster relief funding	$0
Source of information	Insurance Claim Documentation
Comments	



Valued:

Nationwide - Policyholder Inquiry Report (HV Platform)

Insured: NORTH MERCER CO R-III (104784492)

Branch: Chicago

Agency: CPSK INSURANCE SERVICES INC (120033)

By Policy Term

Policy Term	Earned Premium	Loss %	Incurred Losses	Loss Payments	Loss Reserves	Loss Expenses
01/01/2021 to 01/01/2022	$14,902	0.0%	$0	$0	$0	$0
01/01/2020 to 01/01/2021	$16,368	0.0%	$0	$0	$0	$0
01/01/2019 to 01/01/2020	$16,205	0.0%	$0	$0	$0	$0
01/01/2018 to 01/01/2019	$13,258	11.8%	$1,570	$0	$1,050	$520
01/01/2017 to 01/01/2018	$12,460	0.0%	$0	$0	$0	$0
01/01/2016 to 01/01/2017	$14,905	0.0%	$0	$0	$0	$0
01/01/2015 to 01/01/2016	$14,196	0.0%	$0	$0	$0	$0
01/01/2014 to 01/01/2015	$12,187	862.6%	$105,126	$103,181	$0	$1,945
01/01/2013 to 01/01/2014	$11,019	0.0%	$0	$0	$0	$0
All Terms Totals	**$125,500**	**85.0%**	**$106,697**	**$103,181**	**$1,050**	**$2,466**

By Line of Business (for all terms)

LOB Description	Earned Premium	Loss %	Incurred Losses	Loss Payments	Loss Reserves	Loss Expenses
Allied Lines	$125,500	85.0%	$106,697	$103,181	$1,050	$2,466
All Line of Business Totals	**$125,500**	**85.0%**	**$106,697**	**$103,181**	**$1,050**	**$2,466**

...ured Name: North Mercer Co. R-III School District
Policy Effective: 01/01/2023-01/01/2024
Broker: CPSK Insurance Services, Inc.
Current Carrier: Nationwide Insurance Co.
Agent: John T. Southard

Deductible:	$10,000
Wind/Hail D	$150,000
BI/EE:	$500,000
Ordinance o	$1,000,000
EDP:	Inc.
Coinsurance	100%

*Please ensure that the property in the open, i.e., turf fields, etc is listed. If not please include in building value.

2022 Building Total	2023 Building Total	2022 Contents Total	2023 Contents Total	2022 Total TIV	2023 Total TIV
$8,384,405	$11,678,267	$1,599,194	$1,677,153	$9,983,599	$13,355,420

Construction Legend:
1 Frame 4 Masonry Non-Combustive
2 Non-Combustible 5 Modified Fire Resistive
3 Jointed Masonry 6 Fire Resistive
*If year built is over 20 years building updates are required

Loc	Bldg	Location Address	City	State	Zip Code	% Occupied	Occupancy	2022/2023 Expiring Building Value	2023/2024 Building Value	2022/2023 Expiring Content Value	2023/2024 Contents Value	2022/2023 TIV	2023/2024 TIV	Const	Year Built	Sq Ft	Price/ Sq Ft	No. of Stories	Prot. Class	Auto Sprinkler (%)
1	1	22931 Main Street	Mercer	MO	64661	100%	Mercer High School	$ 3,372,167.00	$ 4,721,034.00	$ 391,650.00	$ 411,232.50	$3,763,817	$5,132,267	4	1914	54,975		3		
1	2	22931 Main Street	Mercer	MO	64661	100%	Elementary	$ 809,256.00	$ 1,132,958.00	$ 262,500.00	$ 275,625.00	$1,071,756	$1,408,583	4	Inc	Inc				
1	3	22931 Main Street	Mercer	MO	64661	100%	Old Gymnasium	$ 533,652.00	$ 747,113.00	$ 93,389.00	$ 98,058.00	$627,041	$845,171	4	Inc	Inc				
1	4	22931 Main Street	Mercer	MO	64661	100%	Band Room	$ 210,000.00	$ 294,000.00	$ 157,500.00	$ 163,375.00	$367,500	$457,375	4	Inc	Inc				
1	5	22931 Main Street	Mercer	MO	64661	100%	Music & Library	$ 442,680.00	$ 619,752.00	$ 136,500.00	$ 143,325.00	$579,180	$763,077	4	Inc	Inc				
1	6	22931 Main Street	Mercer	MO	64661	100%	Bus Barn	$ 218,400.00	$ 305,760.00	$ 9,555.00	$ 10,032.75	$227,955	$315,793	4	Inc	Inc				
1	7	22931 Main Street	Mercer	MO	64661	100%	New Gymnasium Addition	$ 2,352,000.00	$ 3,292,800.00	$ 352,800.00	$ 370,440.00	$2,704,800	$3,663,240	4	2000	Inc.				
1	8	22931 Main Street	Mercer	MO	64661	100%	Playground Equipment	$ 52,500.00	$ 55,125.00	$ -	$ -	$52,500	$55,125	1						
1	9	22931 Main Street	Mercer	MO	64661	100%	Fencing	$ 10,500.00	$ 11,025.00	$ -	$ -	$10,500	$11,025	1						
1	10	14370 N. Walnut Street	Mercer	MO	64661	100%	Pre School Building	$ 63,000.00	$ 81,900.00	$ 6,300.00	$ 6,615.00	$69,300	$88,515					1		
1	11	22931 Cherry St.	Mercer	MO	64661	100%	Agriculture Building	$ 262,500.00	$ 342,250.00	$ 157,500.00	$ 165,375.00	$420,000	$507,625	4						
1	12	22931 Main Street	Mercer	MO	64661	100%	Electronic Sign & Brick Frame	$ 21,000.00	$ 23,100.00	$ -	$ -	$21,000	$23,100		2018			1		
1	13	22931 Main Street	Mercer	MO	64661	100%	Weight Room	$ 36,750.00	$ 51,450.00	$ 31,500.00	$ 33,075.00	$68,250	$84,525	4	2017	1,500		1		
							BUSINESS INCOME LIMIT (Not Included in Blanket Limit)					$500,000	$500,000							
							TOTAL	$ 8,384,405.00	$ 11,678,267.00	$ 1,599,194.00	$ 1,677,153.25	$9,983,599	$13,355,420							

X
AUTHORIZED SIGNATURE

X
DATE

FLOOD CATASTROPHE LIMIT $500,000

All Values increased for 2023/24 term due to increased construction cost for materials & supply shortages.
Per Dan Owens 12/14/2021: Board approved additional $500,000 building increase- increase added to "Mercer H.S." Building Limit Eff. 01/01/2022

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: Mercer County

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
- If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013).*

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
C1	Publicize hazard info	X			publicly available @ courthouse & city hall	✓
C2	conduct storm spotter training		X		conducted by Princeton Fire Dept	✓
C3	develop county-wide inventory of emergency shelters	X			reviewed annually	✓

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
C4	emergency management will arrange for training on safety audits		X		completed through Sheriff's office	✓
C5	provide training opportunities for local businesses to develop emergency plans		X		completed through district ambulance & fire	✓
C6	Implement NFIP	X			completed for Princeton municipality	✓
C7	obtain FEMA publications make available with local libraries	X			available for viewing at county library	✓
C8	Maintain local library repositories with latest available publications	X			available for viewing at county library	✓
C9	ensure use of best management practices for channel & drainage	X			completed with county road & bridge requirements	✓
C10	coordinate & conduct standalone event about emergency preparedness		X		ongoing coordination w/ district ambulance & fire	✓
C11	emergency management will coordinate with local response agencies	X			ongoing coordination between dispatch services, ambulance & fire districts, and Sheriffs office	✓
C12	structure grant proposals for road/bridge upgrades w/ hazard mitigation concerns		X		grant proposals to be initiated as needed	✓

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
C13	Make local government experts available to property owners	X			State university extension personel are available	✓
C14	Committee for storm water management	X			handled by LEPC committee	✓
C15	Acquire generator		X		ongoing activity for LEPC committee	✓

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer County	
Action or Project		
Action/Project Number:	C-1	
Name of Action or Project:	Publicize the availability of hazard information to real estate agents, builders, developers, and homeowners.	
Mitigation Category:	Prevention Public Education	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		0
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	21
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	31

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

Cheston Easter
1st District Commissioner
LEPC Chairperson
(660) 953-0822

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer County	
Action or Project		
Action/Project Number:	C-2	
Name of Action or Project:	Conduct storm spotter training classes to local emergency personnel and interested members of the public.	
Mitigation Category:	Emergency Services	
STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		0
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	21
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.**	10
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	15
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	36

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

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1st District Commissioner
LEPC Chairperson
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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer County	
Action or Project		
Action/Project Number:	C-3	
Name of Action or Project:	Develop a county-wide inventory of emergency shelters and saferooms.	
Mitigation Category:	Prevention Public Education	
STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		0
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	21
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.**	8
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	13
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	34

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

Chester Easter
1st District Commissioner
LEPC Chairperson
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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	Mercer County
Action or Project	
Action/Project Number:	C-4
Name of Action or Project:	Emergency Management will arrange for training on safety audits and hazard mitigation using state and fed. training resources & grant funding.
Mitigation Category:	Emergency Services

STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	3
A: Does the jurisdiction have the Administrative capacity to execute this action?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	2
E: Will the project have either a neutral or positive impact on the natural Environment?	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	3
STAPLEE SCORE	23

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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	33

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer County	
	Action or Project	
Action/Project Number:	C-5	
Name of Action or Project:	Provide opportunities for training so local businesses are equipped to develop their own emergency plans.	
Mitigation Category:	Emergency Services	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	23
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.**	7
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	7
	MITIGATION EFFECTIVENESS SCORE	14
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	37

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	Mercer County
	Action or Project
Action/Project Number:	C-6
Name of Action or Project:	Implement NFIP
Mitigation Category:	Prevention

STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	3
A: Does the jurisdiction have the Administrative capacity to execute this action?	3
P: Is it Politically acceptable?	2
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	2
E: Will the project have either a neutral or positive impact on the natural Environment?	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	0
STAPLEE SCORE	19

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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	29

☐ High Priority (30+ points)	☒ Medium Priority (25 - 29 points)	☐ Low Priority (<25 points)

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1st District Commissioner
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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer County	
	Action or Project	
Action/Project Number:	C-7	
Name of Action or Project:	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit them with local libraries.	
Mitigation Category:	Education and Outreach	
STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	22
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	32

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	Mercer County
Action or Project	
Action/Project Number:	C-8
Name of Action or Project:	Maintain local library repositories with the latest available publications.
Mitigation Category:	Education and Outreach

STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	3
A: Does the jurisdiction have the Administrative capacity to execute this action?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	3
E: Is it Economically beneficial?	1
E: Will the project have either a neutral or positive impact on the natural Environment?	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	3
STAPLEE SCORE	22

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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	32

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer County	
	Action or Project	
Action/Project Number:	C-9	
Name of Action or Project:	Ensure the use of best management practices for channel and drainage systems.	
Mitigation Category:	Natural Systems Protections	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		2
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	21
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	7
	MITIGATION EFFECTIVENESS SCORE	12
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	33

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer County	
Action or Project		
Action/Project Number:	C-10	
Name of Action or Project:	Coordinate and conduct a standalone event to educate the public about emergency preparedness and early warning systems.	
Mitigation Category:	Emergency Services	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		2
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		1
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		1
	STAPLEE SCORE	18
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	28

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
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1st District Commissioner
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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	Mercer County
Action or Project	
Action/Project Number:	C-11
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.
Mitigation Category:	Emergency Services

STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	**Score**
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	3
A: Does the jurisdiction have the Administrative capacity to execute this action?	3
P: Is it Politically acceptable?	1
L: Is there Legal authority to implement?	1
E: Is it Economically beneficial?	1
E: Will the project have either a neutral or positive impact on the natural Environment?	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	1
STAPLEE SCORE	16

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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	26

☐ **High Priority (30+ points)**	☒ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

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1st District Commissioner
LEPC Chairperson
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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer County	
	Action or Project	
Action/Project Number:	C-12	
Name of Action or Project:	Make local government experts available to property owners to offer hazard audits of vulnerable structures.	
Mitigation Category:	Education and Outreach	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		2
T: Is it Technically feasible and potentially successful?		1
A: Does the jurisdiction have the Administrative capacity to execute this action?		1
P: Is it Politically acceptable?		1
L: Is there Legal authority to implement?		1
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		1
	STAPLEE SCORE	11
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	7
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	21

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☒ **Low Priority (<25 points)**

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Cheston Easter
1st District Commissioner
LEPC Chairperson
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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer County	
	Action or Project	
Action/Project Number:	C-13	
Name of Action or Project:	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.	
Mitigation Category:	Natural Systems Protections	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		2
T: Is it Technically feasible and potentially successful?		1
A: Does the jurisdiction have the Administrative capacity to execute this action?		1
P: Is it Politically acceptable?		1
L: Is there Legal authority to implement?		1
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		2
Will historic structures be saved or protected?		0
Could it be implemented quickly?		1
	STAPLEE SCORE	11
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	21

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☒ **Low Priority (<25 points)**

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1st District Commissioner
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Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	Mercer County
Action or Project	
Action/Project Number:	C-14
Name of Action or Project:	Acquire a generator through a grant for a shelter site.
Mitigation Category:	Structure and Infrastructure Projects

STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	2
A: Does the jurisdiction have the Administrative capacity to execute this action?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	1
E: Is it Economically beneficial?	2
E: Will the project have either a neutral or positive impact on the natural Environment?	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	2
STAPLEE SCORE	19

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.**	10
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	15
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	34

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

Cheston Easter
1st District Commissioner
LEPC Chairperson
(660) 953-0822

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: City of Princeton

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
- If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013).*

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
P1	Adopt ordinance req. saferooms in new public buildings			✓		X
P2	Publicize the availability of hazard info to real estate, builders, homeowners		✓			✓
P3	Develop shelter and safe room inventories		✓			X

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
P4	Invite SEMA to present			✓		X
P5	ensure use of best practices for channel & drainage systems maint.		✓			✓
P6	structure grant proposals to meet Hazard Mitigation concerns		✓			✓
P7	Form committee to assess storm water management plans & facilitate dev. of plans		✓			M
P8	Install warning sirens with automated units & battery back-up		✓			M
P9	continue to participate in NFIP	✓				✓

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Princeton	
Action or Project		
Action/Project Number:	P-1	
Name of Action or Project:	Publicize the availability of hazard information to real estate agents, builders, developers, and home owners.	
Mitigation Category:	Prevention Public Education	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	21
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	31

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Mullet, City Clerk

6607484375

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Princeton	
Action or Project		
Action/Project Number:	P-2	
Name of Action or Project:	Develop individual, community specific shelter and safe room inventories.	
Mitigation Category:	Prevention Public Education	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	22
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.**	10
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	15
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	37

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Jarrett, City Clerk 6607484375

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Princeton	
Action or Project		
Action/Project Number:	P-3	
Name of Action or Project:	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit them w/ libraries.	
Mitigation Category:	Education and Outreach	
STAPLEE Criteria **Evaluation Rating** Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	23
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.**	7
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	7
	MITIGATION EFFECTIVENESS SCORE	14
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	37

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Mullet, City Clerk 6607484375

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Princeton	
Action or Project		
Action/Project Number:	P-4	
Name of Action or Project:	Ensure the use of best management practices for channel and drainage services.	
Mitigation Category:	Natural Systems Protections	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		3
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	24
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	8
	MITIGATION EFFECTIVENESS SCORE	13
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	37

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number) Jewlett, City Clerk
6607484375

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Princeton	
Action or Project		
Action/Project Number:	P-5	
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.	
Mitigation Category:	Emergency Services	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		2
A: Does the jurisdiction have the Administrative capacity to execute this action?		0
P: Is it Politically acceptable?		2
L: Is there Legal authority to implement?		1
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		2
	STAPLEE SCORE	14
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.**	6
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	11
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	26

☐ **High Priority (30+ points)**	☒ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Cindy Mallot, City Clerk 6607484375

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Princeton	
Action or Project		
Action/Project Number:	P-6	
Name of Action or Project:	Make local government experts available to property owners to offer hazard audits of vulnerable structures.	
Mitigation Category:	Structure & Infrastructure Projects	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		2
T: Is it Technically feasible and potentially successful?		1
A: Does the jurisdiction have the Administrative capacity to execute this action?		1
P: Is it Politically acceptable?		2
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural Environment?		2
Will historic structures be saved or protected?		0
Could it be implemented quickly?		1
	STAPLEE SCORE	12
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	8
	MITIGATION EFFECTIVENESS SCORE	13
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	25

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Jennett, City Clerk 6607484375

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Princeton	
Action or Project		
Action/Project Number:	P-7	
Name of Action or Project:	Form committee to assess storm water management plans and facilitate development of such plans where there is a need.	
Mitigation Category:	Natural Systems Protection	
STAPLEE Criteria **Evaluation Rating** Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		2
A: Does the jurisdiction have the Administrative capacity to execute this action?		1
P: Is it Politically acceptable?		1
L: Is there Legal authority to implement?		1
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		2
	STAPLEE SCORE	14
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	24

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☒ **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Chris Mallot, City Clerk 6607484375

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Princeton	
Action or Project		
Action/Project Number:	P-8	
Name of Action or Project:	Install warning sirens with automated units that have battery back-up.	
Mitigation Category:	Prevention Public Education	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		2
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		2
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		2
	STAPLEE SCORE	20
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.**	10
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	15
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	35

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Jewlett, City Clerk 6607484375

STAPLEE Worksheet		
Name of Jurisdiction:	City of Princeton	
Action or Project		
Action/Project Number:	P-9	
Name of Action or Project:	Adopt FIRM and update or adopt floodplain ordinance to meet all NFIP Requirements	
Mitigation Category:	Prevention	
STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it **Socially** Acceptable		3
T: Is it **Technically** feasible and potentially successful?		3
A: Does the jurisdiction have the **Administrative** capacity to execute this action?		3
P: Is it **Politically** acceptable?		2
L: Is there **Legal** authority to implement?		3
E: Is it **Economically** beneficial?		1
E: Will the project have either a neutral or positive impact on the natural **Environment?**		3
Will historic structures be saved or protected?		1
Could it be implemented quickly?		2
	STAPLEE SCORE	21
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.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	7
	MITIGATION EFFECTIVENESS SCORE	12
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	33

☒ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

Jewellett, City Clerk
6607484375

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: City of Mercer

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
- If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
M1	Adopt ordinance requiring construction of saferooms with new public buildings			X	lack of political support	X
M2	Publicize the availability of hazard information to real estate, builders, owners		X		Periodically send info in utility bills and post on Facebook	✓
M3	Develop safe room inventories		X		lack of funds to create position Will work with County.	M

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
M4	Emergency Management will coordinate with school boards & city councils			X	Emergency Management did not follow through on setting up presentations	X
M5	Ensure the use of best practices for channel and drainage system maint.		X		This is done when working on roads	✓
M6	Structure grant proposals to meet Haz. Mit. concerns (via TAC and MoDOT)		X			✓
M7	Form committee to assess storm water management		X			✓
M8	Install warning siren		X		siren was installed, NO battery backup	✓

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Mercer	
	Action or Project	
Action/Project Number:	M-1	
Name of Action or Project:	Publicize the availability of hazard information to real estate agents, builders, developers, and homeowners	
Mitigation Category:	prevention public education	
STAPLEE Criteria **Evaluation Rating** Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		2
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	22
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	32

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number) [signature] - City Clerk

1660 382 4210

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Mercer	
	Action or Project	
Action/Project Number:	M-2	
Name of Action or Project:	Develop individual, community specific shelter and safe room inventories.	
Mitigation Category:	prevention public education	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		2
Will historic structures be saved or protected?		0
Could it be implemented quickly?		2
	STAPLEE SCORE	21
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.**	8
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	13
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	34

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

Jennie - City Clerk

1660 382 4210

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Mercer	
Action or Project		
Action/Project Number:	M-3	
Name of Action or Project:	Obtain free publications from FEMA, NWS, USGS, and other agencies and deposit them with local libraries.	
Mitigation Category:	prevention public education	

STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it **Socially** Acceptable	3
T: Is it **Technically** feasible and potentially successful?	3
A: Does the jurisdiction have the **Administrative** capacity to execute this action?	3
P: Is it **Politically** acceptable?	3
L: Is there **Legal** authority to implement?	3
E: Is it **Economically** beneficial?	2
E: Will the project have either a neutral or positive impact on the natural Environment?	2
Will historic structures be saved or protected?	0
Could it be implemented quickly?	3
STAPLEE SCORE	22

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.	8
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
	MITIGATION EFFECTIVENESS SCORE	13
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	35

☐ High Priority (30+ points)	☐ Medium Priority (25 - 29 points)	☐ Low Priority (<25 points)

Completed by
(Name, Title, Phone Number) [signature] - City Clerk

1660 382 4210

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Mercer	
	Action or Project	
Action/Project Number:	M-4	
Name of Action or Project:	Ensure the use of best management practices for channel drainage systems.	
Mitigation Category:	prevention public education	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		2
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	22
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	32

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

Jennifer - City Clerk

1660 382 4210

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	City of Mercer
Action or Project	
Action/Project Number:	M-5
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan exercises.
Mitigation Category:	emergency services

STAPLEE Criteria - Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it **Socially** Acceptable	3
T: Is it **Technically** feasible and potentially successful?	2
A: Does the jurisdiction have the **Administrative** capacity to execute this action?	2
P: Is it **Politically** acceptable?	2
L: Is there **Legal** authority to implement?	2
E: Is it **Economically** beneficial?	1
E: Will the project have either a neutral or positive impact on the natural **Environment?**	2
Will historic structures be saved or protected?	0
Could it be implemented quickly?	1
STAPLEE SCORE	15

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.	5
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	25

☐ High Priority (30+ points)	☐ Medium Priority (25 - 29 points)	☐ Low Priority (<25 points)

Completed by
(Name, Title, Phone Number)

Jennifer - City Clerk

360 382 4210

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Mercer	
	Action or Project	
Action/Project Number:	M-6	
Name of Action or Project:	Make local government experts available to property owners to offer hazard audits of vulnerable structures.	
Mitigation Category:	structure & infrastructure projects	

STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**	**Score**
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	1
A: Does the jurisdiction have the Administrative capacity to execute this action?	1
P: Is it Politically acceptable?	1
L: Is there Legal authority to implement?	2
E: Is it Economically beneficial?	1
E: Will the project have either a neutral or positive impact on the natural Environment?	2
Will historic structures be saved or protected?	0
Could it be implemented quickly?	1
STAPLEE SCORE	12

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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	22

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

Jennifer - City Clerk

1260 382 4210

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Mercer	
	Action or Project	
Action/Project Number:	M-7	
Name of Action or Project:	Form committee to assess storm water management plans and facilities	
Mitigation Category:	natural systems protection	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		1
A: Does the jurisdiction have the Administrative capacity to execute this action?		1
P: Is it Politically acceptable?		1
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural Environment?		2
Will historic structures be saved or protected?		0
Could it be implemented quickly?		2
	STAPLEE SCORE	13
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	23

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

[signature] - City Clerk

1060 382 4210

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Mercer	
Action or Project		
Action/Project Number:	M-8	
Name of Action or Project:	Obtain equipment to clear debris, grade roads, remove snow	
Mitigation Category:	Emergency Services	

STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**	**Score**
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	3
A: Does the jurisdiction have the Administrative capacity to execute this action?	3
P: Is it Politically acceptable?	2
L: Is there Legal authority to implement?	2
E: Is it Economically beneficial?	2
E: Will the project have either a neutral or positive impact on the natural Environment?	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	2
STAPLEE SCORE	20

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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	30

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number)

Jennifer - City Clerk

1060 382 4210

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	City of Mercer	
Action or Project		
Action/Project Number:	M-9	
Name of Action or Project:	Install warning sirens with automated units that have battery back-up.	
Mitigation Category:	Prevention Public Education	
STAPLEE Criteria **Evaluation Rating** Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		1
E: Will the project have either a neutral or positive impact on the natural Environment?		1
Will historic structures be saved or protected?		0
Could it be implemented quickly?		2
	STAPLEE SCORE	18
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.**	9
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	14
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	32

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number) [signature] City Clerk

360 382 4210

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: Princeton R-V

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
- If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013).*

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
PS1	Develop a shelter plan to address improving existing shelter & const. new Bldgs		✓			
PS2	Implement Red Cross "Pillowcase Program"	✓				
PS3	"Great American Shakeup" Drill		✓			M

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
PS4	Invite SEMA mitigation specialists to present information			✓		

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Princeton R-V Schools	
Action or Project		
Action/Project Number:	PS-1	
Name of Action or Project:	Obtain free publications from FEMA, NWS, USGS, and other federal and state agencies and deposit them with local libraries.	
Mitigation Category:	Education & Outreach	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		2
P: Is it Politically acceptable?		2
L: Is there Legal authority to implement?		0
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		2
Could it be implemented quickly?		3
	STAPLEE SCORE	20
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	10
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	30

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number) Jerry Brewer

Superintendent, (660) 748-3211

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	Princeton R-V Schools
Action or Project	
Action/Project Number:	PS-2
Name of Action or Project:	coordinate and conduct a standalone event to educate the public about emergency preparedness and early warning systems
Mitigation Category:	Emergency Services

STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	2
A: Does the jurisdiction have the Administrative capacity to execute this action?	2
P: Is it Politically acceptable?	2
L: Is there Legal authority to implement?	0
E: Is it Economically beneficial?	3
E: Will the project have either a neutral or positive impact on the natural Environment?	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	1
STAPLEE SCORE	16

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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
MITIGATION EFFECTIVENESS SCORE		10
TOTAL SCORE (STAPLEE + Mitigation Effectiveness)		26

☐ High Priority (30+ points)	☒ Medium Priority (25 - 29 points)	☐ Low Priority (<25 points)

Completed by
(Name, Title, Phone Number)

Jerry Grewer
Superintendent, (660) 748-3211

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	Princeton R-V Schools
Action or Project	
Action/Project Number:	PS-3
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.
Mitigation Category:	Emergency Services

STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	2
A: Does the jurisdiction have the Administrative capacity to execute this action?	2
P: Is it Politically acceptable?	2
L: Is there Legal authority to implement?	0
E: Is it Economically beneficial?	1
E: Will the project have either a neutral or positive impact on the natural Environment?	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	2
STAPLEE SCORE	15

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.**	7
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	12
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	27

☐ High Priority (30+ points)	☒ Medium Priority (25 - 29 points)	☐ Low Priority (<25 points)

Completed by
(Name, Title, Phone Number) Jerry Gardner

Superintendent, (660) 748-3211

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Princeton R-V Schools	
Action or Project		
Action/Project Number:	PS-4	
Name of Action or Project:	Construct community safe-room on Princeton R-V's campus	
Mitigation Category:	Structure and Infrastructure Projects	
STAPLEE Criteria	**Evaluation Rating** Definitely YES = 3, Maybe YES = 2, Probably NO = 1, Definitely NO = 0	**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		2
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		1
	STAPLEE SCORE	20
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.**	10
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	15
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	35

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Jerry Gardner

Superintendent, (660) 748-3211

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	Princeton R-V Schools
Action or Project	
Action/Project Number:	PS-5
Name of Action or Project:	Participate annually in disaster drills with all students and staff
Mitigation Category:	Prevention Public Education

STAPLEE Criteria Evaluation Rating Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	Score
S: Is it Socially Acceptable	3
T: Is it Technically feasible and potentially successful?	3
A: Does the jurisdiction have the Administrative capacity to execute this action?	3
P: Is it Politically acceptable?	3
L: Is there Legal authority to implement?	0
E: Is it Economically beneficial?	2
E: Will the project have either a neutral or positive impact on the natural Environment?	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	3
STAPLEE SCORE	20

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.**	10
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	15
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	35

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number) Jerry Gardner

Superintendent, 660-748-3211

ASSESSMENT OF PREVIOUSLY PROPOSED ACTIONS

Jurisdiction: North Mercer R-111

The contractor/plan development facilitator has provided a list of actions proposed in the previously approved plan for each jurisdiction. Use the worksheet below to evaluate whether each action is still current, feasible, desirable, and/or creates benefit that outweighs the cost.

The worksheet should include information on the status of the action and progress made in implementation, if any. This includes:

- For **completed actions** provide a description of the implementation process. This may be a success story you would like to publicize in your community.
- Some of the actions might have been **ongoing** in nature, such public information and education programs. When this is the case, indicate what activity has occurred during the previous five years, and indicate if this program is still viable enough that it should be carried on into the future.
- If **no progress** has been made in the implementation of a given action, discuss why. Note that implementation is not a requirement. However, if no progress has been made, perhaps this is an action that would be appropriate to delete in the updated plan.

During review of the previously approved actions, consider whether any new actions should be proposed. Perhaps damages from a recent hazard event have indicated the need for new approaches to protect property and life. Review the problem statements from the updated plan for ideas. Also review the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*.

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
MS1	Develop a shelter plan to address improving existing shelter & construct new			X	Funding	M
MS2	Implement the Red Cross "pillowcase program"	X				X
MS3	participate in "The Great American Shakeup" Earthquake drill		X			M, X

#	Action	Status			Description of Implementation Activities or Reasons for Lack of Progress	Keep – ✓ Delete – X Modify – M
		Complete	Ongoing	No Progress		
MS4	Invite SEMA mitigation specialists to present information			X	Lack of local interest.	X

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet	
Name of Jurisdiction:	Mercer R-III School Dist.
Action or Project	
Action/Project Number:	MS-1
Name of Action or Project:	Obtain free publication from FEMA, NWS, USGS, and other federal agencies and deposit them with local libraries.
Mitigation Category:	Education & Outreach

STAPLEE Criteria **Evaluation Rating** Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0	**Score**
S: Is it **Socially** Acceptable	3
T: Is it **Technically** feasible and potentially successful?	3
A: Does the jurisdiction have the **Administrative** capacity to execute this action?	2
P: Is it **Politically** acceptable?	2
L: Is there **Legal** authority to implement?	0
E: Is it **Economically** beneficial?	2
E: Will the project have either a neutral or positive impact on the natural **Environment?**	3
Will historic structures be saved or protected?	0
Could it be implemented quickly?	3
STAPLEE SCORE	18

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.	8
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	5
	MITIGATION EFFECTIVENESS SCORE	13
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	31

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Wade Hall North Mercer R-III

Superintendent (660)382-4214

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer R-III School District	
Action or Project		
Action/Project Number:	MS-2	
Name of Action or Project:	Coordinate and conduct a standalone event to educate the public about emergency preparedness and early warning systems.	
Mitigation Category:	Emergency Services	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3 Maybe YES = 2** **Probably NO = 1 Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		2
A: Does the jurisdiction have the Administrative capacity to execute this action?		2
P: Is it Politically acceptable?		2
L: Is there Legal authority to implement?		0
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		1
Could it be implemented quickly?		3
STAPLEE SCORE		18
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.**	6
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
MITIGATION EFFECTIVENESS SCORE		11
TOTAL SCORE (STAPLEE + Mitigation Effectiveness)		29

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Wade Hall North Mercer R-III

Superintendent (660)382-4214

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer R-III School District	
Action or Project		
Action/Project Number:	MS-3	
Name of Action or Project:	Emergency Management will coordinate with local response agencies and facilities to plan and execute tabletop and full-scale exercises.	
Mitigation Category:		
STAPLEE Criteria **Evaluation Rating** Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		2
A: Does the jurisdiction have the Administrative capacity to execute this action?		2
P: Is it Politically acceptable?		2
L: Is there Legal authority to implement?		0
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		2
STAPLEE SCORE		16
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.**	5
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
MITIGATION EFFECTIVENESS SCORE		10
TOTAL SCORE (STAPLEE + Mitigation Effectiveness)		26

☐ **High Priority (30+ points)**	☒ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Wade Hall North Mercer R-III

Superintendent (660)382-4214

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer R-III School District	
Action or Project		
Action/Project Number:	MS-4	
Name of Action or Project:	Construct community safe-room on North Mercer R-III's campus.	
Mitigation Category:	Structure & Infrastructure Projects	
STAPLEE Criteria **Evaluation Rating** Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		2
E: Is it Economically beneficial?		2
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		1
STAPLEE SCORE		20
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.**	10
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
MITIGATION EFFECTIVENESS SCORE		15
TOTAL SCORE (STAPLEE + Mitigation Effectiveness)		35

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Wade Hall North Mercer R-III

Superintendent (660)382-4214

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:	Mercer R-III School District	
Action or Project		
Action/Project Number:	MS-5	
Name of Action or Project:	Participate annually in hazard drills with all students & staff.	
Mitigation Category:	Prevention, Public Education	
STAPLEE Criteria **Evaluation Rating** **Definitely YES = 3** **Maybe YES = 2** **Probably NO = 1** **Definitely NO = 0**		**Score**
S: Is it Socially Acceptable		3
T: Is it Technically feasible and potentially successful?		3
A: Does the jurisdiction have the Administrative capacity to execute this action?		3
P: Is it Politically acceptable?		3
L: Is there Legal authority to implement?		3
E: Is it Economically beneficial?		0
E: Will the project have either a neutral or positive impact on the natural Environment?		3
Will historic structures be saved or protected?		0
Could it be implemented quickly?		3
	STAPLEE SCORE	21
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.**	10
Will the implemented action result in a reduction of disaster damages?	**Assign from 5-10 points based on the relative reduction of disaster damages.**	5
	MITIGATION EFFECTIVENESS SCORE	15
	TOTAL SCORE (STAPLEE + Mitigation Effectiveness)	36

[X] **High Priority (30+ points)**	[ ] **Medium Priority (25 - 29 points)**	[ ] **Low Priority (<25 points)**

Completed by (Name, Title, Phone Number) Wade Hall North Mercer R-III

Superintendent (660)382-4214

Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

Natural Hazard Information

First, we would like to know about your experiences with natural hazards.

1. During the past five years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster?
   - ☒ Yes
   - ☐ No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   - ☐ Drought
   - ☐ Dust Storm
   - ☐ Earthquake
   - ☐ Flood
   - ☐ Landslide/debris flow
   - ☐ Wildfire
   - ☒ Windstorm
   - ☐ Severe Winter Storm
   - ☐ Other (specify): _____

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought	X				
Dust Storm			X		
Earthquake					X
Extreme Heat		X			
Flood	X				
Landslide					X
Wildfire				X	
Windstorm	X				
Severe winter storm	X				
Other:					

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?

- ☐ Yes
- ☒ No ***(if NO Skep to Question 5)***

If "YES", how recently?

- ☐ Within the last 6 months
- ☐ Between 6 and 12 months
- ☐ Between 1 and 2 years
- ☐ Between 2 and 5 years
- ☐ 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***

- ☐ News Media
- ☐ Government Agency
- ☐ Insurance agent or company
- ☐ Utility company
- ☐ University or research institution
- ☐ Neighbor/friend/family member
- ☐ Elected official
- ☐ American Red Cross
- ☐ Other non-profit organization
- ☐ Social media (e.g., Facebook)
- ☐ Not sure
- ☐ Other: _____

5. Whom would you <u>most trust</u> to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

- ☐ New media
- ☒ Government agency
- ☒ Insurance agent or company
- ☒ Utility company
- ☐ University or research institution
- ☐ Neighbor/friend/family member
- ☐ Elected official
- ☐ American Red Cross
- ☐ Other non-profit organization
- ☐ Social media (e.g., Facebook)
- ☐ Not sure
- ☐ Other: _____

6. What is the <u>most effective</u> way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

Newspapers:

- ☒ Newspaper stories
- ☐ Newspaper ads

Television

- ☒ Television news
- ☐ Television ads

Radio:

- ☒ Radio news
- ☐ Radio ads

Internet:

- ☐ Email newsletters
- ☒ Online news outlets
- ☐ Social media (e.g., Facebook)

Other methods:

- ☐ Schools
- ☒ Outdoor advertisements (billboards, etc.)
- ☐ Books
- ☒ Mail
- ☐ Fire Department/Rescue
- ☒ Fact sheet/brochure
- ☐ Chamber of Commerce
- ☒ Public workshops/meetings
- ☐ Magazine
- ☐ University or research
- ☐ Other:

_____

7. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?
   - ☒ Yes
   - ☐ No
8. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?
   - ☒ Yes
   - ☐ No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

9. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	Potential Natural Hazard Impact	Order of Vulnerability
Human	Loss of life and/or injuries	3
Economic	Business closures and/or job losses	5
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	2
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	6
Environmental	Damage or loss of forests, rangeland, waterways, etc.	1
Governance	Ability to maintain order and/or provide public amenities and services	4

10. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Elder-care facilities	X				
Schools (K-12)	X				
Hospitals	X				
Major bridges	X				
Fire/Police	X				

Community Assets (cont.)	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Museums/Historic Buildings			X		
Small Businesses		X			
City Hall	X				
Courthouse	X				
Parks		X			
Other: _____					
Other: _____					
Other: _____					
Other: _____					
Other: _____					

11. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk	X					
I support a non-regulatory approach to reducing risk				X		
I support a mix of both regulatory and non-regulatory approaches to reducing risk		X				
I support policies to prohibit development in areas subject to natural hazards	X					
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards		X				
I support the use of local tax dollars to reduce risks and losses from natural disasters	X					
I support protecting historical and cultural structures		X				
I would be willing to make my home more disaster resilient		X				
I support steps to safeguard the local economy following a disaster event	X					
I support improving the disaster preparedness of local schools	X					
I support a local inventory of at-risk buildings and infrastructure	X					
I support the disclosure of natural hazard risks during real estate transactions	X					

12. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important
Protecting private property			X		
Protecting critical facilities (transportation networks, hospitals, fire stations)	X				
Preventing development in hazard prone areas	X				
Enhancing the function of natural features (e.g., streams, wetlands)	X				
Protecting historical and cultural landmarks		X			
Protecting and reducing damage to utilities	X				
Strengthening emergency services (e.g., police, fire, ambulance)	X				
Disclosing natural hazard risks during real estate transactions	X				
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	X				

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

13. In the following, please check those activities that you <u>have done</u> in your household, <u>plan to do</u> in the near future, <u>have not done</u>, or are <u>unable to do</u>. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?	X			
Talked with members in your household about what to do in case of a natural disaster or emergency?	X			
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?			X	
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?	X			
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?			X	
Prepared your home by having smoke detectors on each level of the house?	X			
Discussed or created a utility shutoff procedure in the event of a natural disaster?			X	

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

14. Please indicate your age: 52
15. Gender:
    - ☐ Male
    - ☒ Female

16. Please indicate your level of education:
    - ☐ Highschool graduate/GED
    - ☐ Some college/trade school
    - ☒ College degree
    - ☐ Postgraduate degree
    - ☐ Other (Please specify): _____

17. What is your total household income?
    - ☐ Less than $10,000
    - ☐ $10,000-$29,999
    - ☐ $30,000-$59,999
    - ☒ $60,000-$79,999
    - ☐ $80,000-$99,999
    - ☐ $100,000-$149,999
    - ☐ More than $150,000

18. Zip Code (optional): 64673

19. Please specify your race:
    - ☐ American Indian or Alaska Native
    - ☐ Asian
    - ☐ Black or African American
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☒ White

20. Please specify your ethnicity:
    - ☐ Hispanic or Latino
    - ☒ Not Hispanic or Latino

21. How long have you lived in Mercer County?
    - ☐ Less than one year
    - ☐ 1-5 years
    - ☐ 5-9 years
    - ☐ 10-19 years
    - ☒ 20 years or more

22. Do you own or rent your home?
    - ☐ Own
    - ☒ Rent

23. Please feel free to provide any additional comments in the space provided:

Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

Natural Hazard Information

First, we would like to know about your experiences with natural hazards.

1. During the past five years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster?
   - ☐ Yes
   - ☒ No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   - ☐ Drought
   - ☐ Dust Storm
   - ☐ Earthquake
   - ☐ Flood
   - ☐ Landslide/debris flow
   - ☐ Wildfire
   - ☐ Windstorm
   - ☐ Severe Winter Storm
   - ☐ Other (specify): _____

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought		✓			
Dust Storm					✓
Earthquake					✓
Extreme Heat		✓			
Flood					✓
Landslide					✓
Wildfire					✓
Windstorm		✓			
Severe winter storm		✓			
Other:					

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?
   - ☐ Yes
   - ☑ No ***(if NO Skep to Question 5)***

   If "YES", how recently?
   - ☐ Within the last 6 months
   - ☐ Between 6 and 12 months
   - ☐ Between 1 and 2 years
   - ☐ Between 2 and 5 years
   - ☐ 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***
   - ☐ News Media
   - ☐ Government Agency
   - ☐ Insurance agent or company
   - ☐ Utility company
   - ☐ University or research institution
   - ☐ Neighbor/friend/family member
   - ☐ Elected official
   - ☐ American Red Cross
   - ☐ Other non-profit organization
   - ☐ Social media (e.g., Facebook)
   - ☐ Not sure
   - ☐ Other: _____

5. Whom would you <u>most trust</u> to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***
   - ☐ New media
   - ☐ Government agency
   - ☐ Insurance agent or company
   - ☐ Utility company
   - ☐ University or research institution
   - ☐ Neighbor/friend/family member
   - ☐ Elected official
   - ☐ American Red Cross
   - ☐ Other non-profit organization
   - ☐ Social media (e.g., Facebook)
   - ☑ Not sure
   - ☐ Other: _____

6. What is the <u>most effective</u> way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

   Newspapers:
   - ☐ Newspaper stories
   - ☐ Newspaper ads

   Television
   - ☑ Television news
   - ☐ Television ads

   Radio:
   - ☑ Radio news
   - ☐ Radio ads

   Internet:
   - ☐ Email newsletters
   - ☑ Online news outlets
   - ☐ Social media (e.g., Facebook)

   Other methods:
   - ☐ Schools
   - ☐ Outdoor advertisements (billboards, etc.)
   - ☐ Books
   - ☐ Mail
   - ☐ Fire Department/Rescue
   - ☐ Fact sheet/brochure
   - ☐ Chamber of Commerce
   - ☐ Public workshops/meetings
   - ☐ Magazine
   - ☐ University or research
   - ☐ Other: _____

7. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?
   - ☐ Yes
   - ☑ No
8. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?
   - ☑ Yes
   - ☐ No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

9. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	**Potential Natural Hazard Impact**	**Order of Vulnerability**
Human	Loss of life and/or injuries	1
Economic	Business closures and/or job losses	2
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	3
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	5
Environmental	Damage or loss of forests, rangeland, waterways, etc.	6
Governance	Ability to maintain order and/or provide public amenities and services	4

10. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Elder-care facilities		✓			
Schools (K-12)		✓			
Hospitals	✓				
Major bridges	✓				
Fire/Police	✓				

Community Assets (cont.)	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Museums/Historic Buildings		✓			
Small Businesses	✓				
City Hall		✓			
Courthouse		✓			
Parks		✓			
Other: _____					
Other: _____					
Other: _____					
Other: _____					
Other: _____					

11. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk		✓				
I support a non-regulatory approach to reducing risk		✓				
I support a mix of both regulatory and non-regulatory approaches to reducing risk		✓				
I support policies to prohibit development in areas subject to natural hazards		✓				
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards			✓			
I support the use of local tax dollars to reduce risks and losses from natural disasters			✓			
I support protecting historical and cultural structures		✓				
I would be willing to make my home more disaster resilient			✓			
I support steps to safeguard the local economy following a disaster event		✓				
I support improving the disaster preparedness of local schools		✓				
I support a local inventory of at-risk buildings and infrastructure		✓				
I support the disclosure of natural hazard risks during real estate transactions		✓				

12. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important
Protecting private property			✓		
Protecting critical facilities (transportation networks, hospitals, fire stations)	✓				
Preventing development in hazard prone areas			✓		
Enhancing the function of natural features (e.g., streams, wetlands)		✓			
Protecting historical and cultural landmarks		✓			
Protecting and reducing damage to utilities	✓				
Strengthening emergency services (e.g., police, fire, ambulance)	✓				
Disclosing natural hazard risks during real estate transactions			✓		
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	✓				

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

13. In the following, please check those activities that you <u>have done</u> in your household, <u>plan to do</u> in the near future, <u>have not done</u>, or are <u>unable to do</u>. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?			✓	
Talked with members in your household about what to do in case of a natural disaster or emergency?			✓	
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?			✓	
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?			✓	
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	✓			
Prepared your home by having smoke detectors on each level of the house?	✓			
Discussed or created a utility shutoff procedure in the event of a natural disaster?			✓	

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

14. Please indicate your age: 64
15. Gender:
    - ☐ Male
    - ☒ Female

16. Please indicate your level of education:
    - ☐ Highschool graduate/GED
    - ☐ Some college/trade school
    - ☐ College degree
    - ☒ Postgraduate degree
    - ☐ Other (Please specify): _____

17. What is your total household income?
    - ☐ Less than $10,000
    - ☐ $10,000-$29,999
    - ☐ $30,000-$59,999
    - ☒ $60,000-$79,999
    - ☐ $80,000-$99,999
    - ☐ $100,000-$149,999
    - ☐ More than $150,000

18. Zip Code (optional): _____

19. Please specify your race:
    - ☐ American Indian or Alaska Native
    - ☐ Asian
    - ☐ Black or African American
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☒ White

20. Please specify your ethnicity:
    - ☐ Hispanic or Latino
    - ☒ Not Hispanic or Latino

21. How long have you lived in Mercer County?
    - ☐ Less than one year
    - ☒ 1-5 years
    - ☐ 5-9 years
    - ☐ 10-19 years
    - ☐ 20 years or more

22. Do you own or rent your home?
    - ☐ Own
    - ☒ Rent

23. Please feel free to provide any additional comments in the space provided:

Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

Natural Hazard Information

First, we would like to know about your experiences with natural hazards.

1. During the past five years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster?
   - Yes
   - No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   - Drought
   - Dust Storm
   - Earthquake
   - Flood
   - Landslide/debris flow
   - Wildfire
   - Windstorm
   - Severe Winter Storm
   - Other (specify): _____

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought		✓			
Dust Storm				✓	
Earthquake					✓
Extreme Heat		✓			
Flood			✓		

Landslide
Wildfire
Windstorm
Severe winter storm
Other:

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?
   - Yes
   - No ***(if NO Skep to Question 5)***

   If "YES", how recently?
   - Within the last 6 months
   - Between 6 and 12 months
   - Between 1 and 2 years
   - Between 2 and 5 years
   - 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***
   -
   - News Media
   - Government Agency
   - Insurance agent or company
   - Utility company
   - University or research institution
   - Neighbor/friend/family member
   - Elected official
   - American Red Cross
   - Other non-profit organization
   - Social media (e.g., Facebook)
   - Not sure
   - Other: friends

5. Whom would you most trust to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***
   -
   - New media
   - Government agency
   - Insurance agent or company
   - Utility company
   - University or research institution
   - Neighbor/friend/family member
   - Elected official
   - American Red Cross
   - Other non-profit organization
   - Social media (e.g., Facebook)
   - Not sure
   - Other: _____

6. What is the most effective way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

Newspapers:

- Newspaper stories
- Newspaper ads

Television

- Television news
- Television ads

Radio:

- Radio news
- Radio ads

Internet:

- Email newsletters
- Online news outlets
- Social media (e.g., Facebook)

Other methods:

- Schools
- Outdoor advertisements (billboards, etc.)
- Books
- Mail
- Fire Department/Rescue
- Fact sheet/brochure
- Chamber of Commerce
- Public workshops/meetings
- Magazine
- University or research
- Other: _____

7.

8. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?
   - Yes
   - No

9. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?
   - Yes
   - No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic

components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

10. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	**Potential Natural Hazard Impact**	**Order of Vulnerability**
Human	Loss of life and/or injuries	3
Economic	Business closures and/or job losses	2
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	1
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	6
Environmental	Damage or loss of forests, rangeland, waterways, etc.	4
Governance	Ability to maintain order and/or provide public amenities and services	5

11. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Elder-care facilities	✓				
Schools (K-12)	✓				
Hospitals	✓				
Major bridges	✓				
Fire/Police	✓				
Community Assets (cont.)	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Museums/Historic Buildings		✓			
Small Businesses	✓				
City Hall	✓				
Courthouse	✓				
Parks	✓				
Other: _____					
Other: _____					

Other: _____

Other: _____

Other: _____

12. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk		✓				
I support a non-regulatory approach to reducing risk		✓				
I support a mix of both regulatory and non-regulatory approaches to reducing risk		✓				
I support policies to prohibit development in areas subject to natural hazards		✓				
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards				✓		
I support the use of local tax dollars to reduce risks and losses from natural disasters			✓			
I support protecting historical and cultural structures		✓				
I would be willing to make my home more disaster resilient			✓			
I support steps to safeguard the local economy following a disaster event		✓				
I support improving the disaster preparedness of local schools		✓				
I support a local inventory of at-risk buildings and infrastructure		✓				
I support the disclosure of natural hazard risks during real estate transactions		✓				

13. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important

Protecting private property	✓
Protecting critical facilities (transportation networks, hospitals, fire stations)	✓
Preventing development in hazard prone areas	✓
Enhancing the function of natural features (e.g., streams, wetlands)	✓
Protecting historical and cultural landmarks	✓
Protecting and reducing damage to utilities	✓
Strengthening emergency services (e.g., police, fire, ambulance)	✓
Disclosing natural hazard risks during real estate transactions	✓
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	✓

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

14. In the following, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?			✓	
Talked with members in your household about what to do in case of a natural disaster or emergency?	✓			
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?		✓		
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?			✓	
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	✓			
Prepared your home by having smoke detectors on each level of the house?	✓			
Discussed or created a utility shutoff procedure in the event of a natural disaster?			✓	

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

15. Please indicate your age: 44
16. Gender:
    - Male
    - Female

17. Please indicate your level of education:
    - Highschool graduate/GED
    - Some college/trade school
    - College degree
    - Postgraduate degree
    - Other (Please specify): _____

18. What is your total household income?
    - Less than $10,000
    - $10,000-$29,999
    - $30,000-$59,999
    - $60,000-$79,999
    - $80,000-$99,999
    - $100,000-$149,999
    - More than $150,000

19. Zip Code (optional): 64661

20. Please specify your race:
    - American Indian or Alaska Native
    - Asian
    - Black or African American
    - Native Hawaiian or Other Pacific Islander
    - White

21. Please specify your ethnicity:
    - Hispanic or Latino
    - Not Hispanic or Latino

22. How long have you lived in Mercer County?
    - Less than one year
    - 1-5 years
    - 5-9 years
    - 10-19 years
    - 20 years or more

23. Do you own or rent your home?
    - Own
    - Rent

24. Please feel free to provide any additional comments in the space provided:

Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

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1. During the past five years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster?
   - Yes
   - No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***
   -
   - Drought
   - Dust Storm
   - Earthquake
   - Flood
   - Landslide/debris flow
   - Wildfire
   - Windstorm
   - Severe Winter Storm
   - Other (specify): Tornado

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought					
Dust Storm					
Earthquake					
Extreme Heat					
Flood					

Landslide
Wildfire
Windstorm
Severe winter storm
Other:

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?
   - Yes
   - No ***(if NO Skep to Question 5)***

   If "YES", how recently?
   - Within the last 6 months
   - Between 6 and 12 months
   - Between 1 and 2 years
   - Between 2 and 5 years
   - 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***
   -
   - News Media
   - Government Agency
   - Insurance agent or company
   - Utility company
   - University or research institution
   - Neighbor/friend/family member
   - Elected official
   - American Red Cross
   - Other non-profit organization
   - Social media (e.g., Facebook)
   - Not sure
   - Other: _____

5. Whom would you most trust to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***
   -
   - New media
   - Government agency
   - Insurance agent or company
   - Utility company
   - University or research institution
   - Neighbor/friend/family member
   - Elected official
   - American Red Cross
   - Other non-profit organization
   - Social media (e.g., Facebook)
   - Not sure
   - Other: _____

6. What is the most effective way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

Newspapers:

- Newspaper stories
- Newspaper ads

Television

- Television news
- Television ads

Radio:

- Radio news
- Radio ads

Internet:

- Email newsletters
- Online news outlets
- Social media (e.g., Facebook)

Other methods:

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- Outdoor advertisements (billboards, etc.)
- Books
- Mail
- Fire Department/Rescue
- Fact sheet/brochure
- Chamber of Commerce
- Public workshops/meetings
- Magazine
- University or research
- Other: _____

7.

8. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?

- Yes
- No

9. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?

- Yes
- No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic

components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

10. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	**Potential Natural Hazard Impact**	**Order of Vulnerability**
Human	Loss of life and/or injuries	4
Economic	Business closures and/or job losses	1
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	3
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	6
Environmental	Damage or loss of forests, rangeland, waterways, etc.	5
Governance	Ability to maintain order and/or provide public amenities and services	2

11. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Elder-care facilities	✓				
Schools (K-12)	✓				
Hospitals	✓				
Major bridges	✓				
Fire/Police	✓				
Community Assets (cont.)	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Museums/Historic Buildings		✓			
Small Businesses		✓			
City Hall		✓			
Courthouse		✓			
Parks		✓			
Other: _____		✓			
Other: _____					

Other: _____

Other: _____

Other: _____

12. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk	✓		✓			
I support a non-regulatory approach to reducing risk			✓			
I support a mix of both regulatory and non-regulatory approaches to reducing risk		✓				
I support policies to prohibit development in areas subject to natural hazards			✓			
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards		✓				
I support the use of local tax dollars to reduce risks and losses from natural disasters		✓				
I support protecting historical and cultural structures		✓				
I would be willing to make my home more disaster resilient		✓				
I support steps to safeguard the local economy following a disaster event		✓				
I support improving the disaster preparedness of local schools		✓				
I support a local inventory of at-risk buildings and infrastructure		✓				
I support the disclosure of natural hazard risks during real estate transactions		✓				

13. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important

Protecting private property	✓
Protecting critical facilities (transportation networks, hospitals, fire stations)	✓
Preventing development in hazard prone areas	✓
Enhancing the function of natural features (e.g., streams, wetlands)	✓
Protecting historical and cultural landmarks	✓
Protecting and reducing damage to utilities	✓
Strengthening emergency services (e.g., police, fire, ambulance)	✓
Disclosing natural hazard risks during real estate transactions	✓
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	✓

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

14. In the following, please check those activities that you <u>have done</u> in your household, <u>plan to do</u> in the near future, <u>have not done</u>, or are <u>unable to do</u>. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?			✓	
Talked with members in your household about what to do in case of a natural disaster or emergency?			✓	
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?			✓	
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?			✓	
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	✓			
Prepared your home by having smoke detectors on each level of the house?	✓			
Discussed or created a utility shutoff procedure in the event of a natural disaster?			✓	

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

15. Please indicate your age: 44
16. Gender:
    - ~~Male~~
    - Female

17. Please indicate your level of education:
    - Highschool graduate/GED
    - Some college/trade school
    - College degree
    - Postgraduate degree
    - Other (Please specify): _____

18. What is your total household income?
    - Less than $10,000
    - $10,000-$29,999
    - $30,000-$59,999
    - $60,000-$79,999
    - $80,000-$99,999
    - $100,000-$149,999
    - More than $150,000

19. Zip Code (optional): 64666

20. Please specify your race:
    - American Indian or Alaska Native
    - Asian
    - Black or African American
    - Native Hawaiian or Other Pacific Islander
    - White

21. Please specify your ethnicity:
    - Hispanic or Latino
    - Not Hispanic or Latino

22. How long have you lived in Mercer County?
    - Less than one year
    - 1-5 years
    - 5-9 years
    - 10-19 years
    - 20 years or more

23. Do you own or rent your home?
    - Own
    - Rent

24. Please feel free to provide any additional comments in the space provided:

Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

Natural Hazard Information

First, we would like to know about your experiences with natural hazards.

1. During the past five years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster?
   - ☒ Yes
   - ☐ No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   - ☐ Drought
   - ☐ Dust Storm
   - ☐ Earthquake
   - ☐ Flood
   - ☐ Landslide/debris flow
   - ☐ Wildfire
   - ☐ Windstorm
   - ☐ Severe Winter Storm
   - ☒ Other (specify): Severe windstorm (2023)

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought				X	
Dust Storm				X	
Earthquake				X	
Extreme Heat				X	
Flood				X	
Landslide				X	
Wildfire				X	
Windstorm				X	
Severe winter storm				X	
Other:					

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?

- ☐ Yes
- ☒ No ***(if NO Skep to Question 5)***

If "YES", how recently?

- ☐ Within the last 6 months
- ☐ Between 6 and 12 months
- ☐ Between 1 and 2 years
- ☐ Between 2 and 5 years
- ☐ 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***

- ☐ News Media
- ☐ Government Agency
- ☐ Insurance agent or company
- ☐ Utility company
- ☐ University or research institution
- ☐ Neighbor/friend/family member
- ☐ Elected official
- ☐ American Red Cross
- ☐ Other non-profit organization
- ☐ Social media (e.g., Facebook)
- ☐ Not sure
- ☐ Other: _____

5. Whom would you <u>most trust</u> to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

- ☐ New media
- ☐ Government agency
- ☐ Insurance agent or company
- ☒ Utility company
- ☐ University or research institution
- ☐ Neighbor/friend/family member
- ☐ Elected official
- ☐ American Red Cross
- ☒ Other non-profit organization
- ☐ Social media (e.g., Facebook)
- ☐ Not sure
- ☐ Other: Health Dept

6. What is the <u>most effective</u> way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

Newspapers:

- ☐ Newspaper stories
- ☐ Newspaper ads

Television

- ☐ Television news
- ☐ Television ads

Radio:

- ☐ Radio news
- ☐ Radio ads

Internet:

- ☑ Email newsletters
- ☐ Online news outlets
- ☑ Social media (e.g., Facebook)

Other methods:

- ☐ Schools
- ☐ Outdoor advertisements (billboards, etc.)
- ☐ Books
- ☑ Mail
- ☐ Fire Department/Rescue
- ☑ Fact sheet/brochure
- ☐ Chamber of Commerce
- ☐ Public workshops/meetings
- ☐ Magazine
- ☐ University or research
- ☐ Other: _____

7. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?
   - ☐ Yes
   - ☒ No
8. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?
   - ☐ Yes
   - ☒ No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

9. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	**Potential Natural Hazard Impact**	**Order of Vulnerability**
Human	Loss of life and/or injuries	1
Economic	Business closures and/or job losses	5
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	2
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	3
Environmental	Damage or loss of forests, rangeland, waterways, etc.	6
Governance	Ability to maintain order and/or provide public amenities and services	4

10. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Elder-care facilities	✓				
Schools (K-12)	✓				
Hospitals	✓				
Major bridges	✓				
Fire/Police	✓				

Community Assets (cont.)	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Museums/Historic Buildings	✓				
Small Businesses	✓				
City Hall	✓				
Courthouse	✓				
Parks	✓				
Other: Libraries					
Other: Churches					
Other:					
Other:					
Other:					

11. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk	✓					
I support a non-regulatory approach to reducing risk			✓			
I support a mix of both regulatory and non-regulatory approaches to reducing risk			✓			
I support policies to prohibit development in areas subject to natural hazards		✓				
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards		✓				
I support the use of local tax dollars to reduce risks and losses from natural disasters		✓				
I support protecting historical and cultural structures	✓					
I would be willing to make my home more disaster resilient			✓			
I support steps to safeguard the local economy following a disaster event		✓				
I support improving the disaster preparedness of local schools	✓					
I support a local inventory of at-risk buildings and infrastructure	✓					
I support the disclosure of natural hazard risks during real estate transactions	✓					

12. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important
Protecting private property	✓				
Protecting critical facilities (transportation networks, hospitals, fire stations)	✓				
Preventing development in hazard prone areas	✓				
Enhancing the function of natural features (e.g., streams, wetlands)	✓				
Protecting historical and cultural landmarks	✓				
Protecting and reducing damage to utilities	✓				
Strengthening emergency services (e.g., police, fire, ambulance)	✓				
Disclosing natural hazard risks during real estate transactions	✓				
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	✓				

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

13. In the following, please check those activities that you <u>have done</u> in your household, <u>plan to do</u> in the near future, <u>have not done</u>, or are <u>unable to do</u>. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?			X	
Talked with members in your household about what to do in case of a natural disaster or emergency?	X			
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	X			
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?		X		
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	X			
Prepared your home by having smoke detectors on each level of the house?	X			
Discussed or created a utility shutoff procedure in the event of a natural disaster?			X	

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

14. Please indicate your age: 37
15. Gender:
    - ☐ Male
    - ☑ Female

16. Please indicate your level of education:
    - ☐ Highschool graduate/GED
    - ☐ Some college/trade school
    - ☑ College degree
    - ☐ Postgraduate degree
    - ☐ Other (Please specify): _____

17. What is your total household income?
    - ☐ Less than $10,000
    - ☐ $10,000-$29,999
    - ☐ $30,000-$59,999
    - ☑ $60,000-$79,999
    - ☐ $80,000-$99,999
    - ☐ $100,000-$149,999
    - ☐ More than $150,000

18. Zip Code (optional): 64673

19. Please specify your race:
    - ☐ American Indian or Alaska Native
    - ☐ Asian
    - ☐ Black or African American
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☒ White

20. Please specify your ethnicity:
    - ☐ Hispanic or Latino
    - ☒ Not Hispanic or Latino

21. How long have you lived in Mercer County?
    - ☐ Less than one year
    - ☐ 1-5 years
    - ☐ 5-9 years
    - ☑ 10-19 years
    - ☐ 20 years or more

22. Do you own or rent your home?
    - ☑ Own
    - ☐ Rent

23. Please feel free to provide any additional comments in the space provided:

Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

Natural Hazard Information

First, we would like to know about your experiences with natural hazards.

1. During the past five years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster?
   - ☒ Yes
   - ☐ No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   - ☒ Drought
   - ☐ Dust Storm
   - ☐ Earthquake
   - ☐ Flood
   - ☐ Landslide/debris flow
   - ☐ Wildfire
   - ☒ Windstorm
   - ☒ Severe Winter Storm
   - ☐ Other (specify): _____

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought	X				
Dust Storm					X
Earthquake					X
Extreme Heat		X			
Flood		X			
Landslide					X
Wildfire					X
Windstorm		X			
Severe winter storm	X				
Other:					

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?
   - ☐ Yes
   - ☒ No ***(if NO Skep to Question 5)***

   If "YES", how recently?
   - ☐ Within the last 6 months
   - ☐ Between 6 and 12 months
   - ☐ Between 1 and 2 years
   - ☐ Between 2 and 5 years
   - ☐ 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***
   - ☐ News Media
   - ☐ Government Agency
   - ☐ Insurance agent or company
   - ☐ Utility company
   - ☐ University or research institution
   - ☐ Neighbor/friend/family member
   - ☐ Elected official
   - ☐ American Red Cross
   - ☐ Other non-profit organization
   - ☐ Social media (e.g., Facebook)
   - ☐ Not sure
   - ☐ Other: _____

5. Whom would you <u>most trust</u> to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***
   - ☒ New media
   - ☒ Government agency
   - ☐ Insurance agent or company
   - ☐ Utility company
   - ☐ University or research institution
   - ☐ Neighbor/friend/family member
   - ☐ Elected official
   - ☐ American Red Cross
   - ☐ Other non-profit organization
   - ☐ Social media (e.g., Facebook)
   - ☐ Not sure
   - ☐ Other: _____

6. What is the <u>most effective</u> way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

   Newspapers:
   - ☐ Newspaper stories
   - ☐ Newspaper ads

   Television
   - ☒ Television news
   - ☐ Television ads

   Radio:
   - ☐ Radio news
   - ☐ Radio ads

   Internet:
   - ☐ Email newsletters
   - ☐ Online news outlets
   - ☐ Social media (e.g., Facebook)

   Other methods:
   - ☒ Schools
   - ☐ Outdoor advertisements (billboards, etc.)
   - ☐ Books
   - ☐ Mail
   - ☐ Fire Department/Rescue
   - ☒ Fact sheet/brochure
   - ☐ Chamber of Commerce
   - ☐ Public workshops/meetings
   - ☐ Magazine
   - ☐ University or research
   - ☐ Other: _____

7. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?
   - ☐ Yes
   - ☒ No
8. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?
   - ☐ Yes
   - ☒ No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

9. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	**Potential Natural Hazard Impact**	**Order of Vulnerability**
Human	Loss of life and/or injuries	2
Economic	Business closures and/or job losses	1
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	4
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	6
Environmental	Damage or loss of forests, rangeland, waterways, etc.	3
Governance	Ability to maintain order and/or provide public amenities and services	5

10. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Elder-care facilities	X				
Schools (K-12)	X		⊗		
Hospitals			X		
Major bridges	X				
Fire/Police	X				

Community Assets (cont.)	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Museums/Historic Buildings		X			
Small Businesses	X				
City Hall		X			
Courthouse		X			
Parks		X			
Other: _____					
Other: _____					
Other: _____					
Other: _____					
Other: _____					

11. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk		X				
I support a non-regulatory approach to reducing risk				X		
I support a mix of both regulatory and non-regulatory approaches to reducing risk		X				
I support policies to prohibit development in areas subject to natural hazards	X					
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards			X			
I support the use of local tax dollars to reduce risks and losses from natural disasters	X					
I support protecting historical and cultural structures		X				
I would be willing to make my home more disaster resilient	X					
I support steps to safeguard the local economy following a disaster event		X				
I support improving the disaster preparedness of local schools		X				
I support a local inventory of at-risk buildings and infrastructure		X				
I support the disclosure of natural hazard risks during real estate transactions	X					

12. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important
Protecting private property	X				
Protecting critical facilities (transportation networks, hospitals, fire stations)	X				
Preventing development in hazard prone areas		X			
Enhancing the function of natural features (e.g., streams, wetlands)		X			
Protecting historical and cultural landmarks		X			
Protecting and reducing damage to utilities	X				
Strengthening emergency services (e.g., police, fire, ambulance)	X				
Disclosing natural hazard risks during real estate transactions	X				
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	X				

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

13. In the following, please check those activities that you <u>have done</u> in your household, <u>plan to do</u> in the near future, <u>have not done</u>, or are <u>unable to do</u>. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?		✓		
Talked with members in your household about what to do in case of a natural disaster or emergency?	✓			
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?		✓		
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?	✓			
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?			✓	
Prepared your home by having smoke detectors on each level of the house?	✓			
Discussed or created a utility shutoff procedure in the event of a natural disaster?			✓	

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

14. Please indicate your age: _____
15. Gender:
    - ☐ Male
    - ☒ Female

16. Please indicate your level of education:
    - ☐ Highschool graduate/GED
    - ☐ Some college/trade school
    - ☒ College degree
    - ☐ Postgraduate degree
    - ☐ Other (Please specify): _____

17. What is your total household income?
    - ☐ Less than $10,000
    - ☐ $10,000-$29,999
    - ☐ $30,000-$59,999
    - ☐ $60,000-$79,999
    - ☐ $80,000-$99,999
    - ☒ $100,000-$149,999
    - ☐ More than $150,000

18. Zip Code (optional): 64673

19. Please specify your race:
    - ☐ American Indian or Alaska Native
    - ☐ Asian
    - ☐ Black or African American
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☒ White

20. Please specify your ethnicity:
    - ☐ Hispanic or Latino
    - ☒ Not Hispanic or Latino

21. How long have you lived in Mercer County?
    - ☐ Less than one year
    - ☐ 1-5 years
    - ☐ 5-9 years
    - ☐ 10-19 years
    - ☑ 20 years or more

22. Do you own or rent your home?
    - ☒ Own
    - ☐ Rent

23. Please feel free to provide any additional comments in the space provided:

Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

Natural Hazard Information

First, we would like to know about your experiences with natural hazards.

1. During the past five years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster?
   - ☐ Yes
   - ☒ No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   - ☐ Drought
   - ☐ Dust Storm
   - ☐ Earthquake
   - ☐ Flood
   - ☐ Landslide/debris flow
   - ☐ Wildfire
   - ☐ Windstorm
   - ☐ Severe Winter Storm
   - ☐ Other (specify): _____

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought	✓				
Dust Storm			✓		
Earthquake			✓		
Extreme Heat		✓			
Flood			✓		
Landslide			✓		
Wildfire			✓		
Windstorm		✓			
Severe winter storm		✓			
Other:					

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?
   - ☐ Yes
   - ☑ No ***(if NO Skep to Question 5)***

   If "YES", how recently?
   - ☐ Within the last 6 months
   - ☐ Between 6 and 12 months
   - ☐ Between 1 and 2 years
   - ☐ Between 2 and 5 years
   - ☐ 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***
   - ☐ News Media
   - ☐ Government Agency
   - ☐ Insurance agent or company
   - ☐ Utility company
   - ☐ University or research institution
   - ☐ Neighbor/friend/family member
   - ☐ Elected official
   - ☐ American Red Cross
   - ☐ Other non-profit organization
   - ☐ Social media (e.g., Facebook)
   - ☐ Not sure
   - ☐ Other: _____

5. Whom would you <u>most trust</u> to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***
   - ☐ New media
   - ☐ Government agency
   - ☐ Insurance agent or company
   - ☑ Utility company
   - ☐ University or research institution
   - ☑ Neighbor/friend/family member
   - ☐ Elected official
   - ☐ American Red Cross
   - ☐ Other non-profit organization
   - ☐ Social media (e.g., Facebook)
   - ☐ Not sure
   - ☐ Other: _____

6. What is the <u>most effective</u> way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

   Newspapers:
   - ☐ Newspaper stories
   - ☐ Newspaper ads

   Television
   - ☐ Television news
   - ☐ Television ads

   Radio:
   - ☑ Radio news
   - ☐ Radio ads

   Internet:
   - ☑ Email newsletters
   - ☐ Online news outlets
   - ☑ Social media (e.g., Facebook)

   Other methods:
   - ☐ Schools
   - ☐ Outdoor advertisements (billboards, etc.)
   - ☐ Books
   - ☐ Mail
   - ☐ Fire Department/Rescue
   - ☐ Fact sheet/brochure
   - ☐ Chamber of Commerce
   - ☐ Public workshops/meetings
   - ☐ Magazine
   - ☐ University or research
   - ☐ Other: _____

7. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?
   - ☐ Yes
   - ☑ No
8. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?
   - ☐ Yes
   - ☑ No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

9. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	Potential Natural Hazard Impact	Order of Vulnerability
Human	Loss of life and/or injuries	2
Economic	Business closures and/or job losses	3
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	2
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	3
Environmental	Damage or loss of forests, rangeland, waterways, etc.	2
Governance	Ability to maintain order and/or provide public amenities and services	1

10. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Elder-care facilities	✓				
Schools (K-12)	✓				
Hospitals		N/A			
Major bridges			✓		
Fire/Police		✓			

Community Assets (cont.)	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Museums/Historic Buildings				✓	
Small Businesses			✓		
City Hall		✓			
Courthouse		✓			
Parks		✓			
Other: _____					
Other: _____					
Other: _____					
Other: _____					
Other: _____					

11. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk			✓			
I support a non-regulatory approach to reducing risk		✓				
I support a mix of both regulatory and non-regulatory approaches to reducing risk			✓			
I support policies to prohibit development in areas subject to natural hazards			✓			
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards			✓			
I support the use of local tax dollars to reduce risks and losses from natural disasters		✓				
I support protecting historical and cultural structures			✓			
I would be willing to make my home more disaster resilient		✓				
I support steps to safeguard the local economy following a disaster event			✓			
I support improving the disaster preparedness of local schools			✓			
I support a local inventory of at-risk buildings and infrastructure		✓				
I support the disclosure of natural hazard risks during real estate transactions			✓			

12. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important
Protecting private property		✓			
Protecting critical facilities (transportation networks, hospitals, fire stations)			✓		
Preventing development in hazard prone areas			✓		
Enhancing the function of natural features (e.g., streams, wetlands)			✓		
Protecting historical and cultural landmarks			✓		
Protecting and reducing damage to utilities		✓			
Strengthening emergency services (e.g., police, fire, ambulance)			✓		
Disclosing natural hazard risks during real estate transactions		✓			
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses			✓		

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

13. In the following, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?	✓			
Talked with members in your household about what to do in case of a natural disaster or emergency?		✓		
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?		✓		
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?	✓			
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	✓			
Prepared your home by having smoke detectors on each level of the house?	✓			
Discussed or created a utility shutoff procedure in the event of a natural disaster?		✓		

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

14. Please indicate your age: 48
15. Gender:
    - ☐ Male
    - ☒ Female

16. Please indicate your level of education:
    - ☐ Highschool graduate/GED
    - ☐ Some college/trade school
    - ☒ College degree
    - ☐ Postgraduate degree -- in process
    - ☐ Other (Please specify): _____

17. What is your total household income?
    - ☐ Less than $10,000
    - ☐ $10,000-$29,999
    - ☐ $30,000-$59,999
    - ☐ $60,000-$79,999
    - ☐ $80,000-$99,999
    - ☑ $100,000-$149,999
    - ☐ More than $150,000

18. Zip Code (optional): 46632

19. Please specify your race:
    - ☐ American Indian or Alaska Native
    - ☐ Asian
    - ☐ Black or African American
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☒ White

20. Please specify your ethnicity:
    - ☐ Hispanic or Latino
    - ☒ Not Hispanic or Latino

21. How long have you lived in Mercer County?
    - ☐ Less than one year
    - ☐ 1-5 years
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    - ☒ 20 years or more

22. Do you own or rent your home?
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Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

Natural Hazard Information

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   - ☐ Yes
   - ☒ No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   - ☐ Drought
   - ☐ Dust Storm
   - ☐ Earthquake
   - ☐ Flood
   - ☐ Landslide/debris flow
   - ☐ Wildfire
   - ☐ Windstorm
   - ☐ Severe Winter Storm
   - ☐ Other (specify): _____

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought	X				
Dust Storm					X
Earthquake					X
Extreme Heat					X
Flood					X
Landslide					X
Wildfire					X
Windstorm					X
Severe winter storm		X			
Other:					

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?

   ☐ Yes
   ☒ No ***(if NO Skep to Question 5)***

   If "YES", how recently?

   ☐ Within the last 6 months
   ☐ Between 6 and 12 months
   ☐ Between 1 and 2 years
   ☐ Between 2 and 5 years
   ☐ 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***

   ☐ News Media
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   ☐ Insurance agent or company
   ☐ Utility company
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   ☐ Neighbor/friend/family member
   ☐ Elected official
   ☐ American Red Cross
   ☐ Other non-profit organization
   ☐ Social media (e.g., Facebook)
   ☐ Not sure
   ☐ Other: _____

5. Whom would you <u>most trust</u> to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

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   ☐ Utility company
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   ☐ Elected official
   ☐ American Red Cross
   ☐ Other non-profit organization
   ☐ Social media (e.g., Facebook)
   ☐ Not sure
   ☐ Other: _____

6. What is the <u>most effective</u> way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

   Newspapers:
   - ☐ Newspaper stories
   - ☐ Newspaper ads

   Television
   - ☒ Television news
   - ☐ Television ads

   Radio:
   - ☒ Radio news
   - ☐ Radio ads

   Internet:
   - ☐ Email newsletters
   - ☐ Online news outlets
   - ☐ Social media (e.g., Facebook)

   Other methods:
   - ☐ Schools
   - ☐ Outdoor advertisements (billboards, etc.)
   - ☐ Books
   - ☐ Mail
   - ☒ Fire Department/Rescue
   - ☐ Fact sheet/brochure
   - ☐ Chamber of Commerce
   - ☐ Public workshops/meetings
   - ☐ Magazine
   - ☐ University or research
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7. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?
   - ☐ Yes
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Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	5
Environmental	Damage or loss of forests, rangeland, waterways, etc.	6
Governance	Ability to maintain order and/or provide public amenities and services	4

10. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Elder-care facilities		X			
Schools (K-12)	X				
Hospitals	X				
Major bridges	X				
Fire/Police	X				

Community Assets (cont.)	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Museums/Historic Buildings			X		
Small Businesses	X				
City Hall	X				
Courthouse	X				
Parks	X				
Other: _____					
Other: _____					
Other: _____					
Other: _____					
Other: _____					

11. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk		X				
I support a non-regulatory approach to reducing risk			X			
I support a mix of both regulatory and non-regulatory approaches to reducing risk		X				
I support policies to prohibit development in areas subject to natural hazards			X			
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards		X				
I support the use of local tax dollars to reduce risks and losses from natural disasters		X				
I support protecting historical and cultural structures			X			
I would be willing to make my home more disaster resilient			X			
I support steps to safeguard the local economy following a disaster event	X					
I support improving the disaster preparedness of local schools	X					
I support a local inventory of at-risk buildings and infrastructure			X			
I support the disclosure of natural hazard risks during real estate transactions		X				

12. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important
Protecting private property	X				
Protecting critical facilities (transportation networks, hospitals, fire stations)	X				
Preventing development in hazard prone areas	X				
Enhancing the function of natural features (e.g., streams, wetlands)			X		
Protecting historical and cultural landmarks		X			
Protecting and reducing damage to utilities	X				
Strengthening emergency services (e.g., police, fire, ambulance)	X				
Disclosing natural hazard risks during real estate transactions	X				
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	X				

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

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In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?			X	
Talked with members in your household about what to do in case of a natural disaster or emergency?	X			
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	X			
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?			X	
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?			X	
Prepared your home by having smoke detectors on each level of the house?	X			
Discussed or created a utility shutoff procedure in the event of a natural disaster?	X			

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

14. Please indicate your age: 70
15. Gender:
    - ☐ Male
    - ☒ Female

16. Please indicate your level of education:
    - ☒ Highschool graduate/GED
    - ☐ Some college/trade school
    - ☐ College degree
    - ☐ Postgraduate degree
    - ☐ Other (Please specify): _____

17. What is your total household income?
    - ☐ Less than $10,000
    - ☐ $10,000-$29,999
    - ☐ $30,000-$59,999
    - ☒ $60,000-$79,999
    - ☐ $80,000-$99,999
    - ☐ $100,000-$149,999
    - ☐ More than $150,000

18. Zip Code (optional): 164161

19. Please specify your race:
    - ☐ American Indian or Alaska Native
    - ☐ Asian
    - ☐ Black or African American
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☒ White

20. Please specify your ethnicity:
    - ☐ Hispanic or Latino
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21. How long have you lived in Mercer County?
    - ☐ Less than one year
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   - ☐ Yes
   - ☑ No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   - ☐ Drought
   - ☐ Dust Storm
   - ☐ Earthquake
   - ☐ Flood
   - ☐ Landslide/debris flow
   - ☐ Wildfire
   - ☐ Windstorm
   - ☐ Severe Winter Storm
   - ☐ Other (specify): _____

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought	✓				
Dust Storm		✓			
Earthquake		✓			
Extreme Heat	✓				
Flood	✓				
Landslide			✓		
Wildfire		✓			
Windstorm			✓		
Severe winter storm	✓				
Other:					

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?
   - ☑ Yes
   - ☐ No ***(if NO Skep to Question 5)***

   If "YES", how recently?
   - ☐ Within the last 6 months
   - ☐ Between 6 and 12 months
   - ☐ Between 1 and 2 years
   - ☑ Between 2 and 5 years
   - ☐ 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***
   - ☐ News Media
   - ☐ Government Agency
   - ☑ Insurance agent or company
   - ☑ Utility company
   - ☐ University or research institution
   - ☐ Neighbor/friend/family member
   - ☐ Elected official
   - ☐ American Red Cross
   - ☐ Other non-profit organization
   - ☐ Social media (e.g., Facebook)
   - ☐ Not sure
   - ☐ Other: _____

5. Whom would you <u>most trust</u> to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***
   - ☐ New media
   - ☐ Government agency
   - ☑ Insurance agent or company
   - ☑ Utility company
   - ☐ University or research institution
   - ☑ Neighbor/friend/family member
   - ☐ Elected official
   - ☐ American Red Cross
   - ☐ Other non-profit organization
   - ☐ Social media (e.g., Facebook)
   - ☐ Not sure
   - ☐ Other: _____

6. What is the <u>most effective</u> way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

   Newspapers:
   - ☐ Newspaper stories
   - ☐ Newspaper ads

   Television
   - ☑ Television news
   - ☐ Television ads

   Radio:
   - ☐ Radio news
   - ☐ Radio ads

   Internet:
   - ☐ Email newsletters
   - ☐ Online news outlets
   - ☐ Social media (e.g., Facebook)

   Other methods:
   - ☐ Schools
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   - ☐ Books
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   - ☑ Fact sheet/brochure
   - ☐ Chamber of Commerce
   - ☑ Public workshops/meetings
   - ☐ Magazine
   - ☐ University or research
   - ☐ Other: _____

7. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?
   - ☐ Yes
   - ☑ No
8. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?
   - ☐ Yes
   - ☑ No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

9. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	**Potential Natural Hazard Impact**	**Order of Vulnerability**
Human	Loss of life and/or injuries	1
Economic	Business closures and/or job losses	1
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	1
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	2
Environmental	Damage or loss of forests, rangeland, waterways, etc.	3
Governance	Ability to maintain order and/or provide public amenities and services	2

10. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Elder-care facilities	✓				
Schools (K-12)		✓			
Hospitals					
Major bridges			✓		
Fire/Police	✓				

Community Assets (cont.)	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Museums/Historic Buildings			✓		
Small Businesses		✓			
City Hall		✓			
Courthouse		✓			
Parks			✓		
Other: _____					
Other: _____					
Other: _____					
Other: _____					
Other: _____					

11. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk		✓				
I support a non-regulatory approach to reducing risk		✓				
I support a mix of both regulatory and non-regulatory approaches to reducing risk	✓					
I support policies to prohibit development in areas subject to natural hazards		✓				
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards			✓			
I support the use of local tax dollars to reduce risks and losses from natural disasters		✓				
I support protecting historical and cultural structures		✓				
I would be willing to make my home more disaster resilient			✓			
I support steps to safeguard the local economy following a disaster event	✓					
I support improving the disaster preparedness of local schools	✓					
I support a local inventory of at-risk buildings and infrastructure		✓				
I support the disclosure of natural hazard risks during real estate transactions	✓					

12. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important
Protecting private property	✓				
Protecting critical facilities (transportation networks, hospitals, fire stations)	✓				
Preventing development in hazard prone areas		✓			
Enhancing the function of natural features (e.g., streams, wetlands)		✓			
Protecting historical and cultural landmarks	✓				
Protecting and reducing damage to utilities	✓				
Strengthening emergency services (e.g., police, fire, ambulance)	✓				
Disclosing natural hazard risks during real estate transactions	✓				
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	✓				

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

13. In the following, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?	✓			
Talked with members in your household about what to do in case of a natural disaster or emergency?	✓			
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	✓			
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?		✓		
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	✓			
Prepared your home by having smoke detectors on each level of the house?	✓			
Discussed or created a utility shutoff procedure in the event of a natural disaster?			✓	

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

14. Please indicate your age: _____
15. Gender:
    - ☐ Male
    - ☑ Female

16. Please indicate your level of education:
    - ☐ Highschool graduate/GED
    - ☐ Some college/trade school
    - ☑ College degree
    - ☐ Postgraduate degree
    - ☐ Other (Please specify): _____

17. What is your total household income?
    - ☐ Less than $10,000
    - ☐ $10,000-$29,999
    - ☑ $30,000-$59,999
    - ☐ $60,000-$79,999
    - ☐ $80,000-$99,999
    - ☐ $100,000-$149,999
    - ☐ More than $150,000

18. Zip Code (optional): 64673

19. Please specify your race:
    - ☐ American Indian or Alaska Native
    - ☐ Asian
    - ☐ Black or African American
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☑ White

20. Please specify your ethnicity:
    - ☐ Hispanic or Latino
    - ☑ Not Hispanic or Latino

21. How long have you lived in Mercer County?
    - ☐ Less than one year
    - ☐ 1-5 years
    - ☑ 5-9 years
    - ☐ 10-19 years
    - ☐ 20 years or more

22. Do you own or rent your home?
    - ☑ Own
    - ☐ Rent

23. Please feel free to provide any additional comments in the space provided:

Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

Natural Hazard Information

First, we would like to know about your experiences with natural hazards.

1. During the past five years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster?
   - ☑ Yes
   - ☐ No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   - ☐ Drought
   - ☐ Dust Storm
   - ☐ Earthquake
   - ☑ Flood
   - ☐ Landslide/debris flow
   - ☐ Wildfire
   - ☑ Windstorm
   - ☐ Severe Winter Storm
   - ☐ Other (specify): _____

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought		✓			
Dust Storm		✓			
Earthquake				✓	
Extreme Heat		✓			
Flood		✓			
Landslide				✓	
Wildfire		✓	✓		
Windstorm		✓			
Severe winter storm		✓			
Other:					

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?
   - [x] Yes
   - [ ] No ***(if NO Skep to Question 5)***

   If "YES", how recently?
   - [ ] Within the last 6 months
   - [x] Between 6 and 12 months
   - [ ] Between 1 and 2 years
   - [ ] Between 2 and 5 years
   - [ ] 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***
   - [ ] News Media
   - [x] Government Agency
   - [ ] Insurance agent or company
   - [ ] Utility company
   - [ ] University or research institution
   - [ ] Neighbor/friend/family member
   - [ ] Elected official
   - [ ] American Red Cross
   - [ ] Other non-profit organization
   - [ ] Social media (e.g., Facebook)
   - [ ] Not sure
   - [ ] Other: _____

5. Whom would you <u>most trust</u> to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***
   - [ ] New media
   - [ ] Government agency
   - [ ] Insurance agent or company
   - [ ] Utility company
   - [ ] University or research institution
   - [x] Neighbor/friend/family member
   - [ ] Elected official
   - [ ] American Red Cross
   - [ ] Other non-profit organization
   - [ ] Social media (e.g., Facebook)
   - [ ] Not sure
   - [ ] Other: _____

6. What is the <u>most effective</u> way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

   Newspapers:
   - [ ] Newspaper stories
   - [ ] Newspaper ads

   Television
   - [ ] Television news
   - [ ] Television ads

   Radio:
   - [ ] Radio news
   - [ ] Radio ads

   Internet:
   - [x] Email newsletters
   - [ ] Online news outlets
   - [ ] Social media (e.g., Facebook)

   Other methods:
   - [x] Schools
   - [ ] Outdoor advertisements (billboards, etc.)
   - [ ] Books
   - [ ] Mail
   - [ ] Fire Department/Rescue
   - [x] Fact sheet/brochure
   - [ ] Chamber of Commerce
   - [ ] Public workshops/meetings
   - [ ] Magazine
   - [ ] University or research
   - [ ] Other: _____

7. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?
   - ☐ Yes
   - ☑ No
8. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?
   - ☐ Yes
   - ☑ No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

9. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	**Potential Natural Hazard Impact**	**Order of Vulnerability**
Human	Loss of life and/or injuries	1
Economic	Business closures and/or job losses	4
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	2
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	6
Environmental	Damage or loss of forests, rangeland, waterways, etc.	5
Governance	Ability to maintain order and/or provide public amenities and services	3

10. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Elder-care facilities	✓				
Schools (K-12)	✓				
Hospitals	don't have one in our county				
Major bridges	✓				
Fire/Police	✓				

Community Assets (cont.)	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Museums/Historic Buildings		✓			
Small Businesses	✓				
City Hall	✓				
Courthouse	✓				
Parks		✓			
Other: _____					
Other: _____					
Other: _____					
Other: _____					
Other: _____					

11. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk			✓			
I support a non-regulatory approach to reducing risk			✓			
I support a mix of both regulatory and non-regulatory approaches to reducing risk	✓					
I support policies to prohibit development in areas subject to natural hazards			✓			
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards			✓			
I support the use of local tax dollars to reduce risks and losses from natural disasters			✓			
I support protecting historical and cultural structures			✓			
I would be willing to make my home more disaster resilient		✓				
I support steps to safeguard the local economy following a disaster event		✓				
I support improving the disaster preparedness of local schools	✓					
I support a local inventory of at-risk buildings and infrastructure		✓				
I support the disclosure of natural hazard risks during real estate transactions	✓					

12. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very Important	Not Important
Protecting private property		✓			
Protecting critical facilities (transportation networks, hospitals, fire stations)	✓				
Preventing development in hazard prone areas		✓			
Enhancing the function of natural features (e.g., streams, wetlands)		✓			
Protecting historical and cultural landmarks			✓		
Protecting and reducing damage to utilities	✓				
Strengthening emergency services (e.g., police, fire, ambulance)	✓				
Disclosing natural hazard risks during real estate transactions	✓				
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	✓				

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

13. In the following, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?	✓			
Talked with members in your household about what to do in case of a natural disaster or emergency?	✓			
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	✓			
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?		✓		
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	✓			
Prepared your home by having smoke detectors on each level of the house?	✓			
Discussed or created a utility shutoff procedure in the event of a natural disaster?	✓			

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

14. Please indicate your age: 54
15. Gender:
    - ☐ Male
    - ☒ Female

16. Please indicate your level of education:
    - ☐ Highschool graduate/GED
    - ☐ Some college/trade school
    - ☒ College degree
    - ☐ Postgraduate degree
    - ☐ Other (Please specify): _____

17. What is your total household income?
    - ☐ Less than $10,000
    - ☐ $10,000-$29,999
    - ☒ $30,000-$59,999
    - ☐ $60,000-$79,999
    - ☐ $80,000-$99,999
    - ☐ $100,000-$149,999
    - ☐ More than $150,000

18. Zip Code (optional): _____

19. Please specify your race:
    - ☐ American Indian or Alaska Native
    - ☐ Asian
    - ☐ Black or African American
    - ☐ Native Hawaiian or Other Pacific Islander
    - ☑ White

20. Please specify your ethnicity:
    - ☐ Hispanic or Latino
    - ☒ Not Hispanic or Latino

21. How long have you lived in Mercer County?
    - ☐ Less than one year
    - ☐ 1-5 years
    - ☐ 5-9 years
    - ☒ 10-19 years
    - ☐ 20 years or more

22. Do you own or rent your home?
    - ☒ Own
    - ☐ Rent

23. Please feel free to provide any additional comments in the space provided:

Natural Hazard Questionnaire

Your household has been randomly selected to participate in this survey on public perceptions and opinions about natural hazards in your county. In addition, we would like information about the methods and techniques you prefer for reducing the risks and losses associated with these hazards. The questionnaire should be completed by an adult, preferably the head of household. The information you provide will be used to help improve public/private coordination, mitigation, and risk reduction efforts in your county. The survey should take less than 30 minutes to complete. This is a public opinion survey. The results will inform local natural hazard mitigation planning. Your returned, completed survey indicates your willingness to take part in the study. Participation in this study is voluntary and anonymous. None of the information you provide will be attributed to you directly.

Natural Hazard Information

First, we would like to know about your experiences with natural hazards.

1. During the past five years, in the county you currently reside in, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster?
   - Yes
   - No

   If "YES". Which of these natural disasters have you or someone in your household experienced in the past five years? ***(Please check all that apply)***

   -
   - Drought
   - Dust Storm
   - Earthquake
   - Flood
   - Landslide/debris flow
   - Wildfire
   - Windstorm
   - Severe Winter Storm
   - Other (specify): _____

2. How concerned are you about the following natural disasters affecting your county? ***(Check the corresponding box for each hazard)***

Natural Disaster	Very concerned	Somewhat concerned	Neutral	Not very concerned	Not concerned
Drought	✓				
Dust Storm				✓	
Earthquake					✓
Extreme Heat		✓			
Flood				✓	

Landslide not concerned
Wildfire neutral
Windstorm Neutral
Severe winter storm somewhat concerned
Other:

3. Have you ever received information about how to make members of your household and your home safer from natural disasters?
   - Yes
   - No ***(If NO Skep to Question 5)***

   If "YES", how recently?
   - Within the last 6 months
   - Between 6 and 12 months
   - Between 1 and 2 years
   - Between 2 and 5 years
   - 5 years or more

4. From whom did you **last** receive information about how to make members of your household and your home safer from natural disasters? ***(Please check only one)***
   -
   - News Media
   - Government Agency
   - Insurance agent or company
   - Utility company
   - University or research institution
   - Neighbor/friend/family member
   - Elected official
   - American Red Cross
   - Other non-profit organization
   - Social media (e.g., Facebook)
   - Not sure
   - Other: _____

5. Whom would you <u>most trust</u> to provide you with information about how to make your household and home safer from natural disasters? ***(Please check up to three)***
   -
   - New media
   - Government agency
   - Insurance agent or company
   - Utility company
   - University or research institution
   - Neighbor/friend/family member
   - Elected official
   - American Red Cross
   - Other non-profit organization
   - Social media (e.g., Facebook)
   - Not sure
   - Other: _____

6. What is the most effective way for you to receive information about how to make your household and home safer from natural disasters? ***(Please check up to three)***

Newspapers:

- Newspaper stories
- Newspaper ads

Television

- Television news
- Television ads

Radio:

- Radio news
- Radio ads

Internet:

- Email newsletters
- Online news outlets
- Social media (e.g., Facebook)

Other methods:

- Schools
- Outdoor advertisements (billboards, etc.)
- Books
- Mail
- Fire Department/Rescue
- Fact sheet/brochure
- Chamber of Commerce
- Public workshops/meetings
- Magazine
- University or research
- Other: _____

7.

8. Prior to receiving this survey, were you aware of your county's Natural Hazard Mitigation Plan (NHMP)?

- Yes
- No

9. Prior to receiving this survey, were you aware that the Federal Emergency Management Agency (FEMA) requires your county to update the NHMP every five years in order for your county to eligible for federal pre- and post-disaster hazard mitigation funds?

- Yes
- No

Community Vulnerabilities and Hazard Mitigation Strategies

In order to assess community risk, we need to understand which community assets may be vulnerable to natural hazards in the region. Vulnerable assets are those community features, economic

components, environmental resources, etc.). The next set of questions will focus on vulnerable assets in your community and your preferred strategies to mitigate risk to those assets.

10. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following *categories* are most susceptible to the impacts caused by natural hazards in your county? ***(Please rank the community assets in order of vulnerability, 1 being MOST vulnerable and 6 being LEAST vulnerable)***

Community Assets	**Potential Natural Hazard Impact**	**Order of Vulnerability**
Human	Loss of life and/or injuries	5
Economic	Business closures and/or job losses	1
Infrastructure	Damage or loss of bridges/ utilities, schools, etc.	2
Cultural/Historic	Damage or loss of libraries, museums, fairgrounds, etc.	4
Environmental	Damage or loss of forests, rangeland, waterways, etc.	3
Governance	Ability to maintain order and/or provide public amenities and services	6

11. Next, we would like to know what specific types of community assets are most important to you. ***(Check the corresponding box for each asset)***

Community Assets	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Elder-care facilities	✓				
Schools (K-12)	✓				
Hospitals	✓	✓			
Major bridges	✓				
Fire/Police	✓				
Community Assets (cont.)	**Very Important**	**Somewhat Important**	**Neutral**	**Not Very Important**	**Not Important**
Museums/Historic Buildings			✓		
Small Businesses	✓				
City Hall	✓				
Courthouse	✓				
Parks		✓			
Other: _____					
Other: _____					

Other:

_____

Other:

_____

Other:

_____

12. A number of activities can reduce your community's risk from natural hazards. These activities can be both regulatory and non-regulatory. ***(Please check the box that best represents your opinion of the following strategies to reduce the risk and loss associated with natural disasters)***

Community-Wide Strategies	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Sure
I support a regulatory approach to reducing risk				X		
I support a non-regulatory approach to reducing risk		X				
I support a mix of both regulatory and non-regulatory approaches to reducing risk			X			
I support policies to prohibit development in areas subject to natural hazards			X			
I support the use of tax dollars (federal and/or local) to compensate landowners for not developing in areas subject to natural hazards			X			
I support the use of local tax dollars to reduce risks and losses from natural disasters		X				
I support protecting historical and cultural structures		X				
I would be willing to make my home more disaster resilient			X			
I support steps to safeguard the local economy following a disaster event		X				
I support improving the disaster preparedness of local schools		X				
I support a local inventory of at-risk buildings and infrastructure		X				
I support the disclosure of natural hazard risks during real estate transactions		X				

13. Natural hazards can have a significant impact on a community, but planning for these events can help lessen the impacts. The following statements will help determine citizen priorities regarding planning for natural hazards in your county. ***(Please tell us how important each one is to you)***

Statements	Very important	somewhat important	Neutral	Not very important	Not important

Protecting private property	Somewhat important
Protecting critical facilities (transportation networks, hospitals, fire stations)	very important
Preventing development in hazard prone areas	somewhat important
Enhancing the function of natural features (e.g., streams, wetlands)	very important
Protecting historical and cultural landmarks	neutral
Protecting and reducing damage to utilities	Somewhat important
Strengthening emergency services (e.g., police, fire, ambulance)	neutral
Disclosing natural hazard risks during real estate transactions	neutral
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	Somewhat important

Mitigation and Preparedness Activities in Your Household

Households can mitigate and prepare for natural hazards in order to prevent damage to property, injuries, and loss of life. The precautions you take and training you receive can make a big difference in your ability to recover from a natural disaster or emergency. Access to basic services, such as electricity, gas, water, telephones, and emergency care may be cut off temporarily, or you may have to evacuate at a moment's notice. The following questions focus on your household's preparedness for disaster events.

14. In the following, please check those activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. ***(Please check one answer for each preparedness activity)***

In your household, have you or someone in your household:	Have done	Plan to do	Not done	Unable to do
Attended meeting or received written information on natural disasters or emergency preparedness?			X	
Talked with members in your household about what to do in case of a natural disaster or emergency?			X	
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	X			
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries, or other emergency supplies)?	X			
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	X			
Prepared your home by having smoke detectors on each level of the house?	X			
Discussed or created a utility shutoff procedure in the event of a natural disaster?	X			

General Household Information

Finally, we would appreciate any information you are willing to share with us about you and your household. This information will remain confidential and is for survey comparison purposes only.

15. Please indicate your age: 54
16. Gender:
    - Male
    - Female

17. Please indicate your level of education:
    - Highschool graduate/GED
    - Some college/trade school
    - College degree
    - Postgraduate degree
    - Other (Please specify): _____

18. What is your total household income?
    - Less than $10,000
    - $10,000-$29,999
    - $30,000-$59,999
    - $60,000-$79,999
    - $80,000-$99,999
    - $100,000-$149,999
    - More than $150,000

19. Zip Code (optional): 64661

20. Please specify your race:
    - American Indian or Alaska Native
    - Asian
    - Black or African American
    - Native Hawaiian or Other Pacific Islander
    - White

21. Please specify your ethnicity:
    - Hispanic or Latino
    - Not Hispanic or Latino

22. How long have you lived in Mercer County?
    - Less than one year
    - 1-5 years
    - 5-9 years
    - 10-19 years
    - 20 years or more

23. Do you own or rent your home?
    - Own
    - Rent

24. Please feel free to provide any additional comments in the space provided:

Appendix D: List of Critical Facilities

Reporting Year: 2022					
Facility Name ANR Pipeline Company	**Max Number of Occupants** 0	**Manned Status** UnManned			
Counties MERCER					
Facility Address	**Street** Mercer County	**City** NA	**State** MO	**Zip** NA	
Mailing Address	**Street** 33854 State Highway TT	**City** Graham	**State** MO	**Zip** 64455	
RMP Facility Id	**DUN Number**	**NAICS Code** 486210	**TRI Number**	**Latitude** 40.557571	**Longitude** 93.592041
Explosives Listed N	**Section 302** N	**Section 112** N	**Facility Type** Pipeline	**Submission** Y	
Fire Dept. With Jurisdiction Mercer County Fire Protection District (MRCC)					

Owner/Operator Information	**Name:** ANR Pipeline Company **City:** Mercer County **State:** MO **Zip:** NA **Phone:** 660-939-2145 **24-HR Phone:** 800-447-8066 **Email:** jerrod_plummer@tcenergy.com
Regulatory Point of Contact Information	**Name:** Andrew Lewis **City:** Mercer County **State:** MO **Zip:** NA **Phone:** 660-939-2145 **24-HR Phone:** 800-447-8066 **Email:** jerrod_plummer@tcenergy.com
Emergency Contact Information	**Name:** Jerrod Plummer **City:** Mercer County **State:** MO **Zip:** NA **Phone:** 660-939-2145 **24-HR Phone:** 800-447-8066 **Email:** jerrod_plummer@tcenergy.com
Secondary Emergency Contact Information	**Name:** Matt Abrams **City:** Mercer County **State:** MO **Zip:** NA **Phone:** 660-939-2145 **24-HR Phone:** 800-447-8066 **Email:** jerrod_plummer@tcenergy.com

Facility Name: ANR Pipeline Company		**Reporting Year: 2022**
Chemical Description Chemical Name: Natural Gas Product Name: Natural Gas CAS: 74-82-8 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Flammable (gases, aerosols, liquids or solids) Gas under pressure (compressed gas) Simple Asphyxiant	**Inventory** Max Daily Amount: 1,000-4,999 Avg Daily Amount: 1,000-4,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Other	Greater than Ambient	Ambient	Pipeline

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Reporting Year: 2022					
Facility Name GRM Princeton	**Max Number of Occupants** 2	**Manned Status** UnManned			
Counties MERCER					
Facility Address	**Street** 200 Chestnut Street	**City** Princeton	**State** MO	**Zip** 64673	
Mailing Address	**Street** 1001 Kentucky Street	**City** Princeton	**State** MO	**Zip** 64673	
RMP Facility Id NA	**DUN Number** 7848773	**NAICS Code** 517121	**TRI Number** NA	**Latitude** 40.397206	**Longitude** 93.585453
Explosives Listed N	**Section 302** N	**Section 112** N	**Facility Type** Other	**Submission** Y	
Fire Dept. With Jurisdiction MERCER FIRE PROTECTION DISTRICT (MERC)					

Owner/Operator Information	**Name:** Logan Stiles **City:** 200 Chestnut Street **State:** MO **Zip:** 64673 **Phone:** 660-748-2557 **24-HR Phone:** 660-748-5060 **Email:** lstiles@corp.grm.net
Regulatory Point of Contact Information	**Name:** Logan Stiles **City:** 200 Chestnut Street **State:** MO **Zip:** 64673 **Phone:** 660-748-2557 **24-HR Phone:** 660-748-5060 **Email:** lstiles@corp.grm.net
Emergency Contact Information	**Name:** Logan Stiles **City:** 200 Chestnut Street **State:** MO **Zip:** 64673 **Phone:** 660-748-2557 **24-HR Phone:** 660-748-5060 **Email:** lstiles@corp.grm.net
Secondary Emergency Contact Information	**Name:** Mike Ragan **City:** 200 Chestnut Street **State:** MO **Zip:** 64673 **Phone:** 660-748-2557 **24-HR Phone:** 660-748-5060 **Email:** lstiles@corp.grm.net

Facility Name: GRM Princeton		**Reporting Year: 2022**
Chemical Description Chemical Name: Sulfuric Acid Product Name: Battery Electrolyte Solution CAS: 7664-93-9 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Flammable (gases, aerosols, liquids or solids) Skin corrosion or irritation Serious eye damage or eye irritation Respiratory or skin sensitization Reproductive toxicity Specific target organ toxicity (single or repassed exposure)	**Inventory** Max Daily Amount: 1,000-4,999 Avg Daily Amount: 1,000-4,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Other	Ambient	Ambient	Inside building: 24 batteries = 1,037 pounds of sulfuric acid. Building has back up generator and then back up batteries. Building is heated and air conditioned.

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Reporting Year: 2022					
Facility Name Mercer Quarry	**Max Number of Occupants** 100	**Manned Status** UnManned			
Counties MERCER					
Facility Address	**Street** Highway M	**City** Mercer	**State** MO	**Zip** 64461	
Mailing Address	**Street** 16613 Bus Hwy 71	**City** Savannah	**State** MO	**Zip** 64485	
RMP Facility Id	**DUN Number**	**NAICS Code** 212312	**TRI Number**	**Latitude** 40.511515	**Longitude** -93.486462
Explosives Listed N	**Section 302** N	**Section 112** N	**Facility Type** Other	**Submission** Y	
Fire Dept. With Jurisdiction MERCER FIRE PROTECTION DISTRICT (MERC)					

Owner/Operator Information	**Name:** Norris Quarries **City:** Highway M **State:** MO **Zip:** 64461 **Phone:** 660-382-4315 **24-HR Phone:** 8163240646 **Email:** rick.grauel@norrisquarries.com
Regulatory Point of Contact Information	**Name:** Rick Grauel **City:** Highway M **State:** MO **Zip:** 64461 **Phone:** 660-382-4315 **24-HR Phone:** 8162050266 **Email:** rick.grauel@norrisquarries.com
Emergency Contact Information	**Name:** Scott Jones **City:** Highway M **State:** MO **Zip:** 64461 **Phone:** 660-382-4315 **24-HR Phone:** 8162440508 **Email:** rick.grauel@norrisquarries.com
Secondary Emergency Contact Information	**Name:** Jackie Sisk **City:** Highway M **State:** MO **Zip:** 64461 **Phone:** 660-382-4315 **24-HR Phone:** 8162050225 **Email:** rick.grauel@norrisquarries.com

Facility Name: Mercer Quarry		**Reporting Year: 2022**
Chemical Description Chemical Name: Calcium Carbonate Product Name: Crushed Limestone CAS: 1317-65-3 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Hazard Not Otherwise Classified	**Inventory** Max Daily Amount: 75,000-99,999 Avg Daily Amount: 75,000-99,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Other	Ambient	Ambient	stockpiles on site

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Reporting Year: 2022					
Facility Name Midwest Propane Gas - Princeton	**Max Number of Occupants** 3	**Manned Status** Manned			
Counties MERCER					
Facility Address	**Street** 601 Stewart St.	**City** Princeton	**State** MO	**Zip** 64673	
Mailing Address	**Street** P.O. Box 126	**City** Princeton	**State** KY	**Zip** 64673-126	
RMP Facility Id	**DUN Number** 004659942	**NAICS Code** 454310	**TRI Number**	**Latitude** 40.396960	**Longitude** 93.594030
Explosives Listed N	**Section 302** N	**Section 112** N	**Facility Type** Retail Petroleum	**Submission** Y	
Fire Dept. With Jurisdiction Mercer County Fire Protection District (MRCC)					

Owner/Operator Information	**Name:** United Propane Inc. **City:** 601 Stewart St. **State:** MO **Zip:** 64673 **Phone:** 660-748-4288 **24-HR Phone:** 800-782-7743 **Email:** upg64@upgas.com
Regulatory Point of Contact Information	**Name:** brett sheldon **City:** 601 Stewart St. **State:** MO **Zip:** 64673 **Phone:** 660-748-4288 **24-HR Phone:** 8602340301 **Email:** upg64@upgas.com
Emergency Contact Information	**Name:** United Propane Hines **City:** 601 Stewart St. **State:** MO **Zip:** 64673 **Phone:** 660-748-4288 **24-HR Phone:** 800-782-7743 **Email:** upg64@upgas.com
Secondary Emergency Contact Information	**Name:** Brian Shelby **City:** 601 Stewart St. **State:** MO **Zip:** 64673 **Phone:** 660-748-4288 **24-HR Phone:** 800-782-7743 **Email:** upg64@upgas.com

Facility Name: Midwest Propane Gas - Princeton		**Reporting Year: 2022**
Chemical Description Chemical Name: Propane Product Name: Propane CAS: 74-98-6 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Flammable (gases, aerosols, liquids or solids) Gas under pressure (compressed gas) Simple Asphyxiant	**Inventory** Max Daily Amount: 100,000-499,999 Avg Daily Amount: 100,000-499,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Above Ground Tank	Greater than Ambient	Less than Ambient but Not Cryogenic	Left Side of Office

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Reporting Year: 2022					
Facility Name Princeton BP-PC	**Max Number of Occupants** 4	**Manned Status** Manned			
Counties MERCER					
Facility Address	**Street** 18530 Fedora Loop	**City** Princeton	**State** MO	**Zip** 64673	
Mailing Address	**Street** PO Box 519	**City** Columbia	**State** MO	**Zip** 65205	
RMP Facility Id	**DUN Number** 006965123	**NAICS Code** 424710	**TRI Number**	**Latitude** 40.399800	**Longitude** 93.606700
Explosives Listed N	**Section 302** N	**Section 112** N	**Facility Type** Bulk Petroleum	**Submission** Y	
Fire Dept. With Jurisdiction Mercer County Fire Protection District (MRCC)					

Owner/Operator Information	**Name:** Tracy Barth **City:** 18530 Fedora Loop **State:** MO **Zip:** 64673 **Phone:** 660-748-3355 **24-HR Phone:** 573-999-2489 **Email:** tbarth@mfaoil.com
Regulatory Point of Contact Information	**Name:** Tracy Barth **City:** 18530 Fedora Loop **State:** MO **Zip:** 64673 **Phone:** 660-748-3355 **24-HR Phone:** 573-999-2489 **Email:** tbarth@mfaoil.com
Emergency Contact Information	**Name:** Tracy Barth **City:** 18530 Fedora Loop **State:** MO **Zip:** 64673 **Phone:** 660-748-3355 **24-HR Phone:** 573-999-2489 **Email:** tbarth@mfaoil.com
Secondary Emergency Contact Information	**Name:** Kenny Steeves **City:** 18530 Fedora Loop **State:** MO **Zip:** 64673 **Phone:** 660-748-3355 **24-HR Phone:** 573-397-8871 **Email:** tbarth@mfaoil.com

Facility Name: Princeton BP-PC		**Reporting Year: 2022**
Chemical Description Chemical Name: Gasoline Product Name: Gasoline CAS: 8006-61-9 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Flammable (gases, aerosols, liquids or solids) Skin corrosion or irritation Carcinogenicity	**Inventory** Max Daily Amount: 100,000-499,999 Avg Daily Amount: 100,000-499,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Above Ground Tank	Ambient	Ambient	Bulk AST in secondary containment

Facility Name: Princeton BP-PC		Reporting Year: 2022
Chemical Description Chemical Name: Diesel Fuel Product Name: Diesel Fuel CAS: 68476-34-6 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Flammable (gases, aerosols, liquids or solids) Skin corrosion or irritation Carcinogenicity	**Inventory** Max Daily Amount: 100,000-499,999 Avg Daily Amount: 100,000-499,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Above Ground Tank	Ambient	Ambient	Bulk ASTs in secondary containment

Facility Name: Princeton BP-PC		**Reporting Year: 2022**
Chemical Description Chemical Name: Kerosene Product Name: Kerosene CAS: 8008-20-6 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Flammable (gases, aerosols, liquids or solids) Skin corrosion or irritation Carcinogenicity	**Inventory** Max Daily Amount: 25,000-49,999 Avg Daily Amount: 25,000-49,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Above Ground Tank	Ambient	Ambient	Bulk AST in secondary containment

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Reporting Year: 2022					
Facility Name Princeton LP	**Max Number of Occupants** 0	**Manned Status** UnManned			
Counties MERCER					
Facility Address	**Street** 1404 E. Main Street	**City** Princeton	**State** MO	**Zip** 64673	
Mailing Address	**Street** PO Box 519	**City** Columbia	**State** MO	**Zip** 65205	
RMP Facility Id	**DUN Number** 006965123	**NAICS Code** 424710	**TRI Number**	**Latitude** 40.395800	**Longitude** 93.575200
Explosives Listed Y	**Section 302** N	**Section 112** N	**Facility Type** Bulk Petroleum	**Submission** Y	
Fire Dept. With Jurisdiction Mercer County Fire Protection District (MRCC)					

Owner/Operator Information	**Name:** Tracy Barth **City:** 1404 E. Main Street **State:** MO **Zip:** 64673 **Phone:** 660-748-3355 **24-HR Phone:** 573-999-2489 **Email:** tbarth@mfaoil.com
Regulatory Point of Contact Information	**Name:** Tracy Barth **City:** 1404 E. Main Street **State:** MO **Zip:** 64673 **Phone:** 660-748-3355 **24-HR Phone:** 573-999-2489 **Email:** tbarth@mfaoil.com
Emergency Contact Information	**Name:** Tracy Barth **City:** 1404 E. Main Street **State:** MO **Zip:** 64673 **Phone:** 660-748-3355 **24-HR Phone:** 573-999-2489 **Email:** tbarth@mfaoil.com
Secondary Emergency Contact Information	**Name:** Kenny Steeves **City:** 1404 E. Main Street **State:** MO **Zip:** 64673 **Phone:** 660-748-3355 **24-HR Phone:** 573-397-8871 **Email:** tbarth@mfaoil.com

Facility Name: Princeton LP		**Reporting Year: 2022**
Chemical Description Chemical Name: Propane Product Name: Propane CAS: 74-98-6 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Explosive Flammable (gases, aerosols, liquids or solids) Gas under pressure (compressed gas)	**Inventory** Max Daily Amount: 100,000-499,999 Avg Daily Amount: 100,000-499,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Above Ground Tank	Greater than Ambient	Less than Ambient but Not Cryogenic	Three (3) bulk LPG storage tanks

Reporting Year: 2022					
Facility Name Princeton Quarry	**Max Number of Occupants** 100	**Manned Status** Manned			
Counties MERCER					
Facility Address	**Street** 23500 Harmonica Road	**City** Princeton	**State** MO	**Zip** 64673	
Mailing Address	**Street** 16613 Bus Hwy 71	**City** Savannah	**State** MO	**Zip** 64485	
RMP Facility Id	**DUN Number**	**NAICS Code** 212312	**TRI Number**	**Latitude** 40.375517	**Longitude** -93.575463
Explosives Listed N	**Section 302** N	**Section 112** N	**Facility Type** Other	**Submission** Y	
Fire Dept. With Jurisdiction Mercer County Fire Protection District (MRCC)					

Owner/Operator Information	**Name:** Norris Quarries **City:** 23500 Harmonica Road **State:** MO **Zip:** 64673 **Phone:** 660-748-4454 **24-HR Phone:** 8163240646 **Email:** rick.grauel@norrisquarries.com
Regulatory Point of Contact Information	**Name:** Rick Grauel **City:** 23500 Harmonica Road **State:** MO **Zip:** 64673 **Phone:** 660-748-4454 **24-HR Phone:** 8162050266 **Email:** rick.grauel@norrisquarries.com
Emergency Contact Information	**Name:** Scott Jones **City:** 23500 Harmonica Road **State:** MO **Zip:** 64673 **Phone:** 660-748-4454 **24-HR Phone:** 8162440508 **Email:** rick.grauel@norrisquarries.com
Secondary Emergency Contact Information	**Name:** Jackie Sisk **City:** 23500 Harmonica Road **State:** MO **Zip:** 64673 **Phone:** 660-748-4454 **24-HR Phone:** 8162050225 **Email:** rick.grauel@norrisquarries.com

Facility Name: Princeton Quarry		**Reporting Year: 2022**
Chemical Description Chemical Name: Calcium Carbonate Product Name: Crushed Limestone CAS: 1317-65-3 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Hazard Not Otherwise Classified	**Inventory** Max Daily Amount: 100,000-499,999 Avg Daily Amount: 100,000-499,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Other	Ambient	Ambient	stockpiles on site

Facility Name: Princeton Quarry		**Reporting Year: 2022**
Chemical Description Chemical Name: Diesel Fuel #2 Product Name: Diesel Fuel #2 CAS: 68476346 Trade Secret: N Chemical Type: Mix Chemical State: Gas	**Physical And Health Hazards** Flammable (gases, aerosols, liquids or solids)	**Inventory** Max Daily Amount: 10,000-24,999 Avg Daily Amount: 10,000-24,999 No. of Day on Site per Year: 365 Optional Reporting: N

Storage Codes and Locations

Container	Pressure	Temperature	Storage Location
Above Ground Tank	Ambient	Ambient	1000 feet west of gate

Ferrellgas

Missouri Tier Two Report

Dear Safety Coordinator,

Attached is a copy of the *Missouri Tier Two* report as required by the **Missouri Emergency Response Commission.** A copy of this has been sent to the Commission along with the applicable fees.

This copy is for you to retain in your records.

There is some excellent Resources for Safety and Training, and these are Offered by the Propane Education and Research Council (PERC). PERC has a Publication of Propane Emergencies – a textbook that is available for Free Download at
https://www.propanesafety.com/

PERC also offers Several Items in their Catalog at https://propane.com/resource-catalog/
or by calling (202) 452-8975

If we can be of any further assistance or you would like to see our facility for "Emergency Preparedness" please don't hesitate to call.

Thank You

Robert Turner
Operations Manager

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Important: Please read all instructions before completing form Report period from January 1 to December 31, 2023

Reporting Year: 2023 **Company: Casey's Marketing Company**

Facility Identification (2a) - Facility Location

Facility Name: Casey's General Store #1092
Max No. of Occupants: 75
Street Address: 21649 US Hwy 65
Max No. of Occupants: Manned
City: Princeton
State: MO Zip: 64673
Phone: 660-748-4510
Fax: 515-446-6301
Email: Jill.Reams-Widder@caseys.com
County: MERCER

Owner/Operator Information (2b)

Name: Jill Reams-Widder
Mail Address: 3305 SE Delaware Ave
City: Ankeny State: IA Zip: 50021
Phone: 5154466238
24-HR Phone Number: 515-446-6238
Email: Jill.Reams-Widder@caseys.com

Mailing Address:

Facility Name: Jill Reams-Widder
Street Address: 3305 SE Delaware Ave
City: Ankeny State: IA Zip: 50021

Regulatory point of Contact Information (2c)

Name: Jill Reams-Widder
Mail Address: 3305 SE Delaware Ave
City: Ankeny State: IA Zip: 50021
Phone: 5154466238
24-HR Phone Number: 515-446-6238
Email: Jill.Reams-Widder@caseys.com

RMP Facility Id: 5541
DUN Number: 151151776
NAICS Code: 44-45
TRI Number
Latitude: 40.399982
Longitude: -93.578711

Emergency Contact Information (2d)

Name: Jill Reams-Widder
Mail Address: 3305 SE Delaware Ave
City: Ankeny State: IA Zip: 50021
Phone: 5154466238
24-HR Phone Number: 515-446-6233
Email: Jill.Reams-Widder@caseys.com

Fire Department with Jurisdiction: Mercer County Fire Protection Distrct (MRCC)
Are Any Explosive Listed: N
302: N
112: N
Facility Type: Retail Petroleum
Submission: Initial

Secondary Emergency Contact Information

Name: Scott Fleming
Mail Address: 3305 SE Delaware Ave
City: Ankeny State: IA Zip: 50021
Phone: 515-381-4137
24-HR Phone Number: 515-446-6238
Email: scott.fleming@caseys.com

Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2 and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner/operator OR owner/operator's authorized representative
Name Teri Mason Title EPA Compliance Assistant Signature_____ Date Signed:

Optional Attachments

I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Important: Please read all instructions before completing form Report period from January 1 to December 31, 2023

Reporting Year: 2023 Company: Ferrellgas

Facility Identification (2a) - Facility Location

Facility Name: Spickard
Street Address: 1298 NW 2nd Ave
City: Spickard
Phone: 888-FERRELL
Email: roberttumer@ferrellgas.com
Max No. of Occupants: 1
Max No. of Occupants: UnManned
State: MO Zip: 64679
Fax: 816-368-5564
County: MERCER

Owner/Operator Information (2b)

Name: Ferrell Gas
Mail Address: 1 Liberty Plaza
City: Liberty State: MO Zip: 64068
Phone: 888-FERRELL 24-HR Phone Number: 800-205-5127
Email: jeffbarnes@ferrellgas.com

Mailing Address:

Facility Name: Ferrellgas
Street Address: 1219 N Eaglecrest
City: Nixa State: MO Zip: 65714

Regulatory point of Contact Information (2c)

Name: Robert Turner
Mail Address: 1219 N Eaglecrest
City: Nixa State: MO Zip: 65714
Phone: 4173708342 24-HR Phone Number: 888-FERRELL
Email: roberttumer@ferrellgas.com

RMP Facility Id:
NAICS Code: 457210
Latitude: 40.265172
DUN Number: 861017291
TRI Number:
Longitude: -93.587384

Emergency Contact Information (2d)

Name: Thomas Lay
Mail Address: 2837 Roe Ln
City: Kansas City State: KS Zip: 66103
Phone: 816-777-7600 24-HR Phone Number: 888-FERRELL
Email: thomaslay@ferrellgas.com

Fire Department with Jurisdiction: Spickard Fire Protection District
Are Any Explosive Listed: N
302: N
112: N
Facility Type: Bulk Petroleum
Submission: Initial

Secondary Emergency Contact Information

Name: Jeff Barnes
Mail Address: 2837 Roe Lane
City: Kansas City State: KS Zip: 66103
Phone: 913-687-2006 24-HR Phone Number: 800-205-5127
Email: jeffbarnes@ferrellgas.com

Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner/operator OR owner/operator's authorized representative

Name Robert Turner Title OPS Manager Signature Robert Turner Date Signed: 1/19/24

Optional Attachments

I have attached a site plan

I have attached a list of site coordinate abbreviations

I have attached a description of dikes and other safeguard measures

Facility Name: Casey's General Store #1092
City: Princeton State: MO Zip: 64673

Emergency Contact
Phone: 5154466238 24-HR Phone Number: 515-446-6238

Chemical Description(3)
[ ] Check if info is same as last year.
CAS: 000064-17-5
Trade Secret: N
Chemical Name: ethyl alcohol
Product Name: Gas
Chemical Type: Mix
Chemical State: Liquid

Physical and Health Hazards (4) Check all that apply:

Explosive	Acute toxicity (any route of exposure)
Flammable (gases, aerosols liquids or solids)	Skin corrosion or irritation
Oxidizer (liquid, solid or gas)	Serious eye damage or eye irritation
Self-reactive	Respiratory or skin sensitization
Pyrophoric (liquid or solid)	Germ cell mutagenicity
Pyrophoric Gas	Carcinogenicity
Self-heating	Reproductive toxicity
Organic peroxide	Specific target organ toxicity (single or repassed exposure)
Corrosive to metal	Aspiration hazard
Gas under pressure (compressed gas)	Simple Asphyxiant
Combustible Dust	Hazard Not Otherwise Classified

Inventory (5)
Max Daily Amount Code: 1,000-4,999
Avg Daily Amount Code: 1,000-4,999
No. of Day on Site per Year: 365
Optional Report: N

Storage Codes and Locations (6) (Note: This information is Not Confidential)

Code:	Container	Pressure	Temperature	
	Below Ground Tank	Ambient	Ambient	Storage Location: on store lot

Certification (Read and sign after completing all sections)
I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Optional Attachments
I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Name and official title of owner/operator OR owner/operator's authorized representative
Name Teri Mason Title EPA Compliance Assistant Signature _____ Date Signed:

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Reporting Year: 2023 **Company: Ferrellgas**

Facility Name: Spickard
City: Spickard State: MO Zip: 64679

Emergency Contact
Phone: 816-777-7600 24-HR Phone Number: 888-FERRELL

Chemical Description(3)
[ ] Check if info is same as last year.
CAS: 74-98-6
Trade Secret: N
Chemical Name: Propane
Product Name: Propane
Chemical Type: Pure
Chemical State: Liquid

Physical and Health Hazards (4) Check all that apply:

✓ Explosive	Acute toxicity (any route of exposure)
✓ Flammable (gases, aerosols, liquids or solids)	✓ Skin corrosion or irritation
Oxidizer (liquid, solid or gas)	✓ Serious eye damage or eye irritation
Self-reactive	Respiratory or skin sensitization
Pyrophoric (liquid or solid)	Germ cell mutagenicity
Pyrophoric Gas	Carcinogenicity
Self-heating	Reproductive toxicity
Organic peroxide	Specific target organ toxicity (single or repassed exposure)
Corrosive to metal	Aspiration hazard
✓ Gas under pressure (compressed gas)	✓ Simple Asphyxiant
Combustible Dust	Hazard Not Otherwise Classified

Inventory (5)
Max Daily Amount Code: 50,000-74,999
Avg Daily Amount Code: 50,000-74,999
No. of Day on Site per Year: 365
Optional Report: N

Storage Codes and Locations (6) (Note: This information is Not Confidential)

	Container	Pressure	Temperature	
Code:	Above Ground Tank	Greater than Ambient	Ambient	Storage Location: 1 - 18,000 gal Storage located 1298 NW 2nd Ave or North of Spickard on Old Hwy 65

Certification (Read and sign after completing all sections)
I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner/operator OR owner/operator's authorized representative
Name Robert Turner Title OPS Manager Signature Robert Turner Date Signed: 1/19/24

Optional Attachments
I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Facility Name: Casey's General Store #1092
City: Princeton State: MO Zip: 64673

Emergency Contact
Phone: 5154456238 24-HR Phone Number: 515-446-6238

Chemical Description(3)
[ ] Check if info is same as last year.
CAS: 68334-30-5
Trade Secret: N
Chemical Name: Diesel
Product Name: Diesel
Chemical Type: Mix
Chemical State: Liquid

Physical and Health Hazards (4) Check all that apply:

Explosive	Acute toxicity (any route of exposure)
Flammable (gases, aerosols, liquids or solids)	Skin corrosion or irritation
Oxidizer (liquid, solid or gas)	Serious eye damage or eye irritation
Self-reactive	Respiratory or skin sensitization
Pyrophoric (liquid or solid)	Germ cell mutagenicity
Pyrophoric Gas	Carcinogenicity
Self-heating	Reproductive toxicity
Organic peroxide	Specific target organ toxicity (single or repassed exposure)
Corrosive to metal	Aspiration hazard
Gas under pressure (compressed gas)	Simple Asphyxiant
Combustible Dust	Hazard Not Otherwise Classified

Inventory (5)
Max Daily Amount Code: 1,000-4,999
Avg Daily Amount Code: 1,000-4,999
No. of Day on Site per Year: 365
Optional Report: N

Storage Codes and Locations (6) (Note: This information is Not Confidential)

Code:	Container	Pressure	Temperature	Storage Location, on store lot
	Below Ground Tank	Ambient	Ambient	

Certification (Read and sign after completing all sections)
I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner/operator OR owner/operator's authorized representative
Name Teri Mason Title EPA Compliance Assistant Signature_____ Date Signed:

Optional Attachments
I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Important: Please read all instructions before completing form Report period from January 1 to December 31, 2023

Reporting Year: 2023 Company: City of Princeton

Facility Identification (2a) - Facility Location

Facility Name: City of Princeton Maintenance Barn
Street Address: 200 Stewart Street
City: Princeton
Phone: 6607484375
Email: cityprin@grm.net

Max No. of Occupants: 8
Max No. of Occupants: Manned
State: MO Zip: 64673
Fax:
County: MERCER

Owner/Operator Information (2b)

Name: Greg Goodknight
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607486086
Email: cityprin@grm.net

Mailing Address:

Facility Name: City of Princeton
Street Address: 507 W. Main
City: Princeton State: MO Zip: 64673

Regulatory point of Contact Information (2c)

Name: Greg Goodknight
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607486086
Email: cityprin@grm.net

RMP Facility Id:
NAICS Code: 237310
Latitude: 40.600000

DUN Number: 053645222
TRI Number:
Longitude: -95.800000

Emergency Contact Information (2d)

Name: Greg Goodknight
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607486086
Email: cityprin@grm.net

Fire Department with Jurisdiction: Mercer County Fire Protection District (MRCC)
Are Any Explosive Listed: N
302: N
112: N
Facility Type: Local/Federal Government
Submission: Initial

Secondary Emergency Contact Information

Name: Kelly Hagan
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607485778
Email: cityprin@grm.net

Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Optional Attachments

I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Name and official title of owner/operator OR owner/operator's authorized representative

Name Greg Goodknight Title superintendent Signature_____ Date Signed: 1/3/2024

Facility Name: City of Princeton water treatment plant
City: Princeton State: MO Zip: 64673

Emergency Contact
Phone: 6607484375 24-HR Phone Number: 6607486086

Chemical Description(3)
[ ] Check if info is same as last year.
CAS: 7782-50-5
Trade Secret: N
Chemical Name: Chlorine Gas
Product Name: Chlorine Gas
Chemical Type: Pure
Chemical State: Gas

Physical and Health Hazards (4) Check all that apply:

Explosive	Acute toxicity (any route of exposure)
Flammable (gases, aerosols, liquids or solids)	Skin corrosion or irritation
Oxidizer (liquid, solid or gas)	Serious eye damage or eye irritation
Self-reactive	Respiratory or skin sensitization
Pyrophoric (liquid or solid)	Germ cell mutagenicity
Pyrophoric Gas	Carcinogenicity
Self-heating	Reproductive toxicity
Organic peroxide	Specific target organ toxicity (single or repassed exposure)
Corrosive to metal	Aspiration hazard
Gas under pressure (compressed gas)	Simple Asphyxiant
Combustible Dust	Hazard Not Otherwise Classified

Inventory (5)
Max Daily Amount Code: 10,000-24,999
Avg Daily Amount Code: 10,000-24,999
No. of Day on Site per Year: 365
Optional Report: N

Storage Codes and Locations (6) (Note: This information is Not Confidential)

Code:	Container	Pressure	Temperature	Storage Location:
	Cylinder	Greater than Ambient	Ambient	cl2 room on west side of water plant

Certification (Read and sign after completing all sections)
I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2 , and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Optional Attachments
I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Name and official title of owner/operator OR owner/operator's authorized representative
Name Greg Goodknight Title superintendent Signature_____ Date Signed: 1/3/2024

The Region "H" Homeland Security Regional Response System also agrees to utilize its extensive equipment and trained personnel to respond to hazardous materials incidents throughout Region "H".

This agreement shall be binding upon the successors and assigns of both parties.

In witness whereof, this Agreement is executed this _____th day of _____, 2024.

Mercer County Local Emergency Planning Committee

By _____
Chairperson

Region "H" Homeland Security Regional Response System

By William C Brinton Jr.
William C. Brinton, Jr, Director

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Important: Please read all instructions before completing form Report period from January 1 to December 31, 2023

Reporting Year: 2023 Company: City of Princeton

Facility Identification (2a) - Facility Location

Facility Name: Princeton Wastewater Plant
Street Address: US Highway 136 & Stewart St.
City: Princeton State: MO Zip: 64673
Phone: 6607484375 Fax:
Email: cityprin@grm.net County: MERCER
Max No. of Occupants: 8
Max No. of Occupants: Manned

Owner/Operator Information (2b)

Name: Greg Goodknight
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607486086
Email: cityprin@grm.net

Mailing Address:

Facility Name: City of Princeton
Street Address: 507 W. Main
City: Princeton State: MO Zip: 64673

Regulatory point of Contact Information (2c)

Name: Greg Goodknight
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607486086
Email: cityprin@grm.net

RMP Facility Id:
NAICS Code: 221320
Latitude: 40.405914
DUN Number: 053645222
TRI Number:
Longitude: -93.594840

Emergency Contact Information (2d)

Name: Russell Hydorn
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607485777
Email: cityprin@grm.net

Fire Department with Jurisdiction: Mercer County Fire Protection District (MRCC)
Are Any Explosive Listed: N
302: N
112: N
Facility Type: Local/Federal Government
Submission: Initial

Secondary Emergency Contact Information

Name: Kelly Hagan
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607485777
Email: cityprin@grm.net

Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Optional Attachments

I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Name and official title of owner/operator OR owner/operator's authorized representative

Name Greg Goodknight Title superintendent Signature_____ Date Signed: 1/3/2024

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Reporting Year: 2023 Company: City of Princeton

Facility Name: City of Princeton Maintenance Barn
City: Princeton State: MO Zip: 64673

Emergency Contact
Phone: 6607484375 24-HR Phone Number: 6607486086

Chemical Description(3)
[ ] Check if info is same as last year.
CAS: 8052-42-4
Trade Secret: N
Chemical Name: Liquid Asphalt
MC250& MC30
Product Name: Liquid Asphalt
Chemical Type: Mix
Chemical State: Liquid

Physical and Health Hazards (4) Check all that apply:

- Explosive
- Flammable (gases, aerosols, liquids or solids)
- Oxidizer (liquid, solid or gas)
- Self-reactive
- Pyrophoric (liquid or solid)
- Pyrophoric Gas
- Self-heating
- Organic peroxide
- Corrosive to metal
- Gas under pressure (compressed gas)
- Combustible Dust
- Acute toxicity (any route of exposure)
- Skin corrosion or irritation
- Serious eye damage or eye irritation
- Respiratory or skin sensitization
- Germ cell mutagenicity
- Carcinogenicity
- Reproductive toxicity
- Specific target organ toxicity (single or repassed exposure)
- Aspiration hazard
- Simple Asphyxiant
- Hazard Not Otherwise Classified

Inventory (5)
Max Daily Amount Code: 10,000-24,999
Avg Daily Amount Code: 10,000-24,999
No. of Day on Site per Year: 365
Optional Report: N

Storage Codes and Locations (6) (Note: This information is Not Confidential)

Code:	Container	Pressure	Temperature
	Above Ground Tank	Ambient	Ambient

Storage Location: 40 feet north of Maintenance building

Certification (Read and sign after completing all sections)
I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2 , and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Optional Attachments
I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Name and official title of owner/operator OR owner/operator's authorized representative
Name Greg Goodknight Title superintendent Signature_____ Date Signed: 1/3/2024

Scott Nelson
Presiding Commissioner

Buchanan County, Missouri

William (Bill) Brinton, Jr.
Director
Cell 816-383-0604

EMERGENCY MANAGEMENT AGENCY

411 Jules Street
Saint Joseph, Missouri 64501
Phone 816-271-1574 Fax 816-271-1569

January 19, 2024

To the Region H County Commissioners and County LEPC's,

Enclosed please find:

- **Your Region H HSRT Agreements for 2024**
- **Your Region H HSRT Financial Statements for 2024**
- **Your Region H HRST 2023 Annual Report**

As always, the Region H Team appreciates your support.

We are always there for you and we can't do what we do without you.

If you need anything or have any questions, please feel to contact me at 816-383-0604.

Thanks again for your continue support.

Sincerely,

Bill

Bill Brinton
Chief

STATEMENT

Northwest Missouri Region H HSRT
411 Jules St. Room 102
St. Joseph, MO 64501

STATEMENT # 2024
DATE: JANUARY 19, 2024

BILL TO
Mercer County LEPC
Mercer County Courthouse
802 East Main Street
Princeton MO 64673

COMMENTS

DATE	DESCRIPTION	BALANCE	AMOUNT
January 1 to December 32, 2024	The Region H HSRRS/HAZMAT Team agrees to use their extensive equipment and trained personnel to assist in the training of responders through out Region "H", to assist in emergency response drills and exercises associated in each counties Emergency Operations Plan.		$885.00
January 1 to December 32, 2024	The Region H HSRRS/HAZMAT Team agrees to serve as a conduit for communications between Local, County, State and Federal government agencies involved with hazardous materials and with related professional business organizations and groups concerned with the handling of hazardous materials.		
January 1 to December 32, 2024	The Region H HSRRS/HAZMAT Team also agrees to utilize its extensive equipment and trained personnel to respond to hazardous materials/CBRNE incidents throughout Region "H".		
January 1 to December 32, 2024	The Region H HSRRS/HAZMAT Team also agrees to utilize its extensive equipment and trained personnel to provide equipment/technical support where needed throughout Region H.		
January 1 to December 32, 2024	These funds may also be utilized to provide Physicals for the Region H HSRRS/Hazmat Team **Payment due by June 30, 2024**		

CURRENT	1-30 DAYS PAST DUE	31-60 DAYS PAST DUE	61-90 DAYS PAST DUE	OVER 90 DAYS PAST DUE	AMOUNT DUE
					$885.00

REMITTANCE	
Statement #	Mercer County 2024
Date	
Amount Due	$946.00
Amount Enclosed	

Make all checks payable to Northwest Missouri Region H HSRT
THANK YOU FOR YOUR BUSINESS!

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Reporting Year: 2023 Company: City of Princeton

Facility Name: Princeton Wastewater Plant
City: Princeton State: MO Zip: 64673

Emergency Contact
Phone: 6607484375 24-HR Phone Number: 6607485777

Chemical Description(3)
[ ] Check if info is same as last year.
CAS: 7681-52-9
Trade Secret: N
Chemical Name: Sodium Hyochorite
Product Name: Chorine Liquid
Chemical Type: Pure
Chemical State: Liquid

Physical and Health Hazards (4) Check all that apply:

Explosive	Acute toxicity (any route of exposure)
Flammable (gases, aerosols, liquids or solids)	Skin corrosion or irritation
Oxidizer (liquid, solid or gas)	Serious eye damage or eye irritation
Self-reactive	Respiratory or skin sensitization
Pyrophoric (liquid or solid)	Germ cell mutagenicity
Pyrophoric Gas	Carcinogenicity
Self-heating	Reproductive toxicity
Organic peroxide	Specific target organ toxicity (single or repassed exposure)
Corrosive to metal	Aspiration hazard
Gas under pressure (compressed gas)	Simple Asphyxiant
Combustible Dust	Hazard Not Otherwise Classified

Inventory (5)
Max Daily Amount Code: 10,000-24,999
Avg Daily Amount Code: 10,000-24,999
No. of Day on Site per Year: 365
Optional Report: N

Storage Codes and Locations (6) (Note: This information is Not Confidential)

	Container	Pressure	Temperature	
Code:	Tank Inside Building	Ambient	Ambient	Storage Location: inside wastewater plant building on west side

Certification (Read and sign after completing all sections)
I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Optional Attachments
I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Name and official title of owner/operator OR owner/operator's authorized representative
Name Greg Goodknight Title superintendent Signature_____ Date Signed: 1/3/2024

Missouri Emergency Response Commission - Department of Public Safety - PO Box 3133 Jefferson City, MO 65102

TIER TWO - Emergency and Hazardous Chemical Inventory (General Information)

Important: Please read all instructions before completing form Report period from January 1 to December 31, 2023

Reporting Year: 2023 Company: City of Princeton

Facility Identification (2a) - Facility Location

Facility Name: City of Princeton water treatment plant
Street Address: 401 Fullerton St.
City: Princeton
Phone: 6607484375
Email: cityprin@grm.net
Max No. of Occupants: 8
Max No. of Occupants: Manned
State: MO Zip: 64673
Fax: 6607484776
County: MERCER

Owner/Operator Information (2b)

Name: Greg Goodknight
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607486086
Email: cityprin@grm.net

Mailing Address:

Facility Name: City of Princeton
Street Address: 507 W. Main
City: Princeton State: MO Zip: 64673

Regulatory point of Contact Information (2c)

Name: Greg Goodknight
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607486086
Email: cityprin@grm.net

RMP Facility Id:
NAICS Code: 221310
Latitude: 40.600000
DUN Number: 053645222
TRI Number:
Longitude: -95.800000

Emergency Contact Information (2d)

Name: Greg Goodknight
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607486086
Email: cityprin@grm.net

Fire Department with Jurisdiction: Mercer County Fire Protection District (MRCC)
Are Any Explosive Listed: N
302: N
112: N
Facility Type: Local/Federal Government
Submission: Initial

Secondary Emergency Contact Information

Name: Matt Hydom
Mail Address: 507 W. Main
City: Princeton State: MO Zip: 64673
Phone: 6607484375 24-HR Phone Number: 6607485777
Email: cityprin@grm.net

Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 2, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Optional Attachments

I have attached a site plan
I have attached a list of site coordinate abbreviations
I have attached a description of dikes and other safeguard measures

Name and official title of owner/operator OR owner/operator's authorized representative

Name Greg Goodknight Title superintendent Signature _____ Date Signed: 1/3/2024

2024 AGREEMENT

Between County's within Region "H" (Northwest Missouri)
&
The Buchanan County Region "H" Homeland Security Regional Response System

This agreement made and entered in this _____th day of _____, 2024, by and between, **Mercer County Local Emergency Planning Committee (LEPC)**.

And the Region "H" Homeland Security Regional Response System, 411 Jules St., Room 102, St. Joseph, MO 64501.

The mission of the Region "H" Homeland Security Regional Response System is to promote training, education and the safe efficient response to hazardous materials incidents in Northwest Missouri.

In December of 2007, the Region "H" Homeland Security Regional Response System Board of Directors voted that the Region "H" Homeland Security Regional Response System should become a part of Buchanan County.

It was agreed that it was in the best interest of the County's in Region "H" to continue their financial support of the Region "H" Homeland Security Regional Response System. It was decided that this financial support would be in the form of a donation based upon the population of each County.

The Missouri Association of Counties lists the 2020 population of Mercer County at 3,538 @ $.25 new amount is $885.00; payable on or before June 30, 2024.

The Region "H" Homeland Security Regional Response System agrees to use their extensive equipment and trained personnel to assist in the training of responders through out Region "H", to assist in emergency response drills and exercises associated with each County's Emergency Operations Plan.

The Region "H" Homeland Security Regional Response System also agrees to serve as a conduit for communications between Local, County, State and Federal government agencies involved with hazardous materials and with related professional business organizations and groups concerned with the handling of hazardous materials.

The Region "H" Homeland Security Regional Response System also agrees to promote the development and maintenance of a high code of ethical standards among Team members throughout Northwest Missouri.

STATEMENT

Northwest Missouri Region H HSRT
411 Jules St. Room 102
St. Joseph, MO 64501

STATEMENT # 2024
DATE: JANUARY 19, 2024

BILL TO
Mercer County LEPC
Mercer County Courthouse
802 East Main Street
Princeton MO 64673

COMMENTS

DATE	DESCRIPTION	BALANCE	AMOUNT
January 1 to December 32, 2024	The Region H HSRRS/HAZMAT Team agrees to use their extensive equipment and trained personnel to assist in the training of responders through out Region "H", to assist in emergency response drills and exercises associated in each counties Emergency Operations Plan.		$885.00
January 1 to December 32, 2024	The Region H HSRRS/HAZMAT Team agrees to serve as a conduit for communications between Local, County, State and Federal government agencies involved with hazardous materials and with related professional business organizations and groups concerned with the handling of hazardous materials.		
January 1 to December 32, 2024	The Region H HSRRS/HAZMAT Team also agrees to utilize its extensive equipment and trained personnel to respond to hazardous materials/CBRNE incidents throughout Region "H".		
January 1 to December 32, 2024	The Region H HSRRS/HAZMAT Team also agrees to utilize its extensive equipment and trained personnel to provide equipment/technical support where needed throughout Region H.		
January 1 to December 32, 2024	These funds may also be utilized to provide Physicals for the Region H HSRRS/Hazmat Team Payment due by June 30, 2024		

CURRENT	1-30 DAYS PAST DUE	31-60 DAYS PAST DUE	61-90 DAYS PAST DUE	OVER 90 DAYS PAST DUE	AMOUNT DUE
					$885.00

REMITTANCE	
Statement #	Mercer County 2024
Date	
Amount Due	$946.00
Amount Enclosed	

Make all checks payable to Northwest Missouri Region H HSRT

THANK YOU FOR YOUR BUSINESS!

Appendix E: Adoption Resolutions

City of Princeton, Missouri RESOLUTION NO. 1157

A RESOLUTION OF THE City of Princeton ADOPTING THE Mercer County Hazard Mitigation Plan

WHEREAS the City of Princeton recognizes the threat that natural hazards pose to people and property within the City of Princeton; and

WHEREAS the City of Princeton has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Mercer County Hazard Mitigation Plan, hereafter referred to as the *Plan*, in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City of Princeton from the impacts of future hazards and disasters; and

WHEREAS the City of Princeton recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Princeton will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the City of Princeton demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY the City of Princeton, in the State of Missouri, THAT:

In accordance with (*local rule for adopting resolutions*), the City of Princeton adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 4 in favor and 0 against, and __ abstaining, this 11 day of March, 2024.

By (Sig): _____
Print name: Kurt Meighen

ATTEST:

By (Sig.): Willett, City Clerk
Print name: Cory Willett, City Clerk

APPROVED AS TO FORM:

By (Sig.): _____
Print name:

_____

Mercer County, Missouri RESOLUTION NO: 3-11-2024

A RESOLUTION OF THE Mercer County Commission ADOPTING THE Mercer County Hazard Mitigation Plan

WHEREAS Mercer County recognizes the threat that natural hazards pose to people and property within Mercer County; and

WHEREAS Mercer County has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Mercer County Hazard Mitigation Plan, hereafter referred to as the *Plan*, in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Mercer County from the impacts of future hazards and disasters; and

WHEREAS Mercer County recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Mercer County Commission will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the Mercer County Commission demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY Mercer County, in the State of Missouri, THAT:

In accordance with (*local rule for adopting resolutions*), the Mercer County Commission adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 3 in favor and 0 against, and 0 abstaining, this 11th day of March, 2024

By (Sig): _____ yes X no_____
Print name: Jerry Allen Presiding Commissioner

By (Sig): _____ yes / no_____
Print name: Cheston Easter 1st District Commissioner

By (Sig): _____ yes X no_____
Print name: Zachary Martin 2nd District Commissioner

ATTEST:

By (Sig.): _____
Print name: Judy Hamilton, Mercer Co Clerk

SEAL OF THE COUNTY COURT
SEAL
MERCER COUNTY, MO

City of Mercer, Missouri RESOLUTION NO. 31424

A RESOLUTION OF THE City of Mercer ADOPTING THE Mercer County Hazard Mitigation Plan

WHEREAS the City of Mercer recognizes the threat that natural hazards pose to people and property within the City of Mercer; and

WHEREAS the City of Mercer has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Mercer County Hazard Mitigation Plan, hereafter referred to as the *Plan*, in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City of Mercer from the impacts of future hazards and disasters; and

WHEREAS the City of Mercer recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Mercer will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the City of Mercer demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY the City of Mercer, in the State of Missouri, THAT:

In accordance with (*local rule for adopting resolutions*), the City of Mercer adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 4 in favor and 0 against, and __ abstaining, this 14th day of March 2024

By (Sig): _____
Print name: Randy Michael

ATTEST:

By (Sig.): _____
Print name: Tracy Meinecke

APPROVED AS TO FORM:

By (Sig.): _____
Print name: _____

Princeton R-V School Board, Missouri RESOLUTION NO. 2024-01A

A RESOLUTION OF THE Princeton R-V School Board ADOPTING THE Mercer County Hazard Mitigation Plan

WHEREAS the Princeton R-V School Board recognizes the threat that natural hazards pose to people and property within the Princeton R-V School District; and

WHEREAS the Princeton R-V School Board has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Mercer County Hazard Mitigation Plan, hereafter referred to as the *Plan*, in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the Princeton R-V School District from the impacts of future hazards and disasters; and

WHEREAS the Princeton R-V School Board recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Princeton R-V School District will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the Princeton R-V School Board demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY the Princeton R-V School Board, in the State of Missouri, THAT:

In accordance with (*local rule for adopting resolutions*), the Princeton R-V School Board adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 18 day of March, 2024.

By (Sig): _____
Print name: Jerry Girdner - Superintendent

ATTEST:

By (Sig.): Carrie Goodin
Print name: Carrie Goodin

APPROVED AS TO FORM:

By (Sig.): _____
Print name: _____

North Mercer R-III School Board, Missouri RESOLUTION NO. _____

A RESOLUTION OF THE North Mercer R-III School Board ADOPTING THE Mercer County Hazard Mitigation Plan

WHEREAS the North Mercer R-III School Board recognizes the threat that natural hazards pose to people and property within the North Mercer R-III School District; and

WHEREAS the North Mercer R-III School Board has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Mercer County Hazard Mitigation Plan, hereafter referred to as the *Plan*, in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the North Mercer R-III School District from the impacts of future hazards and disasters; and

WHEREAS the North Mercer R-III School Board recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the North Mercer R-III School District will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the North Mercer R-III School Board demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY the North Mercer R-III School Board, in the State of Missouri, THAT:

In accordance with (*local rule for adopting resolutions*), the North Mercer R-III School Board adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 7 in favor and 0 against, and 0 abstaining, this 12 day of March, 2024.

By (Sig): Ervin Taff
Print name: Ervin Taff, Board President

ATTEST:

By (Sig.): Heath West
Print name: Heath West VP President

APPROVED AS TO FORM:

By (Sig.): Wade Hall
Print name: Wade Hall, Superintendent