MISSISSIPPI DEPARTMENT OF
EMERGENCY MANAGEMENT

2026 | MEMA District 5

REGIONAL HAZARD MITIGATION PLAN

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1. INTRODUCTION

The update to the 2020 District 5 Regional Hazard Mitigation Plan (RHMP) focuses on hazards identified as posing the greatest risk to the people and communities located in MEMA District 5. These priorities are based on a comprehensive hazard risk assessment and input from local officials. Hazards considered to present lower levels of concern will still be reviewed but may not receive full profiling during this update. The revised risk assessment will guide participating jurisdictions in updating and prioritizing mitigation actions, ensuring efforts target hazards that pose the most significant threats to life and property.

This section provides a general introduction to the Mississippi District 5 RHMP which consists of the following four subsections:

- Overview and Authority
- What is Hazard Mitigation?
- What is a Hazard Mitigation Plan?
- Summary of Plan Contents

1.1. OVERVIEW AND AUTHORITY

Natural hazards can cause property loss, loss of life, injury to people, economic hardship, and threats to public health and safety. Hazard mitigation is an effort to reduce the impact future disasters have on people and property in the community and reducing the cycle of repeatedly reconstructing frequently damaged facilities or infrastructure. When properly implemented, hazard mitigation can be a long-term, cost-effective means of reducing the risk of loss and helping create a more disaster-resistant and sustainable community. A study by the National Institute of Building Sciences found that, on average, every $1 invested in disaster mitigation saves society $13.[1]

The Federal Emergency Management Agency (FEMA) defines mitigation as follows:

> ***Mitigation is the effort to reduce loss of life and property by lessening the impact of disasters. Mitigation is taking action now—before the next disaster—to reduce human and financial consequences later (analyzing risk, reducing risk, insuring against risk). Effective mitigation requires that we all understand local risks, address the hard choices, and invest in long-term community well-being. Without mitigation actions, we jeopardize our safety, financial security, and self-reliance.***

Community leaders serving jurisdictions within District 5 understand how disasters affect their communities. The following are important considerations for communities within District 5 to keep in mind when planning for and mitigating hazards:

- Disasters can happen at anytime and anyplace; their personal and financial consequences are hard to predict.
- While the number of disaster events is increasing, only a fraction of these events reaches the damage threshold that triggers a federal declaration that would provide federal funding through the FEMA Public Assistance (PA), Individual Assistance (IA) and the Hazard Mitigation Grant Program (HMGP).
- FEMA's Hazard Mitigation Assistance (HMA) programs are designed to support activities which reduce the impact of events, dependence on taxpayer support, funding from the United States (U.S.) Treasury for disaster relief and to make communities more resilient.
- Hazard Mitigation planning is a process in which hazards are identified and profiled; people and facilities at risk are identified and assessed for threats and potential vulnerabilities; and strategies and mitigation measures are identified. The primary goal of this process is to reduce risk and vulnerability, to lessen the impacts to life, the economy and infrastructure and make a resilient community.
- Hazard mitigation planning increases the ability of communities to effectively function in the face of a natural and manmade disaster. Goals developed are to be realistic with achievable actions identified using short and long-term strategies to permanently reduce or alleviate the loss of injuries, life, and property resulting from hazardous events. In addition, policies, activities, and tools for mitigating the effects of disasters are developed. The method and subsequent plan are designed for accomplishing a systematic and participatory process using strategically scheduled events with stakeholder and government involvement. A comprehensive mitigation approach addresses hazard vulnerabilities existing today and in the foreseeable future.

The MEMA District 5 Regional Hazard Mitigation Plan has been developed in accordance with current state and federal rules and regulations governing local hazard mitigation plans and has been adopted

[1] https://nibs.org/wp-content/uploads/2025/04/ms_v4_overview.pdf

by each participating county and local jurisdiction in accordance with standard local procedures. Copies of the adoption resolutions for each participating jurisdiction are provided in Appendix G. The Plan shall be routinely monitored and revised to maintain compliance with the following provisions, rules, and legislation:

- Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390)
- FEMA's Final Rule published in the Federal Register, at 44 CFR Part 201 (201.6 for local mitigation planning requirements and 201.7 for Tribal planning requirements)
- Flood Insurance Reform Act of 2004 (P.L. 108-264), Biggert-Waters Flood Insurance Reform Act of 2012 (P.L. 112-141) and the Homeowner Flood Insurance Affordability Act

1.2. WHAT IS HAZARD MITIGATION?

Hazard mitigation is defined as any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazard events and their effects. The long-term impact of hazard mitigation actions can be distinguished from those actions that are more closely associated with immediate preparedness, response and recovery activities, as hazard mitigation is the only emergency management phase specifically dedicated to breaking the cycle of damage, reconstruction and repeated damage.

According to the ***Mississippi Emergency Management Agency Strategic Plan 2027-2031***, "Goal A: Lessen the impact of future natural and human-caused incidents, thus reducing the loss of life and property. This is accomplished through deliberate planning to identify risks and vulnerabilities, administration of programs to provide funding for mitigation projects, floodplain management, flood hazard mitigation, and the National Flood Insurance Program. (MEMA)

Disasters can cause loss of life, injure people, damage buildings and infrastructure, and have devastating consequences for a community's economic, social, and environmental well-being. Local governments have the responsibility to protect the health, safety, and welfare of their residents. Each year in the United States natural disasters take the lives of hundreds of people and injure many thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters.

These funds only partially reflect the true cost of disasters because subsequent expenses incurred by insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Many natural disasters are predictable, and much of the damage caused by these events can be minimized or even eliminated. Proactive mitigation policies and actions help reduce risk and create safer, more disaster resilient communities. Hazard mitigation is an investment in a community's future safety and sustainability. Local mitigation actions and concepts can also be incorporated into land use plans, zoning ordinances, city codes and building codes.

A successful hazard mitigation program can:

- Reduce or eliminate long-term risk to people and property from natural hazards and their effects – an effort to reduce loss of life, and injuries property by lessening the impact of disasters.
- Reduce harm to existing and future development.
- Prevent damage to a community's unique economic, cultural, and environmental assets.
- Minimize operational downtime and accelerate recovery of government and business after disasters.
- Reduce the costs of disaster response and recovery and the exposure to risk for first responders.
- Help accomplish other community objectives, such as leveraging capital improvements, infrastructure protection, open space preservation, and economic resiliency.

1.3. WHAT IS A HAZARD MITIGATION PLAN?

Mitigation is most effective when it is based on a comprehensive, long-term plan that is developed before a disaster occurs. Successful mitigation initiatives are based on well-crafted mitigation plans. Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts of those hazards are determined, mitigation goals are set, and appropriate strategies to lessen impacts are determined, prioritized, and implemented. Hazard mitigation plans form the foundation of a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction and repetitive damage. Mitigation planning can:

- Foster partnerships among all levels of government
- Develop and strengthen non-governmental and private partnerships
- Promote more disaster-resilient and sustainable communities
- Reduce the costs associated with disaster response and recovery by promoting mitigation activities

Local mitigation plans are investment strategies that communities develop throughout the planning process to identify hazards, assess risks and vulnerabilities, and develop mitigation strategies that can be funded using a wide range of resources. As stated in 44 CFR § 201.1(b), “the purpose of mitigation planning is for state, local and Indian tribal governments to identify the natural hazards that impact them, to identify actions and activities to reduce any losses from those hazards, and to establish a coordinated process to implement the plan, taking advantage of a wide range of resources.” This coordinated process allows mitigation investments to be based on a community based, risk-informed decision-making process. The local mitigation planning process helps the whole community understand the importance of mitigation and develop mitigation actions based on current and future risks and capabilities.

1.3.1. MULTI-JURISDICTIONAL PLANNING

A multi-jurisdictional hazard mitigation plan (MJHMP) is a plan jointly prepared by more than one local government or jurisdiction. The Mississippi District 5 was jointly developed by all participating communities to assist in making the planning area less susceptible to hazards. This multi-community collaboration:

- Enables comprehensive approaches to mitigation of hazards that affect multiple jurisdictions
- Allows economies of scale by leveraging individual capabilities and sharing costs and resources
- Avoids duplication of efforts
- Imposes external discipline on the process

Each jurisdiction participated in the planning process and has developed a local Mitigation Action Plan unique to their jurisdiction. Each jurisdiction will adopt their Mitigation Action Plan separately. This provides the means for jurisdictions to monitor and update their Plan on a regular basis.

1.3.2. FUNDING ELIGIBILITY

Hazard mitigation planning also provides opportunities for funding to undertake risk reduction projects. Mitigation plans create a framework for risk-based decision making regarding how to utilize this funding to reduce damages to lives, property, and the economy from future disasters. The Federal Emergency Management Agency (FEMA) makes funding available for planning through the Hazard Mitigation Assistance (HMA) grant programs including the Hazard Mitigation Grant Program (HMGP), Flood

Mitigation Assistance (FMA) Program, Building Resilient Infrastructure and Communities (BRIC) grant program, and the Pre-Disaster Mitigation (PDM) Program.

Approved mitigation plans are a requirement for local governments, including special districts, to be eligible for the projects funded under these FEMA programs. Federal regulations require that mitigation plans be reviewed and updated every five years and formally adopted by each participating jurisdiction's governing body as part of receiving approval.

1.4. SUMMARY OF PLAN CONTENTS

The body of this Plan contains background information relevant to the entire planning area, while information specific to each County has been broken out into individual Annexes.

1.4.1. PLANNING PROCESS

This section of District 5's Mitigation Plan describes the planning process undertaken to develop this regional plan. This section includes a description of who was involved in preparing this document; the process utilized to prepare this document; how the public was involved; and an explanation of the major differences between this plan and previous mitigation plans in District 5.

1.4.2. PLANNING AREA PROFILE

Section 3 provides a general overview of the regional and county **profiles**, including relevant geographic, demographic, and economic characteristics. In addition, building characteristics and land use patterns are discussed where applicable and available. This baseline information provides a snapshot of the planning area and helps local officials recognize those social, environmental, and economic factors that ultimately play a role in determining the region's vulnerability to hazards.

1.4.3. CAPABILITY ASSESSMENT

Section 4 provides a comprehensive examination of MEMA District 5's capacity to implement meaningful mitigation strategies and identifies opportunities to increase and enhance that capacity. Specific capabilities addressed in this section include planning and regulatory capability, staff and organizational (administrative) capability, technical capability, fiscal capability, and political capability. Information was obtained using a detailed survey questionnaire and an inventory and analysis of existing plans, ordinances, and relevant documents. The purpose of this assessment is to identify any existing gaps, areas of improvement, or conflicts in programs or activities that may hinder mitigation efforts. Additionally, the purpose is to identify those activities that should be built upon in establishing a successful and sustainable local hazard mitigation program.

1.4.4. HAZARD IDENTIFICATION AND RISK ASSESSMENT

Section 5 covers *Hazard Identification; Hazard Profiles;* and *Vulnerability Assessments*. Together, these sections serve to identify, analyze, and summarize hazards that pose a threat to the MEMA District 5. The risk assessment also attempts to define any hazard risks that may uniquely or exclusively affect specific locations within the planning area.

The Risk Assessment begins by identifying hazards that threaten MEMA District 5. Next, detailed profiles are established for each hazard, building on available historical data from past hazard occurrences, spatial extent, and probability of future occurrence. This section culminates in a hazard risk ranking based on conclusions regarding the frequency of occurrence, spatial extent, and potential impact highlighted in each of the hazard profiles. In the vulnerability assessment, FEMA's HAZUS loss estimation methodology is used to evaluate known hazard risks by their relative long-term cost in expected damages. In essence, the information generated through the risk assessment serves as a critical function as the MEMA District 5 seeks to determine the most appropriate mitigation actions to pursue and implement—enabling the District to prioritize and focus its efforts on those hazards of greatest concern and those structures or planning areas facing the greatest risk(s).

The *Planning Area Profile, Capability Assessment* and *Hazard Identification* and *Risk Assessment* collectively serve as a basis for determining the goals for the MEMA District 5 Regional Hazard Mitigation Plan, each contributing to the development, adoption, and implementation of a meaningful and manageable *Mitigation Strategy* that is based on accurate background information.

1.4.5. MITIGATION STRATEGY

Section 6 consists of broad goal statements as well as an analysis of hazard mitigation strategies for the jurisdictions participating in the MEMA District 5 Regional Hazard Mitigation Plan to consider in reducing hazard vulnerabilities.

The strategy provides the foundation for a detailed Mitigation Action Plan, which links specific mitigation actions for each county and municipal department or agency to locally assigned implementation mechanisms and target completion dates. Together, these sections are designed to make the Plan both strategic, through the identification of long-term goals. As well as functional, through the identification of immediate and mitigation actions that will guide long-term decision-making and project implementation to build community resilience.

1.4.6. PLAN MONITORING, EVALUATION AND UPDATES

Section 7 includes the measures that the jurisdictions participating in the MEMA District 5 Regional plan will take to ensure the Plan's continuous long-term implementation. The procedures include how the Plan will be regularly evaluated and updated to remain a current and actionable planning document.

1.4.7. ANNEXES

County-specific **Annexes** have been created for each of the counties participating in this plan. Each Annex contains information relevant to the county and the participating municipal jurisdictions in the county. Information included in each country level Annex includes Community Profile, Risk Assessment and Capability Assessment information. The Mitigation Actions identified for that county and its municipal jurisdictions are also included in the county's Annex. This allows each county and jurisdiction to quickly locate the information contained in the plan that is most relevant for them.

The 2026 District 5 RHMP has been developed in accordance with 44 CFR §201.6, the Local Mitigation Planning Policy Guide FP-206-21-0002 Effective April 11, 2025, OMB Collection #1660-0062 and was adopted by the legislatures of each participating county and its municipalities. **Table 4** documents the dates each county and municipality formally adopted the plan. Copies of executed adoption resolutions are included in Appendix G.

2. PLANNING PROCESS

This section describes the planning process undertaken by the Mississippi Emergency Management Agency (MEMA) District 5 counties and jurisdictions in the development of its 2026 Regional Hazard Mitigation Plan (RHMP). The planning process is broken down into four subsections:

1. Organize the planning process and resources
2. Assess risk and capabilities
3. Develop a mitigation strategy
4. Adopt and implement the plan

The 2026 District 5 RHMP update reflects how participating communities have embraced and adopted hazard mitigation planning to identify hazards of concern, as well as developing appropriate ways to mitigate or eliminate these hazards. The planning process has evolved over the past ten years. Prior to 2015, counties participated in a process managed by three separate entities:

- The North Central Planning and Development District,
- the South Delta Planning and Development District
- McCool Management Services

In 2015, these plans were reviewed and integrated into the 2015 Mississippi District 5 Hazard Mitigation Plan, a Regional Plan that included County Annexes to ensure community-specific information. To ensure that the RHMP met the requirements of the Disaster Mitigation Act of 2000 (DMA 2000), an approach to the planning process and plan documentation was developed for the 2020 iteration of the Mississippi District 5 Hazard Mitigation Plan. The 2026 Hazard Mitigation Plan largely follows the planning process for the previous plan; the plan will be multi-jurisdictional and consider natural hazards facing all communities located in the District 5 planning area, thereby satisfying the natural hazards mitigation planning requirements specified in DMA 2000. The RHMP planning process, depicted in **Figure 1** was developed in keeping with DMA 2000, FEMA regulations, and FEMA and MEMA guidance.

FIGURE 1: MEMA DISTRICT 5 PLANNING PROCESS

The benefits of mitigation planning go beyond solely reducing hazard vulnerability. Mitigation measures like acquisition and the regulation of land in hazard areas can help achieve community goals like preserving open space, maintaining environmental health, and enhancing recreational opportunities. It is vitally important that any local mitigation planning process be integrated with other concurrent local planning efforts, and any proposed mitigation strategies must consider other existing community goals or initiatives that will help complement or hinder their future implementation.

2.1. ESTABLISH THE PLANNING PROCESS AND RESOURCES

Local hazard mitigation plans must be updated every five years to remain eligible for federal mitigation funding. To simplify planning efforts for the jurisdictions, MEMA officials worked with each county within the District 5 Region to collaboratively create the MEMA District 5 Regional Hazard Mitigation Plan. This allows resources to be shared amongst the participating jurisdictions and eases the administrative duties of all the participants by combining the nine counties into one regional plan.

District 5 is one of nine Districts designated by MEMA for coordination purposes throughout the state. Located in Central Mississippi, District 5 includes ten (10) counties and thirty-nine (39) municipalities. District 5 is home to the State Capital (City of Jackson), as well as the most populated county in the state (Hinds County). This Multi-Jurisdictional Plan covers five (5) counties and eighteen (18) municipalities in District 5. The remaining five (5) counties and twenty-one (21) municipalities in District 5 have chosen to opt out of this regional plan and maintain their own hazard mitigation plan. These nine jurisdictions can be found in **Table 4** while **Figure 3** represents the entire 2026 planning area.

To streamline planning efforts by local jurisdictions, the Mississippi Emergency Management Agency (MEMA) elected to move towards developing RHMPs that are aligned with the District's participating counties and jurisdictions. This alignment served to unify mitigation planning statewide, and to also improve integration and utilization of resources (financial and other assets) efficiently. Participation Agreements were signed by local jurisdictions stating their intent to participate in the development of the District 5 Regional HMP planning process.

2.1.1. MULTI-JURISDICTIONAL PARTICIPATION

The MEMA District 5 Hazard Mitigation Plan includes five counties and 18 incorporated municipalities. To satisfy multi-jurisdictional participation requirements, each county and its participating jurisdictions were required to perform the following tasks:

- Participating in mitigation planning workshops or designating a representative to do so
- Identify completed/new mitigation projects, if applicable
- Develop and adopt (or update) their local Mitigation Action Plans

Each jurisdiction participated in the planning process and has developed a local Mitigation Action Plan unique to their jurisdiction. Each jurisdiction will adopt their Mitigation Action Plan separately. This provides the means for jurisdictions to monitor and update their Plan on a regular basis.

This process ensured that all federal and state requirements are met and support RHMP review. This RHMP was revised using the best available information obtained from a wide variety of sources. Throughout plan development and update, a concerted effort was made to gather information from participating municipal and county agencies and staff as well as other local organizations and utilities, federal and state agencies, and the residents of the Counties. The District 5 Mitigation Council solicited information from local agencies and individuals with specific knowledge of certain natural hazards and past historical events, as well as considering planning and zoning codes, ordinances, and other recent planning decisions. The natural hazard mitigation strategies identified in this plan have been developed through an extensive planning process involving county and local agencies, municipal officials and staff, and the citizens of the respective Counties.

Communities that participate in mitigation planning have the potential to produce long-term benefits by breaking the repetitive cycle of disaster loss. Hazard mitigation investments made before a disaster will significantly reduce disaster costs by lessening the need for emergency response, repair, recovery, and reconstruction. Furthermore, resilient practices enable residents, businesses, and industries to re-establish community economies in the wake of a disaster, getting them back on track sooner and with less interruption.

2.1.2. PLANNING TEAM AND REGIONAL HAZARD MITIGATION COUNCIL

In 2025, MEMA solicited qualified consultants to help the District 5 Mitigation Council (Mitigation Council) spearhead the development of an updated RHMP. Witt O'Brien's (WOB) was selected through the competitive bid process and approved by MEMA and the Mitigation Council. Per the contractual scope of work, the Witt O'Brien's consulting team followed the mitigation planning process outlined and recommended by FEMA in the Local Mitigation Planning Policy Guide (FP 206-21-0002) effective April 11, 2025 (OMB Collection #1660-0062). The Local Mitigation Plan Review Tool provides a summary of how the plan meets FEMA's current minimum standards of acceptability for compliance with DMA 2000 and notes the location where each requirement is met within this Plan. These standards are based upon FEMA's Final Rule as published in the Federal Register in Part 201 of the Code of Federal Regulations (CFR).

The Mitigation Council was also supported throughout the planning process by an advisory team that was supported by multiple MEMA staff, including Bureau Director, Mitigation Plans, Frank Hill; Director, Office of Mitigation, Jana Henderson; and Mitigation Planner Kandice McNamee. They and the Mitigation Council members provided guidance to ensure the District 5 RHMP met community needs and the requirements of the FEMA Mitigation Planning Process per 44CFR §201.6. They also ensured mitigation initiatives included in the 2026 District 5 RHMP update are aligned with the Mississippi 2023 Standard State Hazard Mitigation Plan (SHMP) priorities and initiatives.

Mitigation Council members identified in **Table 1** served as county and municipal representatives in the District 5 RHMP planning process. They also helped direct the decision-making process; supported the hazard identification process; and approved the draft plan before it was submitted to the MEMA and FEMA for state and federal approval. After FEMA Region IV designates the plan as Approval Pending Adoption (APA), Mitigation Council members will present plan to county and municipal officials for formal adoption by each jurisdiction. As part of the plan maintenance process, Mitigation Council members will identify ways to integrate mitigation goals, objectives, and action items with other State and local planning initiatives and activities.

TABLE 1: MEMBERS OF THE MEMA DISTRICT 5 MITIGATION COUNCIL

Jurisdiction	Designated Representative
Claiborne County	Marvin Ratliff, EMA
City of Port Gibson	Isom Coleman, City Clerk
Hinds County	Joseph Perkins, EMA
City of Raymond	Randall Harris, Mayor
Town of Bolton	Vera Powell, Alderwoman
Town of Edwards	Carolyn E. Glin, Alderwoman
Town of Learned	Henry Riggin, Alderman
Town of Utica	Kenneth Broome, Alderman
Issaquena County	Larry Short, EMA
Town of Mayersville	Linda Short, Mayor
Sharkey County	James Tankson, Bldg. Inspect.
City of Rolling Fork	Eldridge Walker, Mayor
Town of Anguilla	Evelyn Maxey, Mayor
Town of Cary	Sandra Sidney, Mayor
Simpson County	John Kilpatrick, EMA

Jurisdiction	Designated Representative
City of Magee	John Kilpatrick, EMA
City of Mendenhall	John Kilpatrick, EMA
Town of D'Lo	John Kilpatrick, EMA
Village of Braxton	John Kilpatrick, EMA
City of Canton	Melon Garrett, Landfill Dir.
City of Madison	Derrick Layton
City of Crystal Springs	Alan Faler, Water Plant Oper.
Village of Puckett	Russell Espiritu, Mayor

A variety of stakeholders participated in the different parts of this plan update process. Their participation included providing information on hazard occurrences or critical facility locations, attending meetings, updating mitigation strategy/actions, and reviewing plan drafts.

Consultant

Through an open bid process, MEMA selected a planning consultant Witt O'Brien's (WOB) to facilitate the plan update process. A contract between WOB and MEMA was executed in August 15th, 2025. The Consultant was tasked with:

- Assisting with the development and implementation of a public and stakeholder outreach program
- Data collection
- Facilitating meetings
- Identifying the hazards of concern and performing a risk assessment
- Assisting with the development of mitigation planning goals and objectives
- Assisting with the screening of mitigation actions and the identification of appropriate actions
- Assisting with the prioritization of mitigation actions
- Authoring of the Draft and Final HMP documents

Witt O'Brien's secured data and input from the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) office in Jackson, Mississippi, the State Department of Environmental Quality, the Mississippi Forestry Commission, and other technical and subject matter experts. Witt O'Brien's internal Geographic Information Systems (GIS) department was particularly helpful in developing the vulnerability assessment that led to identifying community specific mitigation strategies to mitigate against hazards of concern.

2.1.2.1. DISTRICT 5 MITIGATION COUNCIL PARTICIPATION

The District 5 Mitigation Council participated in many engagement opportunities during the plan update. Their participation included providing information on hazard occurrences or critical facility locations, attending meetings, updating mitigation strategies and actions, and reviewing plan drafts. **Table 2** provides a summary list of participating jurisdictions along with their involvement in the planning process.

TABLE 2: JURISDICTIONAL PARTICIPATION IN PLANNING PROCESS

Jurisdiction	Kickoff Meeting (10/07/2025)	HIRA Workshop 1 (12/11/2025)	MEMA Meeting (01/14/2026)	HIRA Workshop 2 (01/28/2026)	Draft Plan Review (03/31/2026)
Claiborne County			X	X	X
City of Port Gibson				X	X
Hinds County	X	X		X	X
City of Raymond		X		X	X
Town of Bolton			X	X	
Town of Edwards	X	X		X	
Town of Learned	X	X		X	
Town of Utica	X	X		X	X
Issaquena County			X		X
Town of Mayersville			X		X
Sharkey County					X
City of Rolling Fork			X	X	X
Town of Anguilla				X	X
Town of Cary				X	X
Simpson County			X	X	
City of Magee			X	X	
City of Mendenhall			X	X	
Town of D'Lo			X	X	
Village of Braxton			X	X	
City of Canton			X	X	
City of Madison	X			X	X
City of Crystal Springs			X		
Village of Puckett			X	X	

2.1.2.2. TIMELINE

Development of the MEMA District 5 Regional Hazard Mitigation Plan was shaped by a series of milestones throughout 2026. These milestones mark the progression from securing resources to drafting, reviewing, and finalizing the plan. These are documented below to provide a clear record of how the plan was developed, and they demonstrate the continued dedication among Mitigation Council members to produce a high-quality hazard mitigation plan for the community. **Table 3** lists the key milestones during the 2026 RHMP update.

TABLE 3: KEY PLANNING MILESTONES

Date	Planning Milestone
8/15/2025	A contract between MEMA and WOB was executed
9/2/2025	Project Manager Kick-Off Meeting
10/17/2025	Kick-Off Meeting

Date	Planning Milestone
11/4/2025 – 11/18/2025	Survey #1 Open to Public
12/11/2025	HIRA Workshop 1
1/14/2026	MEMA Meeting 1
2/28/2026	HIRA Workshop 2
3/24/2026	MEMA Meeting 2
3/31/2026	Draft Finalization Meeting
TBD	Public Review Period
TBD	State Submission
TBD	FEMA Submission
TBD	Plan Adoption

Meetings

District 5 Mitigation Council Members, which includes at least one representative of each jurisdiction, were invited

Project Manager Kick-Off Meeting

The project manager kick-off meeting took place on September 2nd, 2025. The purpose of the meeting was to validate points of contact for each county and community within MEMA District 5 and identify tasks to complete by the Kick-Off Meeting on October 17th, 2025.

Kick-Off Meeting

Representatives of District 5 jurisdictions, as well as individuals from MEMA, met on October 17th, 2025 for the Hazard Mitigation Plan Update kickoff meeting. In this meeting, which was held at the Rankin County Emergency Operations Center, attendees were provided with an overview of the development timeline, expectations for each jurisdiction, and other elements of the planning process. Additionally, the team discussed the hazards that would be profiled in the hazard mitigation plan. The team also discussed mitigation goals, any progress towards previous mitigation actions, and changes that have occurred in the community since the 2020 plan was written. Before concluding, team members were introduced to the worksheets and forms that would be used to assess community capabilities, critical facilities, community stakeholders, and mitigation actions.

HIRA Workshop 1

The first HIRA Workshop was held on December 11th, 2025, at the Hinds County Secondary Emergency Operations Center. The Mitigation Council reviewed the results of the risk assessment for the first six hazards profiled in the hazard mitigation plan: drought, earthquake, expansive soils, severe thunderstorms, tornadoes, and tropical storms. Assessments of these hazards included a review of the frequency and magnitude of hazards in the planning area. The team also discussed mitigation actions that jurisdictions had in place for the previous mitigation plan, as well as exploring new actions that could be pursued. Finally, the team reviewed the results from public survey #1, which was open for responses for two weeks prior to the first HIRA workshop.

MEMA Meeting 1

Due to the number of jurisdictions participating in the mitigation plan, time constraints and schedule conflicts meant that some communities were unable to send representatives to the in-person kickoff meeting and first HIRA workshop. Therefore, on January 14th, MEMA hosted a meeting which revisited

much of the information covered during the kickoff meeting and first HIRA workshop. Information about the State's role in providing information and coordinating with jurisdictions was also provided.

HIRA Workshop 2

On February 28th, the second HIRA Workshop was held at the Hinds County Secondary Emergency Operations Center. This workshop was originally scheduled to take place at the end of January, but the impact of Winter Storm Fern on Mississippi and other states meant that communities were understandably focused on emergency response efforts and restoring normalcy. In the second HIRA workshop, the remaining 6 hazards were reviewed: flooding, dam and levee failure, wildfire, winter storms, nuclear power plan incidents, and hazardous materials transportation incidents. Like the first HIRA workshop, assessments of hazards involved reviewing the frequency and severity of events in the planning area. Additionally, the mitigation actions from the previous plan which were intended to address these hazards were reviewed to determine which should be carried forward, as well as whether any new actions should be added.

MEMA Meeting 2

On March 23rd, MEMA hosted another meeting with representatives from jurisdictions that were unable to make it to previous meetings. The primary objective of this meeting was to ensure that all jurisdictions were kept informed about the items covered during the two HIRA meetings. Communities were assisted with the completion of the Capability Assessment worksheet, hazard rankings, and updating mitigation actions. This meeting took place in the Sharkey County Emergency Operations Center.

Draft Final Review of HMP

The Draft Review of the Hazard Mitigation Plan Meeting took place on March 31st, 2026, and it was held at the Mississippi State Emergency Logistical Operations Center. The Mitigation Council discussed and verified the information in the Plan Maintenance section of the plan, the second public survey, and asked members to complete their capability assessment and other stakeholders who should receive a draft of the plan. Participating jurisdictions were sent a copy of the draft HMP a week prior to this meeting, and the draft review meeting provided a final, in-person opportunity to discuss questions and comments about the plan. More information can be found in Appendix B.

2.1.2.3. STAKEHOLDER ENGAGEMENT

FEMA guidance directs local hazard mitigation planning efforts to create opportunities for the participation of community stakeholders. Stakeholders invited to participate should include each of the following categories:

- Local or regional entities involved in hazard mitigation activities
- Agencies that have the authority to regulate development
- Neighboring communities
- Represent area businesses, academic institutions, or other private organizations
- Represent nonprofit organizations or community-based organizations that work directly with and/or provide support to underserved communities and socially vulnerable populations

Stakeholders were identified collaboratively through multiple meetings with participating jurisdictions. All stakeholders were sent a copy of the draft plan and were asked to provide feedback. Community stakeholders were also asked to participate in the second public survey, which asked a variety of questions about how well the draft identified risks and vulnerabilities, whether the proposed mitigation actions adequately addressed all hazards, whether the mitigation actions were realistic and actionable,

and the respondent's level of support for the mitigation actions. Feedback provided by the stakeholders was considered for integration in the final plan. A list of stakeholders for each of the five categories listed above can be found in Appendix C.

2.1.2.4. PUBLIC PARTICIPATION

Public input played a key role in shaping the MEMA District 5 HMP. Consistent with the requirements of 44 CFR §201.6(b)(1) and FEMA's Local Mitigation Plan Review Tool (Elements A3 and A4), the District provided multiple opportunities for the public to participate in the development and review of the Hazard Mitigation Plan. Feedback from community members helped the Mitigation Council confirm that no significant local hazards were overlooked and informed how each hazard was characterized in the plan.

Public Survey

Public surveys were developed to capture the community's thoughts and feedback on hazard mitigation within MEMA District 5. Public surveys are a great tool to quickly capture feedback from the community on a variety of topics, and they offer several benefits for District 5 communities. First, online surveys do not require travel, which could be a challenge for a residents in a planning area spanning across multiple counties. The road distance between some participating jurisdictions exceeds 90 miles. Second, online public surveys can be completed at any time of day, allowing individuals to participate when their schedule allows. Third, online surveys can quickly be shared through a wide variety of avenues—links can be shared through social media posts, community websites, newsletters, and more. Additionally, QR codes were generated that could be printed out and placed in public spaces such as libraries and community centers. When scanned, these codes would take individuals directly to the surveys. In total, two public surveys were opened to the public for feedback and input during the plan's development.

Public Survey #1

The first public survey went live on November 4th, 2025 to November 18th, 2025. MEMA District 5 counties and participating jurisdictions shared the public survey on their website and social media platforms. The survey contained 21 questions asking residents about their perception of the hazards that pose a risk to the planning area. Eight MEMA District 5 residents answered the survey, all of whom lived in either Claiborne or Hinds County. The top hazards that community members identified as a concern were tornadoes and severe thunderstorms, followed by flooding and nuclear power incidents. More information on the first public survey results can be found in Appendix B.

Public Survey #2

The second public survey went live on (date until date). MEMA District 5 counties shared the public survey on their website and social media platforms. The survey contained X questions asking residents (insert survey question topics). X MEMA District 5 residents answered the survey. More information on the first public survey result can be found in Appendix B.

2.2. INCORPORATION OF EXISTING PLANS, STUDIES, AND REPORTS

Development of the MEMA District 5 Hazard Mitigation Plan drew upon multiple existing plans, studies, and reports. Information from these sources helped shape the community profile, describe local hazards, and assess risks and vulnerabilities. They also guided the selection of mitigation actions and informed the development of a maintenance, evaluation, and update process consistent with existing planning mechanisms and delegated authorities. To help ensure the plan remains relevant and accurate in the future, the Mitigation Council is encouraged to continue using these plans, studies, and reports, as well as incorporating new ones which may be published in the future, as useful guides and references during annual plan review meetings. The following plans, studies, and reports were incorporated in the MEMA District 5 Hazard Mitigation Plan.

- *Mississippi State Hazard Mitigation Plan* – Mississippi Emergency Management Agency. 2023.
- County Community Wildfire Protection Plans (CWPPs)
    - Copiah County – Central Mississippi Planning & Development District. 2009.
    - Simpson County – Central Mississippi Planning & Development District. 2009.
- *Extreme Heat Is Harming Americans' Health — And Communities Aren't Ready*, Vol. IV – American Public Health Association. 2025.
- *Preparing for the Health Effects of Drought* -- National Center for Environmental Health (U.S.). Division of Environmental Hazards and Health Effects. Health Studies Branch. 2018.
- *How to Build Flood Resilience for Communities of Every Size* – American Flood Coalition, Arcadis, Kingdom of the Netherlands. 2021.
- National Centers for Environmental Information. *Storm Events Database.* National Oceanic and Atmospheric Administration. 2026.
- Fiscal Year Annual Report, 2016 – 2025. Mississippi Forestry Commission.
- *Grand Gulf Nuclear Station Emergency Plan Controlled Copy*. Entergy.

2.3. CHANGES IN PRIORITIES

MEMA District 5 counties and their jurisdictions have experienced changes in terms of growth and development as well as recovering from a global pandemic since the last plan update. Each county and jurisdiction considered changes in their community and priorities when completing worksheets and providing feedback on the MEMA District 5 HMP. Most District 5 counties and municipalities did not indicate that there have been any notable changes in their priorities, and communities remain focused on ensuring hazard mitigation activities are supported over time, incorporating information from this plan into other planning mechanisms, maintaining essential services and capabilities, adopting and updating ordinances and codes, and keeping residents well-informed about hazard risks. A small number of communities did identify specific priorities that have changed since the last plan, and they are:

Town of Bolton: The town indicated that there has been a limited amount residential and small-scale commercial activity, and aging infrastructure like roads and utility lines is requiring increased attention. The town is placing greater emphasis on infrastructure repair and resilience, as well as expanding community engagement and quality-of-life initiatives as it relates to hazard mitigation.

Town of Learned: The 2026 MEMA District 5 HMP is the first mitigation plan that will be adopted by the Town of Learned. The community indicated that its current priorities include improving drainage and attracting businesses to the town's main street area.

City of Canton: The City of Canton has had several large commercial development projects in recent years. The community is eager to ensure that these facilities do not create an outside risk or vulnerability in the community by updating and enforcing ordinances.

Town of Edwards: Since the previous hazard mitigation plan, the Town of Edwards has added a carbon-activated water system, and it is important for the town to ensure this capability is adequately maintained and utilized. The town also indicated that they have placed an increased emphasis on promoting economic development and growth within the community.

2.4. ASSESS RISKS AND CAPABILITIES

The process of identifying hazards that pose a threat to the community, analyzing their potential impacts, and evaluating the community's existing resources, plans, and capacities to reduce or manage those risks. This step ensures mitigation strategies are based on both the level of risk and the ability to implement effective actions. The information below provides a broad overview of the importance of risk and capability assessments that will be covered more in-depth throughout this plan update.

2.4.1. RISK ASSESSMENT

This process identifies and analyzes hazards that could impact the community. It typically includes:

- **Hazard Identification**: Determine which hazards (natural, technological, or human-caused) pose a threat locally—e.g., floods, wildfires, extreme heat, dam failure.
- **Vulnerability Analysis**: Assess who and what is at risk:
    - Population (e.g., vulnerable groups, high-density areas)
    - Critical facilities (hospitals, utilities, transportation)
    - Infrastructure and economy
- **Impact and Probability**: Estimate the likelihood and severity of each hazard. This often uses historical data, climate projections, and GIS mapping.
- **Risk Prioritization**: Rank hazards based on potential consequences and frequency to focus mitigation efforts where they matter most.

2.4.2. CAPABILITY ASSESSMENT

This evaluates the community's ability to implement mitigation strategies. It includes:

- **Existing Plans and Policies**: Review zoning ordinances, building codes, emergency operations plans, and other regulations that influence risk reduction.
- **Administrative and Technical Capacity**: Identify staff expertise, tools (GIS, modeling software), and interagency coordination.
- **Financial Resources**: Assess funding sources like local budgets, grants (FEMA, HUD), and partnerships.
- **Political and Community Support**: Gauge leadership commitment and public engagement, which are critical for successful implementation.

These are reasons why mitigation is critical to communities:

- **Informs Mitigation Strategies**: You can't design effective actions without knowing what hazards exist and what resources you have.
- **Meets FEMA Requirements**: Both risk and capability assessments are required under 44 CFR §201.6 for plan approval.
- **Builds Resilience**: Aligns mitigation actions with realistic capabilities and prioritized risks.

2.5. DEVELOP A MITIGATION STRATEGY

The intent of a Mitigation Strategy is to provide the communities in the MEMA District 5 Region with the goals that will serve as guiding principles for future mitigation policy and project administration, along with an analysis of mitigation techniques deemed available to meet those goals and reduce the impact of identified hazards. It is designed to be comprehensive, strategic, and functional in nature:

In being *comprehensive*, the development of the strategy includes a thorough review of all hazards and identifies extensive mitigation measures intended to not only reduce the future impacts of high-risk hazards, but also to help the region achieve compatible economic, environmental, and social goals.

In being *strategic*, the development of the strategy ensures that all policies and projects proposed for implementation are consistent with pre-identified, long-term planning goals.

In being *functional*, each proposed mitigation action is linked to established priorities and assigned to specific departments or individuals responsible for their implementation with target completion deadlines. When necessary, funding sources are identified that can be used to assist in project implementation.

The full Mitigation Strategy can be found in **Section 6** and consists of broad goal statements as well as an analysis of hazard mitigation techniques for the jurisdictions participating in the MEMA District 5 Regional Hazard Mitigation Plan to consider in reducing hazard vulnerabilities.

2.6. ADOPT AND IMPLEMENT THE PLAN

The MEMA District 5 RHMP Plan has been developed in accordance with the requirements of the Disaster Mitigation Act of 2000 and 44 CFR §201.6. Following completion of the planning process and receipt of FEMA's approval, the plan must be formally adopted by the governing body of each participating jurisdiction to become an official policy document.

The purpose of formal adoption demonstrates the jurisdiction's commitment to hazard mitigation and ensures continued eligibility for federal mitigation grant programs under the Robert T. Stafford Disaster Relief and Emergency Assistance Act. **Table 4** lists each participating jurisdiction and their adoption dates of the plan.

TABLE 4: MEMA DISTRICT 5 JURISDICTIONS AND ADOPTION DATES

Jurisdiction	Date
Claiborne County	
City of Port Gibson	
Hinds County	
City of Raymond	
Town of Bolton	
Town of Edwards	
Town of Learned	
Town of Utica	
Issaquena County	
Town of Mayersville	
Sharkey County	
City of Rolling Fork	
Town of Anguilla	
Town of Cary	
Simpson County	
City of Magee	
City of Mendenhall	
Town of D'Lo	
Village of Braxton	
City of Canton	
City of Madison	
City of Crystal Springs	
Village of Puckett	

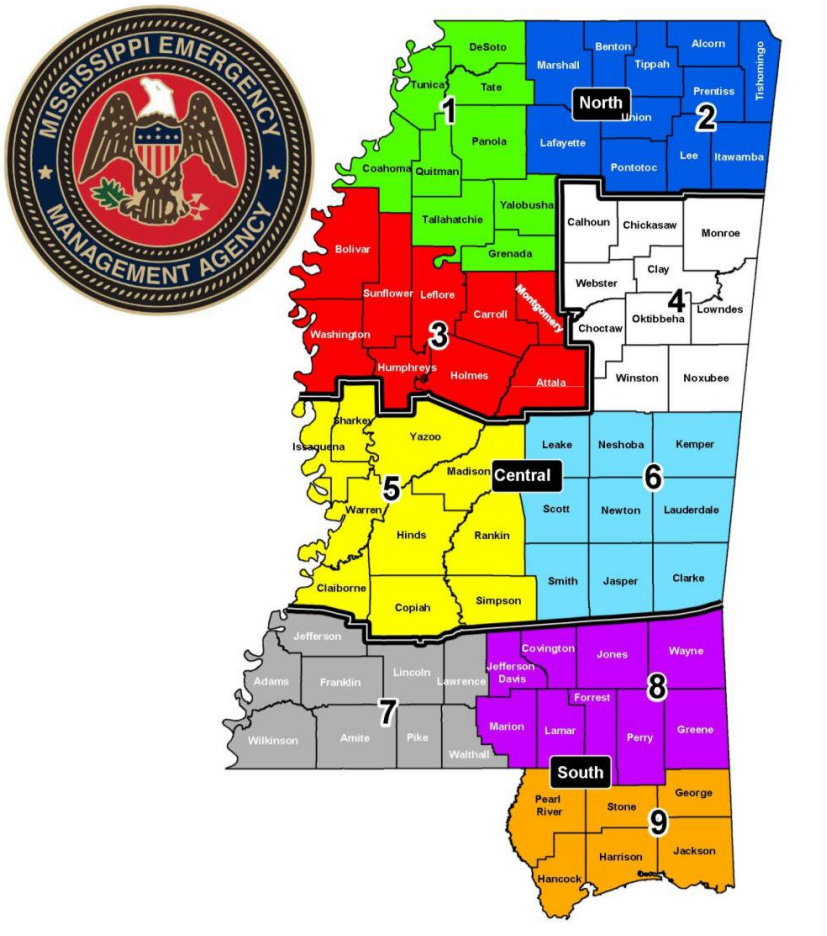
3. PLANNING AREA PROFILE

In this Section of the plan, profile information is presented and analyzed to develop an understanding of the components or assets that comprise District 5. This profile describes the general information pertaining to District 5's physical setting, population and demographics, general building stock, and land uses to develop an understanding of the District's characteristics.

District 5 is one of nine Districts designated by MEMA for coordination purposes throughout the state. Located in Central Mississippi, District 5 includes ten (10) counties and thirty-nine (39) municipalities. District 5 is home to the State Capital (City of Jackson), as well as the most populated county in the state (Hinds County). This Multi-Jurisdictional Plan covers five (5) counties and eighteen (18) municipalities in District 5. The remaining five (5) counties and twenty-one (21) municipalities in District 5 have chosen to opt out of this regional plan and maintain their own hazard mitigation plans. These nine jurisdictions can be found in **Table 4**.

Mississippi's District 5 is comprised of ten (10) counties primarily located in north central Mississippi, roughly one hour north of the state capital, Jackson. The ten counties in District 5 include Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren and Yazoo. **Figure 3** provides an overview of the planning area and **Table 5** describes the total land and water areas of each participating county and jurisdiction.

FIGURE 2: MEMA DISTRICT MAP | SOURCE: MEMA



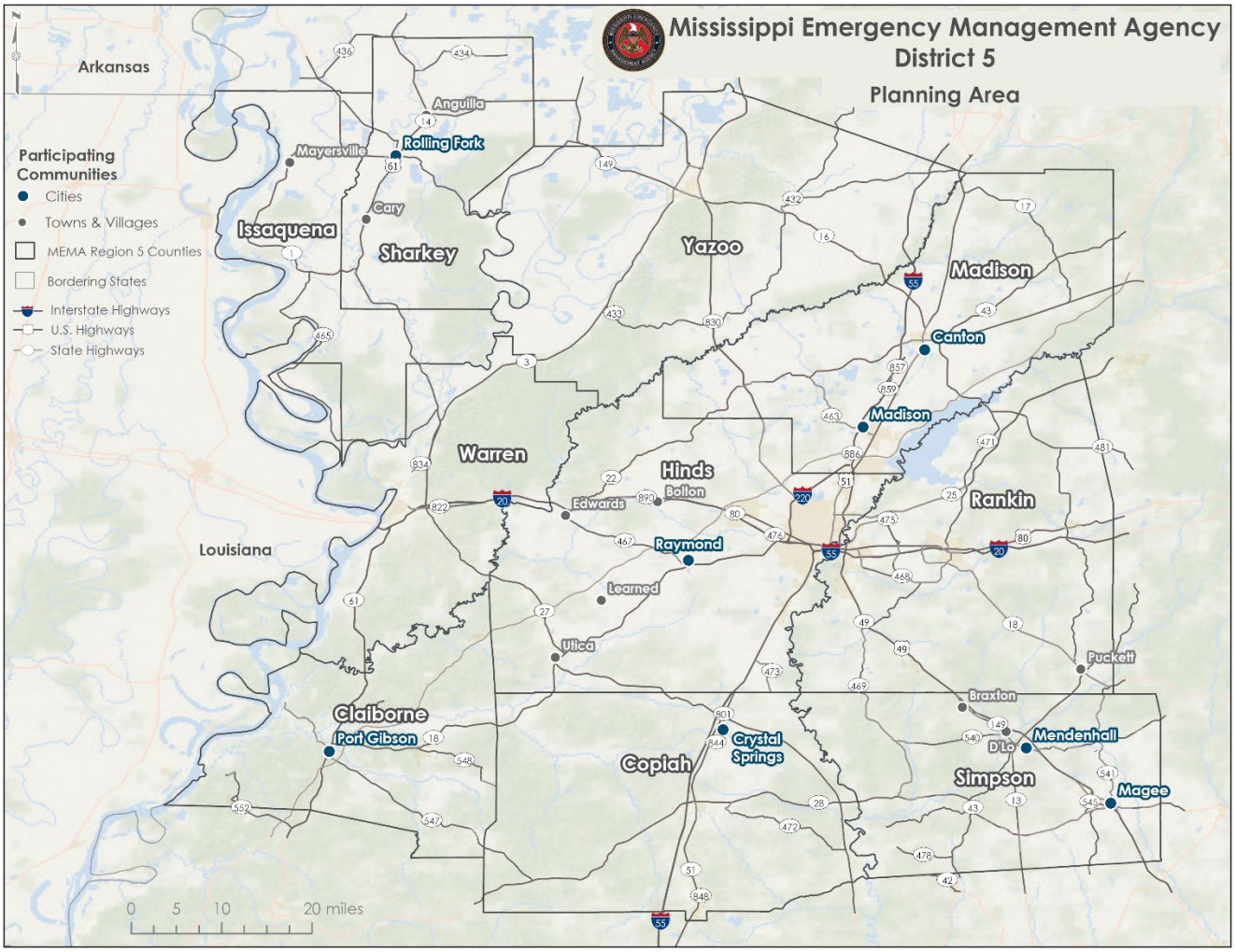
3.1. REGIONAL PROFILE

This section of the Plan provides a general overview of the Mississippi District 5 Region and consists of the following seven subsections:

- Climatology and Weather
- Geography and Geology
- Population and Demographics
- Land Use and Housing
- Employment and Industry
- Lifelines, Infrastructure and Critical Facilities
- Changes in Development

Annexes A-I are county and jurisdiction specific annexes which provide a detailed community base profile for each county and its respective jurisdictions. **Figure 3** displays the entire planning area used for this plan update.

FIGURE 3: MAP OF THE PLANNING AREA



3.1.1. CLIMATOLOGY AND WEATHER

The State of Mississippi is in the humid subtropical climate region of the United States, which is characterized by long, hot summers, temperate winters and rainfall that is evenly distributed throughout the year. The region is inland, away from the Gulf Coast, but still influenced by warm, moist air from the Gulf of Mexico.

3.1.1.1. CLIMATE

Mississippi is located between the Gulf of Mexico and the southern end of the vast, relatively flat plains of central North America, which extend from the Arctic Circle to the Gulf of Mexico. The state is therefore exposed to diverse air masses, including the warm, moist air from the Gulf of Mexico and drier continental air masses, which are cold in the winter and warm in the summer.

District 5 is in the humid subtropical climate region, which is characterized by temperate winters; long hot summers; and rainfall that is evenly distrusted throughout the year. Temperatures average about 92 degrees in July and about 53 degrees in January. On average, the warmest month is July, and the coolest month is January. Prevailing southerly winds provide moisture for high humidity and potential discomfort from May through September. Locally violent and destructive thunderstorms are a threat on an average of about 60 days each year. Normal precipitation averages from 3.4 to 5.6 inches per month throughout the area annually. Traceable amounts of sleet and snowfall are also typical.

The State is divided into 10 different climate zones:

- 1-Upper Delta
- 2-North Central
- 3-Northeast
- 4-Lower Delta
- 5-Central
- 6-East Central
- 7-Southwest
- 8-South Central
- 9-Southeast
- 10-Coastal

Figure 4 provides an overview of the different climate zones in the State and **Figure 5** displays them at the District level. District 5 counties in climate zones 4 include Sharkey, Issaquena and Yazoo. Counties in zone 5 include Madison and Rankin; and zone 7 include Claiborne, Copiah, Hinds and Warren. Simpson County is the only jurisdiction in zone 8.

FIGURE 4: CLIMATE DIVISIONS IN MISSISSIPPI | SOURCE: 2023 MEMA SHMP

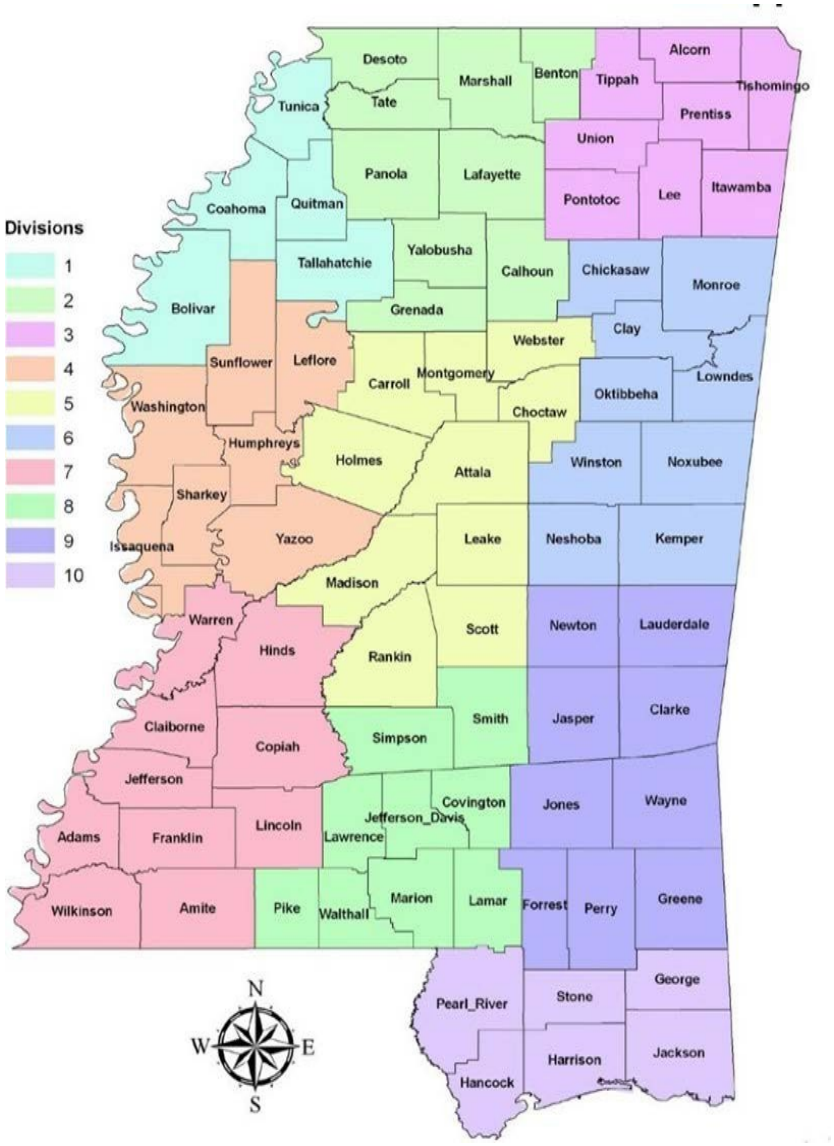
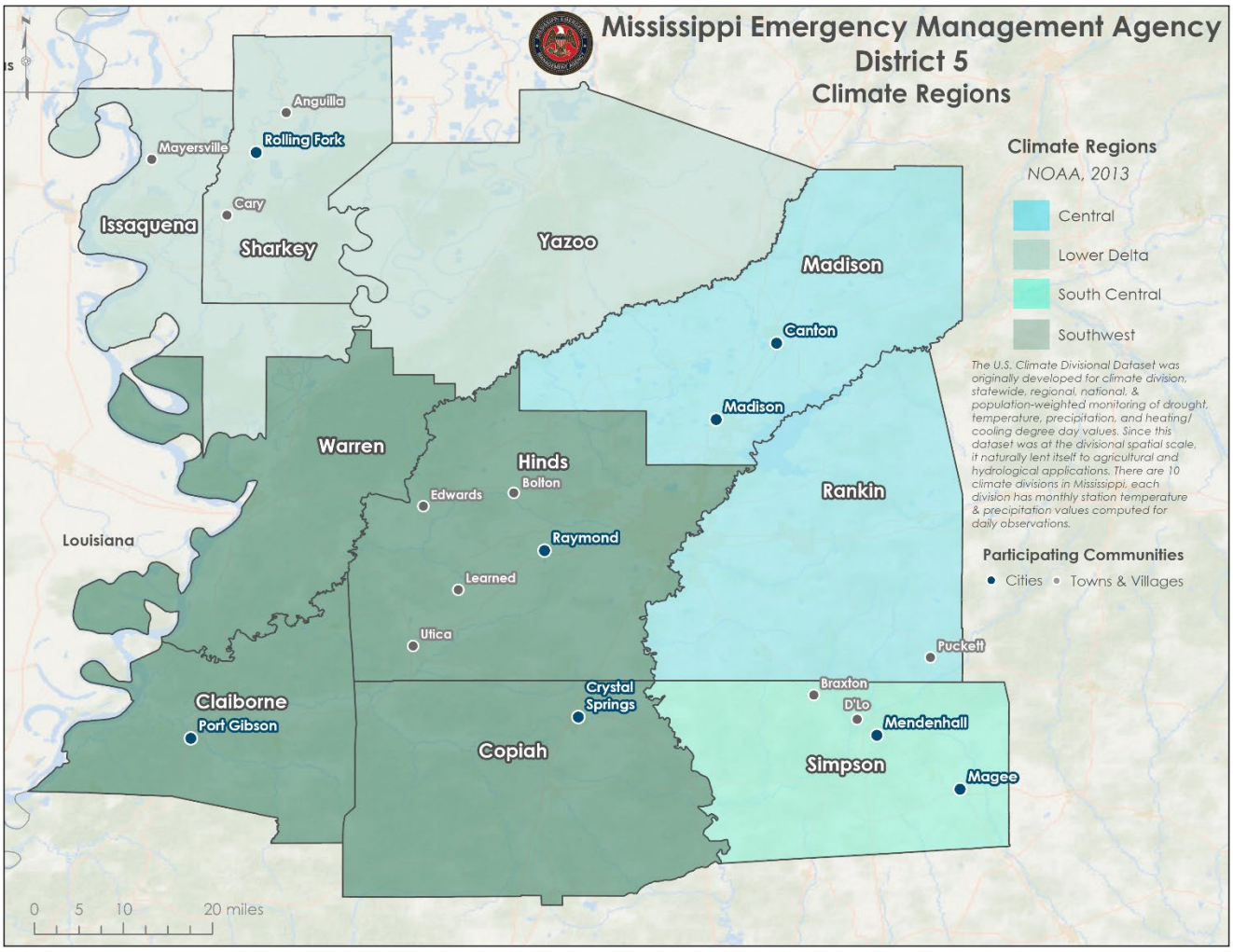


FIGURE 5: MEMA DISTRICT 5 CLIMATE REGIONS



3.1.2. GEOGRAPHY AND GEOLOGY

District 5 covers central and southwestern Mississippi, including the counties of Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Sharkey, Warren and Yazoo. The western portion lies within the Mississippi Delta, a flat alluvial plain adjacent to the Mississippi River, characterized by fertile soils and extensive wetlands. The eastern and central areas transition into gently rolling uplands of the Jackson Prairie and Piney Woods regions. Major waterways include the Mississippi, Yazoo, and Pearl Rivers, creating a landscape highly influenced by riverine systems and prone to flooding.

TABLE 5: PARTICIPATING MEMA DISTRICT 5 AREAS | SOURCE: 2020 U.S. CENSUS DATA

Jurisdiction	Total Area (Square Miles)	Total Land (Square Miles)	Total Water (Square Miles)
Claiborne County	501.21	487.42	13.79
Hinds County	877.29	869.85	7.44
Issaquena County	441.42	412.98	28.44
Sharkey County	435.12	431.72	3.40
Simpson County	590.47	589.17	1.30
City of Canton	21.58	21.28	0.30
City of Madison	26.43	25.25	1.18
City of Crystal Springs	5.48	5.43	0.05
Village of Puckett	2.89	2.88	0.01

3.1.2.1. SOILS

Southern Mississippi Valley Alluvium: The Delta

Geologically, the district is dominated by thick Quaternary alluvial deposits in the Delta and loess-covered uplands, underlain by older sedimentary formations from the Eocene and Miocene periods. Soils range from rich silts and clays in the floodplain to sandy and clay-rich upland soils. This combination of flat terrain, dynamic hydrology, and unconsolidated sediments contributes to significant flood risk, making accurate mapping and mitigation planning essential.

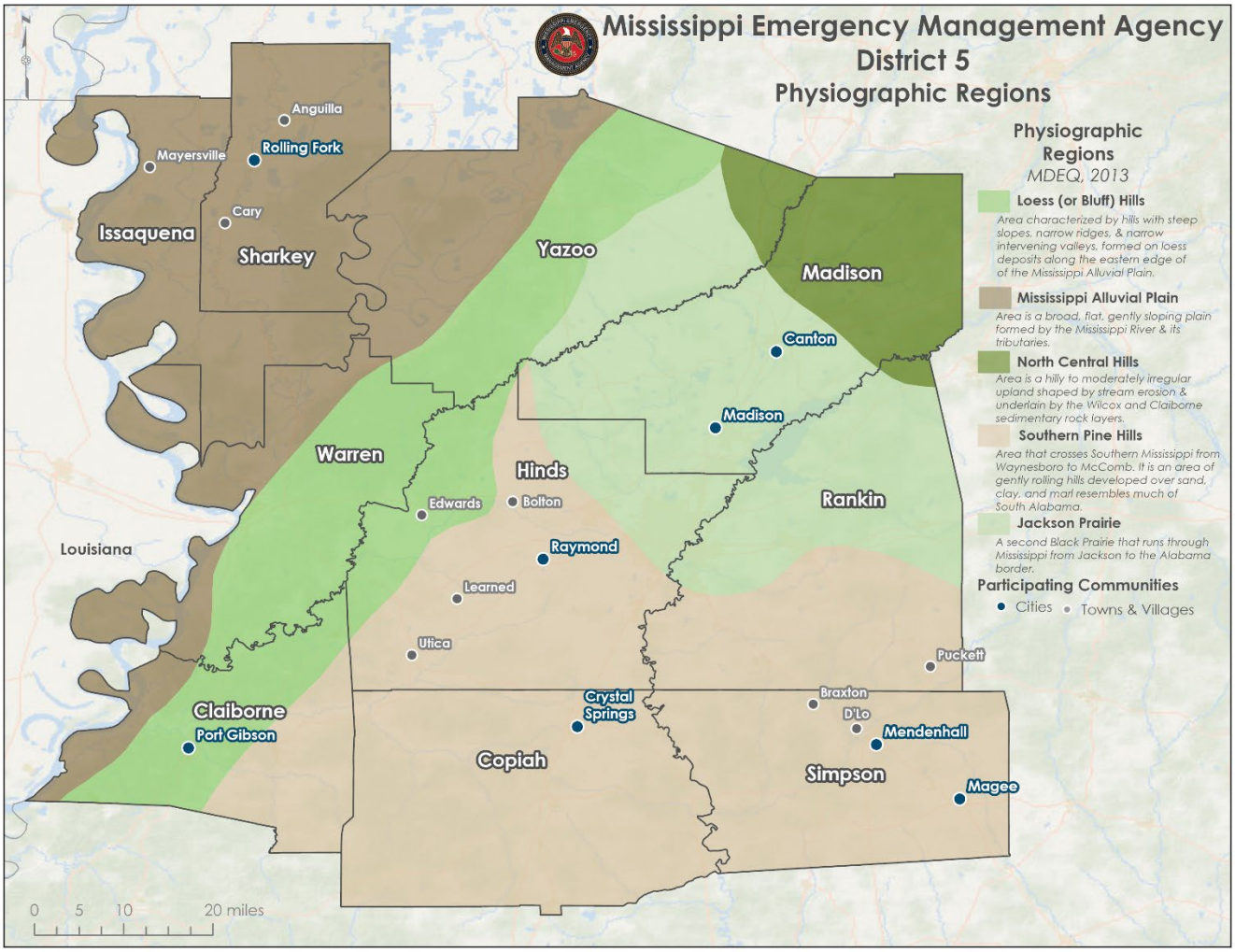
Mississippi Delta soils originated from sediments left by flooding of the various rivers that crisscross the District. The term Delta used here is not the same as that traditionally referred to when speaking about a delta “fan” formed at the mouth of a river. Most Delta soils are farmed, with three-fourths of the cropland in the northern portion of District 5 and less cropland in the southern portion. Major soil management issues in the region include the need to control surface water runoff and stormwater drainage management.

The alluvial origin of sediment originating north of Mississippi causes Delta soils to be naturally diverse. Sediment particle size decreases as the distance from the originating stream increases. In other words, soils closer to running water include proportionally larger silt and sand particles than soils further from the stream. Another factor in Delta soil formation is the movement of surface water over time. Soils formed under standing water have different properties than soils formed under running water.

Physiographic Regions

The planning area is divided into five physiographic regions as shown here in **Figure 6**.

FIGURE 6: MEMA DISTRICT 5 PHYSIOGRAPHIC REGIONS



Loess (Bluff) Hills

This region extends from DeSoto County southward to Wilkinson County. The predominant soil type in this region is both acidic and non-acidic. This part of the state is also considered the brown loam region. The topography and physiography of the region are characterized by narrow ridges and steep-sided ravines. Parts of Claiborne, Hinds, Warren and Yazoo Counties are situated in the Loess Hills region.

Mississippi Alluvial Plain

This region covers the area of the state that borders the Mississippi River from a portion of DeSoto County down to the northeast corner of Wilkinson County. The general topography is flat plain. Delta soil is characterized as ranging from mildly acidic to mildly alkaline. District 5 counties in this plain include Issaquena and Sharkey and parts of Claiborne, Warren and Yazoo.

North Central Hills

Covering a large portion of Mississippi, this region extends from Marshall County in the northern portion of the state southward to northern Madison County, then southwestward to Wayne County. The soil in this region is mostly acidic. The topography is characterized by both ridges and valleys. Parts of Madison, Rankin and Yazoo Counties are situated in this region.

Southern Pine Hills

The Southern Pine Hills region of Mississippi is an upland area within the Gulf Coastal Plain, characterized by rolling hills, sandy and gravelly soils, and elevations higher than the surrounding lowlands. The climate is humid and subtropical with mild winters and frequent thunderstorms. This physiographic district contrasts with the flat Mississippi Delta by offering more varied topography and pine-dominated ecosystems. District 5 counties in this region include Copiah and parts of Claiborne, Hinds, Rankin and Simpson.

Jackson Prairie

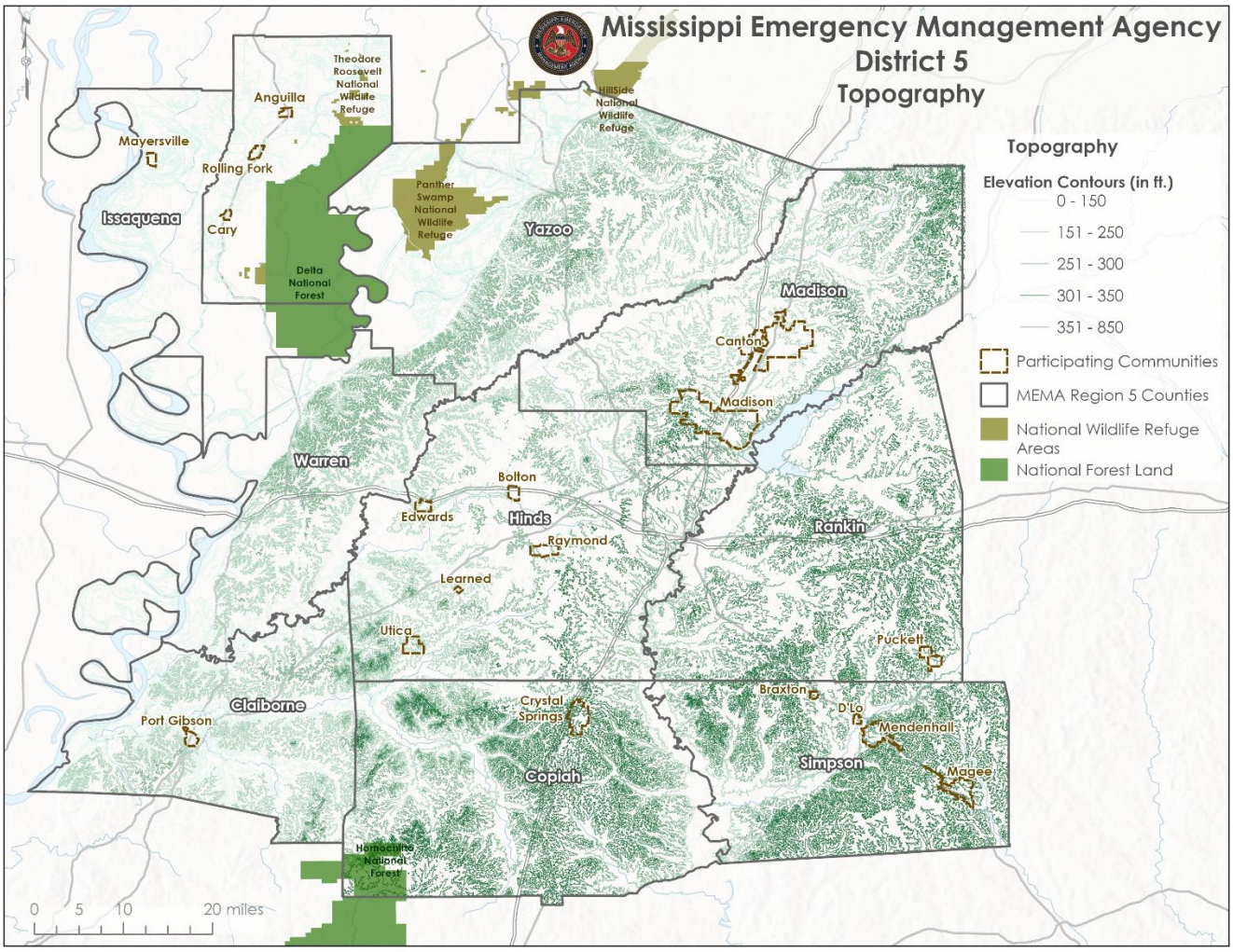
The Jackson Prairie in Mississippi is a narrow, roughly 10–40 -mile-wide belt of temperate grassland and woodland extending diagonally from the Mississippi River near Jackson southeast toward Alabama, covering about 611,200 acres. Geologically, it sits atop Eocene-age Yazoo Clay and calcareous strata—often overlain with brown loess loams and Pliocene sands in hilly areas—and features shrink–swell clays that create characteristic mounds and depressions. Parts of Hinds, Madison, Rankin and Yazoo Counties are in this region.

3.1.2.2. TOPOGRAPHY

Mississippi MEMA District 5 covers a mix of low-lying floodplains and gently rolling uplands. The western counties, such as Claiborne, Issaquena, and Sharkey, lie within the Mississippi Alluvial Plain—a broad, flat region formed by river sediment deposition. These areas are characterized by fertile soils and elevations generally between 40 and 150 feet, making them prone to flooding.

Moving eastward into Hinds, Simpson, and Madison counties, the terrain transitions into rolling hills and uplands, part of the Loess Bluffs and Piney Woods regions. Elevations here range from roughly 130 to over 570 feet, with more varied topography and better drainage compared to the floodplain. Overall, District 5's landscape shifts from flat, riverine lowlands in the west to gently undulating terrain in the east, creating diverse conditions for hazard mitigation planning. **Figure 7** displays the topography in MEMA District 5.

FIGURE 7: MEMA DISTRICT 5 TOPOGRAPHY



3.1.3. POPULATION AND DEMOGRAPHICS

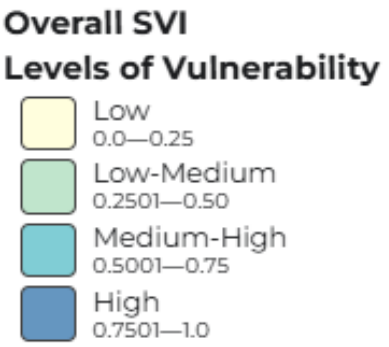
3.1.3.1. CDC SOCIAL VULNERABILITY INDEX

The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey grouped into four main themes:

- Socioeconomic Status,
- Household Characteristics,
- Racial & Ethic Minority Status, and
- Housing Type & Transportation.

This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). **Figure 8** below explains the levels of vulnerability used to determine a county's overall Social Vulnerability Index.

FIGURE 8: CDC SOCIAL VULNERABILITY INDEX LEVELS OF VULNERABILITY | SOURCE: ATSDR



According to the most current CDC Social Vulnerability Index, the scores for the participating jurisdictions are listed below in **Table 6**. The SVI scores for Sharkey, Issaquena, Claiborne, Hinds, and Simpson Counties are applicable to all participating jurisdictions within the County boundaries. For the Cities of Canton, Madison, Crystal Springs and the Village of Puckett, the data below is for Madison County, Copiah County and Rankin County respectfully.

TABLE 6: MEMA DISTRICT 5 CDC SOCIAL VULNERABILITY INDEX RANKINGS | SOURCE: ATSDR

Jurisdiction	SVI Ranking	Level of Vulnerability
Sharkey County	0.9383	High
Issaquena County	0.9012	High
Claiborne County	0.7284	Medium to High
Hinds County	0.6543	Medium to High
City of Crystal Springs	0.4568	Low to Medium
Simpson County	0.2963	Low to Medium
City of Canton	0.0494	Low
City of Madison	0.0494	Low
Village of Puckett	0.0123	Low

According to the SVI data, Sharkey County has the highest SVI ranking, indicating that populations in this area have the highest level of vulnerability. Followed closely by Issaquena County with the remaining jurisdiction's level of vulnerability ranging from medium to high down to low.

3.1.3.2. POPULATION

The jurisdictions within District 5 continue to experience a decline in population according to the 2000, 2010, and 2020 U.S. Census data, as shown in **Table 7**. The greatest declines from 2010-2020 occurred in Issaquena County (-13.0%) Sharkey County (-10.0%), City of Canton (-9.4%), and Claiborne County (-5.9%).

TABLE 7: POPULATION TRENDS | SOURCE: 2020 U.S. CENSUS DATA

Jurisdiction	2000 Census	2010 Census	2020 Census	Percent Change 2010-2020
Claiborne County	11,831	9,604	9,042	-5.9%

Jurisdiction	2000 Census	2010 Census	2020 Census	Percent Change 2010-2020
Hinds County	250,800	245,285	235,604	-4.0%
Issaquena County	2,274	1,406	1,223	-13.0%
Sharkey County	6,580	4,916	4,427	-10.0%
Simpson County	27,639	27,503	26,818	-2.5%
City of Canton	13,140	13,189	11,943	-9.4%
City of Madison	14,703	24,149	25,650	+6.2%
City of Crystal Springs	5,987	5,044	4,753	-5.8%
Village of Puckett	369	316	343	+8.5%

3.1.3.3. DEMOGRAPHICS

The racial characteristics of the participating jurisdictions are shown in **Table 8**. Most of the participating counties and jurisdictions are made up of more than 35 percent of people who are African American.

TABLE 8: DEMOGRAPHICS IN PERCENT | SOURCE: 2020 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
Claiborne County	12.2%	88.0%	0.2%	1.5%	1.0%	2.7%
Hinds County	25.2%	73.6%	2.4%	1.3%	1.1%	3.4%
Issaquena County	27.2%	71.1%	1.3%	0.4%	1.6%	1.6%
Sharkey County	25.8%	73.9%	0.5%	0.0%	0.3%	0.2%
Simpson County	61.2%	35.5%	1.7%	0.6%	0.5%	1.9%
City of Canton	23.3%	74.8%	6.2%	0.4%	0.1%	2.4%
City of Madison	81.1%	13.2%	1.1%	6.1%	0.3%	2.2%
City of Crystal Springs	29.1%	67.7%	6.9%	1.0%	2.7%	4.6%
Village of Puckett	97.9%	3.3%	1.2%	1.2%	0.2%	2.6%

3.1.3.4. SOCIOECONOMIC CHALLENGES

District 5 faces persistent economic challenges, including high poverty rates (often exceeding 20% in several counties and jurisdictions) and lower per capita incomes compared to statewide averages. Educational attainment levels are also lower, with fewer residents holding college degrees, which impacts workforce readiness and resilience. As noted in **Table 9**, poverty and other social factors are also important to consider in this plan. provides a summary of each county's percentage of population living in poverty, under 5 years of age, 65 and older, and disabled. Claiborne, Issaquena and Sharkey Counties as well as the City of Canton all have populations above 30% below the poverty level.

TABLE 9: VULNERABLE POPULATIONS | SOURCE: 2020 U.S. CENSUS DATA

Jurisdiction	Below Poverty	Very Young (5 and under)	Elderly (65+)	Disabled
Claiborne County	33.3%	533	1,633	1,025
Hinds County	22.2%	12,820	36,087	31,837
Issaquena County	55.7%	0	191	272
Sharkey County	32.6%	217	659	577
Simpson County	19.7%	1,523	4,691	5,347
City of Canton	33.3%	450	1,604	1,456
City of Madison	4.8%	1,635	4,528	2,505
City of Crystal Springs	23.4%	424	874	895
Village of Puckett	27.4%	18	62	52

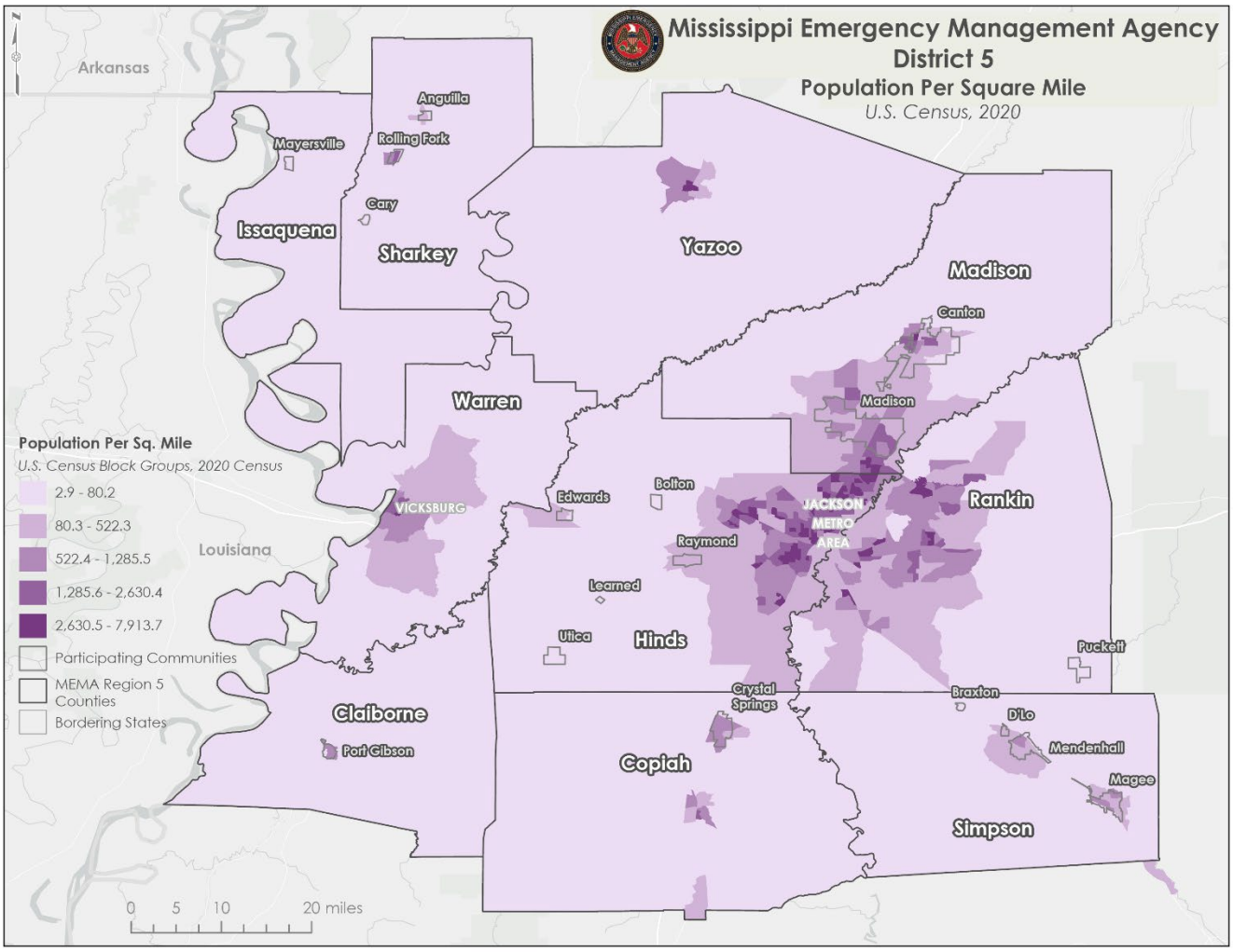
The jurisdictions in District 5 are, for the most part, sparsely populated when compared to other Mississippi counties. Within District 5, Hinds County is the largest in land area and Issaquena County have the smallest population density. **Table 10** shows the population density per square mile for each jurisdiction and **Figure 9** displays the population per square mile.

TABLE 10: LAND AREA AND POPULATION DENSITY | SOURCE: 2020 U.S. CENSUS DATA

Jurisdiction	Total Population (2020 Census Estimates)	Total Land Square Miles	Population Density (Per Square Mile)
Claiborne County	9,042	487.42	18.6
Hinds County	235,604	869.85	270.9

Jurisdiction	Total Population (2020 Census Estimates)	Total Land Square Miles	Population Density (Per Square Mile)
Issaquena County	1,223	412.98	3.0
Sharkey County	4,427	431.72	10.3
Simpson County	26,818	589.17	45.5
City of Canton	11,943	21.28	561.2
City of Madison	25,650	25.25	1,015.8
City of Crystal Springs	4,753	5.43	875.3
Village of Puckett	343	2.88	119.1

FIGURE 9: POPULATION PER SQUARE MILE IN MEMA DISTRICT 5



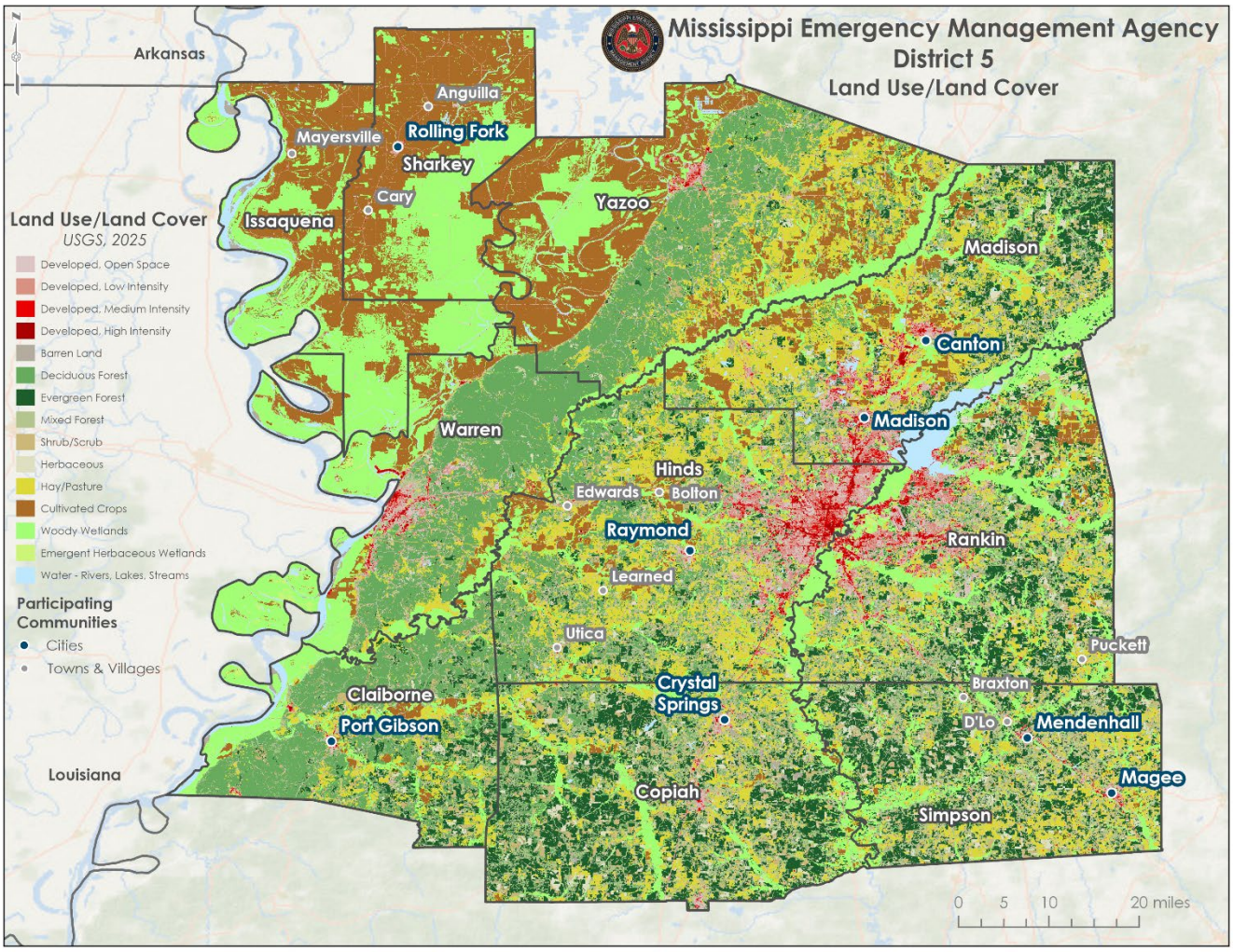
3.1.4. LAND USE AND HOUSING

3.1.4.1. LAND USE

District 5 encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, and growing residential development near population centers such as Jackson and Madison. Commercial and industrial uses are concentrated along major transportation corridors, while low-density residential growth continues in outlying counties. Several jurisdictions have experienced expansion into flood-prone areas along the Pearl River and its tributaries, increasing vulnerability to flooding.

Future development trends indicate continued suburban growth and infrastructure improvements, which may place additional pressure on floodplains and wetlands. Local comprehensive plans emphasize economic development, but enforcement of zoning and floodplain management ordinances varies across jurisdictions. Strengthening land-use policies, promoting open-space preservation, and directing growth away from high-risk areas remain key mitigation strategies to reduce hazard exposure and enhance community resilience. Figure 10 below displays the land use and land cover in the district.

FIGURE 10: LAND USE AND LAND COVER IN MEMA DISTRICT 5



3.1.4.2. HOUSING

The previously mentioned population decline is reflected in the decline in housing. **Table 11** shows the change in estimated housing units in MEMA District 5 participating counties and jurisdictions over the 5-year planning cycle. The City of Madison has the highest increase over that time while Sharkey County and the Village of Puckett have seen the largest decline in the number of housing units over that same period.

TABLE 11: ANNUAL ESTIMATES OF HOUSING UNITS IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023
Claiborne County	4,344	3,950	3,948	3,949
Hinds County	104,356	106,266	106,367	106,439
Issaquena County	553	457	449	438

Jurisdiction	2020	2021	2022	2023
Sharkey County	2,160	1,723	1,705	1,673
Simpson County	12,195	11,618	11,643	11,661
City of Canton	5,407	4,971	4,959	4,997
City of Madison	9,086	9,754	9,815	10,127
City of Crystal Springs	1,677	1,829	1,952	1,957
Village of Puckett	139	172	174	160

3.1.5. EMPLOYMENT AND INDUSTRY

The district is characterized by a predominantly rural economy with strong ties to agriculture, particularly crop farming, and a growing presence of manufacturing and service industries in select areas. District 5's economy is diverse, with employment concentrated in government services, healthcare, education, manufacturing, and agriculture. The Jackson metropolitan area serves as the primary employment hub, hosting state government offices, major hospitals, and higher education institutions. Manufacturing and distribution facilities are located along key transportation corridors, while rural counties rely heavily on farming, forestry, and related industries.

3.1.5.1. EMPLOYMENT AND INCOME

Employment levels across District 5 counties are generally below the state average, reflecting limited industrial diversification. Average weekly wages range from approximately $1,092, with most counties falling below the national average of $1,589. Hinds County serves as the district's economic hub, hosting education, government, healthcare and professional services, while Madison and Rankin Counties also provide significant employment opportunities in agriculture and manufacturing sectors.

Urban/suburban areas like Hinds and Madison Counties enjoy stronger employment and income levels, while rural counties struggle with high unemployment, low wages, and elevated poverty rates. These economic vulnerabilities can restrict individual and community resilience in post-disaster recovery, necessitating tailored mitigation support and resource allocation to strengthen capacity where it's most needed. **Table 12** below displays the economic indicators for the participating jurisdictions in MEMA District 5.

TABLE 12: MEMA DISTRICT 5 ECONOMIC INDICATORS BY COUNTY | SOURCE: 2024 U.S. CENSUS DATA

Jurisdiction	Median Household Income	Per Capita Income	Poverty Rate	Employment	Unemployment Rate
Claiborne County	$34,371	$18,619	32.7%%	2,719	8.7%
Hinds County	$49,966	$29,336	21.0%	103,957	6.6%

Jurisdiction	Median Household Income	Per Capita Income	Poverty Rate	Employment	Unemployment Rate
Issaquena County	$29,271	$13,843	49.6%	196	8.2%
Sharkey County	$35,741	$23,081	34.5%	1,682	10.5%
Simpson County	$54,111	$29,599	20.1%	10,864	5.2%
City of Canton	$34,812	$21,764	33.0%	4,866	3.8%
City of Madison	$120,918	$59,346	4.4%	13,855	3.2%
City of Crystal Springs	$42,990	--	23.4%	1,752	9.0%
Village of Puckett	$66,000	--	27.4%	177	3.2%

Employment in MEMA District 5 is largely focused on manufacturing, agriculture, logistics, healthcare and educational services, there are several other large industries located within the participating jurisdictions. **Table 13** below summarizes employment information in the City.

TABLE 13: EMPLOYMENT IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Management, business, science and arts occupations	Service occupations	Sales and office occupations	Natural resources, construction and maintenance occupations	Production, transportation and material moving occupations
Claiborne County	719	492	600	202	451
Hinds County	34,108	20,140	19,705	7,105	15,839
Issaquena County	74	8	51	24	29
Sharkey County	344	236	367	305	305
Simpson County	2,998	1,993	2,474	1,398	1,681
City of Canton	1.173	901	1.189	451	862
City of Madison	7,382	1,375	3,297	529	894
City of Crystal Springs	752	274	93	265	573
Village of Puckett	84	28	35	18	32

3.1.6. LIFELINES, INFRASTRUCTURE AND CRITICAL FACILITIES

A lifeline is a sector that provides an indispensable service which enables the continuous operation of critical business and government functions and is critical to human health and safety or economic security. Infrastructure associated with lifelines is a mix of public and private ownership and has many interdependencies. See **Table 14** for the eight Community Lifelines and their respective components.

As an example, maintaining the function of a hospital during an event that results in a power failure is dependent on communication infrastructure and access to temporary power to prevent interruption of services. Assessing these sectors helps to identify root causes of impacts and consequences from previous hazard events and prioritizes the highest issue areas and interdependencies to create effective mitigation solutions.

TABLE 14: COMMUNITY LIFELINES AND COMPONENTS

Lifeline	FEMA Icon	Components	Lifeline	FEMA Icon	Components
Communications		Infrastructure Alerts, Warnings, and Messages 911 and Dispatch Responder Communications Finance	**Health & Medical**		Medical Care Patient Movement Fatality Management Public Health Medical Supply Chain
Energy (Power & Fuel)		Power Grid Fuel	**Safety & Security**		Law Enforcement and Security Fire Service Search and Rescue Government Services Community Safety
Food, Hydration, Shelter		Food Hydration Shelter Agriculture	**Transportation**		Highway, Roadway, and Motor Vehicle Aviation Mass Transit Maritime Railway
Hazardous Materials		Facilities HAZMAT, Polluants, and Contaminants	**Water & Wastewater Systems**		Potable Water Infrastructure Wastewater Management

3.1.6.1. TRANSPORTATION

There are several major thoroughfares that traverse the jurisdictions in District 5 as shown in **Table 15** and in **Figure 11** on the following pages. Interstate 55 runs north/south through the central portion of Mississippi and is the main access to Jackson, MS and Memphis, TN. There are several small general airports in the planning area. The nearest major airports that provide regular, commercial flights are in Jackson, MS (Jackson-Evers International Airport) and Memphis, TN (Memphis International Airport), which are both outside of the planning area.

Class I and III rail lines cross through many of the jurisdictions and are used by Canadian National, Illinois Central Railway and other local carriers. The Mississippi River borders the western side of Claiborne, Issaquena and Warren Counties and includes 2 ports. The Port of Vicksburg (Warren County) provides multimodal services (bulk and break bulk), all-weather loading and unloading, warehousing, liquid warehouse facilities, barge fleeting, marshaling, barge cleaning and refurbishing. The Port of Claiborne County provides a concrete general cargo dock on a slackwater harbor and public boat ramps. The Yazoo County Port connects to the Mississippi River and the inland waterways at Vicksburg.

TABLE 15: MEMA DISTRICT 5 TRANSPORTATION SYSTEMS

Jurisdiction	Roadway		Rail	Aviation
Claiborne County	61	U.S. Highway 61		
	18	State Highway 18		
	547	State Highway 547		
	548	State Highway 548		
	552	State Highway 552		
		Natchez Trace Parkway		
Hinds County	20	Interstate 20	Canadian Pacific/Kansas City Rail (CPKC) Canadian National (CN)	Jackson-Medgar Wiley Evers International Airport (JAN) John Bell Williams Airport (KJVW)
	55	Interstate 55		
	220	Interstate 220		
	49	U.S. Highway 49		
	51	U.S. Highway 51		
	80	U.S. Highway 80		
	18	State Highway 18		
	22	State Highway 22		
	25	State Highway 25		
	27	State Highway 27		
	467	State Highway 467		
		Natchez Trace Parkway		
Issaquena County	61	U.S. Highway 61		
	1	State Highway 1		
	14	State Highway 14		
	16	State Highway 16		
	465	State Highway 465		
Sharkey County	61	U.S. Highway 61		
	14	State Highway 14		
	16	State Highway 16		
	433	State Highway 433		
	434	State Highway 434		
Simpson County	49	U.S. Route 49	Canadian National (CN)	Magee Municipal Airport
	13	State Highway 13		
	28	State Highway 28		
	42	State Highway 42		
	43	State Highway 43		
	149	State Highway 149		
	469	State Highway 469		
	472	State Highway 472		

Jurisdiction	Roadway		Rail	Aviation
	478	State Highway 478		
	540	State Highway 540		
	541	State Highway 541		
	545	State Highway 545		
City of Canton (Madison County)	55	Interstate 55	Canadian National (CN)	Bruce Campbell Field (KMBO)
	49	U.S. Highway 49		
	51	U.S. Highway 51		
	16	State Highway 16		
	17	State Highway 17		
	22	State Highway 22		
	43	State Highway 43		
City of Madison (Madison County)	55	Interstate 55	Canadian National (CN)	Bruce Campbell Field (KMBO)
	49	U.S. Highway 49		
	51	U.S. Highway 51		
	16	State Highway 16		
	17	State Highway 17		
	22	State Highway 22		
	43	State Highway 43		
City of Crystal Springs (Copiah County)	55	Interstate 55	Canadian National (CN)	Copiah County Airport (M11)
	51	U.S. Highway 51		
	18	State Highway 18		
	27	State Highway 27		
	28	State Highway 28		
	472	State Highway 472		
	478	State Highway 478		
	547	State Highway 547		
Village of Puckett (Rankin County)	20	Interstate 20	Canadian Pacific/Kansas City Rail (CPKC) Canadian National (CN)	
	55	Interstate 55		
	49	U.S. Highway 49		
	80	U.S. Highway 80		
	13	State Highway 13		
	18	State Highway 18		
	25	State Highway 25		
	43	State Highway 43		
	425	State Highway 425		
	468	State Highway 468		
	469	State Highway 469		
	471	State Highway 471		

Jurisdiction	Roadway		Rail	Aviation
	475	State Highway 475		
	481	State Highway 481		

FIGURE 11: MEMA DISTRICT 5 TRANSPORTATION MAP

3.1.6.2. UTILITIES

District 5 relies on a diverse network of utilities that support residential, commercial, and industrial needs. Electric power is provided by a mix of investor-owned utilities such as Entergy Mississippi, municipal systems, and rural electric cooperatives. Water and wastewater services are managed by municipal utilities in cities like Jackson, Canton, and Clinton, supplemented by rural water associations serving smaller communities. Natural gas distribution is handled by regulated pipeline companies and local municipal providers, while telecommunications and broadband services are delivered by regional carriers under oversight from the Mississippi Public Service Commission.

These systems are essential for public safety and economic stability but remain vulnerable to hazards such as flooding, severe storms, and extended power outages. Critical facilities, including water treatment plants, substations, and communication, require backup power and hardened infrastructure to maintain continuity during disasters.

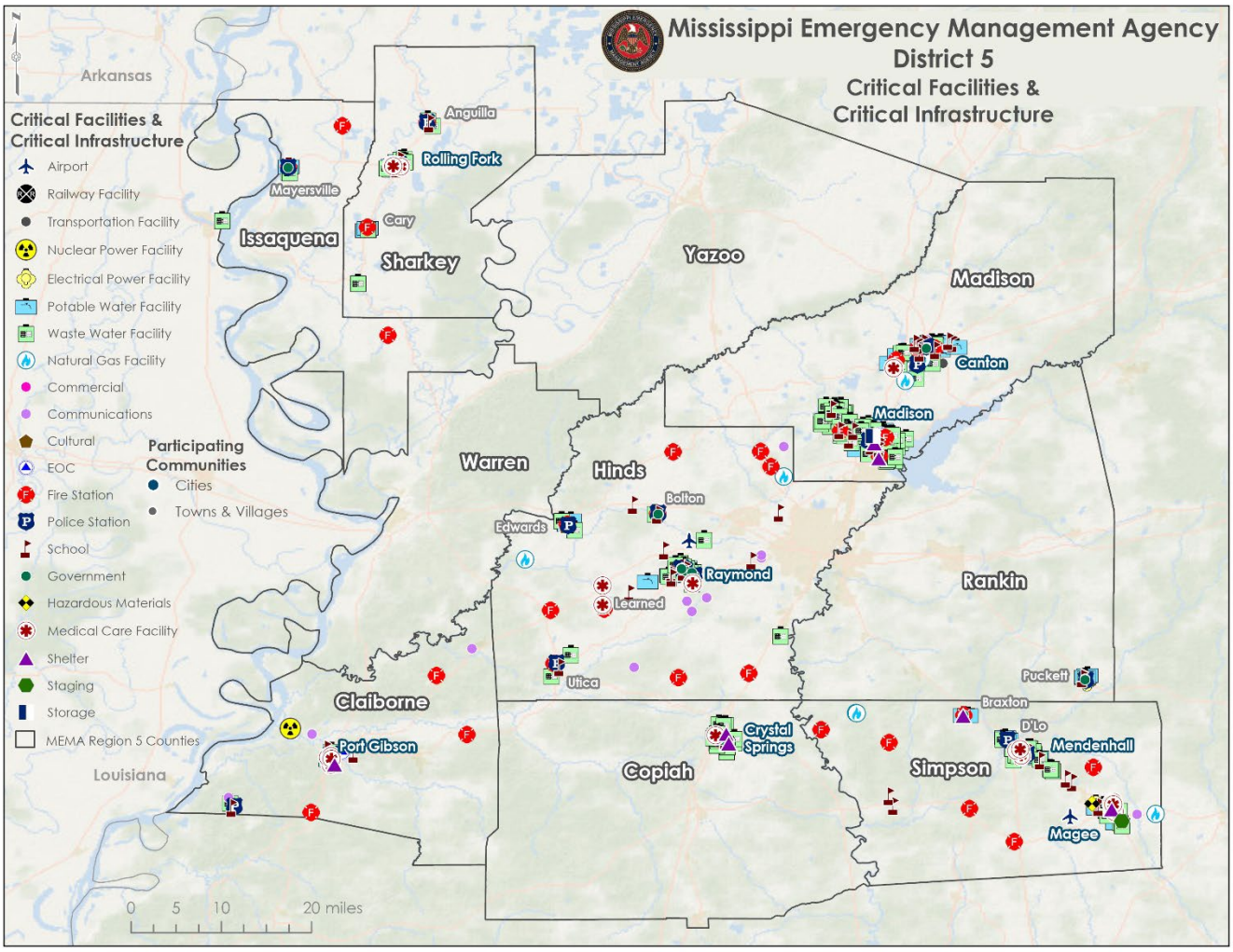
Grand Gulf Nuclear Station is the only nuclear power plant in Mississippi. In 2012, Grand Gulf completed a power upgrade that makes the facility the largest single-unit nuclear power plant in the country and the fifth largest in the world. The facility operates a boiling water reactor with output of 1,443 megawatts. The Grand Gulf Nuclear Station is located on a 2,100-acre site near Port Gibson in western Claiborne County and is operated by Entergy. While the plant is outside many local jurisdictions, its proximity means that surrounding counties could be affected by an incident depending on wind patterns, water systems, and transportation routes. The location of Grand Gulf Nuclear Station, as well as the 10-mile and 50-mile evacuation zones, is shown in **Figure 56**.

As a complement to the utility assets data, researchers consulted the Mississippi Public Service Commission web site for the 2026 update to review the list of utilities shown there. Each jurisdiction provides a detailed table that highlights this information in their respective annex. An attempt was made to prevent duplication; however, it was decided data from both sources should be incorporated into the District 5 Base Plan and in each of the annexes for the sake of thorough documentation.

3.1.6.3. INFRASTRUCTURE AND CRITICAL FACILITIES

Certain assets and facilities are considered as being of great significance for Mississippi Emergency Management Agency (MEMA) District 5 and the jurisdictions located throughout the district. Those identified in the **Figure 12** are based on best available data and discussions with the Mitigation Council, District 5 Regional Mitigation Planning Council, MEMA District 5 counties and jurisdictions. For a full list of critical facilities and infrastructure within District 5, see each participating jurisdiction’s annex.

FIGURE 12: MEMA DISTRICT 5 CRITICAL FACILITIES AND INFRASTRUCTURE



3.1.7. CHANGES IN DEVELOPMENT

This section outlines recent and anticipated changes in development within Mississippi MEMA District 5 that may influence hazard vulnerability and mitigation priorities. The information supports risk assessment updates and informs mitigation strategy refinement.

3.1.7.1. REGIONAL DEVELOPMENT TRENDS

Since the last HMP update, District 5 has experienced modest but notable development changes, particularly in the following areas:

- **Residential Growth**: Small-scale residential expansion has occurred in municipalities such as the City of Madison (Madison County) and the Village of Puckett (Rankin County). These developments are primarily infill housing and subdivisions near existing infrastructure.
- **Infrastructure Improvements**: Counties have invested in upgrading critical infrastructure, including:
- Installation of backup generators at emergency shelters and public safety buildings.
- Roadway improvements to reduce flood-prone areas.

- Expansion of broadband access to support emergency communications.

Public Facility Enhancements: Several jurisdictions have constructed or retrofitted community safe rooms and storm shelters, particularly in areas with high tornado risk.

3.1.7.2. IMPLICATIONS FOR HAZARD VULNERABILITY

These development changes have both positive and negative implications for hazard vulnerability:

Positive Impacts:

- Improved sheltering capacity and emergency power systems enhance community resilience.
- Infrastructure upgrades reduce exposure to flood and storm hazards.
- Broadband expansion supports emergency alert systems and remote coordination.

Potential Challenges:

- New residential areas may increase exposure to flash flooding and severe storm events if not adequately mitigated.
- Continued development in low-lying or poorly drained areas may exacerbate localized flooding risks.

3.1.7.3. FUTURE DEVELOPMENT CONSIDERATIONS

To support long-term resilience in Mississippi MEMA District 5, future development should be strategically planned to minimize exposure to hazards and enhance adaptive capacity. Specifically, new construction and infrastructure projects should avoid areas prone to flooding or those with limited emergency access, reducing vulnerability during disasters.

Additionally, integrating green infrastructure—such as permeable surfaces, rain gardens, and bioswales—alongside robust stormwater management practices will help mitigate flood risks and improve environmental sustainability. Continued coordination with MEMA and FEMA is also essential to secure funding for mitigation initiatives and ensure alignment with state and federal resilience goals.

3.2. COMMUNITY PROFILES

Community Profiles for each participating county within MEMA District 5 are in their respective annex. Each Community Profile includes but is not limited to information on each participating jurisdiction's land use, development, natural and historical resources, demographics, and critical facilities.

4. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. As with any planning process, it is essential to determine which goals, objectives, and actions are feasible based on the capacity of agencies responsible for implementation. This assessment helps identify practical mitigation actions that can realistically be carried out over time, considering the local government's planning and regulatory framework, administrative and technical resources, financial capacity, and current political environment. A capability assessment has two primary components:

1. An inventory of a local jurisdiction's relevant plans, ordinances, or programs already in place.
2. An analysis of its capacity to carry them out.

Careful examination of local capabilities will detect any existing gaps, shortfalls, or weaknesses with ongoing government activities that could hinder proposed mitigation activities and possibly exacerbate community hazard vulnerability. A capability assessment also highlights the positive mitigation measures already in place or being implemented at the local government level, which should continue to be supported and enhanced through future mitigation efforts.

Implementing hazard mitigation initiatives involves working with an array of professionals, many of whom may not be trained in the five phases of emergency management. Stakeholders may include local planners, public works officials, economic development specialists and others. Similarly, hazard mitigation planning cuts across multiple disciplines. As a result, questions included in the Local Capability Assessment Survey regarding general regulatory and administrative capabilities were designed to measure the degree to which mitigation is integrated into other planning efforts. **Table 16** provides an overview of several general implementation activities local communities traditionally use to assist with implementing mitigation strategies designed to reduce the long-term impacts of hazards on people and property.

More detailed information on the Capability Assessment for each participating jurisdiction in MEMA District 5 can be found in their respective Annex.

TABLE 16: MEMA DISTRICT 5 LOCAL CAPABILITIES

Capability	Relationship with Hazard Mitigation

Floodplain Management Capability	• Flooding is the greatest natural hazard facing the nation and the planning area. At the same time, the tools available to reduce flood-related impacts are numerous and among the most developed when compared to other hazard-specific mitigation techniques.
	• The National Flood Insurance Program (NFIP) was created by Congress in 1968 to protect lives and property and to reduce the financial burden of providing disaster assistance. The NFIP is administered by the Federal Emergency Management Agency (FEMA). The NFIP is based on a mutual agreement between the federal government and communities.
	• Communities that participate agree to regulate floodplain development according to certain criteria and standards. The partnership involves:
	  ○ Flood Insurance: Property owners in participating communities are eligible to purchase federal flood insurance that covers both buildings and contents.
	  ○ Flood Hazard Maps: Partnering with FEMA, the state produces flood maps based on FEMA standards for use by community regulatory bodies, insurance agents and others.
	  ○ Regulations: Communities must adopt and enforce minimum floodplain management regulations so that development is managed in ways that reduce exposure to flooding.
	• The NFIP provides specific regulatory measures that enable officials to determine where and how growth occurs relevant to flood hazards. The NFIP is a voluntary program but is strongly encouraged by FEMA to implement sustainable solutions.
	• The Town of Learned is not participating in the NFIP

Capability	Relationship with Hazard Mitigation
Flood Damage Prevention Ordinance	• A local Flood Damage Prevention Ordinance is a tool used by counties and municipalities to regulate the type of construction that occurs in the floodplain. If a community is an NFIP participant, it must adopt and enforce a Flood Damage Prevention Ordinance. The MEMA State Assistance Office for the NFIP has developed a Model Flood Damage Prevention Ordinance for use by all participating NFIP communities. For each NFIP participating community in the planning area, an emphasis will be placed on continued compliance with the NFIP. The following steps will be taken by each participating community to meet or exceed the following minimum requirements as set by the NFIP. • Issuing or denying floodplain development/building permits • Inspecting all development to ensure compliance with local ordinance • Maintaining records of floodplain development • Assisting in the preparation and revision of flood maps/updates • Assist residents in obtaining information on flood hazards, floodplain map data, flood insurance and proper construction measures.
Community Rating System (CRS)	• The goal of the CRS program is to reduce flood damage to insurable property, strengthen and support the insurance aspects of the NFIP, and encourage a comprehensive approach to floodplain management. Benefits of the CRS not only include lower flood insurance rates, but also the following: • Citizens and property owners increase their knowledge of the risks associated with flood impacts and can evaluate their individual vulnerabilities and learn to take action to protect themselves and their property. • CRS floodplain management activities provide enhanced public safety, reduced damage to property and public infrastructure, and avoidance of economic disruption and loss. • Communities can evaluate the effectiveness of their flood programs against nationally recognized benchmarks. • Technical assistance in designing and implementing some activities is available to communities at no charge • CRS communities have incentives to maintain and improve their flood programs over time. • Of the communities within District 5, the City of Madison, City of Canton, and Hinds County participate in the CRS
Storm Water Management Plan	A storm water management plan is designed to address flooding associated with storm water runoff. The storm water management plan is typically focused on design and construction measures intended to reduce the impact of more frequently occurring minor urban flooding.
Zoning Ordinances	Zoning represents how land use is controlled by local governments. As part of a community's police power, zoning is used to protect public health, safety and welfare. A zoning ordinance is the mechanism through which zoning is typically implemented. Since zoning regulations enable municipal governments to limit the type and density of development, it can serve as a powerful tool when applied in identified hazard areas.

Capability	Relationship with Hazard Mitigation
Subdivision Ordinances	• A subdivision ordinance is intended to regulate the development of housing, commercial, industrial or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. • Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development.
Building Codes, Permitting and Inspections	Building codes regulate construction standards. Decisions regarding the adoption of building codes, the type of permitting process required both before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk faced by a community. Under Senate Bill 2378 of 2014, all counties and municipalities must enact the uniform building codes unless they opt out prior to Nov. 30, 2014.
Historic Preservation Plan	A historic preservation plan is intended to preserve historic structures or districts within a community. An often-overlooked aspect of the historic preservation plan is the assessment of buildings and sites located in areas subject to natural hazards to include the identification of the most effective way to reduce future damage. This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards or are within a historic district that cannot easily be relocated out of harm's way.
Hazard Mitigation Plans	A hazard mitigation plan represents a community's blueprint for how they intend to reduce the impact of natural and human-caused hazards on people and the built environment. Elements of a hazard mitigation plan include a risk assessment, capability assessment and mitigation strategy. As this is a multi-jurisdictional hazard mitigation plan, each of the participating communities have developed a hazard mitigation plan.
Emergency Operations Plan	An emergency operations plan outlines responsibility and the means by which resources are deployed during or following an emergency or disaster.
Continuity of Operation Plan	A continuity of operations plan establishes a clear chain of command, line of succession, and plans for backup or alternate emergency facilities in case of an extreme emergency or disaster.
Comprehensive Plan	A comprehensive plan establishes the overall vision for a community and helps to guide municipal decision-making.
Economic Development Plan	An economic development plan serves as a road map for economic development decision making, based on the collection of statistical data, historical perspective, and human potential.
Community Wildfire Protection Plan	The community wildfire protection plan is a strategic plan that identifies wild land fire issues facing the community and outlines prioritized mitigation actions.

4.1. CAPABILITY ASSESSMENT PROCESS

Performing a Capability Assessment is one step of a FEMA approved hazard mitigation plan update. A mitigation planning Capability Assessment consists of taking an in-depth look at community mechanisms (such as plans, codes, ordinances, staffing, etc.) which can affect hazard mitigation activities. Performing the Capability Assessment helps communities identify the regulatory, administrative, technical, and fiscal capabilities of their jurisdiction and consider ways these tools can be used to further hazard mitigation and disaster resiliency goals. Capability Assessments were undertaken by each participating jurisdiction as part of the development of the previous plan.

4.1.1. METHODOLOGY

The Disaster Mitigation Act of 2000 requires local governments to review and incorporate, if appropriate, existing plans and programs, studies, reports and technical information into their hazard mitigation plans. WOB worked closely with the Mitigation Council and distributed copies of the Local Capabilities Survey to officials in participating jurisdictions. The survey asked several detailed questions about existing local plans, policies, programs and ordinances that contribute to and/or hinder that community's ability to implement hazard mitigation actions. In addition, a series of questions were asked concerning each jurisdiction's technical, fiscal, and administrative capabilities. The survey results provided an inventory of existing local plans, policies, programs and ordinances. Just as important, local officials conducted a self-assessment of their capabilities.

As part of the assessment of jurisdictional capabilities, previous mitigation strategies were reviewed, along with the status of any actions taken to meet the goals and objectives of the strategies. Information on these findings can be found in **Section 6 – Mitigation Strategy**. The information from the survey was incorporated into a scoring system to provide an overall capability rating of "high", "moderate", or "limited". Documenting past mitigation measures can also serve to help assess the degree to which local governments are willing to adopt future mitigation actions.

4.1.2. CONDUCTING THE CAPABILITY ASSESSMENT

To facilitate the inventory and analysis of local government capabilities within the MEMA District 5 counties, a Capability Assessment Survey was presented to each of the participating jurisdictions based on information found in existing hazard mitigation plans and local government websites. The survey was then real-time validated by the county emergency managers during the one-on-one meeting review process. This process produced "capability indicators" such as existing local plans, policies, programs, or ordinances that contribute to and/or hinder the region's ability to implement hazard mitigation actions. Other indicators included information related to the region's fiscal, administrative, and technical capabilities, such as access to local budgetary and personnel resources for mitigation purposes.

The current political climate, an important consideration for any local planning or decision-making process, was also evaluated with respect to hazard mitigation. Also collected were an inventory of existing local plans, ordinances, programs, and resources in place or under development.

4.1.3. CAPABILITIES AND RESOURCES

4.1.3.1. PLANNING MECHANISMS

MEMA District 5 Counties and their incorporated jurisdictions have several policies, programs, and capabilities, which help to prevent and minimize future losses resulting from hazards. These tools are valuable instruments in pre- and post-disaster mitigation as they facilitate the implementation of mitigation activities through the current legal and regulatory framework. Detailed planning capability information for each of the participating jurisdictions can be found in each of the annexes' capability assessment section.

4.1.3.2. STAFF AND TECHNICAL CAPABILITIES

The ability of local government to develop and implement mitigation projects, policies, and programs is contingent upon its staff and resources. Administrative capability is determined by evaluating whether there is an adequate number of personnel to complete mitigation activities. Similarly, technical capability can be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in surveying and Geographic Information Systems. Detailed staff and technical capability information for each of the participating jurisdictions can be found in each of the annexes' capability assessment section.

4.1.3.3. FLOODPLAIN MANAGEMENT AND REGULATION

Floodplain management and regulations support flood mitigation and can reduce flood risk to the community. NFIP participation can support flood mitigation as participation requires floodplain management and regulation. **Table 17** details the communities within MEMA District 5 that participate or do not participate in the NFIP. All jurisdiction except the Town of Learned are participating in the NFIP, and two communities—Canton and Madison—are participating in the Community Rating System (CRS). Detailed floodplain management and regulation capability information for each of the participating jurisdictions can be found in each of the annexes' capability assessment section.

TABLE 17: NFIP PARTICIPATION | SOURCE: FEMA COMMUNITY STATUS BOOK

Jurisdiction	CID	NFIP Participation (Yes or No)	Current Effective Map Date	CRS Participation (Yes or No)	CRS Effective Date
Claiborne County	280201B	Yes	07/20/21	No	-
City of Port Gibson	280033#	Yes	04/19/10	No	-
Hinds County	280070B	Yes	07/20/21	No	-
City of Raymond	280320#	Yes	11/18/09	No	-
Town of Bolton	280216#	Yes	11/18/09	No	-
Town of Edwards	280330#	Yes	(NSFHA)	No	-
Town of Learned	280315#	No	-	No	-
Town of Utica	285263#	Yes	(NSFHA)	No	-
Issaquena County	280200#	Yes	02/16/12	No	-
Town of Mayersville	280329#	Yes	02/16/12	No	-
Sharkey County	280152C	Yes	08/14/24	No	-
City of Rolling Fork	280155#	Yes	03/02/12	No	-
Town of Anguilla	280153C	Yes	08/14/24	No	-
Town of Cary	280154#	Yes	03/02/12	No	-
Simpson County	280281#	Yes	09/02/11	No	-
City of Magee	280158#	Yes	09/02/11	No	-
City of Mendenhall	280159#	Yes	09/02/11	No	-
Town of D'Lo	280157#	Yes	09/02/11	No	-
Village of Braxton	280156#	Yes	09/02/11(M)	No	-
City of Canton	280109B	Yes	01/17/25	Yes	4/01/24
City of Madison	280229B	Yes	01/17/25	Yes	04/01/22
City of Crystal Springs	280044#	Yes	12/16/08(M)	No	-
Village of Puckett	280147#	Yes	06/09/14	No	-

4.1.3.4. FISCAL CAPABILITIES

The ability of a local government to implement mitigation activities is also associated with the funding available for policies and projects. Funding such initiatives is often locally based revenue and financing, as well as outside grants. Costs associated with mitigation activities range from staffing and administrative costs to the actual cost of the mitigation project. Detailed fiscal capability information for each of the participating jurisdictions can be found in each of the annexes' capability assessment section.

4.1.4. LINKING THE CAPABILITY ASSESSMENT WITH THE RISK ASSESSMENT AND THE MITIGATION STRATEGY

The findings from the Risk Assessment and Capability Assessment form the foundation for developing an effective hazard mitigation strategy. When identifying specific mitigation actions, the Mitigation

Council evaluated both the jurisdiction's level of hazard risk and its existing capabilities to reduce or eliminate those risks. As mentioned earlier in the Summary of Plan Contents section 1.4., the Hazard Identification and Risk Assessment is where you can locate the Risk Assessments.

5. HAZARD IDENTIFICATION & RISK ASSESSMENT

The FEMA Hazard Identification and Risk Assessment (HIRA) process involves a structured series of steps, beginning with identifying potential hazards and evaluating their likelihood and potential consequences. It then estimates the level of risk based on current mitigation measures and concludes with recommendations to address risks that exceed acceptable thresholds for the region.

This section of the plan describes the process employed to identify and rank each hazard; and profiles each hazard that was ranked as being significant enough for further evaluation. It contains the following subsections:

- Hazard Identification Overview.
- Hazard Identification and Risk Assessment Methodology.
- Natural, Human-Caused and Technological Hazard Profiles and Risk Assessment.

More detailed information on the hazard identification and risk assessment for each participating jurisdiction in MEMA District 5, can be found in their respective Annex.

5.1. OVERVIEW

The HIRA process provides a structured approach for identifying and evaluating threats that may impact a community. These hazards are typically grouped into three categories: natural, human-caused, and technological. Natural hazards—such as hurricanes, floods, and tornadoes—arise from environmental conditions and can cause widespread damage to life and property. Human-caused hazards result from intentional actions or negligence, including terrorism, civil unrest, and arson. Technological hazards stem from system failures or accidents, such as hazardous material spills, dam breaches, cyberattacks, and utility outages.

By assessing the likelihood, consequences, and existing controls for each hazard, the HIRA process helps communities prioritize risks and develop targeted mitigation strategies. This ensures that resources are directed toward reducing vulnerabilities and enhancing resilience across all sectors of the community.

Since 1969, counties within District 5 have had 49 federal disaster declarations. In the past five years, the District has received Federal Disaster Declarations for events caused by hurricanes, severe storms, flooding, tornadoes, and straight-line winds. The entire state, including District 5, has been included in the Emergency Declaration and Disaster Declaration issued because of the COVID-19 pandemic on April 5, 2020. **Table 18** shows the 49 declared events affecting the District since 1969 and the 13 that have occurred since the 2020 District 5 Plan update.

TABLE 18: MEMA DISTRICT 5 FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4899	Winter Storms	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/6/2026
DR-4874	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Issaquena	5/11/2025
DR-4790	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Hinds, Madison	6/10/2024
DR-4727	Severe Storm, Straight-line Winds, Tornadoes	Madison, Rankin, Warren, Yazoo	8/12/2023
DR-4697	Severe Storm, Straight-line Winds, Tornadoes	Sharkey	3/26/2023
DR-4626	Hurricane	Claiborne, Copiah, Simpson	10/22/2021
EM-3569	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
DR-4598	Severe Winter Storms	Claiborne, Copiah, Hinds, Rankin, Simpson, Warren, Yazoo	5/4/2021
EM-3548	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4551	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Claiborne, Simpson	7/9/2020
DR-4538	Severe Storm, Flooding and Mudslides	Claiborne, Copiah, Hinds, Issaquena, Sharkey, Warren, Yazoo	4/23/2020
DR-4528	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4450	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Yazoo	12/6/2019
DR-4314	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Claiborne, Yazoo	5/22/2017
DR-4268	Severe Storm, Flooding	Claiborne, Issaquena	3/25/2016
DR-4175	Severe Storm, Tornado, Flooding	Rankin, Simpson, Warren	4/30/2014
DR-4081	Hurricane	Claiborne, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1983	Flooding	Claiborne, Issaquena, Sharkey, Warren, Yazoo	5/11/2011
EM-3320	Flooding	Claiborne, Issaquena, Sharkey, Warren, Yazoo	5/4/2011
DR-1972	Severe Storm, Tornado	Hinds	4/29/2011
DR-1906	Severe Storm, Tornado	Issaquena, Warren, Yazoo	4/29/2010
DR-1837	Severe Storm, Tornado, Flooding	Simpson	5/12/2009
DR-1794	Hurricane	Claiborne, Copiah, Issaquena	9/22/2008
DR-1764	Severe Storm, Tornado	Hinds	5/28/2008
DR-1753	Severe Storm, Flooding	Warren	5/8/2008
DR-1604	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005
DR-1594	Hurricane	Madison, Rankin	7/10/2005
DR-1360	Severe Storm, Flooding, Tornado	Claiborne, Copiah, Hinds, Issaquena, Simpson, Warren, Yazoo	2/23/2001
DR-1436	Tropical Storm	Copiah	10/1/2002

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-1398	Severe Storm, Tornado	Hinds, Madison, Sharkey	12/7/2001
DR-1360	Severe Storm, Tornado	Madison, Yazoo	2/23/2001
DR-1265	Severe Winter Weather	Issaquena, Sharkey, Warren, Yazoo	1/25/1999
DR-1178	Flooding	Warren	6/13/1997
DR-968	Severe Storm, High Winds, Tornado, Hail	Copiah, Rankin, Simpson	11/25/1993
DR-939	Severe Storm, Tornado	Sharkey	3/20/1992
DR-906	Severe Storm, Tornado	Claiborne, Issaquena, Madison, Sharkey, Warren, Yazoo	5/17/1991
DR-888	Flooding, Severe Storm, Tornado	Madison, Simpson	1/3/1991
DR-895	Flooding, Severe Storm, Tornado	Madison, Simpson	3/5/1991
DR-683	Flooding, Severe Storm, Tornado	Claiborne, Hinds, Madison, Rankin, Warren, Yazoo	6/1/1983
DR-577	Severe Storm, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-499	Flooding, Severe Storm, Tornado	Copiah, Madison, Simpson	4/1/1976
DR-430	Heavy Rains, Flooding	Copiah, Rankin, Simpson	4/18/1974
DR-368	Severe Storm, Tornado	Claiborne, Issaquena, Sharkey, Simpson, Warren, Yazoo	3/27/1973
DR-318	Heavy Rains, Flooding	Copiah	1/19/1972
DR-302	Severe Storm, Tornado	Hinds, Issaquena, Sharkey, Warren, Yazoo	2/22/1971
DR-271	Hurricane	Copiah, Hinds, Madison, Rankin, Simpson	8/18/1969

5.2. HIRA METHODOLOGY

The hazard identification process is a foundational step in understanding the risks that may affect a community. It involves recognizing a wide range of potentially harmful events that could impact people, property, infrastructure, and the environment. Identifying these hazards allows communities to assess their potential impacts and prioritize mitigation efforts. By considering both historical data and emerging threats, local jurisdictions can better prepare for and reduce the consequences of future hazard events. This process supports the development of targeted strategies that enhance public safety, protect critical assets, and promote long-term resilience.

5.2.1. INITIAL REVIEW OF ALL HAZARDS

In accordance with FEMA's hazard mitigation planning requirements outlined in 44 CFR §201.6(c)(2)(i), the MEMA District 5 Mitigation Council evaluated a comprehensive range of hazards that could impact communities within MEMA District 5. This process included a review of the previously approved 2020 District 5 Multi-Jurisdictional Hazard Mitigation Plan and the 2023 Mississippi State Hazard Mitigation Plan. The Mitigation Council considered both historical data and current risk factors to assess potential impacts across jurisdictions. Sources used to identify and validate hazard occurrences included FEMA's federal disaster declaration records, the FEMA Data Visualization platform, and the NOAA National Weather Service Storm Events Database maintained by the National Centers for Environmental Information (NCEI).

The counties within MEMA District 5 agreed on profiling the same 10 natural hazards that were identified in the previous plan update. This plan update also includes profiling two human-caused/technological hazards. No additional hazards were added, but the public health emergency profile for COVID-19 was removed from this plan update. During the plan kickoff meeting, the MEMA District 5 jurisdictions determined which hazard to profile, and identified the hazards presented below. There are no common hazards that are omitted in this assessment. All profiled hazards have been identified as a risk and affect the planning area. The 12 hazards for the 2026 MEMA District 5 Hazard Mitigation Plan include:

- Dam/Levee Failure
- Drought
- Earthquake
- Expansive Soils
- Flooding
- Severe Storms
- Severe Winter Weather
- Tornado
- Tropical Storms/Hurricanes
- Wild/Urban Interface (WUI) Fire
- Hazardous Materials Incidents
- Nuclear Power Plant Incidents

5.2.2. HAZARD VULNERABILITY RANKING

In keeping with the same process followed in the 2020 District 5 Regional Hazard Mitigation Plan, as well as the methodology presented in the 2023 Mississippi State Hazard Mitigation Plan, the next step

in the hazard identification and risk assessment process for the 2026 plan update involved the analysis of general hazard risk and vulnerability and ranking the hazards for risk characteristics. All jurisdictions within the planning area concurred with the criteria presented in **Table 19**. A higher rating demonstrates a more concerning hazard. The scores for area impacted, health and safety consequences, property damage, environmental damage, and property damage. Representatives of participating jurisdictions assessed each hazard in relation to their own community when determining the scores listed in **Table 24**. Additionally, time was set aside during each HIRA Workshop for discussions and review of hazard risk scores.

During this process, the Mitigation Council felt it was important to ensure that local knowledge and expertise would be factored into the ratings. Therefore, communities were encouraged to consider their own lived experiences when scoring hazards, even if available data suggested something different. In particular, some communities expressed that they had experienced hazard events which were not always documented in national datasets. NOAA, NCEI, and other datasets are excellent resources, but they are not perfect—reporting gaps, definition differences, and other causes can result in local events sometimes being excluded from these datasets. This is why some communities in District 5 have scored the probability of certain hazards higher than what would be suggested from the previously documented instances, alone.

TABLE 19: HAZARD RISK CRITERIA

Hazard Risk Criteria	Score
Area Impacted	
No area in the jurisdiction directly impacted	0
Less than 25% of the jurisdiction impacted	1
Less than 50% of the jurisdiction impacted	2
Less than 75% of the jurisdiction impacted	3
Over 75% of the jurisdictions impacted	4
Health and Safety Consequences	
No health or safety impact	0
few injuries or illnesses	1
few fatalities but many injuries or illnesses	2
Numerous fatalities	3
Property Damage	
No property damage	0
Few properties destroyed or damaged	1
Few destroyed but many damaged	2
Few damaged and many destroyed	3
Many properties damaged or destroyed	4
Environmental Damage	
Little or no environmental damage	0
Resources damaged with short term recovery	1
Resources damaged with long term recovery	2
Resources destroyed beyond recovery	3
Economic Disruption	

No economic impact	0
Low direct and/or indirect costs	1
High direct and low indirect costs	2
Low direct and high indirect costs	3
High direct and high indirect costs	4

5.2.3. HAZARD RISK LEVEL

The Total Risk Score was determined based on the total score of risk characteristics (vulnerability) multiplied by a "probability of future occurrence" value of 1 through 5 using the following formula:

Vulnerability (Sum of risk characteristic scores) x Probability of Occurrence = Total Risk Score

The following probability criteria were aligned with a scoring system to assess the Total Risk Score and Risk Level. The Total Risk Score was then converted to a "risk level", based on the following scoring system.

TABLE 20: HAZARD RISK LEVELS

Probability of Future Occurrence	Score
(**Unlikely**) 0 documented occurrences over last 10 years	1
(**Low**) 1 – 4 documented occurrences over last 10 years	2
(**Likely**) 5 – 7 documented occurrences over last 10 years	3
(**Highly Likely)** 8 – 10 documented occurrences over last 10 years	4
(**Extremely Likely**) More than 10 occurrences over last 10 years	5

TABLE 21: RISK LEVELS AND SCORES

Risk Level	Total Risk Score
Low	0-15
A hazard with a ***LOW-RISK*** rating is expected to have little to no impact upon the jurisdiction. The hazard poses minimal health and safety consequences to the state's residents and is expected to cause little to no property damage. The occurrence of a hazard with a ***LOW-RISK*** rating is rare; however, due to other factors such as geographic location it is still possible for such a hazard to occur and cause even significant damage based upon the magnitude of the event.	
Medium	16-30
A hazard with a ***MODERATE-RISK*** rating is expected to have a moderate impact upon the jurisdiction. The hazard poses minor health and safety consequences with minor injuries expected and few to no fatalities. The hazard may cause some property to be damaged or destroyed. The occurrence of a hazard with a ***MODERATE-RISK*** rating is likely at least once within the next 25 years.	
High	31 or More
A hazard with a ***HIGH-RISK*** rating is expected to have a significant impact upon the jurisdiction. The hazard poses high health and safety consequences with numerous injuries and fatalities possible. The hazard may cause even some property to be damaged or destroyed. A hazard with a ***HIGH-RISK*** rating is expected to occur at least once within a 12-month period but can occur multiple times within a year.	

TABLE 22: MEMA DISTRICT 5 HAZARD RISK SCORES

Hazard	Vulnerability Score (Sum of Risk Characteristic Scores)	Probability of Future Occurrence Score	Total Risk Score	Risk Level
Dam/Levee Failure	7	1	7	Low
Drought	10	3	30	High
Earthquake	9	1	9	Low
Expansive Soils	5	1	5	Low
Flood	11	3	33	High
Severe Storm (Thunderstorm, Lightning, Hail and High Wind)	11	5	55	High
Severe Winter Weather	11	3	33	High
Tornado	15	4	60	High
Tropical Storm	10	2	20	Med
Wildfire	9	3	27	Med
Hazardous Material Incident	9	1	9	Low
Nuclear Power Plant Incidents	8	1	8	Low

5.2.4. SUMMARY OF HAZARD RANKINGS

The following table provides a summary of the risk levels for each community regarding the natural hazards profiled in this plan. Because quantitative data does not always provide a full picture of hazard impacts, the results of the statistical ranking were discussed with the Mitigation Council to secure their perspective on how each hazard affects their jurisdictions. With their input, hazards were ranked as being of Low, Medium, or High concern per county-specific listings presented in **Table 23**.

TABLE 23: SUMMARY OF HAZARD RISK BY JURISDICTION

Jurisdictions	Dam/Levee Failure	Drought	Earthquake	Expansive Soils	Flood	Severe Storms	Severe Winter Weather	Tornado	Tropical Storms	Wild/Urban Fires	Hazard Material Incident	Nuclear Power Plant Incident
Claiborne County	Low	Med	Low	Low	High	High	Med	High	Med	High	Low	Low
City of Port Gibson	Low	Med	Low	Low	Low	High	High	High	Med	Low	N/A	N/A
Hinds County	Med	Low	Low	Low	High	High	Med	High	Med	Med	High	Med
City of Raymond	Low	Med	Low	Low	Low	High	Med	High	Med	Low	Low	Med
Town of Bolton	Med	Med	Med	Low	High	High	High	High	High	Med	Low	Low
Town of Edwards	Low	Med	Low	Low	Low	High	Med	High	Med	Low	N/A	N/A
Town of Learned	Low	Med	Low	Low	Med	High	Med	Med	Low	Low	Low	Med
Town of Utica	Low	Med	Low	Low	Low	High	High	High	Med	Low	Low	Low
Issaquena County	Med	Med	Low	Low	High	High	High	High	Med	Low	Low	Low
Town of Mayersville	Med	Med	Low	Low	High	High	High	High	Med	Low	Low	Low
Sharkey County	Med	Med	Low	Low	High	High	High	High	Med	Low	Low	Low
City of Rolling Rock	Low	Med	Low	Low	Med	High	Med	High	Med	Low	N/A	N/A
Town of Anguilla	Low	Med	Low	Low	Med	High	High	High	Med	Low	Low	Low
Town of Cary	Med	Med	Low	Low	High	High	High	High	Med	Low	Low	Low
Simpson County	Low	High	Low	Low	High	High	High	High	High	High	Med	Low
City of Magee	Low	Med	Low	Low	High	High	High	High	Med	High	N/A	N/A
City of Mendenhall	Low	High	Low	Low	High	High	High	High	High	High	Med	Low
Town of D'Lo	Low	High	Low	Low	High	High	High	High	High	High	Med	Low
Village of Braxton	Low	High	Low	Low	High	High	High	High	High	High	Med	Low
City of Canton	Low	Med	Low	Low	High	High	Med	High	Med	Low	Low	Low
City of Madison	Med	Med	Low	Med	Med	High	Med	High	Med	Low	Low	Low
City of Crystal Springs	Low	Med	Low	Low	Med	High	Med	High	Med	Med	N/A	N/A
Village of Puckett	Low	Med	Low	Low	Med	High	Med	High	Med	Med	Low	Low

TABLE 24. MEMA DISTRICT 5 ALL JURISDICTIONS HAZARD RISK SCORES

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Dam/Levee Failure							
Claiborne County	1	1	2	3	1	1	8
City of Port Gibson	0	0	0	0	0	1	0
Hinds County	4	2	1	2	2	2	22
City of Raymond	1	0	0	0	0	1	1
Town of Bolton	4	1	4	3	4	1	16
Town of Edwards	0	0	0	0	0	1	0
Town of Learned	0	0	0	0	0	1	0
Town of Utica	0	0	0	0	0	1	0
Issaquena County	4	3	4	2	4	1	17
Town of Mayersville	4	3	4	2	4	1	17
Sharkey County	4	3	4	2	4	1	17
City of Rolling Rock	0	0	0	0	0	1	0
Town of Anguilla	1	3	2	1	4	1	11
Town of Cary	4	3	4	4	4	1	19
Simpson County	1	1	1	1	1	1	5
City of Magee	1	1	2	1	2	1	7
City of Mendenhall	1	1	1	1	1	1	5
Town of D'Lo	1	1	1	1	1	1	5
Village of Braxton	1	1	1	1	1	1	5
City of Canton	3	2	2	2	2	1	11
City of Madison	2	1	2	1	3	2	18
City of Crystal Springs	1	1	2	1	1	1	6
Village of Puckett	1	1	0	1	2	1	5
Drought							
Claiborne County	4	1	1	2	2	3	30
City of Port Gibson	4	1	1	2	2	3	30
Hinds County	4	1	0	1	1	2	14
City of Raymond	4	1	1	2	2	3	30
Town of Bolton	4	1	1	1	1	2	16

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Town of Edwards	4	1	1	2	3	2	22
Town of Learned	3	1	2	2	1	2	18
Town of Utica	4	1	1	2	3	2	22
Issaquena County	4	1	1	1	2	3	27
Town of Mayersville	4	1	1	1	2	3	27
Sharkey County	4	1	1	1	2	3	27
City of Rolling Rock	4	1	1	2	2	3	30
Town of Anguilla	4	2	1	1	2	2	20
Town of Cary	4	2	1	1	2	3	30
Simpson County	4	1	2	2	3	3	36
City of Magee	4	1	1	2	2	2	20
City of Mendenhall	4	1	2	2	3	3	36
Town of D'Lo	4	1	2	2	3	3	36
Village of Braxton	4	1	2	2	3	3	36
City of Canton	4	1	1	1	3	3	30
City of Madison	4	1	1	1	3	2	20
City of Crystal Springs	4	1	1	2	2	3	30
Village of Puckett	4	1	1	2	2	2	20
Earthquake							
Claiborne County	4	1	1	1	1	1	8
City of Port Gibson	4	1	1	1	1	1	8
Hinds County	4	2	2	2	4	1	14
City of Raymond	4	1	1	1	1	1	8
Town of Bolton	4	3	4	3	4	1	18
Town of Edwards	4	1	1	1	1	1	8
Town of Learned	0	1	1	0	0	1	2
Town of Utica	4	1	1	1	1	1	8
Issaquena County	2	2	3	1	3	1	11
Town of Mayersville	2	2	3	1	3	1	11
Sharkey County	2	2	3	1	3	1	11
City of Rolling Rock	4	1	1	1	1	1	8

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Town of Anguilla	4	1	1	1	1	1	8
Town of Cary	2	1	1	1	3	1	8
Simpson County	4	1	1	1	1	1	8
City of Magee	4	1	1	1	1	1	8
City of Mendenhall	4	1	1	1	1	1	8
Town of D'Lo	4	1	1	1	1	1	8
Village of Braxton	4	1	1	1	1	1	8
City of Canton	4	1	1	1	1	1	8
City of Madison	4	1	1	1	1	1	8
City of Crystal Springs	4	1	1	1	1	1	8
Village of Puckett	4	1	2	1	1	1	9
Expansive Soils							
Claiborne County	1	0	1	1	1	1	4
City of Port Gibson	1	0	1	1	1	1	4
Hinds County	4	0	1	1	2	1	8
City of Raymond	1	0	1	1	1	1	4
Town of Bolton	1	0	3	2	1	1	7
Town of Edwards	1	0	1	1	1	1	4
Town of Learned	0	0	1	0	0	1	1
Town of Utica	1	0	1	1	1	1	4
Issaquena County	1	1	1	1	1	1	5
Town of Mayersville	1	1	1	1	1	1	5
Sharkey County	1	1	1	1	1	1	5
City of Rolling Rock	1	0	1	1	1	1	4
Town of Anguilla	1	1	1	1	1	1	5
Town of Cary	1	1	1	1	1	1	5
Simpson County	1	0	1	1	2	1	5
City of Magee	1	0	1	1	1	1	4
City of Mendenhall	1	0	1	1	2	1	5
Town of D'Lo	1	0	1	1	2	1	5
Village of Braxton	1	0	1	1	2	1	5

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
City of Canton	1	1	2	1	1	1	6
City of Madison	2	0	2	1	1	5	30
City of Crystal Springs	1	0	2	1	1	1	5
Village of Puckett	1	0	0	1	1	1	3
Flooding							
Claiborne County	4	3	3	3	3	3	48
City of Port Gibson	1	1	2	1	1	1	6
Hinds County	4	2	1	1	2	4	40
City of Raymond	1	1	1	1	1	2	10
Town of Bolton	4	1	4	3	3	5	75
Town of Edwards	1	1	1	1	1	2	10
Town of Learned	3	2	2	1	2	2	20
Town of Utica	2	1	1	1	1	2	12
Issaquena County	4	1	2	2	3	3	36
Town of Mayersville	4	1	2	2	3	3	36
Sharkey County	4	1	2	2	3	3	36
City of Rolling Rock	1	1	1	2	2	3	21
Town of Anguilla	3	2	2	2	2	2	22
Town of Cary	4	3	4	2	4	2	34
Simpson County	4	2	3	2	3	4	56
City of Magee	4	3	2	1	2	5	60
City of Mendenhall	4	2	3	2	3	4	56
Town of D'Lo	4	2	3	2	3	4	56
Village of Braxton	4	2	3	2	3	4	56
City of Canton	4	2	2	2	2	4	48
City of Madison	3	1	1	1	1	4	28
City of Crystal Springs	4	1	1	1	1	2	16
Village of Puckett	2	1	2	2	3	2	20
Severe Storms							
Claiborne County	4	3	3	1	1	5	60
City of Port Gibson	4	1	2	1	2	5	50

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Hinds County	4	1	2	1	1	5	45
City of Raymond	4	1	2	2	2	5	55
Town of Bolton	4	1	4	3	4	5	80
Town of Edwards	4	1	2	1	1	5	45
Town of Learned	4	2	2	1	2	3	33
Town of Utica	4	2	2	2	2	5	60
Issaquena County	3	1	2	1	1	5	40
Town of Mayersville	3	1	2	1	1	5	40
Sharkey County	3	1	2	1	1	5	40
City of Rolling Rock	4	1	2	2	2	5	55
Town of Anguilla	4	2	2	1	2	5	55
Town of Cary	3	2	2	1	3	5	55
Simpson County	4	2	3	2	4	5	75
City of Magee	4	1	3	1	1	5	50
City of Mendenhall	4	2	3	2	4	5	75
Town of D'Lo	4	2	3	2	4	5	75
Village of Braxton	4	2	3	2	4	5	75
City of Canton	4	2	2	2	3	5	65
City of Madison	4	1	2	2	2	5	55
City of Crystal Springs	4	1	2	2	2	5	55
Village of Puckett	4	1	2	2	3	5	60
Severe Winter Weather							
Claiborne County	4	2	2	1	2	2	22
City of Port Gibson	4	1	2	1	2	5	50
Hinds County	4	1	1	1	1	2	16
City of Raymond	4	1	1	1	2	3	27
Town of Bolton	4	2	4	3	4	3	51
Town of Edwards	4	1	1	1	1	3	24
Town of Learned	2	2	1	1	2	2	16
Town of Utica	4	2	2	1	2	3	33
Issaquena County	4	2	3	2	2	3	39

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Town of Mayersville	4	2	3	2	2	3	39
Sharkey County	4	2	3	2	2	3	39
City of Rolling Rock	4	1	1	1	2	3	27
Town of Anguilla	4	2	3	2	2	3	39
Town of Cary	4	2	4	3	4	3	51
Simpson County	4	3	2	2	3	3	42
City of Magee	4	3	1	1	3	3	36
City of Mendenhall	4	3	2	2	3	3	42
Town of D'Lo	4	3	2	2	3	3	42
Village of Braxton	4	3	2	2	3	3	42
City of Canton	4	1	1	1	2	2	18
City of Madison	4	1	1	1	2	2	18
City of Crystal Springs	4	1	1	1	2	3	27
Village of Puckett	4	1	1	1	2	2	18
Tornado							
Claiborne County	4	3	3	2	3	5	75
City of Port Gibson	4	1	4	2	2	3	39
Hinds County	4	2	2	1	2	5	55
City of Raymond	4	1	2	2	3	3	36
Town of Bolton	4	3	4	3	4	4	72
Town of Edwards	4	2	2	2	3	3	39
Town of Learned	2	2	2	2	2	3	30
Town of Utica	4	3	4	2	3	3	48
Issaquena County	4	2	3	2	4	5	75
Town of Mayersville	4	2	3	2	4	5	75
Sharkey County	4	2	3	2	4	5	75
City of Rolling Rock	4	3	4	2	3	3	48
Town of Anguilla	4	3	4	2	4	5	85
Town of Cary	4	3	4	3	4	5	90
Simpson County	4	4	4	3	3	5	90
City of Magee	4	3	4	2	4	5	85

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
City of Mendenhall	4	4	4	3	3	5	90
Town of D'Lo	4	4	4	3	3	5	90
Village of Braxton	4	4	4	3	3	5	90
City of Canton	4	2	2	2	3	3	39
City of Madison	4	2	2	2	3	3	39
City of Crystal Springs	4	2	2	2	3	3	39
Village of Puckett	4	1	2	2	3	4	48
Tropical Storms							
Claiborne County	4	1	1	1	1	2	16
City of Port Gibson	4	1	1	1	1	2	16
Hinds County	4	2	2	2	1	2	22
City of Raymond	4	1	1	1	2	2	18
Town of Bolton	4	2	4	3	4	2	34
Town of Edwards	4	1	1	1	2	2	18
Town of Learned	0	1	0	0	0	1	1
Town of Utica	4	1	1	1	2	2	18
Issaquena County	3	1	1	1	3	2	18
Town of Mayersville	3	1	1	1	3	2	18
Sharkey County	3	1	1	1	3	2	18
City of Rolling Rock	4	1	1	1	2	2	18
Town of Anguilla	4	1	1	1	2	3	27
Town of Cary	3	2	1	1	3	2	20
Simpson County	4	2	2	3	2	3	39
City of Magee	4	1	2	1	2	2	20
City of Mendenhall	4	2	2	3	2	3	39
Town of D'Lo	4	2	2	3	2	3	39
Village of Braxton	4	2	2	3	2	3	39
City of Canton	4	1	1	1	3	2	20
City of Madison	4	1	1	1	3	2	20
City of Crystal Springs	4	1	1	1	2	2	18
Village of Puckett	4	1	1	1	1	2	16

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Wild/Urban Interface Fire							
Claiborne County	4	2	2	2	2	5	60
City of Port Gibson	1	1	1	2	2	2	14
Hinds County	4	1	0	0	0	5	25
City of Raymond	1	1	1	2	2	2	14
Town of Bolton	4	2	4	3	4	1	17
Town of Edwards	1	1	1	1	2	1	6
Town of Learned	2	2	2	2	2	2	10
Town of Utica	1	1	1	1	2	1	6
Issaquena County	1	0	1	1	1	3	12
Town of Mayersville	1	0	1	1	1	3	12
Sharkey County	1	0	1	1	1	3	12
City of Rolling Rock	1	1	1	1	1	2	10
Town of Anguilla	1	1	1	1	1	2	10
Town of Cary	1	0	0	0	0	2	2
Simpson County	4	3	3	3	2	5	75
City of Magee	4	1	2	2	2	5	55
City of Mendenhall	4	3	3	3	2	5	75
Town of D'Lo	4	3	3	3	2	5	75
Village of Braxton	4	3	3	3	2	5	75
City of Canton	2	1	1	1	2	2	14
City of Madison	2	1	1	1	2	2	14
City of Crystal Springs	2	1	1	1	1	5	30
Village of Puckett	2	1	2	2	2	2	18
Hazardous Materials Incidents							
Claiborne County	4	4	1	1	1	1	11
City of Port Gibson	-	-	-	-	-	-	-
Hinds County	4	1	1	1	1	5	40
City of Raymond	2	1	0	1	1	2	10
Town of Bolton	4	1	2	2	1	1	10
Town of Edwards	-	-	-	-	-	-	-

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Town of Learned	1	1	1	1	1	1	5
Town of Utica	1	3	1	1	1	1	7
Issaquena County	2	1	1	1	1	2	12
Town of Mayersville	2	1	1	1	1	2	12
Sharkey County	2	1	1	1	1	2	12
City of Rolling Rock	-	-	-	-	-	-	-
Town of Anguilla	2	1	1	1	1	1	6
Town of Cary	2	2	1	2	1	1	8
Simpson County	3	4	4	4	2	1	17
City of Magee	-	-	-	-	-	-	-
City of Mendenhall	3	4	4	4	2	1	17
Town of D'Lo	3	4	4	4	2	1	17
Village of Braxton	3	4	4	4	2	1	17
City of Canton	4	1	1	1	2	1	9
City of Madison	2	1	1	2	1	2	14
City of Crystal Springs	-	-	-	-	-	-	-
Village of Puckett	0	0	0	0	0	1	0
Nuclear Power Plant Incident							
Claiborne County	2	2	3	3	4	1	14
City of Port Gibson	-	-	-	-	-	-	-
Hinds County	4	1	4	3	4	1	16
City of Raymond	3	1	0	1	2	3	21
Town of Bolton	4	1	2	3	2	1	12
Town of Edwards	-	-	-	-	-	-	-
Town of Learned	4	4	3	4	4	1	19
Town of Utica	1	3	1	1	2	1	8
Issaquena County	2	2	1	2	3	1	10
Town of Mayersville	2	2	1	2	3	1	10
Sharkey County	2	2	1	2	3	1	10
City of Rolling Rock	-	-	-	-	-	-	-
Town of Anguilla	1	1	1	1	3	1	7

Jurisdiction	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Town of Cary	2	1	1	2	3	1	9
Simpson County	1	1	1	1	1	1	5
City of Magee	-	-	-	-	-	-	-
City of Mendenhall	1	1	1	1	1	1	5
Town of D'Lo	1	1	1	1	1	1	5
Village of Braxton	1	1	1	1	1	1	5
City of Canton	0	0	0	0	0	1	0
City of Madison	1	1	1	1	1	1	5
City of Crystal Springs	-	-	-	-	-	-	-
Village of Puckett	0	0	0	0	0	1	0

5.3. HAZARD PROFILE OVERVIEW

Natural hazards include events such as hurricanes, floods, tornadoes, and earthquakes, which arise from environmental and atmospheric conditions and can cause extensive damage to life, property, and infrastructure. These events often occur with little warning and may result in long-term disruptions to essential services and economic activity.

Human-caused and technological hazards stem from intentional actions, accidents, or system failures. Human-caused hazards may include acts of terrorism, civil unrest, or arson, while technological hazards involve incidents such as hazardous material spills, dam failures, cyberattacks, and utility outages. These types of hazards can threaten public health and safety, damage critical infrastructure, and disrupt daily operations. Recognizing and assessing the full spectrum of hazards is essential for developing effective mitigation strategies that enhance community resilience and reduce future risk.

5.4. DAM/LEVEE FAILURE

5.4.1. DESCRIPTION

A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Dams are typically constructed of earth, rock, concrete, or mine tailings. Dam failure is the uncontrolled release of impounded water resulting in downstream flooding, affecting both life and property. Dam failure can be caused by any of the following: flooding; earthquakes; flow blockages; landslides; lack of maintenance; improper operation; poor construction; vandalism; or terrorism.

A levee is an artificial embankment alongside a river. The main purpose of an artificial levee is to prevent flooding of the adjoining countryside; however, they also confine the flow of the river resulting in higher and faster water flow.

The Surface Water and Dam Safety Divisions of the Office of Land and Water Resources, Mississippi Department of Environmental Quality (MDEQ) develop regulations on Dam Safety for the state. Dams are categorized according to what lies downstream, as well as the expected impact of dam failure.

The following is taken from regulations for dams in Mississippi, describing the statutory dam categories and their characteristics.

- **Low Hazard (Category III, or Class A):** Dam in which failure would at the most result in damage to agricultural land, farm buildings (excluding residences), or minor roads. Without exception, all low hazard dams in Mississippi are earthen dams.
- **Significant Hazard (Category II, or Class B):** Dam in which failure poses no threat to life, but which may cause significant damage to main roads, minor roads, or cause interruption of service of public utilities.
- **High Hazard (Category I, or Class C):** Dam failure may cause loss of life, serious damage to homes, industrial or commercial buildings, important public utilities, main highways or railroads. Dams constructed in residential, commercial, or industrial areas are classified as high hazard dams unless otherwise classified on a case-by-case business. For example, dams constructed where there is potential for development receive a high hazard classification. The term “High Hazard” does not speak to the quality of the structure, but the potential for a resultant death or exposure to property damage downstream in case of a failure. A dam can be as small as six feet in height, but if a homeowner lives within a reasonable distance of the structure, he would be vulnerable.

According to Mississippi Department of Environmental Quality (MSDEQ) “Dam Safety Regulation, Title II: Part 7, Chapter 3, requires all owners of High Hazard and Significant Hazard Dams to have their dams inspected by a registered professional engineer at recurring intervals to be set by the division. All High Hazard dams must also have an Emergency Action Plan (EAP). EAPs may also be required for some Significant Hazard Dams”.

A more detailed discussion of the location and extent, previous occurrences and overall vulnerability for each county and its jurisdictions to this hazard are provided in the respective county’s annex.

5.4.2. LOCATION

The Dam Safety Division at MDEQ routinely reviews the numbers and rankings of dams statewide. During review, dams may be removed from the inventory or placed in categories other than those termed as being of High, Significant, or Low concern. A more detailed discussion of the location and extent, previous occurrences and overall vulnerability for each county and its jurisdictions to this hazard is provided in the respective county’s annex.

There are 1,187 dams within District 5, of which 96 are high hazard dams, 13 are significant hazard dams, 911 are low hazard dams and 167 are listed as undetermined. **Table 25** provides more information about these dams.

Figure 14 shows where the 96 high hazard dams are in the District. Of the 96 high hazard dams in MEMA District 5, only 33 are in the planning area. Both Issaquena and Sharkey Counties have zero dams in their planning area.

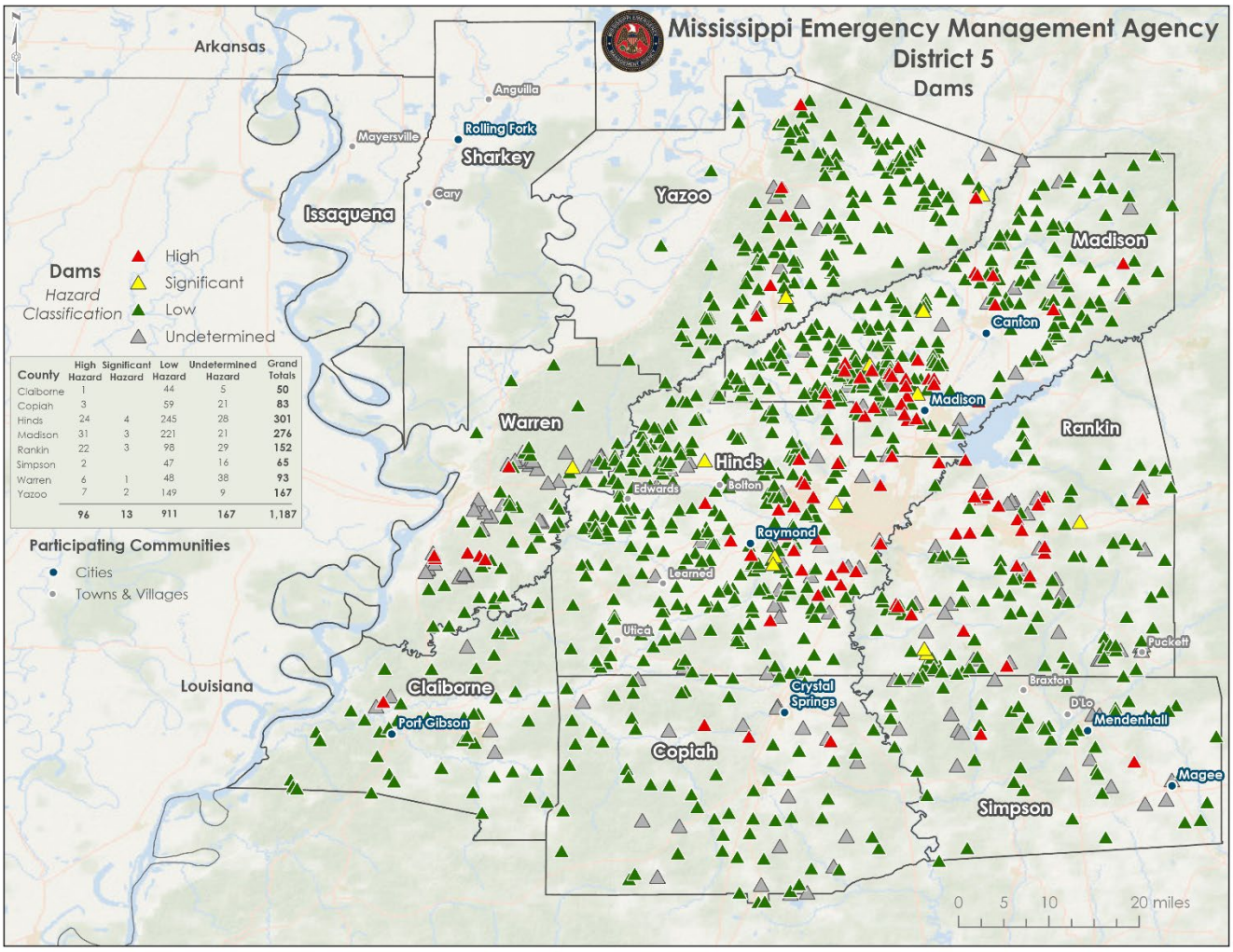
Hinds County has the highest number of high hazard dams (24) by participating jurisdictions and the highest number of dams (301) in general, compared to the other MEMA District 5 counties. Additionally, in Madison County, the City of Madison, has six high hazard dams, which is the second most by participating jurisdictions. Counties with hazard dams within the jurisdiction are at higher risk of dam failures and incidents which can severely damage property and threaten populations.

TABLE 25: DAMS IN THE MEMA DISTRICT 5 PLANNING AREA

County	High	Significant	Low	Undetermined	Total
Claiborne	1	--	44	5	50
Copiah	3	--	59	21	83
Hinds	24	4	245	28	301
Issaquena	--	--	--	--	--
Madison	31	3	221	21	276
Rankin	22	3	98	29	152
Sharkey	--	--	--	--	--
Simpson	2	--	47	16	65
Warren	6	1	48	38	93
Yazoo	7	2	149	9	167
Total District 5	**96**	**13**	**911**	**167**	**1,187**

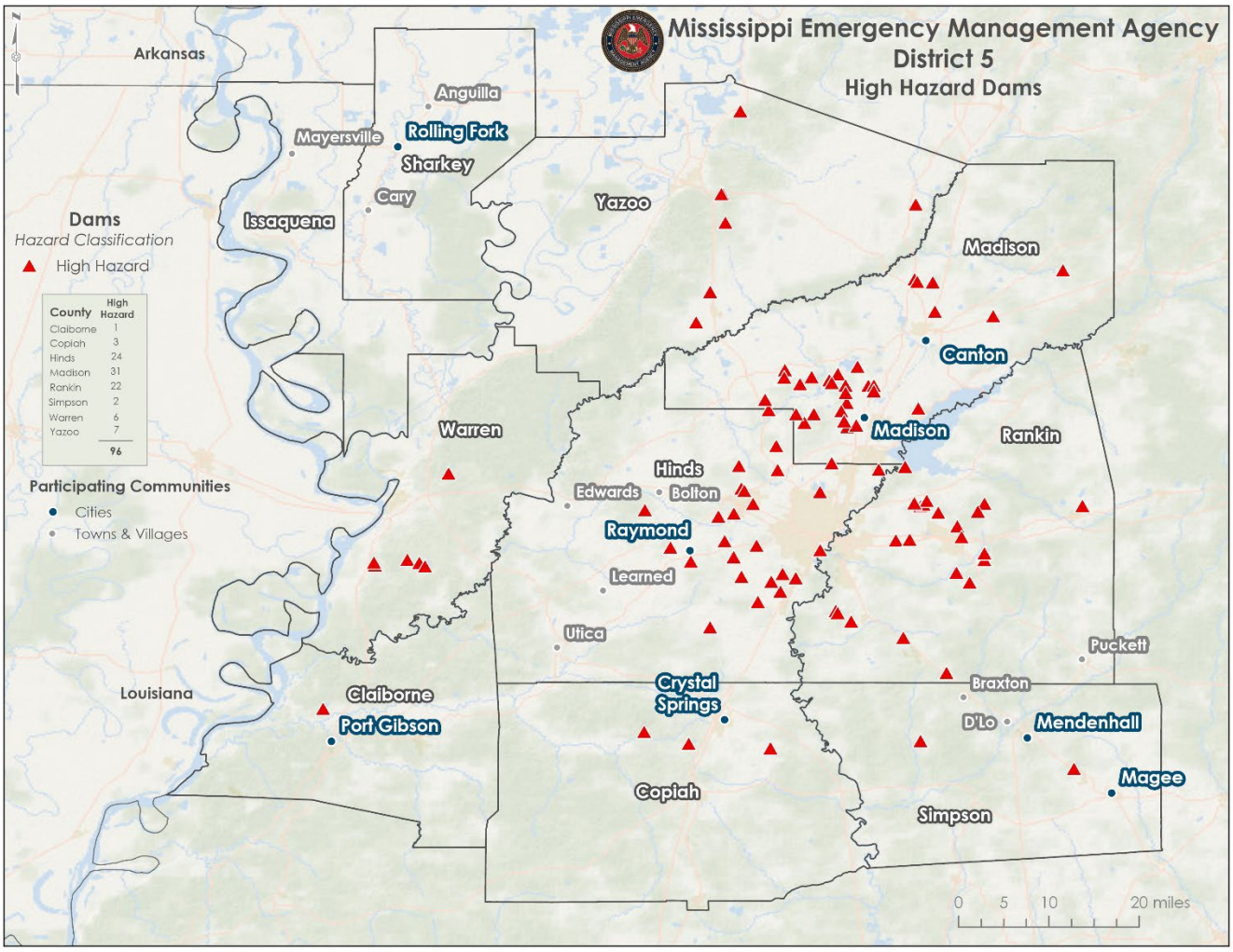
Communities in the planning area which are not within an inundation zone may still be impacted by a significant dam breach. In the event of a dam failure – particularly among the federally administered dams – communities which remain dry may be asked to support the directly impacted communities. Support may include housing displaced individuals, hosting emergency operations centers, and providing vital resources like fuel, electricity, and potable water.

FIGURE 13: DAMS IN MEMA DISTRICT 5



County	High Hazard	Significant Hazard	Low Hazard	Undetermined Hazard	Grand Totals
Claiborne	1		44	5	50
Copiah	3		59	21	83
Hinds	24	4	245	28	301
Madison	31	3	221	21	276
Rankin	22	3	98	29	152
Simpson	2		47	16	65
Warren	6	1	48	38	93
Yazoo	7	2	149	9	167
	96	13	911	167	1,187

FIGURE 14: HIGH HAZARD DAMS IN MEMA DISTRICT 5



5.4.3. EXTENT

The repercussions of dam failures are largely determined by the volume of water released and the extent of people and property in the inundation zone. Dams are classified as High, Significant, or Low hazard to convey the potential impact a dam failure would have on upstream and/or downstream areas or at locations remote from the dam. This hazard potential classification system was produced by FEMA, and it categorizes dams based on the probable loss of human life and the impacts on economic, environmental, and lifeline interests. Improbable loss of life exists where people are only temporarily in the potential inundation area. For instance, this hazard potential classification system does not contemplate the improbable loss of life of the occasional recreational user of the river and downstream lands, passer-by, or non-overnight outdoor user of downstream lands. **Table 26** provides additional information about dam classifications.

TABLE 26: DAM HAZARD CLASSIFICATIONS | SOURCE: 2023 MEMA SHMP

Hazard Class	Anticipated Loss of Human Life	Economic, Environmental, and Lifeline Losses	Description of Classification
High (Category I or Class C)	Probable. One or more expected.	Yes (but not necessary for this classification)	Dams assigned to high hazard potential classification are those where failure or mis-operation will probably cause loss of human life.
Significant (Category II or Class B)	None	Yes	Dams assigned to the significant hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.
Low (Category III or Class A)	None	Low and generally limited to owner	Dams assigned with the low hazard potential classification are those where failure or disoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

According to federal dam safety guidelines, the above hazard potential classification system should be utilized with the understanding that the failure of any dam or water-retaining structure, no matter how small, could represent a danger to downstream life and property. Whenever there is an uncontrolled release of stored water, there is the possibility of someone, regardless of how unexpected, being in its path. FEMA recognized the need for common terms and definitions that can be applied to all dams, regardless of size, owner, or location. According to FEMA and the Association of State Dam Safet Officials (ASDSO), **Table 27** below describes the differences between a dam failure and a dam incident.

TABLE 27: DAM FAILURE AND DAM INCIDENT | SOURCE: FEMA AND ASDSO

	Description
Dam Failure	Catastrophic type of failure characterized by the sudden, rapid, and uncontrolled release of impounded water or the likelihood of such an uncontrolled release It is recognized that there are lesser degrees of failure and that any malfunction or abnormality outside the design assumptions and parameters that adversely affect a dam's primary function of impounding water is properly considered a failure. These lesser degrees of failure can progressively lead to or heighten the risk of a catastrophic failure. They are, however, normally amenable to corrective action.
Dam Incident	An incident is defined as an event, which takes place, or a condition, which is slowly developing, that is not normally encountered in the routine operation of the dam and reservoir or necessitates a variation from Standard Operating Procedures. Such events are more common

	Description
	than emergency conditions and often offer time to conduct preplanned responses to the slowly developing situation. If addressed in a timely manner, such events can often be prevented from progressing into a worse event such as a component failure, or a catastrophic failure.

5.4.3.1. DAM INUNDATION MAPS

Dam failures have the potential to flood communities. Not all dams are required to have Emergency Action Plans (EAPs) or inundations maps. However, high-hazard potential dams are required to develop EAPs and develop inundation maps since those dams have the potential to cause significant loss of life or property. Of the 96 high hazard dams in MEMA District 5, only 33 are in the planning area. As mentioned above, Hinds County has the highest number of high hazard dams and the highest number of dams in general, compared to the other MEMA District 5 counties. Additionally, in Madison County, the City of Madison, it has the second highest number of high hazard dams by participating jurisdictions. These dams and their mapped inundation areas show that a dam failure or incident can have a severe impact on infrastructure throughout the planning area. Dam inundation maps for all the high hazard dams located in the planning area are provided in each of the participating jurisdiction's annexes.

5.4.4. PREVIOUS OCCURRENCES

Since 1982, MDEQ Dam Safety Division has recorded 138 breaches Statewide. Since that time, there have been 14 dam failures or incidents in the MEMA District 5 planning area with most of the failures occurring in Hinds County. The Willowwood Subdivision Lake Dam, in Hinds County, is the only dam that has had multiple failures, and they were caused by piping or spillway failure. **Table 28** shows all breaches that have occurred since 1983, and it is important to note that some failures may not have been detected and reported.

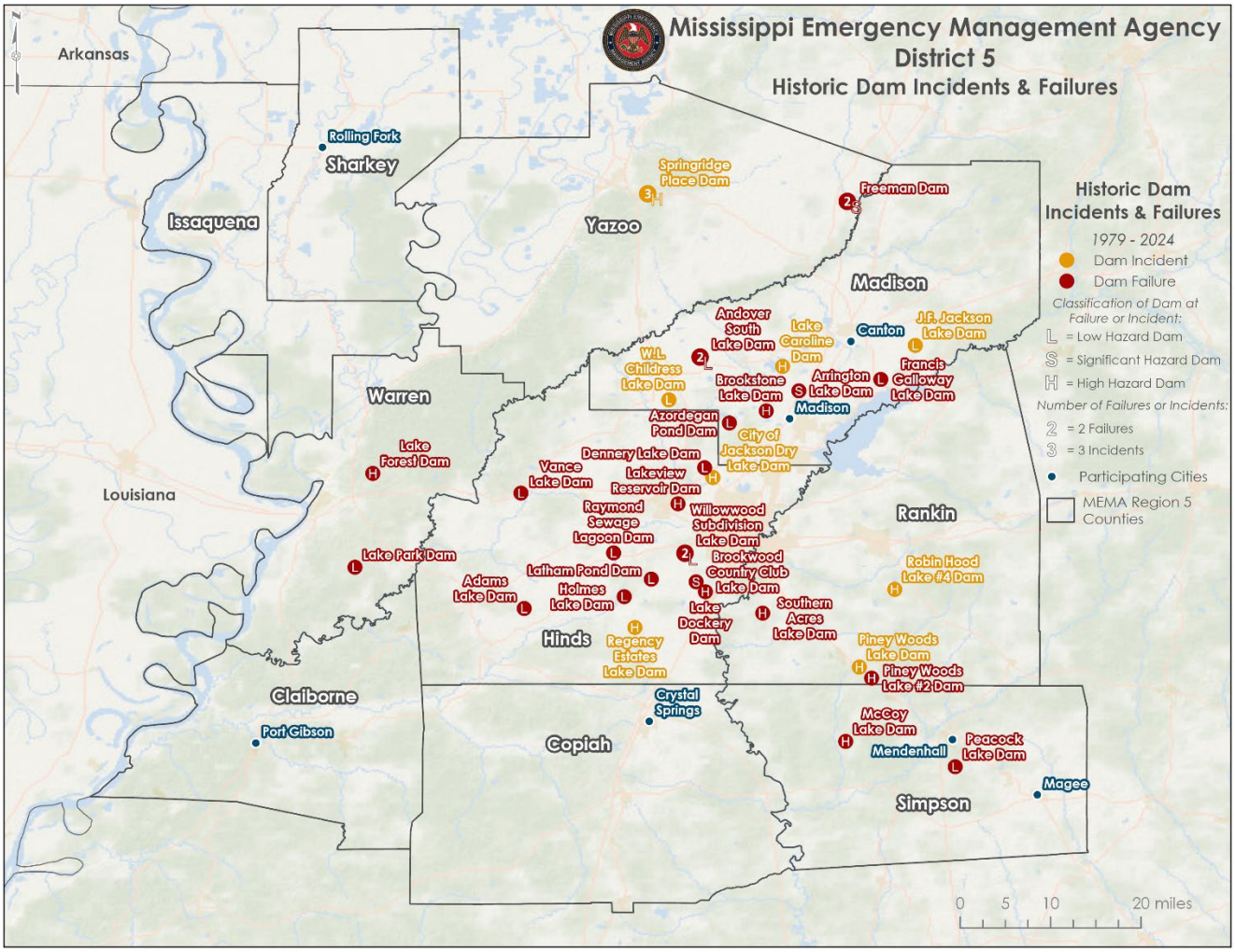
Figure 15 displays a map of MEMA District 5's historic dam incidents and failures across the District.

TABLE 28: DAM FAILURES IN MEMA DISTRICT 5 1983-2022 | SOURCE: 2023 STATE OF MISSISSIPPI SHMP

Date	County	Structure Name	Cause of Failure
8/2022	Hinds	Raymond Sewage Lagoon Dam	Combination of issues - erosion of backslope due to tailwater conditions and animal activity. Breached area appeared to be a collapsed animal den.
1/2020	Hinds	Holmes Lake Dam	From inspection, there were tree stumps and roots present in the bottom of the breach leading us to believe there was piping due to the rotting roots and stumps.
3/2016	Hinds	Regency Estates Lake Dam	During heavy rains, the reservoir filled to top of dam and began eroding around the siphon pipe causing significant damage

Date	County	Structure Name	Cause of Failure
11/2015	Hinds	Latham Pond Dam	Overtopping of a breach section constructed by the owner
4/2014	Simpson	Mccoy Lake Dam	The owner noticed severe sliding on the downstream slope and attempted to perform a controlled breach of the dam. However, the channel experienced severe erosion and led to an uncontrolled release of the lake.
7/2007	Hinds	Brookwood Country Club Lake Dam	Overtopping
7/2007	Hinds	Willowwood Subdivision Lake Dam	Spillway failure
4/2005	Hinds	Dennery Lake Dam	Seepage; piping; biological growth
6/2004	Hinds	Lake Dockery Dam	Animal attack
6/2004	Hinds	Willowwood Subdivision Lake Dam	Piping/spillway failure
2/1/2004	Simpson	Peacock Lake Dam	Spillway failure
10/7/1999	Hinds	City Of Jackson Dry Lake Dam	Debris - reservoir
11/27/1983	Hinds	Lakeview Reservoir Dam	Not known
4/9/1983	Hinds	Adams Lake Dam	Overtopping

FIGURE 15: HISTORIC DAM INCIDENTS AND FAILURES IN DISTRICT 5



5.4.5. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, a dam incident or failure occurred 14 times over 39 years, which would correspond to a low probability. However, many members of the Mitigation Council felt that the probability in their community was unlikely, and the average probability based on ratings across all District 5 communities is **Unlikely.** As with all hazards profiled in this plan, specific hazard metrics are shown in **Table 24**. Structural vulnerabilities in dams may be observable through external inspection; however, failure can still occur unexpectedly, even during fair weather conditions. A sunny day breach, particularly in earthen dams, can result in sudden and severe flooding. While there are tools and methods available to assess the likelihood of imminent failure, these do not always provide sufficient foresight into future events.

5.4.6. VULNERABILITY ASSESSMENT

To understand how vulnerable District 5 communities are to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

Dam and levee failures represent a significant hazard within Mississippi MEMA District 5, where aging infrastructure and limited inspection data contribute to elevated risk levels. Many of the dams in the

District are earthen structures, which are particularly vulnerable to sunny-day failures—events that occur without rainfall or warning due to internal erosion or structural degradation. Such failures can result in rapid-onset flooding, threatening downstream communities, critical infrastructure, and the environment. While tools exist to assess imminent failure, they do not reliably predict future events, leaving populations exposed to sudden and severe impacts. Based on the extent, vulnerability, and probability, Dam Failures poses a **Low** risk to District 5 planning area, overall. However, dams and levees are not evenly spread throughout the District, and some participating jurisdictions have a different level of risk than the District, overall. Specific risk ratings for each participating jurisdiction are shown in **Table 24.**

5.4.6.1. PEOPLE

Dam and levee failures pose a direct threat to human life and safety, particularly for populations living downstream of high-hazard structures. In MEMA District 5, many communities are located near aging earthen dams that are vulnerable to sudden breaches, including sunny-day failures that occur without warning. These events can result in rapid flooding, leaving little time for evacuation and increasing the risk of injury or death.

Vulnerable populations include residents in low-lying areas, individuals with limited mobility, and those without access to timely and accessible emergency alerts. Critical facilities such as schools, hospitals, and emergency services may also be impacted, compounding the risk to public health and safety. The unpredictable nature of dams and levee failures makes proactive planning essential to reduce human vulnerability and enhance community resilience. As mentioned above, Hinds County and the City of Madison have the highest number of high hazard dams and pose the biggest threat to life and property.

5.4.6.2. STRUCTURES AND SYSTEMS

Dam and levee failures can cause widespread damage to built environments and critical systems within MEMA District 5. Structures located downstream, including homes, businesses, schools, and healthcare facilities—are at risk of inundation, structural collapse, or isolation due to floodwaters. Transportation networks such as roads and bridges may be washed out or rendered impassable, disrupting emergency response and daily operations.

Utility systems, including water, wastewater, electricity, and communications infrastructure, are also vulnerable to damage or service interruption. The cascading effects of these failures can significantly impact public safety, economic stability, and recovery efforts. Given the aging condition of many dams and levees in the District, and the limited warning time associated with sudden breaches, the vulnerability of structures and systems is considered high. High hazard dams in the District 5 planning area pose the biggest threat to transportation systems and associated infrastructure. All structures and systems located downstream of a dam are at some level of risk.

5.4.6.3. CRITICAL FACILITIES

Critical facilities within MEMA District 5, including hospitals, emergency operations centers, fire stations, schools, and water treatment plants—are vulnerable to the impacts of dam and levee failures. These facilities are essential for life safety, emergency response, and community recovery, and their disruption during a flood event can significantly hinder disaster management efforts.

Facilities located downstream of high-hazard dams are at particular risk of inundation, structural damage, or isolation due to impassable roads and infrastructure failures. Loss of access or functionality at these sites can delay emergency services, compromise public health, and prolong recovery

timelines. Ensuring continuity of operations and protecting these assets through mitigation measures is critical to reducing overall vulnerability in the District.

Within the District 5 planning area, there are a total of six critical facilities in mapped inundation areas. The Simpson Legion Lake Dam in Simpson County has five critical facilities located within the mapped inundation areas: one school, one potable water facility and three wastewater facilities. The Raymond Lake Dam in Hinds County has one wastewater treatment facility in the mapped inundation area.

Community Lifelines

Dam and levee failures in Mississippi MEMA District 5 can severely disrupt all eight community lifelines, which are essential to public safety, health, and daily functioning. Mitigation strategies should focus on protecting critical infrastructure, strengthen community evacuation plans, and ensuring continuity of operations across all lifelines to enhance community resilience. **Table 29** describes the potential vulnerabilities of lifelines from high hazard potential dam failure within MEMA District 5.

TABLE 29: POTENTIAL VULNERABILITIES OF LIFELINES FROM HIGH HAZARD POTENTIAL DAM FAILURE

Lifeline	FEMA Icon	Description of Impact
Communications		Damage to cell towers, fiber lines, and emergency communication systems can hinder public alerts and coordination. Overloaded networks may reduce situational awareness during response operations.
Energy (Power & Fuel)		Floodwater can damage substations, power lines, and fuel storage facilities, leading to outages. Restoration efforts may be delayed if access to infrastructure is limited.
Food, Hydration, Shelter		Flooding can contaminate water supplies and damage food distribution infrastructure. Residential displacement may overwhelm shelter capacity and emergency housing resources.
Hazardous Materials		Industrial sites and storage facilities may release hazardous substances if flooded. Contamination risks increase for downstream communities and ecosystems.
Health & Medical		Hospitals, clinics, and long-term care facilities may be inundated or isolated, reducing access to medical care. Emergency medical response may be delayed due to transportation disruptions.

Lifeline	FEMA Icon	Description of Impact
Safety & Security		Emergency services may be delayed or disrupted if facilities are flooded or access routes are compromised. Law enforcement and fire stations located in flood-prone areas may be rendered inoperable.
Transportation		Roads, bridges, and railways may be washed out or blocked, impeding evacuation and emergency access. Disruption of freight and transit routes can affect supply chains and recovery logistics.
Water & Wastewater Systems		Flooding can damage water treatment plants, pump stations, and distribution lines, leading to service interruptions. Sewer lines and lift stations may be overwhelmed or damaged, resulting in backups and environmental contamination.

5.4.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Natural, historic, and cultural resources within MEMA District 5 are vulnerable to the impacts of dam and levee failures, particularly due to flooding and erosion. Natural areas such as wetlands, rivers, and forests may experience habitat loss, sedimentation, and water quality degradation, which can disrupt ecosystems and displace wildlife. These environmental changes can have long-term consequences for biodiversity and land use.

Historic and cultural assets, including landmarks, heritage buildings, archaeological sites, and places of community significance—are also at risk. Floodwater can cause irreversible damage to structures not built to modern standards, erode foundations, and destroy artifacts. Cultural resources such as places of worship, gathering spaces, and traditional landscapes may be rendered inaccessible or permanently altered, impacting community identity and continuity. Recovery and preservation efforts may be challenged by limited access, lack of documentation, and the high cost of restoration.

5.4.7. POTENTIAL IMPACTS

Dam and levee failures in MEMA District 5 have the potential to cause widespread and cascading impacts across communities, infrastructure, and essential services. A sudden breach—whether triggered by extreme weather or internal structural failure—can result in rapid flooding that endangers lives, damages property, and disrupts critical operations. Residential areas, businesses, and public facilities located downstream of high-hazard structures are particularly vulnerable to inundation and isolation.

Beyond immediate physical damage, such events can severely impact community lifelines, including transportation, energy, water and wastewater systems, communications, and emergency services. Natural ecosystems may be degraded, while historic and cultural resources face irreversible loss. Recovery efforts can be prolonged and costly, especially in rural areas with limited access and resources. Given the aging condition of many dams and levees in the District, and the unpredictable

nature of failure events, the overall potential impact to MEMA District 5 is considered high and warrant proactive mitigation and preparedness planning.

5.4.8. IMPACTS OF CHANGES IN DEVELOPMENT

Changes in development across MEMA District 5 have the potential to increase vulnerability to a dam and levee failures in counties where population trends have been increasing. As residential, commercial, and industrial growth expands into flood-prone areas downstream of high-hazard structures, more people, property, and infrastructure are placed at risk. New developments may outpace mitigation measures, such as floodplain management, stormwater controls, and dam safety upgrades, leading to greater exposure and reduced resilience.

Additionally, increased impervious surfaces from urbanization can exacerbate runoff and strain existing drainage systems, potentially contributing to overtopping or erosion near dam and levee sites. Without careful planning and enforcement of land use regulations, development patterns may unintentionally heighten the consequences of a failure event. Coordinated mitigation strategies and integration of hazard data into planning decisions are essential to managing future risk in the face of ongoing growth.

The U.S. Army Corps of Engineers is currently exploring the possibility of levee enhancements along the Pearl River in Hinds County to reduce flood risk. As of March 2026, the project remains in a preliminary stage and has not yet received final approval. While local stakeholders have advanced a preferred design alternative, the project is still subject to completion of a federally required environmental impact statement, along with additional engineering analysis, public engagement, and identification of funding sources. The current proposal includes structural measures such as channel modifications, levee enhancements, and potential impoundment features intended to increase conveyance capacity along the Pearl River. Given its estimated cost and regulatory requirements, implementation timelines remain uncertain, and the project should be considered a long-term, conceptual mitigation strategy rather than a near-term solution.

5.5. DROUGHT

5.5.1. DESCRIPTION

According to the National Oceanic and Atmospheric Administration (NOAA), a drought is defined as a period of unusually dry weather persisting long enough to cause serious problems, such as crop damage and/or water supply shortages. The severity of the drought depends upon the degree of moisture deficiency and the duration of the drought. Drought occurs under differing conditions, based on these reference points:

- **Meteorological:** drought is defined as a period of substantially diminished precipitation duration and/or intensity. The commonly used definition of meteorological drought is an interval of time, generally in the order of months or years, during which the actual moisture supplies at a given place consistently falls below the average moisture supply.
- **Agricultural:** drought occurs when there is inadequate soil moisture to meet the needs of a crop at a given time. Agricultural drought usually occurs after or during meteorological drought, but before hydrological drought and can affect livestock and other dry-land agricultural operations.
- **Hydrological:** drought refers to deficiencies in surface and subsurface water supplies from deficiencies in precipitation. It is measured as stream flow, snowpack, and as lake, reservoir, and groundwater levels. There is usually a delay between rain or snow and less measurable water in streams, lakes, and reservoirs. Therefore, hydrological measurements tend to lag other drought indicators.
- **Socio-economic**: drought occurs when physical water shortages start to affect health, wellbeing, and quality of life of people, or when drought starts to affect the supply and demand of an economic product.

A drought's severity depends on numerous factors, including duration, intensity, and geographic extent, as well as regional water demands by humans, livestock, crops, and vegetation. The severity of drought can be aggravated by other climatic factors, such as prolonged high winds and low relative humidity. Due to its multi-dimensional nature, drought is difficult to define in exact terms and poses difficulties in terms of comprehensive risk assessments.

5.5.2. LOCATION

Drought affects the entire planning area equally. A severe, prolonged drought could have negative and lasting impacts on residents, agriculture, industry, and infrastructure. When available water tables decline and potable water becomes harder to obtain, the residents, commuting population, and visitors are exposed to greater health risks. Any water-dependent functions in the state are exposed to potential loss of or failure to function.

5.5.3. EXTENT

Localized monitoring efforts, including weekly field reports submitted via mobile apps, have helped track the evolving drought conditions. These observations are used to update the U.S. Drought Monitor and determine eligibility for federal assistance programs. While D4 (Exceptional Drought) has not been reported in District 5 this year, the presence of D4-level impacts—such as major crop losses and water shortages—suggests a serious situation requiring continued mitigation and support. See **Table 30** for the USDM Drought Categories.

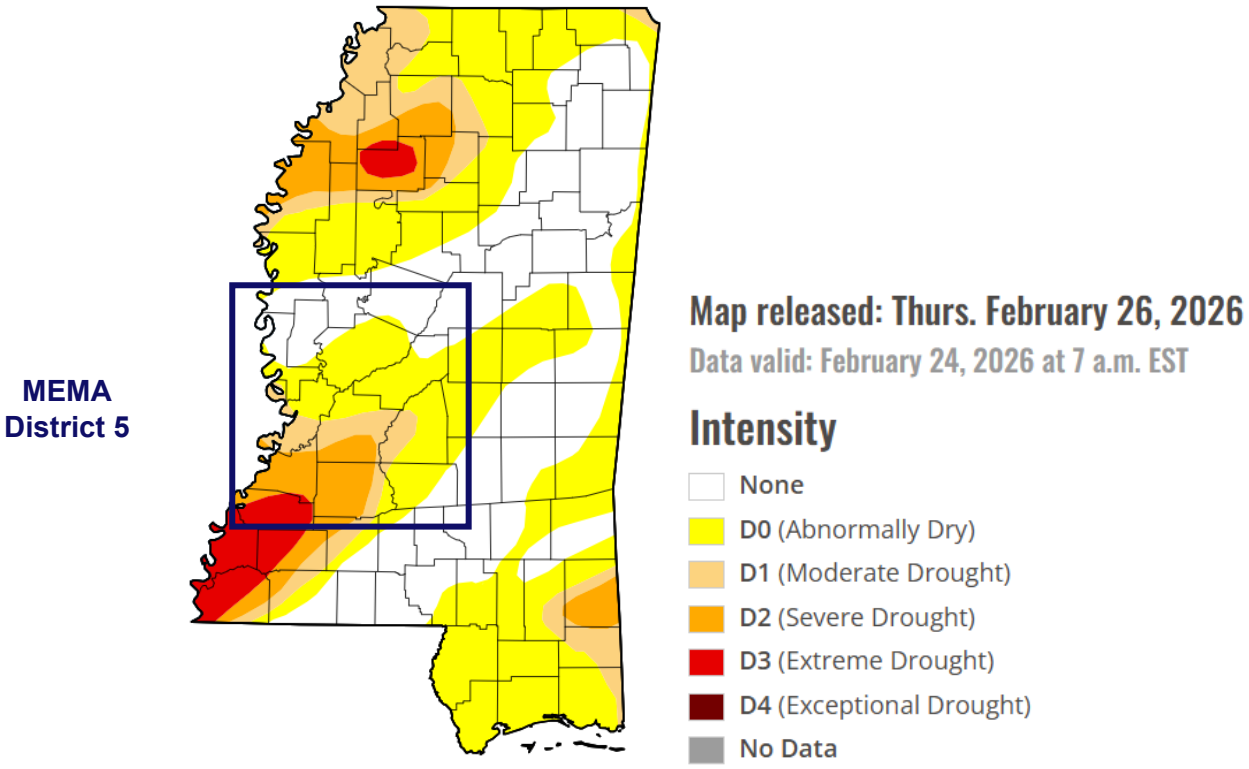
As of February 2026, Mississippi MEMA District 5 is experiencing widespread drought conditions, with severity ranging from D0 (Abnormally Dry) to D3 (Extreme Drought) across various counties. The District has seen below-average rainfall and above-average temperatures, contributing to rapid soil moisture loss and stressing local agriculture. Several counties have implemented burn bans, and

reports from extension agents indicate crop damage, low water levels in ponds and creeks, and increased wildfire risk. **Table 30** below describes the different drought categories while **Figure 16** displays the drought conditions throughout the State and for District 5 as of February 26, 2026. The map shows that the District is experiencing abnormally dry to severe drought. The blue box within the figure is the approximate location of District 5.

TABLE 30: USDM DROUGHT MONITOR CATEGORIES | SOURCE: U.S. DROUGHT MONITOR

Category	Description
None (Gray)	Normal or wet conditions
D0 (Light Yellow)	Abnormally Dry
D1 (Light Orange)	Moderate Drought
D2 (Orange)	Severe Drought
D3 (Red)	Extreme Drought
D4 (Dark Red)	Exceptional Drought

FIGURE 16: MISSISSIPPI DROUGHT MONITOR (2/26/2026) | SOURCE: U.S. DROUGHT MONITOR



5.5.4. PREVIOUS OCCURRENCES

Although droughts can happen year-round in Mississippi, they most commonly occur in late summer and early fall. During these periods, row crops, poultry production, and pasture yields often decline significantly, leading to price fluctuations that may persist for months. Mississippi experienced 17 drought events between 1980 and 2025, with two major events occurring in just the last five years.

- **2022–2023**: Parts of Mississippi, including District 5 counties, experienced D2–D4 level droughts, leading to crop stress and supplemental feeding for livestock, cracking of roads and foundations, reduced hydroelectric output and increased energy costs.
- **Summer 2025**: A resurgence of D1–D2 drought conditions was noted, with burn bans and low creek flows reported.

Table 31 below compares historical drought events between the previous planning cycle (2015-2020) and the current planning cycle (2020-2025). Based on the available NCEI data, which only provides event data at the county level, there have been fewer droughts from 2020-2025 than 2015-2020. Additionally, there are fewer property damages while crop damages increased significantly. Drought events are only tracked at the county level and the numbers below for the Cities of Canton, Madison, Crystal Springs and the Village of Puckett represent the statistics for Madison, Copiah and Rankin Counties.

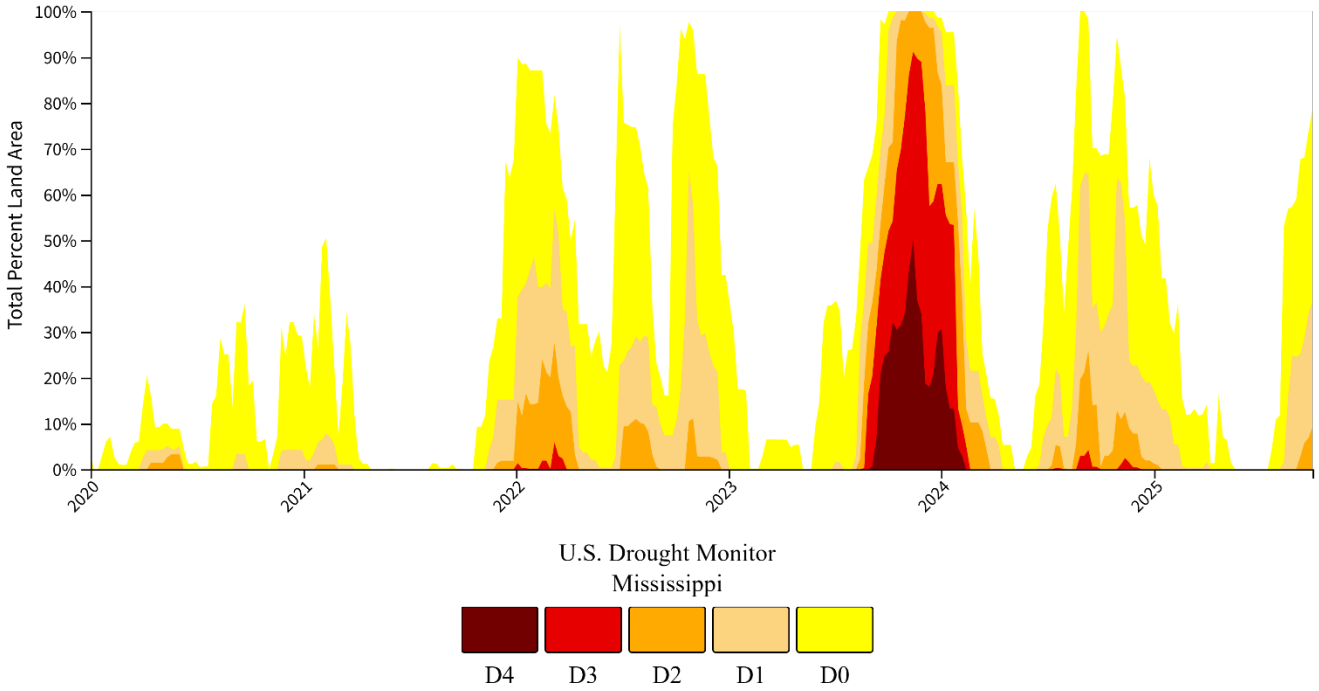
TABLE 31: SUMMARY OF DROUGHT EVENTS IN MEMA DISTRICT 5 | SOURCE: NCEI

County	2015-2020 No of Events	2020-2025 No of Events	2015-2020 Plan Property Damage ($)	2020-2025 Plan Property Damage ($)	2015-2020 Crop Damage ($)	2020-2025 Crop Damage ($)
Claiborne County	5	4	$50,000	--	$481,000	$2,080,000
Hinds County	5	3	$100,000	--	$491,200	$5,810,000
Issaquena County	4	4	--	--	$501,200	$50,000
Sharkey County	4	3	--	--	$501,200	$50,000
Simpson County	5	3	$50,000	--	$481,200	$533,000
City of Canton (Madison County)	7	3	$80,000	--	$521,200	$7,520,000
City of Madison (Madison County) *	--	--	--	--	--	--
City of Crystal Springs (Copiah County)	5	4	$50,000	--	$481,200	$1,060,000
Village of Puckett (Rankin County)	5	3	$50,000	--	$491,200	$2,940,000
Total District 5	**47**	**30**	**$460,000**	**--**	**$4,470,600**	**$27,563,000**

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

Figure 17 details historical drought conditions in Mississippi between 2020-2025. Drought events persisted throughout the five years with extreme and exceptional drought occurring in late 2023 to 2024.

FIGURE 17: HISTORICAL DROUGHT CONDITIONS IN MISSISSIPPI (2020-2025) | SOURCE: DROUGHT.GOV

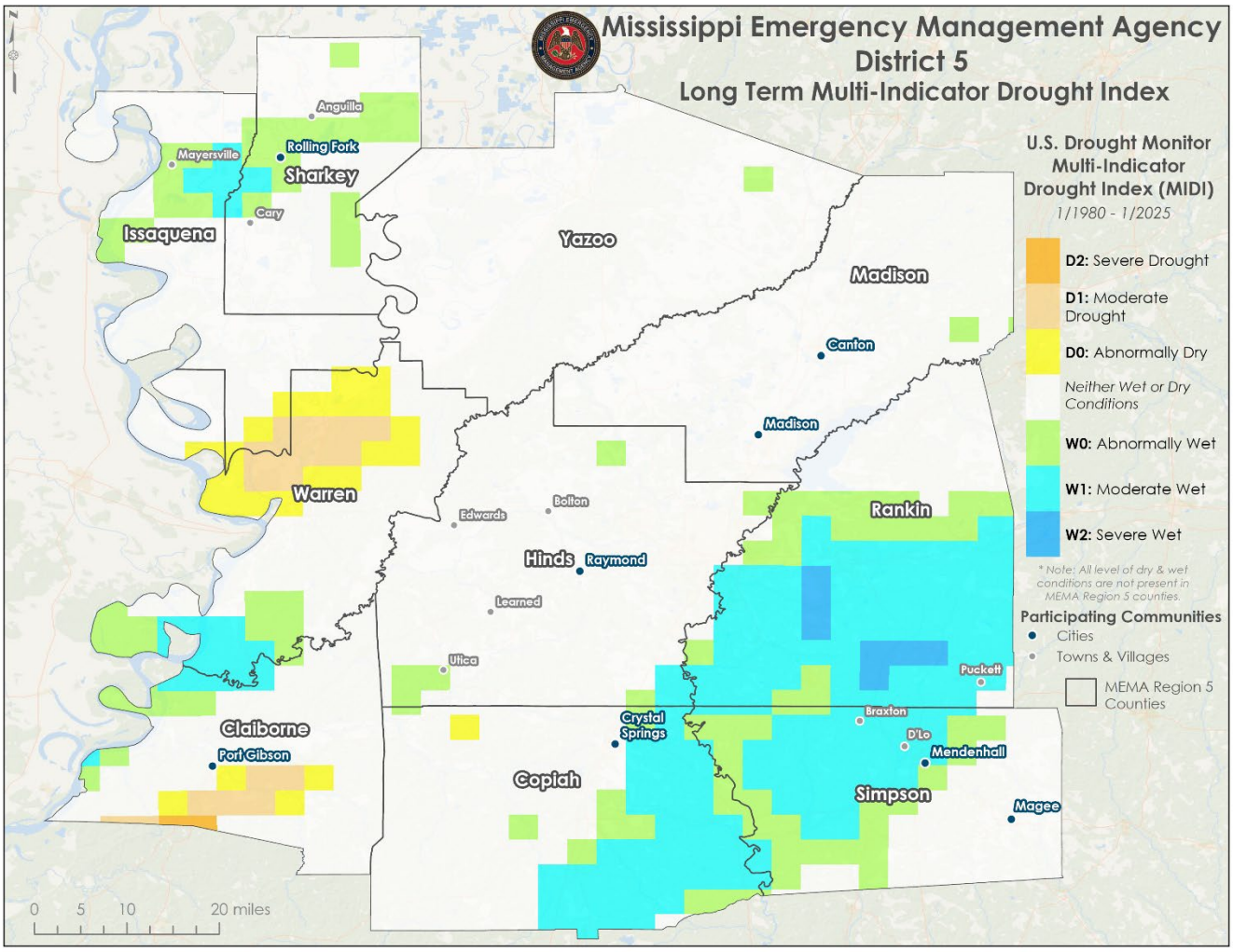


5.5.5. PROBABILITY OF FUTURE OCCURRENCES

Mississippi lies in a region where water is generally plentiful, receiving an average of 56 inches of rainfall annually ranging from about 51 inches in the Northern part of the state to nearly 64 inches along the coast. Despite this abundance, precipitation patterns are highly variable, which has shaped the state's agricultural practices, forestry operations, urban water systems, and broader land use strategies. This variability means that even in a water-rich environment, droughts can and do occur, often with significant consequences. The **Figure 18** below shows the long-term multi-indicator drought index for MEMA District 5. The multi-indicator drought index shows that Claiborne, Hinds, Issaquena and Sharkey Counties have minor Abnormally Wet and Moderate Wet areas while Simpson County has significantly more of these areas in the Central and Western parts of the County. The entire Village of Puckett is in the Moderate Wet areas of Rankin County. Conversely, Issaquena County also has Abnormally Dry and Moderate Drought areas in the Southern part of the County while Claiborne County has Severe Drought areas in addition to Abnormally Dry and Moderate Drought areas in the Southern part of the County. The Cities of Crystal Springs, Canton and Madison are in neither wet nor dry areas in their respective Counties.

Based on previous occurrences, nearly all jurisdictions have experienced at least 7 periods of drought conditions over the past 10 years. For most communities and the District overall, the probability of future drought conditions is considered **likely,** although a few communities felt that their probability was slightly lower. Full ratings are shown in **Table 24.**

FIGURE 18: LONG TERM MULTI-INDICATOR DROUGHT INDEX FOR MEMA DISTRICT 5

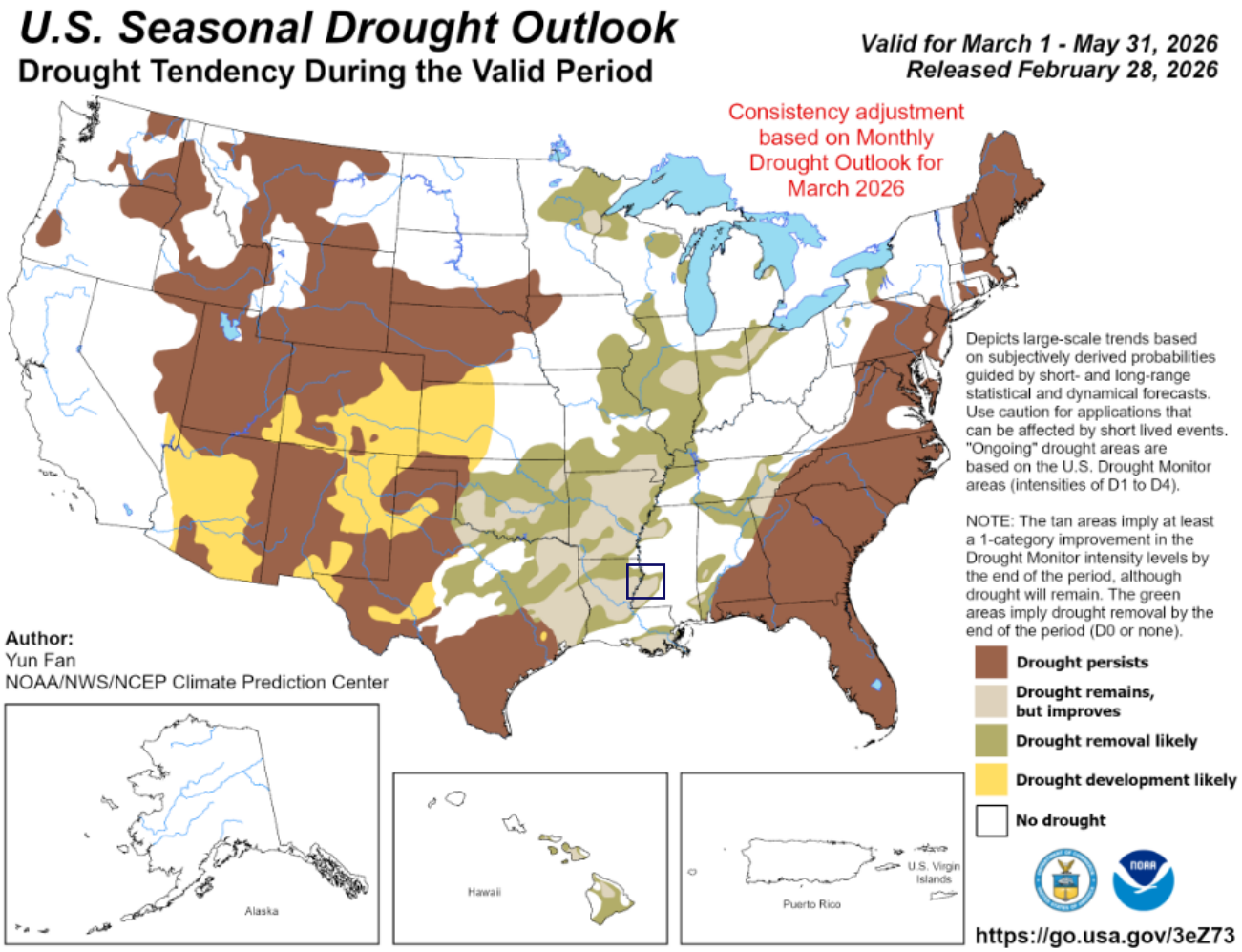


5.5.5.1. DROUGHT FORECASTING

Droughts in Mississippi typically arise during late summer and early fall, impacting row crops, poultry, and pasture productivity. These dry spells not only reduce yields and drive-up prices but also increase the risk of wildfires due to dry vegetation and leaf litter. To help monitor and respond to these conditions, the National Integrated Drought Information System (NIDIS) provides early warning tools and resources. Although Mississippi is not part of a designated Drought Early Warning System region, NIDIS supports the state with research, data tools, and national-level drought monitoring products.

Forecasting limitations make it unrealistic to estimate precisely the probability of future drought occurrences within the context of this plan. Given statewide drought indices, however, the probability of future drought conditions is likely, as determined by the U.S. Seasonal Drought Outlook. The most current Outlook map is provided in **Figure 19**; however, continuous monitoring of drought indices and forecasts will allow jurisdictions to anticipate future short-term trends. Based on the figure below, it is projected that drought persists throughout most of the state and drought development is likely to occur in the northern part of the state and southwestern. The blue box within the figure is the approximate location of District 5.

FIGURE 19: U.S. SEASONAL DROUGHT OUTLOOK (MARCH 1, 2026 – MAY 31, 2026) | SOURCE: NWS CLIMATE PREDICTION CENTER



5.5.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

The drought vulnerability assessment for Mississippi MEMA District 5 highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. Drought risk variability across Mississippi MEMA District 5 is influenced by a mix of climatic, geographic, and agricultural factors, resulting in uneven impacts across counties. The District lies within a humid subtropical climate zone, which typically brings evenly distributed rainfall throughout the year. However, Mississippi often experiences extreme weather swings—alternating between floods and droughts—with localized conditions that can differ significantly even within the same district. Based on the extent, vulnerability, and probability, Drought poses an overall **High** risk to the District 5 planning area, although not every community faces the exact same risk. Risk ratings for each participating jurisdiction can be found in **Table 24**.

5.5.6.1. PEOPLE

Drought poses a significant threat to public health and safety, particularly when it disrupts access to clean and sufficient water supplies. Individuals without adequate hydration are at increased risk of heat-related illnesses, including dehydration, heat exhaustion, and in severe cases, heat stroke or death. These impacts are often intensified when drought conditions coincide with extreme heat events. Vulnerable populations—such as young children, older adults, and individuals with disabilities or access and functional needs—are disproportionately affected due to limited access to resources. Additionally, during drought conditions, water usage may increase and drive-up water rates, which may be difficult to afford. With Issaquena County and Claiborne County having Abnormally Dry to Severe Drought areas in the Southern parts of their Counties, populations living in those areas could be more at risk to drought conditions, especially those vulnerable populations.

Population growth in the District 5 Counties, especially if driven by unregulated development, may exacerbate community vulnerability by increasing demand on already strained water resources and emergency services. Unregulated development—growth occurring without adequate land-use planning, zoning, or environmental safeguards—worsens drought conditions by expanding impervious surfaces that limit groundwater recharge and increase stormwater runoff, reducing the amount of water retained during dry periods. Likewise, removing vegetation for new construction reduces the land's natural moisture-holding capacity, disrupts evapotranspiration, and alters local precipitation patterns, leaving watersheds more susceptible to extended drought.

5.5.6.2. STRUCTURES AND SYSTEMS

Quantifying structural and systemic vulnerability to drought is inherently challenging, as the hazard does not typically cause direct physical damage to buildings or infrastructure. Damage to structures and systems is likely to manifest in disruption operations and businesses due to lack of water supplies. The greatest disruption of operations would be the water system that supplies water to MEMA District 5. Prolonged droughts could cause water shortages leading to the possible use of conversations measures, increase water usage and rates, as well as mutual aid from other water retailers.

In MEMA District 5, drought is expected to have minimal impact on critical facilities and limited implications for public safety infrastructure. However, systems reliant on water, particularly those supporting agricultural operations are among the most vulnerable. Prolonged drought conditions can strain irrigation systems, reduce crop yields, and disrupt local food supply chains, indirectly affecting economic stability and community resilience. While critical facilities may not be directly exposed, the broader systems they depend on could experience operational stress during extended drought events.

Table 32 details a summary of the total acreage in each of the MEMA District 5 Counties dedicated to agricultural uses in comparison to the total acreage in each county. Based on statistics from the USDA 2022 Census of Agricultural Census Report, which only provides event data at the county level, Copiah (for the City of Crystal Springs) and Rankin (for the Village of Puckett), Counties have the lowest percentages of acreage dedicated to agriculture at 21% and 20% respectively. In contrast, over 25% of the land in Hinds, Issaquena, Sharkey and Simpson Counties is used for agricultural purposes. In the remaining two counties, Claiborne and Madison (for the Cities of Canton and Madison), total percentage of land used for agriculture is 22% to 43% respectively.

TABLE 32: TOTAL AGRICULTURAL ACREAGE IN MEMA DISTRICT 5 COUNTIES | SOURCE: USDA 2022 AGRICULTURAL CENSUS

County	Approximate Land (Acres)	Total Farms	Total Farm (Acres)	Percentage of Farmland
Claiborne County	311,946	172	67,446	21.6%

County	Approximate Land (Acres)	Total Farms	Total Farm (Acres)	Percentage of Farmland
Hinds County	556,643	847	224,068	40.3%
Issaquena County	364,349	103	132,550	36.4%
Sharkey County	276,301	112	177,028	64.1%
Simpson County	377,066	437	97,311	25.8%
City of Canton (Madison County)	457,093	510	197,702	43.3%
City of Madison (Madison County)	--	--	--	--
City of Crystal Springs (Copiah County)	497,462	444	103,863	20.9%
Village of Puckett (Rankin County)	496,317	579	99,015	19.9%

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

Drought has significantly affected agricultural areas in Claiborne County and Hinds County in the past ten years. Between 2015-2020, drought conditions have caused $481,000 and $491,000 in crop damage compared to 2020-2025. During that timeframe, Claiborne County and Hinds County reported $2,080,000 and $5,810,000 in crop damage respectfully, thus indicating that worsening drought conditions are likely to have an impact across the District.

5.5.6.3. CRITICAL FACILITIES

The MEMA Strategic Plan (2026–2030) highlights the importance of safeguarding infrastructure and maintaining operational readiness during natural disasters, including droughts. It emphasizes mitigation strategies such as protecting roadways, power systems, and water infrastructure to ensure continuity of services. Drought can strain these systems by reducing water availability for cooling, sanitation, and firefighting, while also increasing energy costs due to decreased hydroelectric output.

Community Lifelines

FEMA developed community lifelines to increase effectiveness in disaster operations and better position the Agency to respond to catastrophic incidents. Lifelines are the fundamental services in the community that, when stabilized, enable all other aspects of society. When these lifelines are disrupted, decisive intervention is required.

Drought significantly affects community lifelines in Mississippi MEMA District 5, disrupting essential services and infrastructure that support public health, safety, and economic stability. According to the U.S. Drought Monitor, impacts intensify as drought severity increases—from low creek flows and wildlife displacement at D0 levels to cracked foundations, reduced surface water, and increased fire danger at D4 levels. These conditions directly threaten lifelines such as water utilities, transportation networks, and emergency services. **Table 33** details the potential vulnerabilities of drought events on community lifelines.

TABLE 33: POTENTIAL VULNERABILITIES OF LIFELINES FROM DROUGHTS

Lifeline	FEMA Icon	Description of Impact
Communications		Droughts are not anticipated to have a direct impact on communication infrastructure or services in the planning area.
Energy (Power & Fuel)		Water-dependent energy facilities, such as those using hydroelectric or cooling systems, are vulnerable to drought impacts, potentially leading to increased competition for water among various sectors.
Food, Hydration, Shelter		Drought conditions across the District may disrupt agricultural production, contributing to food insecurity and price increases. Long-term droughts may further challenge the provision of essential resources like water and shelter for vulnerable communities.
Hazardous Materials		While droughts rarely cause hazardous materials incidents, reduced water supplies can complicate firefighting efforts involving such materials.
Health & Medical		Limited water quality and supply can lead to health risks, including dehydration and poor sanitation, and may disrupt healthcare facility operations.
Safety & Security		Drought may heighten wildfire risk, burden emergency services, and increase competition for scarce resources.
Transportation		Drought is unlikely to cause physical damage to roads, railways, bridges, or other transportation systems.

Lifeline	FEMA Icon	Description of Impact
Water & Wastewater Systems		Water is the most directly affected lifeline during drought, with reduced supply impacting households, agriculture, and industry, and placing stress on water treatment systems.

5.5.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Drought conditions in Mississippi MEMA District 5 have significant impacts on the District's natural, historic, and cultural resources. Natural ecosystems—such as wetlands, forests, and waterways—suffer from reduced water availability, leading to habitat degradation, increased wildfire risk, and stress on native vegetation and wildlife. These environmental changes can also affect recreational areas and conservation lands, diminishing their ecological and economic value.

Historic and cultural resources are also vulnerable. Prolonged drought can cause soil shrinkage and cracking, which may damage the foundations of historic buildings and archaeological sites. Erosion and vegetation loss can expose or destabilize cultural landmarks, altering their historical context and increasing the risk of irreversible damage. Agencies like the Mississippi Department of Archives and History and the State Historic Preservation Office work with local governments and tribal communities to monitor and protect these resources, especially during periods of environmental stress. These impacts highlight the need for integrated drought mitigation strategies that include cultural and environmental preservation alongside infrastructure and emergency planning.

5.5.7. POTENTIAL IMPACTS

Drought can intensify the risk of secondary natural hazards, particularly wildfires and wind erosion. Extended dry periods increase the probability of wildfire ignition and spread, while simultaneously reducing the availability and pressure of water resources critical for firefighting operations. Prolonged droughts can also lead to water shortages and strain the water systems, businesses, agriculture, and people. Additionally, when severe drought is followed by intense rainfall, the hardened and compacted soil may be unable to absorb water efficiently, leading to elevated flash flood risk due to rapid surface runoff.

District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Historical data shows increasing frequency and severity of droughts, often peaking in late summer and early fall, which can lead to crop failures, reduced livestock productivity, and strain on municipal water systems.

To mitigate these risks, the assessment emphasizes strategies such as water conservation programs, drought monitoring systems, and emergency water supply planning. It also recommends public awareness campaigns and agricultural support initiatives to build resilience. Coordination between local emergency management agencies and MEMA is crucial for implementing these measures and securing funding through hazard mitigation grants. Overall, the assessment underscores the need for proactive planning to reduce the long-term impacts of drought on communities and economies in District 5.

5.5.8. IMPACTS OF CHANGES IN DEVELOPMENT

Drought conditions can significantly influence development planning in Mississippi MEMA District 5. In the event that water resources become strained due to drought conditions, local governments and planners are prompted to reconsider how and where new development occurs. This includes prioritizing

areas with reliable water access, incorporating water-efficient infrastructure, and updating building codes to improve resilience against wildfire risks that often accompany drought. These environmental pressures can also lead to shifts in land use, favoring conservation and low-impact development over expansion in vulnerable zones.

In response, hazard mitigation strategies are increasingly integrated into planning processes. Communities may revise zoning regulations, enhance stormwater management systems, and include drought resilience measures in comprehensive plans. These changes not only reduce long-term vulnerability but also improve eligibility for federal mitigation funding. Ultimately, drought conditions serve as a catalyst for more sustainable and risk-aware development across District 5.

5.6. EARTHQUAKE

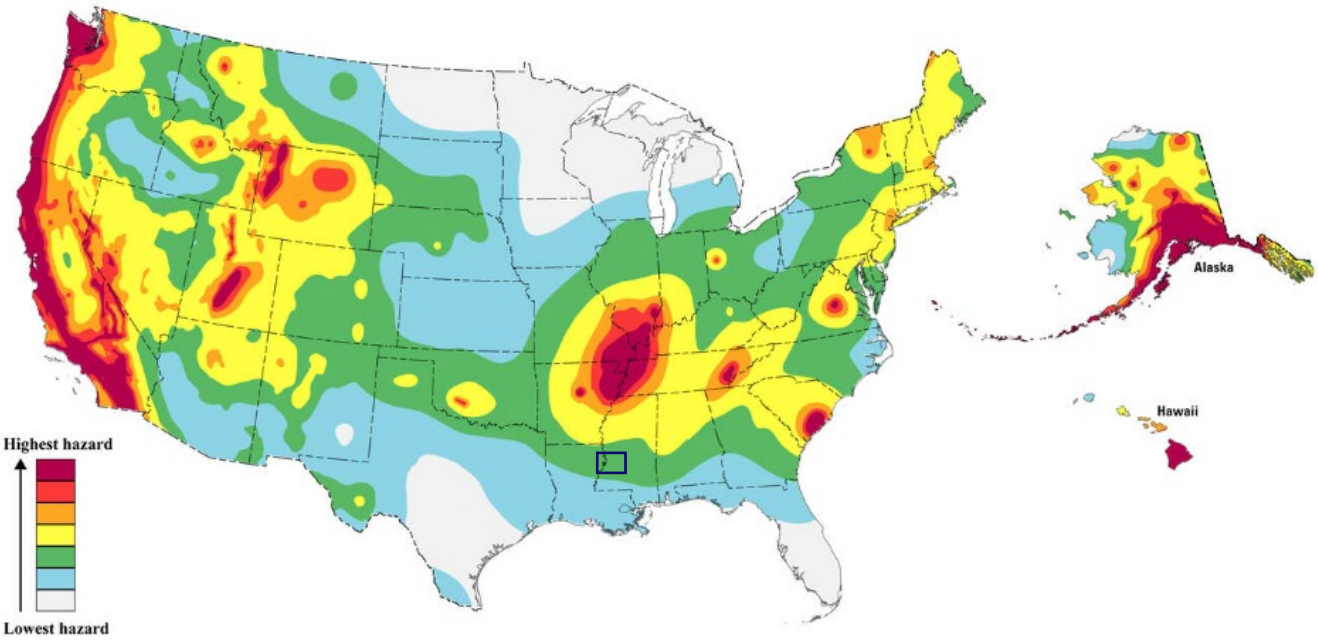
5.6.1. DESCRIPTION

According to the United States Geological Survey (USGS), an earthquake is a sudden shaking of the ground caused by a rapid release of energy from beneath the Earth's surface. For hazard mitigation planning, important earthquake characteristics include the magnitude (how strong it is), peak ground acceleration (how much the ground moves), and the distance from the epicenter. The epicenter is the point on the surface directly above where the earthquake starts underground, known as the focus.

5.6.2. LOCATION

Although Mississippi does not have any fault lines within its borders, it remains vulnerable to earthquakes due to its proximity to the New Madrid Seismic Zone (NMSZ), a major fault system located in neighboring states beneath the central Mississippi Valley. District 5 is located in the Central and Western part of the State and based on the map shown in **Figure 20**, seismic hazard assessments classify District 5 as having low to moderate risk, with most of the District in the moderate risk area and the Southern portion of the district in the low-risk area. The blue box within the figure is the approximate location of District 5.

FIGURE 20: USGS NATIONAL SEISMIC HAZARD ZONES, 2023 | SOURCE: USGS

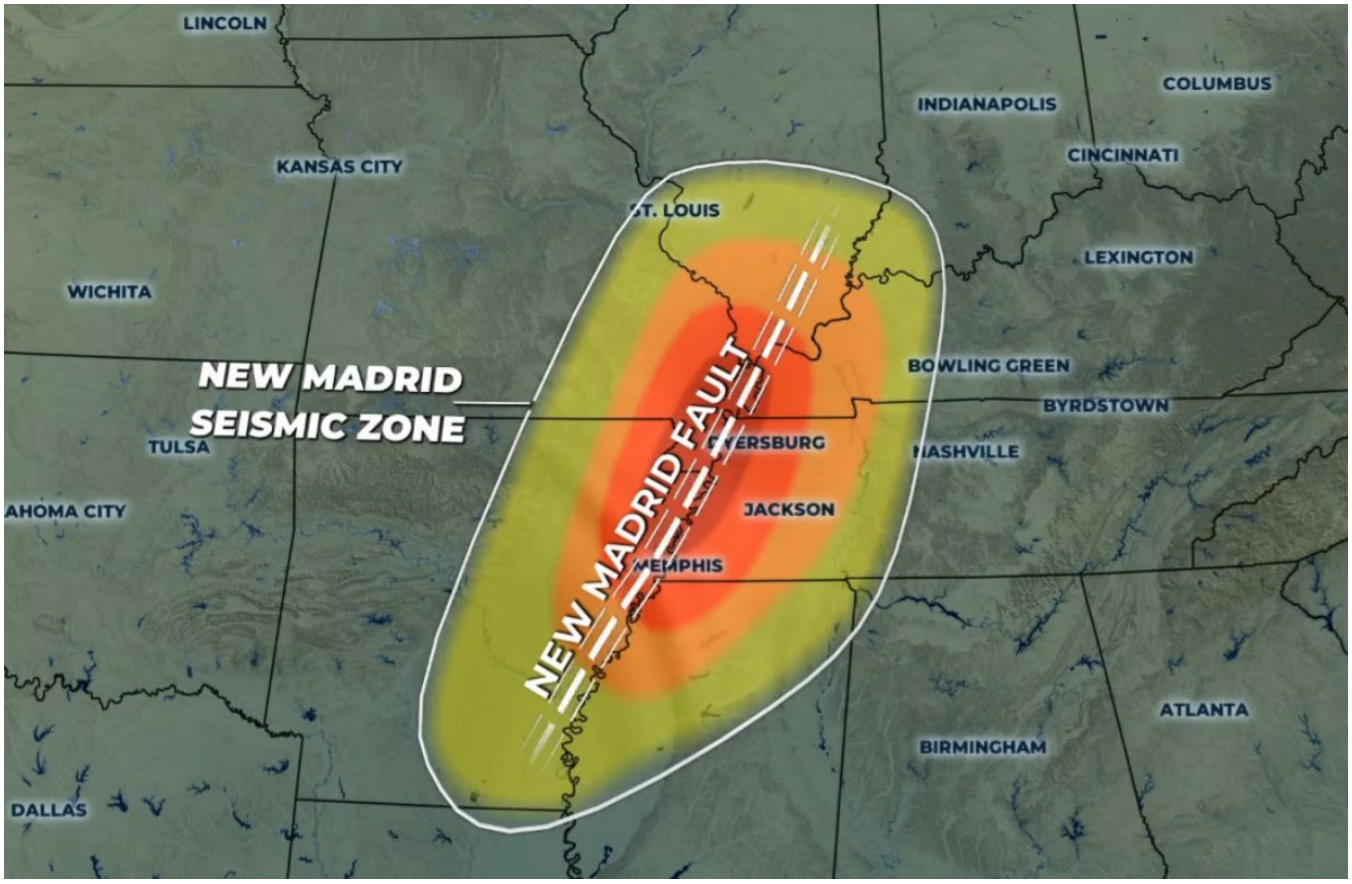


Estimated peak ground acceleration (PGA) values ranging from 0.04g to 0.08g. This level of shaking could result in light to moderate structural damage, particularly in older buildings and critical infrastructure. Soil conditions in parts of the district may amplify shaking, increasing vulnerability in floodplain and soft sediment areas. Although earthquakes are infrequent, the potential extent of impact warrants continued mitigation planning, public education, and infrastructure resilience efforts.

5.6.2.1. NEW MADRID SEISMIC HAZARD ZONES

Figure 21 below shows the New Madrid Seismic Zone that is located from southeastern Missouri, Northeastern Arkansas, Western Tennessee, Western Kentucky and Southern Illinois. The NMSZ is the most active seismic area in the United States east of the Rocky Mountains.

FIGURE 21: NEW MADRID SEISMIC ZONE MAP | SOURCE: USGS



5.6.3. EXTENT

Mississippi MEMA District 5, which includes counties such as Issaquena and Sharkey, are located within the influence zone of the New Madrid Seismic Zone (NMSZ). While the District itself does not sit atop a major fault line, it remains vulnerable to seismic shaking from large regional earthquakes. Historical events, such as the 1811–1812 New Madrid earthquakes, were felt across the district, demonstrating the potential for long-range ground motion.

5.6.3.1. MODIFIED MERCALLI SCALE (MMI)

The Modified Mercalli Scale (MMI) is another means for rating earthquakes, but one that attempts to quantify intensity of ground shaking. Intensity under this scale is a function of distance from the epicenter (the closer to the epicenter the greater the intensity), ground acceleration, duration of ground shaking, and degree of structural damage. This rates the level of severity of an earthquake by the amount of damage and perceived shaking. **Table 34** describes the various values and shaking severity of earthquakes based on the MMI.

TABLE 34: MODIFIED MERCALLI SCALE

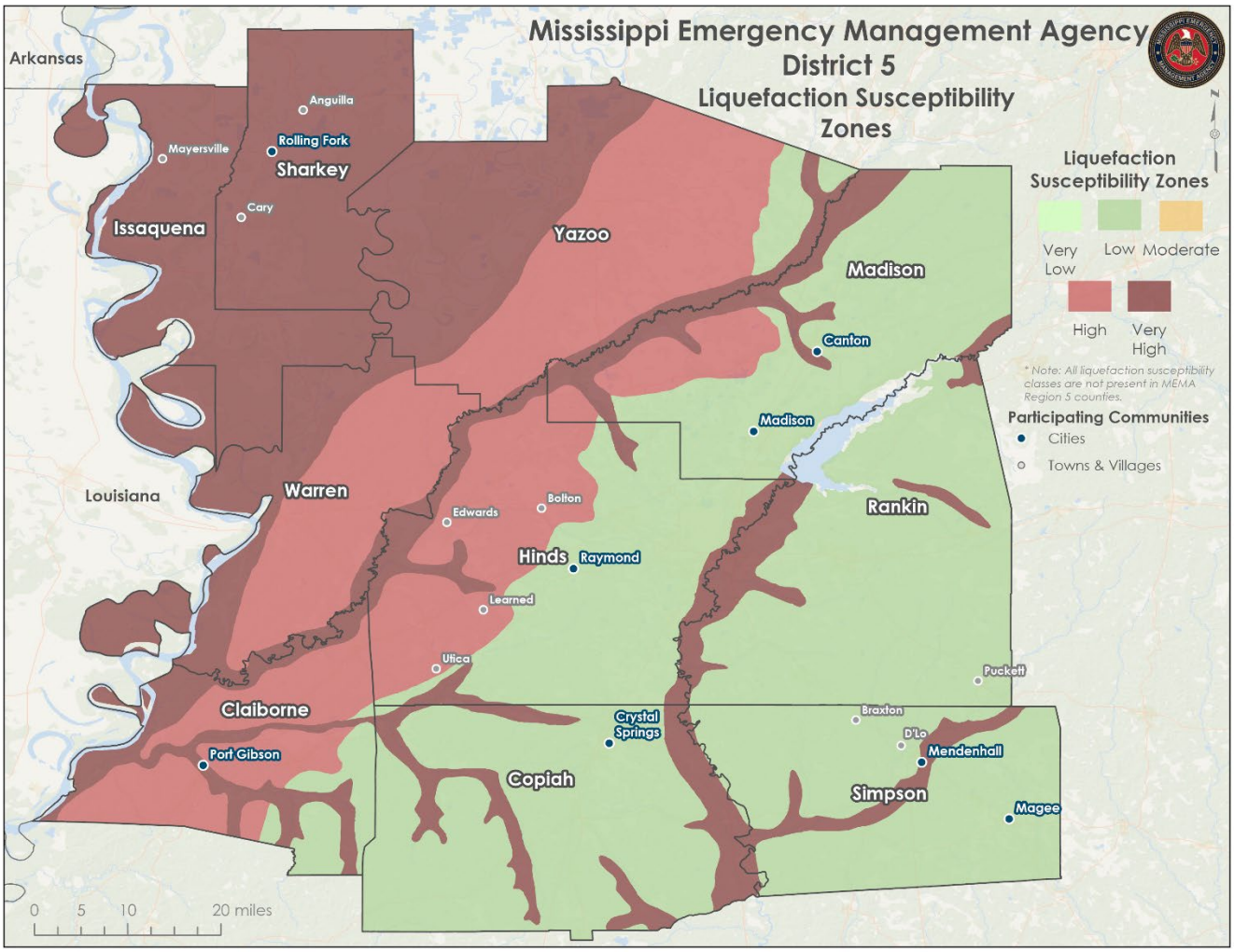
Scale	Intensity	Description	Corresponding Ritcher Scale Magnitude
I	**Instrumental**	Usually detected only on seismographs.	< 4.2

Scale	Intensity	Description	Corresponding Ritcher Scale Magnitude
II	**Feeble**	Felt only by a few persons at rest, especially on upper floors of buildings.	
III	**Slight**	Felt quite noticeably indoors, especially on upper floors. Most people don't recognize it as an earthquake (i.e. a truck rumbling).	
IV	**Moderate**	Can be felt by people walking; dishes, windows, and doors are disturbed.	
V	**Slightly Strong**	Sleepers are awoken; unstable objects are overturned.	< 4.8
VI	**Strong**	Trees sway; suspended objects swing; objects fall off shelves; damage is slight.	< 5.4
VII	**Very Strong**	Damage is negligible in buildings of good design and construction, slight to moderate in well-built ordinary structures, and considerable in poorly built or badly designed structures; some chimneys are broken.	<6.1
VIII	**Destructive**	Damage is slight in specially designed structures; considerable in ordinary, substantial buildings. Moving cars become uncontrollable; masonry fractures, poorly constructed buildings damaged.	<6.9
IX	**Ruinous**	Some houses collapse, ground cracks, pipes break open; damage is considerable in specially designed structures; buildings are shifted off foundations.	
X	**Disastrous**	Some well-built wooden structures are destroyed; most masonry and frame structures are destroyed along with foundations. Ground cracks profusely; liquefaction and landslides widespread.	<7.3

5.6.3.2. LIQUEFACTION

Liquefaction occurs when loosely packed, water-logged sediments at or near the ground surface lose their strength in response to strong ground shaking. In summary, areas within the liquefaction hazard zones are more susceptible to earthquake impacts. Within MEMA District 5, the western side of the District has very high liquefaction susceptibility zones and decreases to high and low towards the eastern side of the District. Issaquena and Sharkey counties are completely within the very high liquefaction susceptibility zone. **Figure 22**, shows the various liquefaction susceptibility zones within the District.

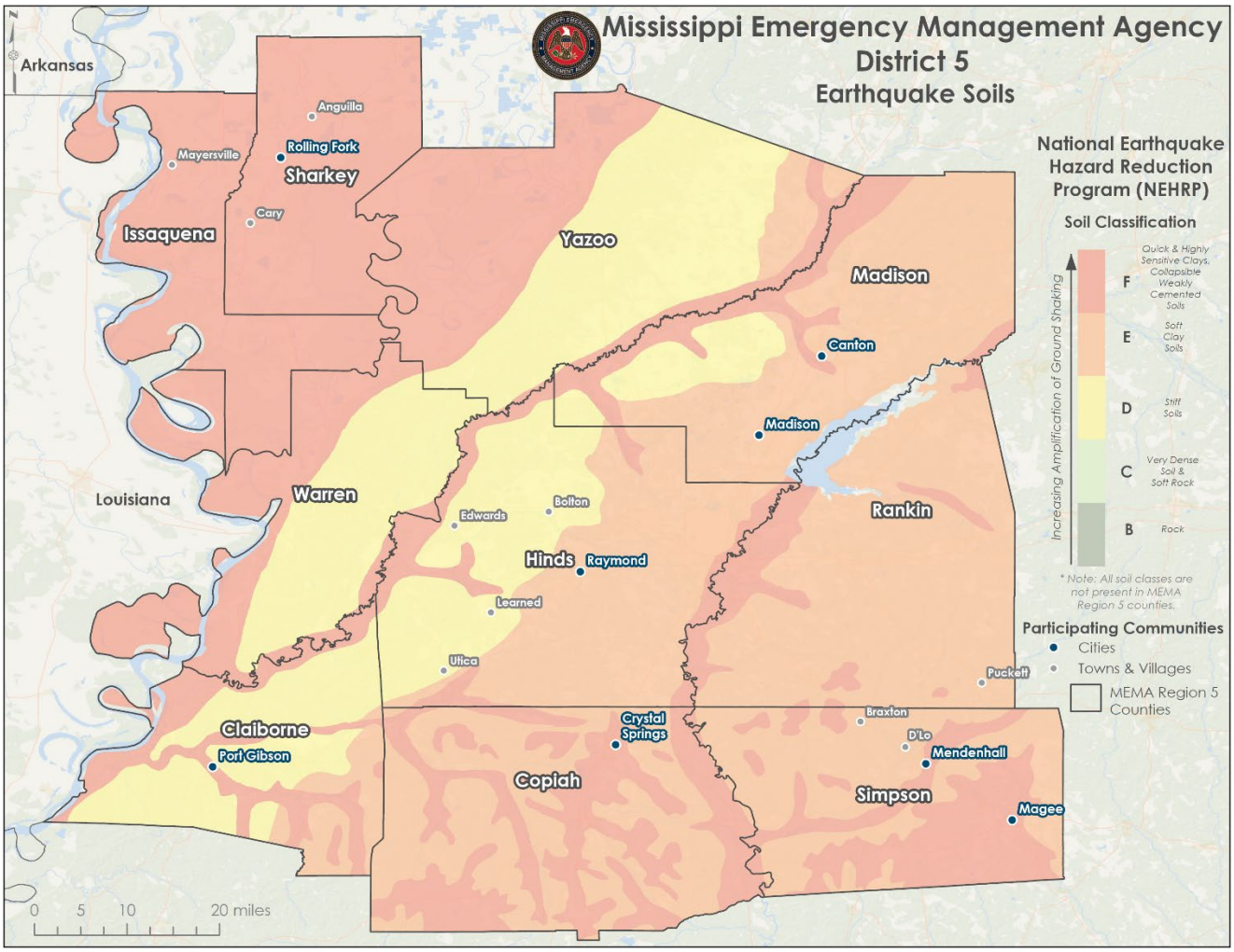
FIGURE 22: MEMA DISTRICT 5 LIQUEFACTION SUSCEPTIBILITY ZONES



5.6.3.3. EARTHQUAKE SOILS

Another way to evaluate an area's level of risk and impact from earthquakes is looking at the soil classifications. The National Earthquake Hazards Reduction Program (NEHRP) categories soil based on its stability and ability to amplify seismic waves, ranging from hard rock (Class A, least amplification) to soft soils like mud, artificial fill, or peat (Classes E/F, most amplification). Issaquena and Sharkey counties are completely within the soil classification F area. **Figure 23**, shows that MEMA District 5 has soil classifications that range from Class D to Class F.

FIGURE 23: NEHRP SOIL CLASSIFICATIONS



5.6.4. PREVIOUS OCCURRENCES

Although Mississippi experiences relatively low seismic activity, historical records show that earthquakes have impacted MEMA District 5, primarily through long-range shaking from regional events. The most notable example is the 1811–1812 New Madrid earthquake sequence, which included three major quakes estimated between magnitude 7.0 and 8.0. These events were felt across much of the central United States, including Mississippi, causing ground shaking, soil liquefaction, and damage to riverbanks and structures as far south as Vicksburg.

In more recent history, since 2020, there have been nine earthquakes statewide; four of which were not even noticeable or felt. The two strongest were a magnitude 3.0 earthquake near Magee (Simpson County) in March 2025 and a magnitude 2.5 earthquake in Southern Madison County in November 2024. The weakest was a magnitude 1.9 earthquake in Monroe County back in December 2020. These occurrences underscore the importance of maintaining awareness and preparedness, even in areas with infrequent seismic activity.

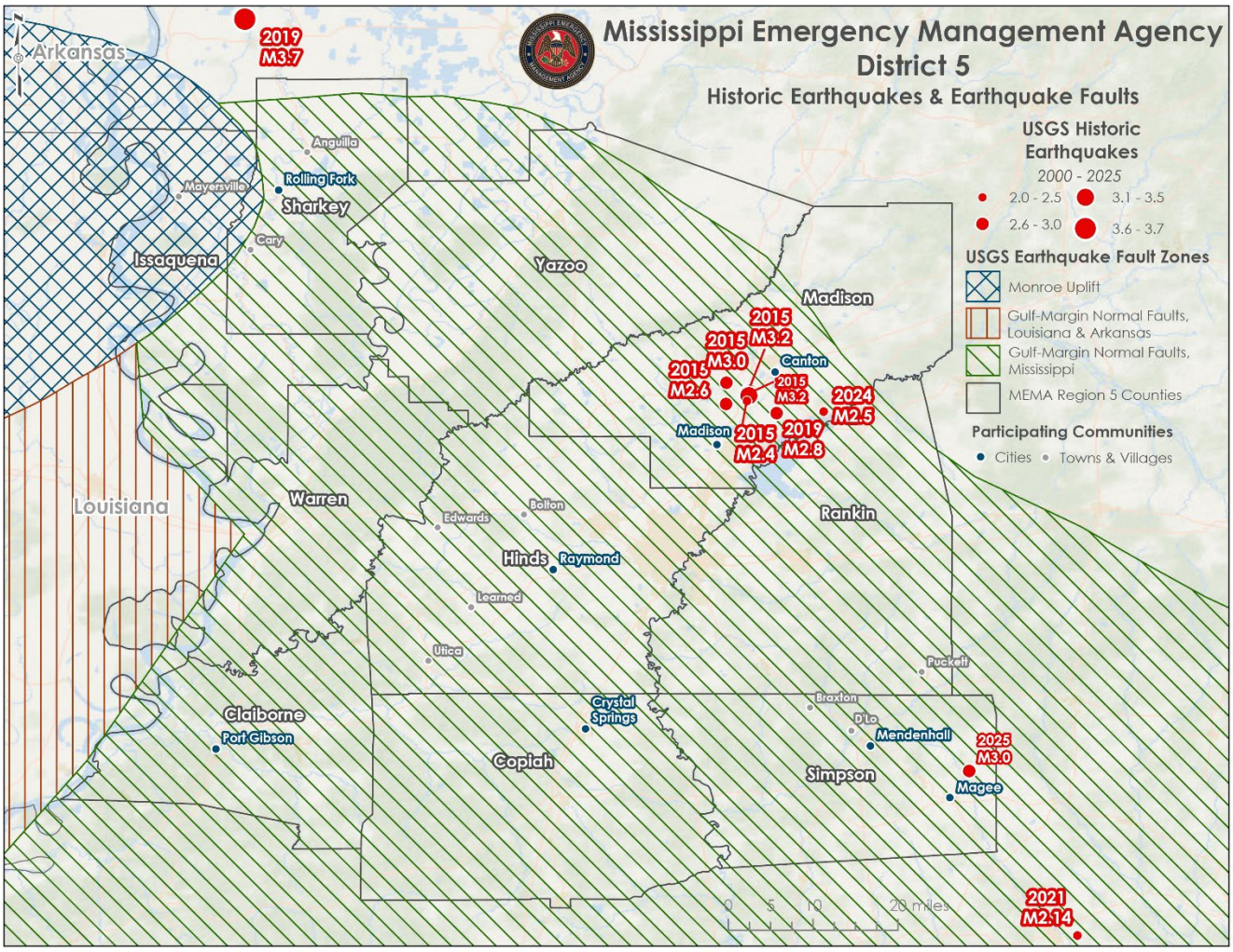
Table 35 below compares historical earthquake events in MEMA District 5 between the previous planning cycle (2015-2020) and the current planning cycle (2020-2025). Based on the table, there have been four less earthquakes in Mississippi between 2020 to 2025 than 2015 to 2020. Despite the

decrease in earthquake events, the strength of earthquakes has increased during this planning cycle. **Figure 24** shows the earthquakes in the District between 2000 to 2025.

TABLE 35: SUMMARY OF EARTHQUAKE EVENTS IN MEMA DISTRICT 5 | SOURCE: 2023 STATE OF MISSISSIPPI SHMP

County	2015-2020 Plan No. of Events	Date of Event	Magnitude
Madison	1	8/9/2019	2.8
Madison	1	8/17/2015	2.6
Madison	1	6/29/2015	3.2
Madison	1	5/3/2015	3.0
Madison	1	5/3/2015	3.2
Madison	1	5/3/2015	2.4
County	**2020-2025 Plan No. of Events**	**Date of Event**	**Magnitude**
Simpson	1	3/15/2025	3.0
Madison	1	11/28/2024	2.5

FIGURE 24: HISTORIC EARTHQUAKES AND FAULTS IN MEMA DISTRICT 5



5.6.5. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, the District has experienced eight earthquake events in the past 10 years, which would suggest that the probability of future events is highly likely. For this plan update, it is **Unlikely** that Mississippi MEMA District 5 will experience damaging earthquakes with a magnitude greater than 3.3, but it is not entirely free from seismic risk. It is more likely that an earthquake with a magnitude of 3.3 or less would occur. Based on the soil classifications and liquefaction susceptibility zones, MEMA District 5 is more susceptible to ground shaking and subsequent impacts if an earthquake were to occur compared to other areas in the State.

According to the USGS and FEMA seismic hazard maps, most of District 5 falls within Seismic Design Category A or B, which indicates a very small to moderate chance of experiencing earthquake shaking. These categories suggest that while strong earthquakes are unlikely, minor to moderate shaking could occur, especially from distant seismic sources like the New Madrid Seismic Zone (NMSZ). Additionally, according to the United States Geological Survey (USGS) and the Center for Earthquake Research and Information at the University of Memphis, the following probabilities of an earthquake in the NMSZ over a 50-year period are as follows:

- The probability of repeating the 1811–1812 earthquakes (Magnitude 7.7–8.0): 7.1%.

- The probability of a magnitude 6.0 or larger: 25–40%.

5.6.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

An earthquake vulnerability assessment for Mississippi MEMA District 5 evaluates the District's potential risks from seismic activity, even though earthquakes are relatively uncommon in the area. The assessment considers factors like soil conditions, building age and design, and the presence of critical infrastructure.

The vulnerability assessment identifies these resources as critical community assets and recommends protective measures. These include conducting detailed inventories of historic and cultural sites, assessing their structural integrity, and prioritizing retrofits or stabilization projects. Earthquake mitigation planning also encourages integrating these considerations into local development and emergency response plans to ensure that preservation and safety go together. Protecting these resources not only safeguards community identity but also supports long-term recovery and resilience.

While the overall seismic hazard is moderate, the assessment emphasizes the importance of preparedness and mitigation. Older structures not built to modern seismic standards are particularly at risk, and areas with soft or unstable soils may experience amplified ground shaking. Recommendations include retrofitting vulnerable buildings, updating construction codes to include seismic design standards, and integrating earthquake resilience into emergency planning and development decisions. These steps help reduce potential damage and improve community safety in the event of an earthquake. Based on the extent, vulnerability, and probability, Earthquakes poses a **Low** risk to District 5. Individual hazard risk ratings for all participating are shown in **Table 24**.

5.6.6.1. PEOPLE

Although earthquakes are infrequent in MEMA District 5, the population remains vulnerable due to several factors. Many communities in the district are rural, with limited access to emergency services and infrastructure that may be disrupted during a seismic event. Vulnerable populations, including the elderly, individuals with disabilities, and those living in poverty—may face greater challenges in evacuation, sheltering, and recovery.

Older buildings, especially unreinforced masonry structures, pose a significant risk to occupants during ground shaking. Schools, healthcare facilities, and residential homes may not be built to withstand even moderate seismic forces, increasing the potential for injury or displacement. Additionally, public awareness of earthquake risks is generally low, which can delay protective actions and increase exposure during an event. These vulnerabilities highlight the need for targeted outreach, building retrofits, and emergency planning to reduce human impacts from future earthquakes.

For the planning area, populations living in high to very high liquefaction susceptibility zones are at an increased risk. Those areas include Issaquena and Sharkey Counties, Western Claiborne and Hinds Counties. Participating jurisdictions located in the low to very low liquefaction susceptibility zones include Simpson County, the Cities of Canton, Crystal Springs, Madison and the Village of Puckett thus putting those populations at a slightly lower risk than the rest of the District.

5.6.6.2. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking. Many buildings in the district, especially older homes, schools, and public

facilities—were constructed before modern seismic codes were adopted and may lack the structural integrity to withstand even moderate shaking. Unreinforced masonry buildings are particularly susceptible to collapse or severe damage during seismic events.

Critical systems such as transportation networks, water and wastewater infrastructure, and energy distribution lines are also at risk. Bridges and elevated roadways may experience structural stress or failure, disrupting emergency response and evacuation routes. Water and sewer systems could suffer pipe breaks or service interruptions, while electrical grids may be impacted by ground movement or equipment failure. These vulnerabilities can lead to cascading effects, including displacement of residents, interruption of essential services, and increased recovery costs.

Structures and systems within the planning area located in zones with high to very high liquefaction susceptibility face elevated risk. These areas include Issaquena and Sharkey Counties, as well as the western portions of Claiborne and Hinds Counties. In contrast, participating jurisdictions situated in low to very low liquefaction susceptibility zones—such as Simpson County, the Cities of Canton, Crystal Springs, and Madison, along with the Village of Puckett—are exposed to comparatively lower risk than the rest of the District.

5.6.6.3. CRITICAL FACILITIES

Critical facilities in MEMA District 5, including hospitals, emergency operations centers, fire stations, law enforcement offices, schools, and water treatment plants—are essential for life safety, emergency response, and community recovery. Many of these facilities were constructed prior to the adoption of modern seismic building codes and may lack structural reinforcements necessary to withstand even moderate ground shaking.

Facilities located in areas with soft soils or near floodplains are particularly vulnerable due to the potential for soil amplification, which can intensify shaking and increase the likelihood of structural damage. Damage to these facilities could result in disruption of emergency services, delayed medical care, loss of communication capabilities, and compromised sheltering operations. Additionally, utility-dependent facilities may face cascading failures if power, water, or transportation systems are impacted. Protecting critical facilities through retrofits, backup power systems, and site-specific hazard assessments is essential to maintaining operational continuity during and after an earthquake event.

Community Lifelines

FEMA developed community lifelines to increase effectiveness in disaster operations and better position the Agency to respond to catastrophic incidents. Lifelines are the fundamental services in the community that, when stabilized, enable all other aspects of society. When these lifelines are disrupted, decisive intervention is required.

While unlikely that an earthquake could significantly disrupt community lifelines in Mississippi MEMA District 5 based on previous magnitude earthquakes, in the case of a more destructive earthquake, ground shaking could disrupt essential services and infrastructure that support public health, safety, and economic stability. **Table 36** details the potential vulnerabilities of community lifelines from strong earthquakes.

TABLE 36: POTENTIAL VULNERABILITIES OF LIFELINES FROM EARTHQUAKES

Lifeline	FEMA Icon	Description of Impact
Communications		Cell towers and internet services may fail, affecting emergency coordination.
Energy (Power & Fuel)		Power outages are likely from damaged lines and substations; fuel supply may be interrupted.
Food, Hydration, Shelter		Water systems may rupture; food supply chains and shelter access could be disrupted.
Hazardous Materials		Industrial sites may leak chemicals or pollutants, posing environmental and health risks.
Health & Medical		Hospitals may be damaged or overwhelmed; medical transport and supplies may be limited.
Safety & Security		Emergency services may be delayed due to damaged infrastructure and blocked roads.
Transportation		Roads, bridges, and railways may be impassable, delaying aid and evacuation.

Lifeline	FEMA Icon	Description of Impact
Water & Wastewater Systems		Water mains may rupture, reducing potable water access. Wastewater systems may fail, causing sanitation and environmental hazards.

5.6.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Earthquakes, though infrequent in Mississippi MEMA District 5, can still pose serious risks to natural, historic, and cultural resources. These assets—such as historic buildings, archaeological sites, museums, cemeteries, and natural landmarks—are often more vulnerable due to their age, construction methods, and lack of seismic retrofitting. Even moderate ground shaking can cause structural damage, collapse, or irreversible loss of cultural heritage. More information on the vulnerability of natural, historic, and cultural resources, for each county, can be found in their respective annexes.

5.6.7. POTENTIAL IMPACTS

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. Counties such as Issaquena and Sharkey are closer to the northern boundary of the district and therefore more likely to experience stronger shaking from a major New Madrid Seismic Zone (NMSZ) event. These areas are generally classified as having moderate seismic hazards, while southern counties like Copiah and Simpson are considered lower risk due to their greater distance from the NMSZ and more stable soil conditions.

Soil type plays a significant role in risk variability. Areas with soft sediments or flood plains, such as parts of Claiborne and Hinds counties, may experience amplified ground motion, increasing the potential for structural damage even in lower shaking scenarios. Additionally, differences in building age and construction standards across counties affect vulnerability. Older, unreinforced masonry buildings are more prevalent in some communities and are less likely to withstand seismic forces, contributing to localized increases in risk.

This variability underscores the need for county-specific mitigation strategies, including targeted retrofitting, public education, and emergency planning tailored to each community's unique exposure and vulnerability profile.

5.6.8. IMPACTS OF CHANGES IN DEVELOPMENT

Earthquake risk, even if moderate in Mississippi MEMA District 5, can influence how and where development occurs. Planners and local governments may need to reconsider site selection, especially in areas with unstable soils or older infrastructure. New development projects are increasingly expected to meet updated building codes that include seismic design standards, helping reduce potential damage from ground shaking.

These considerations also affect long-term growth strategies. Communities may revise zoning regulations, prioritize retrofitting of existing structures, and incorporate earthquake resilience into comprehensive plans. By doing so, they not only improve public safety but also enhance eligibility for federal mitigation funding. In short, earthquake vulnerability encourages more thoughtful, hazard-aware development across the district.

5.7. EXPANSIVE SOILS

5.7.1. DESCRIPTION

Expansive soils contain minerals—such as smectite clay—that absorb water and swell in volume. The more moisture these soils take in, the more they expand, sometimes by 10% or more. This expansion can exert significant pressure on buildings, roads, and other structures, potentially leading to cracking, shifting, or other types of damage. Identifying and managing areas with expansive soils is important for reducing long-term risks to infrastructure.

Soil is made up of various materials, most of which do not noticeably change when exposed to moisture. However, certain clay minerals—such as smectite, bentonite, and montmorillonite—are known to expand significantly when wet. Some sulfate salts can also expand due to temperature changes. When soils contain a high concentration of these expansive minerals, they have greater potential to swell. Conversely, soils with low concentrations have minimal expansion risk. Expansive soils typically do not cause problems if their moisture levels remain stable. The greatest risk of damage occurs when there are frequent or significant changes in moisture content, which can lead to shifting or cracking in foundations and other structures.

5.7.2. LOCATION

Expansive soils are found throughout Mississippi and have caused significant damage to homes and infrastructure. According to the American Society of Civil Engineers, approximately 25% of homes in the United States experience some level of damage due to expansive soils. In fact, these soils are responsible for more annual property damage than earthquakes, floods, hurricanes, and tornadoes combined. Much of this damage is linked to inadequate construction practices or the mistaken belief that such deterioration is simply part of a building's aging process.

In MEMA District 5, which includes counties in central Mississippi, several types of expansive soils are present. These soils are primarily associated with specific geologic formations known for their high shrink-swell potential due to their clay content. Issaquena and Sharkey Counties contain a mixture of areas in the Vertisols (10-49% and 50-100%) and Vertic Subgroups (10-49% and 50-100%) which puts these communities at higher risk than the district overall. Simpson County has three small areas in the Vertic Subgroups (50-100%) while Claiborne County has areas in the Vertic Subgroups (10-49%) in the Western part of the County. The remaining jurisdictions of Hinds County, Cities of Canton, Crystal Springs, Madison and the Village of Puckett have zero expansive soils. The different types of expansive soils are displayed below in **Figure 25**.

Major expansive soil Formations found in District 5 are:

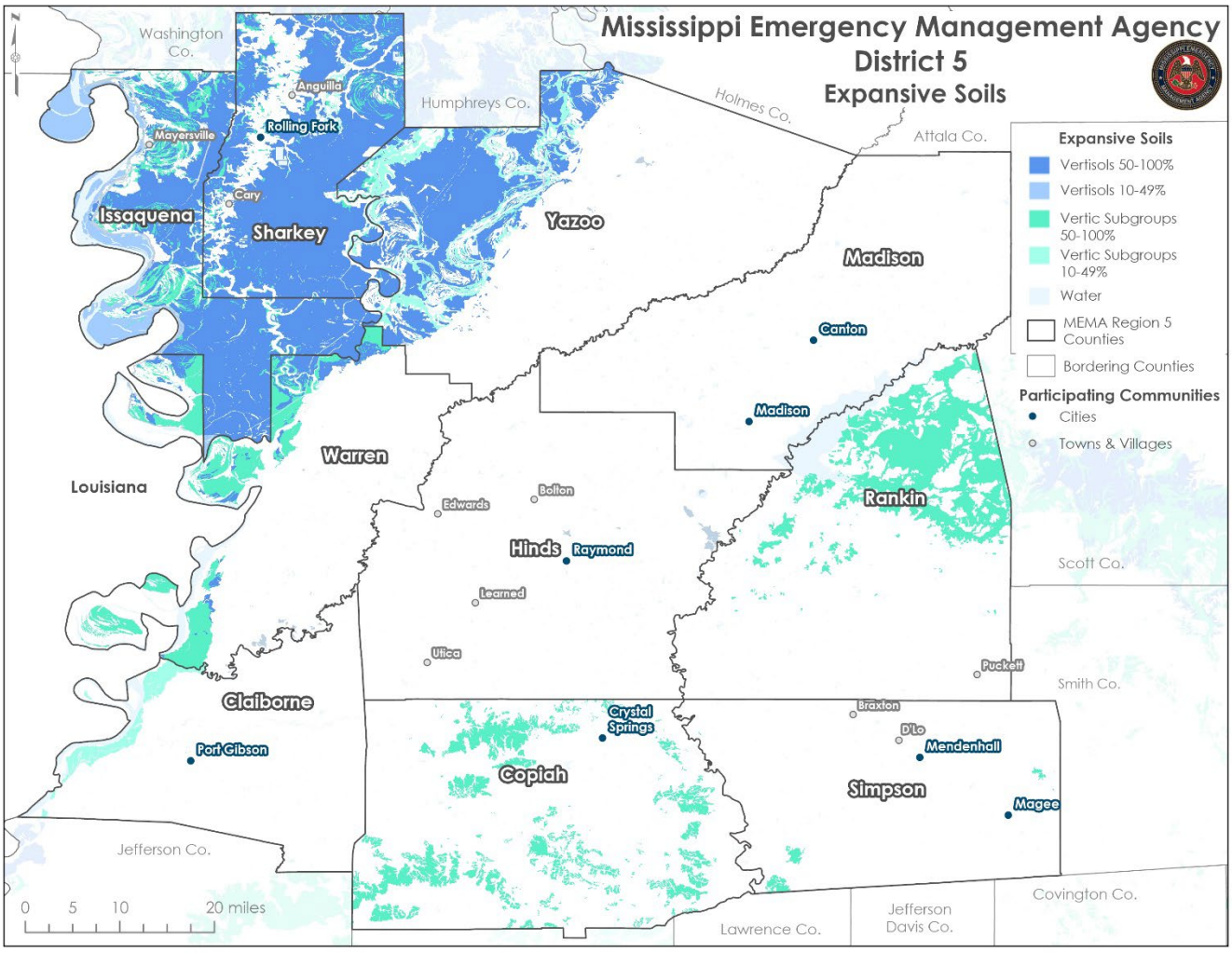
- **Yazoo Clay (Jackson Geologic Group)**: Most problematic in the Central Mississippi area. Known for high plasticity and significant volume changes with moisture variation. Causes foundation and infrastructure issues due to swelling and shrinking.
- **Porters Creek Formation**: Found in Central and North Mississippi. Contains clay-rich soils with expansive characteristics.
- **Zilpha Formation**: Also present in Central and North Mississippi. Similar expansive behavior due to its clay mineralogy.
- **Hattiesburg/Pascagoula Formation**: More common in Southern Mississippi but may have localized presence in District 5.

These formations are identified by the Mississippi Department of Transportation (MDOT) as having high volume change potential, making them critical for hazard mitigation and infrastructure planning.

5.7.3. EXTENT

Expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. The different types of expansive soils are displayed in **Figure 25**. The most hazardous expansive soils are vertisols 50-100% and least hazardous vertic subgroups 10-49%. Expansive soils are predominately located on the western side of the MEMA District 5. These soils undergo significant volume changes in response to moisture fluctuations, leading to ground movement that can damage foundations, roads, and utility systems. Such damage is often the result of insufficient site preparation, poor construction practices, or the misconception that structural deterioration is a normal consequence of aging rather than soil-related movement.

FIGURE 25: MEMA DISTRICT 5 EXPANSIVE SOILS



5.7.4. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the District 5 Region. While these soils can lead to structural issues—particularly affecting foundations, they are not considered a direct threat to public safety or human life.

5.7.5. PROBABILITY OF FUTURE OCCURRENCES

In MEMA District 5, the probability of future damage from expansive soils is considered **Unlikely** due to the lack of report damages from previous occurrences. However, due to the District's geologic makeup and historical patterns of soil movement, the District should prepare for expansive soils in the rare event that it causes damage in the future. Counties more susceptible to expansive soils include Sharkey, Issaquena, and parts of Yazoo and Warren. Expansive soils are a widespread geologic hazard across Mississippi, including MEMA District 5, due to the presence of clay-rich formations such as the Yazoo, Porters Creek, and Hattiesburg/Pascagoula Formations. These soils expand and contract with moisture changes, causing ground movement that can damage foundations, roads, and utilities. Studies have shown that expansive soils can cause more annual financial loss than all other natural hazards combined, including floods and hurricanes. Approximately 25% of homes nationwide are affected by this issue, and Mississippi's soil conditions suggest a high likelihood of continued occurrences.

Vertical and horizontal shifts in soil have been documented under natural conditions, confirming the ongoing nature of this hazard. While not sudden or catastrophic, the damage is cumulative and often exacerbated by poor construction practices or lack of site-specific geotechnical assessments. As such, expansive soils should be treated as a chronic hazard in local mitigation planning, with proactive strategies to reduce long-term infrastructure impacts.

5.7.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

Expansive soils pose a chronic and widespread hazard across MEMA District 5, with vulnerability varying based on local geology, soil composition, and development patterns. Areas underlain by clay-rich formations such as the Yazoo, Porters Creek, and Hattiesburg/Pascagoula Formations are particularly susceptible to shrink-swell behavior, which can lead to structural damage in buildings, roads, and underground utilities. Vulnerable assets include residential housing, schools, emergency services facilities, and aging infrastructure, especially those constructed without geotechnical assessments or soil stabilization measures.

The risk posed by expansive soils varies significantly across MEMA District 5 due to differences in underlying geologic formations, soil composition, and local environmental conditions. Areas underlain by clay-rich formations such as the Yazoo, Porters Creek, Zilpha, and Hattiesburg/Pascagoula Formations are particularly susceptible to shrink-swell behavior. These formations are not uniformly distributed, resulting in localized zones of higher risk where expansive clays are more prevalent.

For example, central portions of the district are known to be affected by Yazoo Clay, which exhibits high plasticity and volume change potential. In contrast, regions with more stable soil profiles or lower clay content may experience reduced risk. However, due to the unpredictable nature of soil deposits and the potential for isolated pockets of expansive clay, even areas not traditionally considered high-risk may still be vulnerable to damage.

This variability underscores the importance of site-specific geotechnical investigations prior to development and infrastructure projects. Risk mapping and soil surveys should be used to identify high-risk zones, allowing for targeted mitigation strategies such as soil stabilization, modified foundation designs, and public education efforts. Incorporating this variability into planning ensures that mitigation efforts are both efficient and effective across the district. Based on the extent, vulnerability, and

probability, expansive soils pose a **Low** risk to District 5. Specific hazard risk ratings for all participating jurisdictions are shown in **Table 24**.

5.7.6.1. PEOPLE

Populations most at risk include low-income households and rural communities, where resources for mitigation and repair may be limited. Public buildings and critical facilities are also vulnerable, particularly if built on expansive soils without appropriate engineering controls. Damage from expansive soils is often gradual and cumulative, making it harder to detect and more costly over time. As such, the vulnerability across the district is not uniform and should be addressed through targeted mitigation strategies, including improved construction standards, soil testing, and public education. However, based on the lack of previous occurrences, the risk of expansive soil to people in District 5 is low.

For the planning area, populations living in expansive soil areas are at an increased risk. Issaquena and Sharkey Counties contain a mixture of areas in the Vertisols (10-49% and 50-100%) and Vertic Subgroups (10-49% and 50-100%) which puts these communities at higher risk than the district overall. Simpson County has three small areas in the Vertic Subgroups (50-100%) while Claiborne County has areas in the Vertic Subgroups (10-49%) in the Western part of the County. The remaining jurisdictions of Hinds County, Cities of Canton, Crystal Springs, Madison and the Village of Puckett have zero expansive soils.

5.7.6.2. STRUCTURES AND SYSTEMS

Expansive soils pose a significant risk to structures and infrastructure systems throughout MEMA District 5. These soils, which expand when wet and contract when dry, exert substantial pressure on built environments, leading to damage that is often gradual and cumulative. Vulnerable structures include residential homes, schools, and small commercial buildings, particularly those constructed without geotechnical assessments or soil stabilization measures. Lightly loaded structures are especially susceptible to foundation cracking, wall displacement, and misalignment of doors and windows due to soil movement. Infrastructure systems such as roads, water lines, sewer systems, and underground utilities are also at risk. Soil expansion and contraction can cause differential settlement, pipe misalignment, and pavement cracking, resulting in service disruptions and costly repairs.

Structures and systems within the planning area located in regions with expansive soils face elevated risk. Issaquena and Sharkey Counties include a combination of Vertisols (10–49% and 50–100%) and Vertic Subgroup soils (10–49% and 50–100%), resulting in higher overall risk for these communities compared to the rest of the district. Simpson County contains three small areas classified within the Vertic Subgroups (50–100%), while western Claiborne County includes areas within the Vertic Subgroups (10–49%). All remaining jurisdictions—Hinds County, the Cities of Canton, Crystal Springs, and Madison, and the Village of Puckett—contain no expansive soils.

5.7.6.3. CRITICAL FACILITIES

Critical facilities, including emergency services buildings and public utilities, may face operational challenges if built on expansive soils without appropriate engineering controls. Older structures and communities with limited resources for mitigation are especially vulnerable. The cumulative nature of damage from expansive soils makes early detection and proactive mitigation essential. Strategies such as soil testing, improved construction standards, and public education can help reduce long-term impacts and enhance resilience across the district.

Community Lifelines

Expansive soil can affect all eight FEMA Community Lifelines by compromising the structural integrity and operational reliability of critical facilities and infrastructure. These impacts are typically gradual but

can lead to significant disruptions if left unaddressed. **Table 37** describes the potential vulnerabilities of lifelines from expansive soils.

TABLE 37: POTENTIAL VULNERABILITIES OF LIFELINES FROM EXPANSIVE SOILS

Lifeline	FEMA Icon	Description of Impact
Communications		Soil movement can disrupt underground telecom lines and damage communication hubs, impairing emergency coordination.
Energy (Power & Fuel)		Underground power and fuel lines are at risk of displacement, potentially causing outages or leaks.
Food, Hydration, Shelter		Potable water infrastructure, are at risk from soil-induced pipe misalignment, joint failure, and infiltration; shelter facilities may become unsafe due to structural shifts.
Hazardous Materials		Facilities storing hazardous substances may face containment risks due to soil-induced structural damage.
Health & Medical		Medical facilities may experience damage to foundations and utility systems, affecting patient care and sanitation.
Safety & Security		Emergency services buildings may suffer foundation damage, reducing response capacity and safety.
Transportation		Roads, bridges, and railways may crack or settle unevenly, impacting mobility and emergency access.

Lifeline	FEMA Icon	Description of Impact
Water & Wastewater Systems		Water and wastewater systems are vulnerable to pipe misalignment and leakage.

5.7.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Expansive soils can cause gradual but significant damage to natural landscapes, historic structures, and cultural assets across MEMA District 5. Soil movement may destabilize foundations of historic buildings, monuments, and archaeological sites, leading to cracking, shifting, and long-term structural degradation. These impacts are especially concerning older or unreinforced structures, many of which hold cultural or historical significance and may lack modern soil mitigation protections.

Natural resources such as wetlands and forested areas may also be affected, as soil instability can alter drainage patterns, increase erosion, and disrupt native vegetation. Cultural institutions, including museums, libraries, and heritage centers risk both their buildings and collections if expansive soils compromise structural integrity or climate control systems. Protecting these resources requires proactive planning, including geotechnical assessments, coordination with preservation agencies, and integration of cultural and environmental considerations into hazard mitigation strategies.

5.7.7. POTENTIAL IMPACTS

Given the widespread presence of expansive clay formations in the District and the cumulative nature of the damage, expansive soils represent a high-probability hazard with significant long-term consequences. Effective mitigation requires coordinated planning, improved construction practices, and targeted investments in vulnerable areas.

5.7.8. IMPACTS OF CHANGES IN DEVELOPMENT

Expansive soil presents a significant challenge to local development across MEMA District 5. Their shrink-swell behavior can damage foundations, roads, and underground utilities, increasing construction costs and long-term maintenance burdens. These impacts are especially problematic in areas experiencing growth, where new development may occur on previously undeveloped land with limited geotechnical evaluation. Without proper soil assessments and mitigation measures, new structures may be vulnerable to costly damage and reduced lifespan.

The presence of expansive soils also influences land use planning and zoning decisions. Communities may need to restrict development in high-risk areas or require enhanced building codes and foundation designs to reduce vulnerability. This can affect housing affordability, infrastructure investment, and the pace of development. In rural and underserved areas, limited resources for soil testing and mitigation may further constrain safe growth. Integrating expansive soil risk into comprehensive planning and permitting processes is essential to ensure resilient and sustainable development across the district.

5.7.8.1. FRACKING AND SURFACE MINES

Fracking

Fracking is the process of injecting water, sand, and chemicals at high pressure into underground rock formations (usually shale) to create fractures that allow oil or natural gas to flow to a wellhead at the surface. **Figure 26** shows the Mississippi Statewide hydraulic fracking map. It is widely used in petroleum and natural gas production. The subsequent hazards that fracking poses include:

- **Groundwater Contamination:** Risk from chemical additives and produced water.
- **Induced Seismicity:** Low but possible if deep injection wells are used.
- **Infrastructure Stress:** Increased heavy truck traffic on rural roads.

FIGURE 26: MISSISSIPPI STATEWIDE HYDRAULIC FRACKING MAP | SOURCE: PACE UNIVERSITY

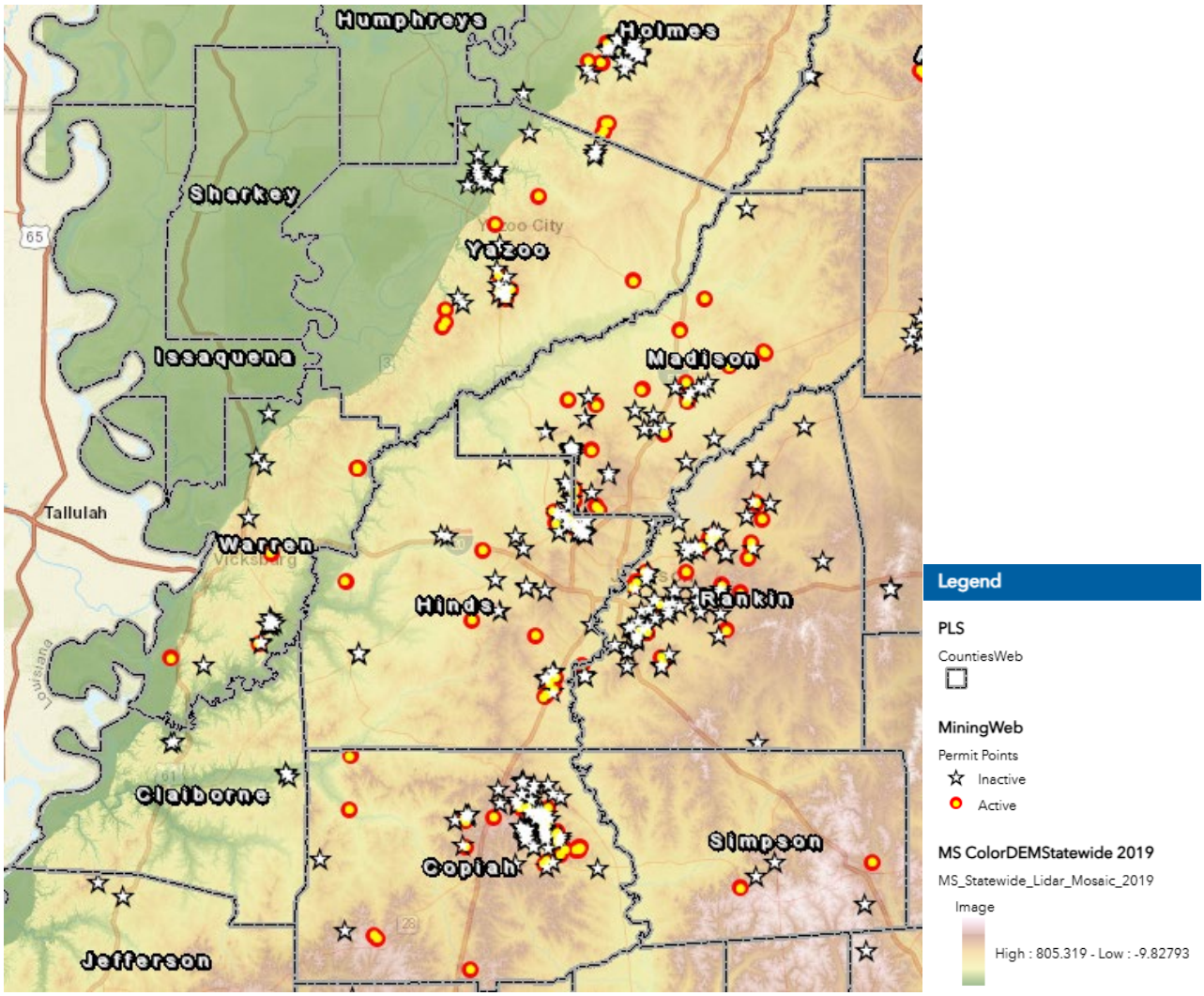
Surface Mining

Surface mining involves removing the top layer of soil or rock to access minerals beneath the surface. In Mississippi, this method is used to extract sand, gravel, clay, bentonite, chalk, and limestone for construction and infrastructure projects. The subsequent hazards that fracking poses include:

- **Soil Erosion & Sedimentation**: Can impact waterways and agriculture.
- **Dust & Air Quality Issues**: Affect nearby communities and crops.
- **Flooding Risk**: Altered drainage patterns increase localized flood hazards.

There are many inactive and active mining locations within the District's counties, shown in **Figure 27**. Active and inactive mines can pose a risk to the environment through water pollution, erosion, and habitat destruction, as well as posing a hazard to public health.

FIGURE 27: MEMA DISTRICT 5 SURFACE MINING MAP | SOURCE: MDEQ



5.8. FLOOD

5.8.1. DESCRIPTION

Floods are the most common type of natural disaster, occurring when water overflows on land that is typically dry. This can result from heavy rainfall, storm surges, or rapid snowmelt, and often leads to significant impacts on both human life and the environment. Floodwater, along with debris they carry, can cause injuries, fatalities, and extensive damage to homes, infrastructure, and ecosystems. By definition, a flood is a temporary condition where normally dry land becomes partially or fully submerged due to the overflow of inland or tidal waters, or from an unusual and rapid accumulation of surface water.

Flooding is a natural and recurring event, often tied to seasonal weather patterns such as tropical storms and prolonged rainfall. Rivers, lakes, and other bodies of water naturally expand beyond their banks, inundating adjacent areas known as floodplains. While these areas are part of the natural hydrological cycle, the risk becomes severe when human development encroaches on them. When homes, businesses, and infrastructure are built within floodplains, the consequences of flooding can be devastating, highlighting the critical need for thoughtful hazard mitigation and land-use planning.

In areas removed from the Mississippi Gulf Coast (such as MEMA District 5), there are three primary types of flooding that generally occur. Communities and their residents should be able to discern between the different types of flooding and prepare accordingly.

- **Riverine Flooding**: Occurs along major rivers such as the Yazoo, Big Black, and Pearl Rivers, typically following prolonged rainfall or upstream runoff. Floods from these sources can be “flash,” or rapid, but are usually more gradual and have longer duration than flash floods.
- **Flash Flooding**: Results from intense, short-duration rainfall events, often overwhelming local drainage systems and causing rapid inundation. The unexpected onslaught and torrential nature of flash floods make this hazard particularly lethal.
- **Urban Flooding**: Affects developed areas with impervious surfaces and inadequate stormwater infrastructure, leading to localized flooding during heavy rain. Urban flooding can disrupt transportation, damage buildings, and pose health risks due to contaminated water.

A more detailed discussion of the location and extent, previous occurrences and overall vulnerability for each county and its jurisdictions to this hazard is provided in the respective county’s annex.

5.8.2. LOCATION

The major water body associated with regional flooding is the Mississippi River, which forms the western boundary of Claiborne, Issaquena and Warren Counties. However, overflow from the rivers and tributaries feed several other river basins account for flooding that occurs in the region. District 5 is in five portions of the nine primary river basins identified in Mississippi. The 100-year flood hazard areas traverse through the entire District with heavier areas located in the Western parts of the District. Both Issaquena and Sharkey Counties, located in the Northwestern part of the District, are entirely within the 100-year flood hazard area. Similarly, these two counties have the most levee protected areas located in the Northern portions of their counties. Hinds County also has a levee protected area in the Western part of the County, in the City of Jackson. There are 500-year flood hazard areas located throughout the planning area with the most prominent areas being in Claiborne and Hinds Counties. The jurisdictions of the City of Crystal Springs, the Village of Puckett and Sharkey County do not contain any areas within the 500-year flood zones. **Table 38** below lists the five river basins and which counties are in each of the identified basins.

TABLE 38: RIVER BASINS IN MEMA DISTRICT 5

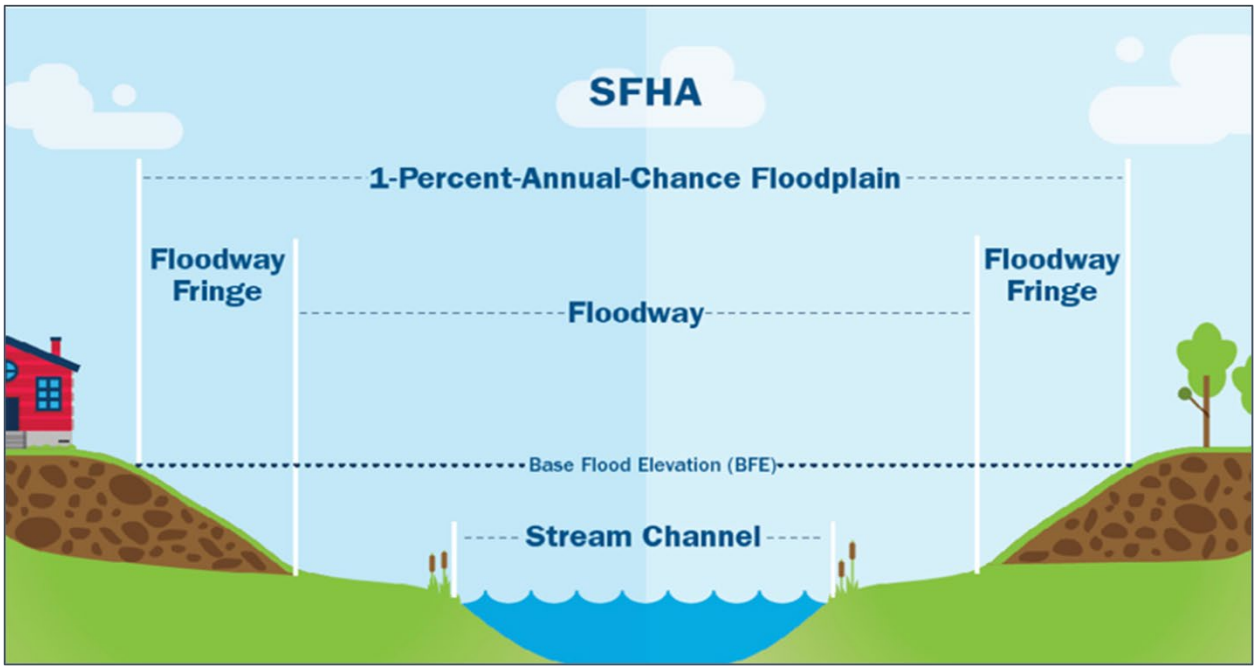
Yazoo River Basin	Big Black River Basin	Pearl River Basin	Mississippi River Basin	South Independent River Basin
Issaquena County	Hinds County	Rankin County	Claiborne County	Claiborne County
Sharkey County	Madison County	Simpson County	Issaquena County	Copiah County

5.8.3. EXTENT

According to MEMA, the State of Mississippi ranks eighth in the nation for the number of repetitive loss-structures. The state also has more than 5 million acres classified as floodplain, which is the fifth largest in the nation. The extent of flooding in District 5 includes areas designated as Zone A, AE, and other high-risk flood zones on DFIRMs, which represent locations with a 1% annual chance of flooding—areas that have a one-in-four chance of flooding during a 30-year mortgage. Flood hazard zones do not follow municipal boundaries; instead, they extend along river systems, low-lying terrain, and areas with inadequate drainage, forming continuous flood-prone corridors across multiple counties in the district. Development may be permitted in these areas only if it is elevated above the Base Flood Elevation (BFE), which is the computed height floodwaters are expected to reach during the 100-year event.

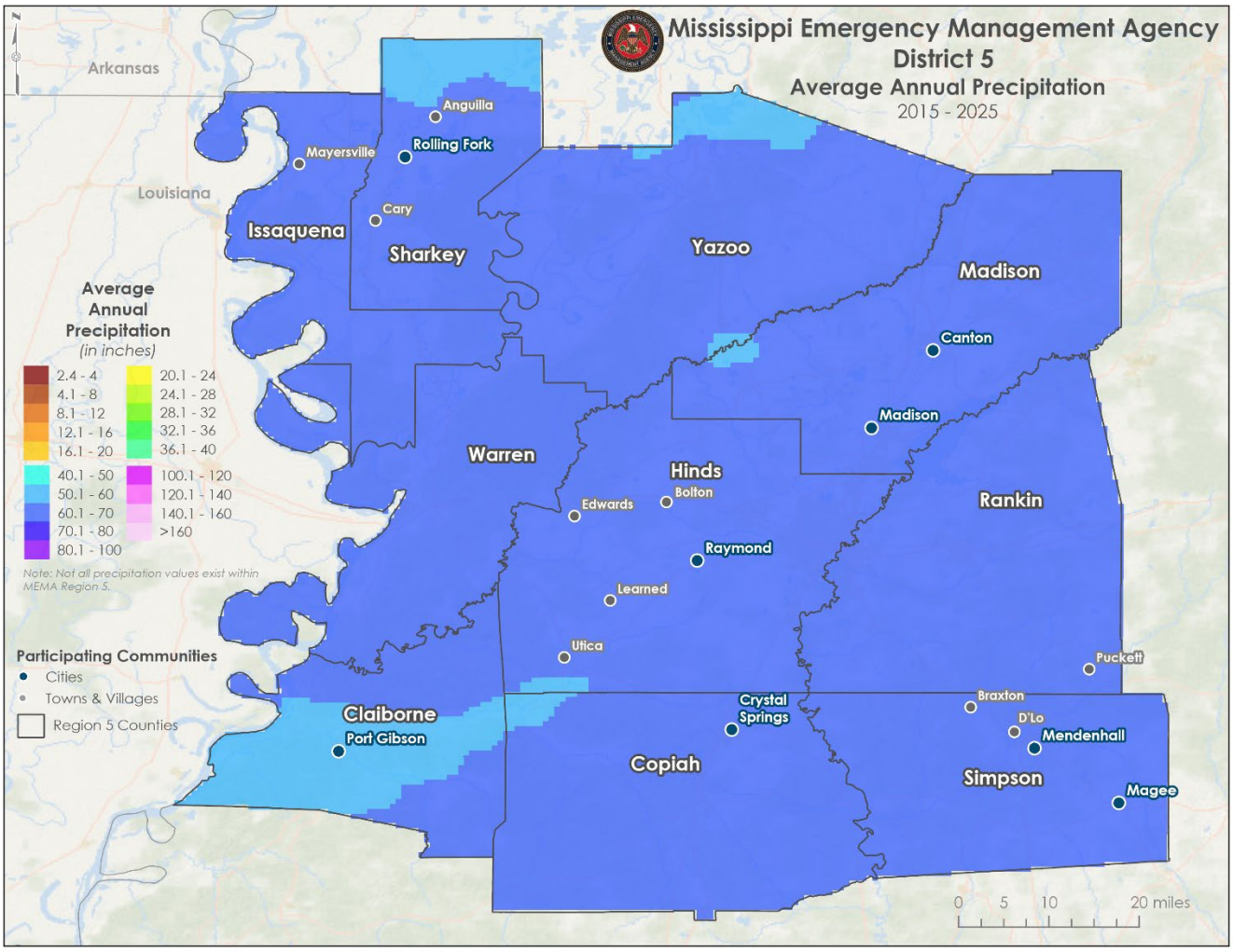
Figure 28 illustrates this relationship, showing the stream channel at the center, the regulatory floodway that conveys the majority of floodwater, and the adjoining floodway fringes that make up the rest of the 100-year floodplain. Together, these elements form the SFHA, which serves as the regulatory basis for FEMA's Flood Insurance Rate Maps and for floodplain management regulations.

FIGURE 28: COMPONENTS OF THE SPECIAL FLOOD HAZARD AREA



MEMA District 5 receives a moderate to high amount of rainfall each year, approximately 50.1 to 80 inches. **Figure 29** displays the average annual precipitation across the District. High amounts of rainfall can increase risk flooding, especially flash flooding if rain occurs under a short period of time.

FIGURE 29: MEMA DISTRICT 5 AVERAGE ANNUAL PRECIPITATION 2015-2025



Overall, for MEMA District 5, the extent of flooding includes broad, interconnected flood-hazard zones mapped through DFIRM and NFHL datasets, covering river corridors, low-lying rural areas, and developed communities with drainage limitations. These mapped flood zones, combined with real-time inundation tools, reveal that flooding in District 5 can be both geographically extensive and highly variable, with the potential to affect multiple jurisdictions simultaneously and disrupt transportation, utilities, and critical infrastructure across the district.

5.8.3.1. FEMA FLOOD MAPS

FEMA is gradually modernizing Digital Flood Insurance Rate Maps (DFIRMs) nationally. Maps are updated based on based on a community's exposure to the flood hazard. Among other uses, insurance companies consult DFIRMS to estimate a property's flood risk level, which affects the flood premium paid by property owners. **Figure 30** displays the floodplains located within MEMA District 5. Orange represents the 500-year floodplain (0.2% Annual Chance), blue represents the 100-year floodplain (1% Annual Chance), and red represents levee protected areas. The Northwestern side of MEMA District 5 contains more 100-year, 500-year floodplains, as well as levee protected areas in the same areas. Additionally, **Table 39** shows recently published information from the FEMA Map Service Center. Included for each community is the year of publication for the community's most recent maps.

Issaquena and Sharkey Counties contain the most levee protected areas in District 5. Issaquena County is protected by the Mississippi River Levee, part of a 3,700-mile system managed by the US Army Corps of Engineers and local levee boards, including the Mississippi Levee District. Sharkey County is protected by a system of levees, primarily managed by the Mississippi Levee District. Levee-protected areas are essential infrastructure that help create, expand, and safeguard residential, commercial, and agricultural lands in floodplains by keeping river flows confined within their channels. In the rare event of a levee failure, the levee protected areas would be at risk of flooding.

FIGURE 30: FLOOD HAZARD AREAS IN MEMA DISTRICT 5

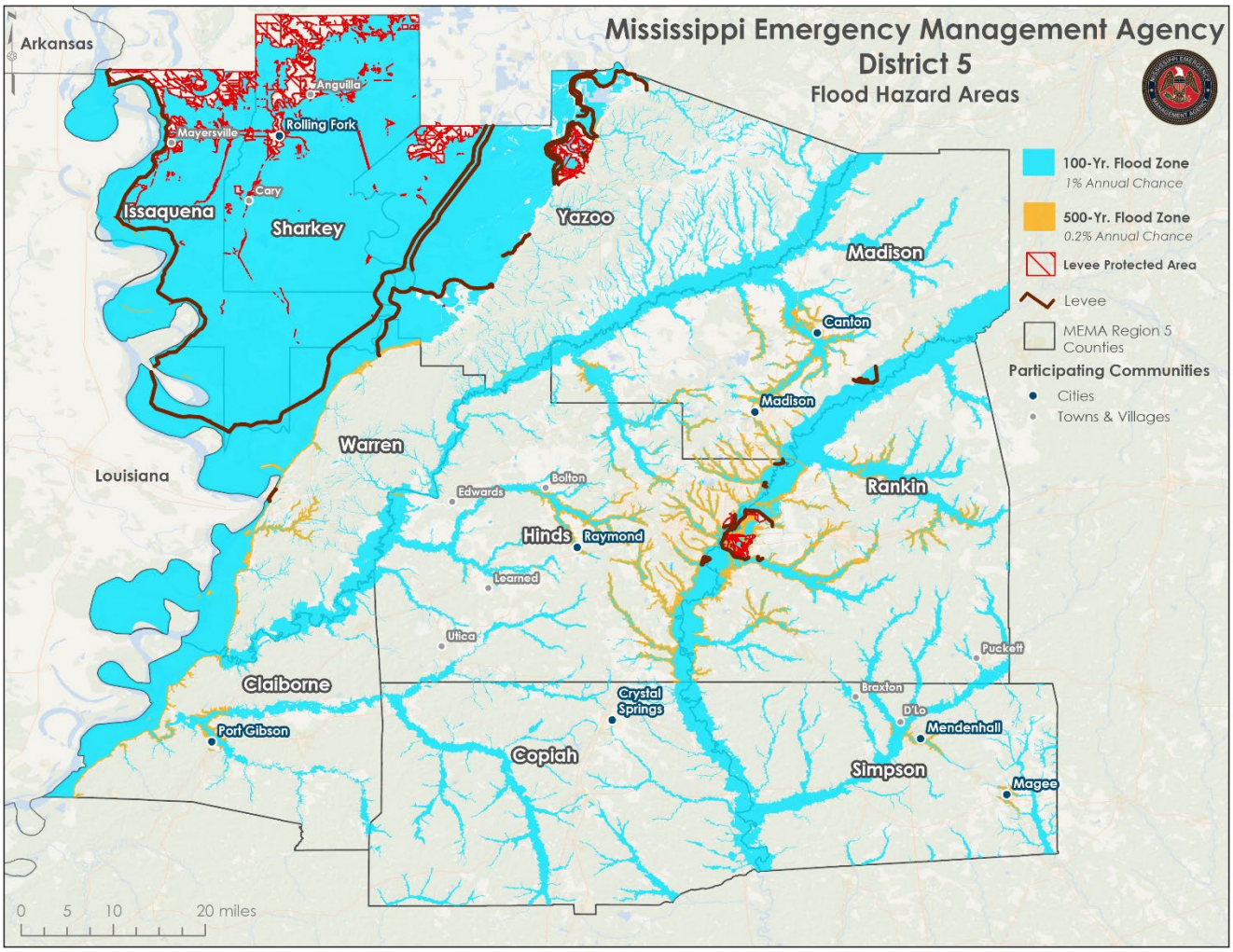


TABLE 39: MEMA DISTRICT 5 COUNTY FLOOD MAP EFFECTIVE DATE | SOURCE: FEMA MAP SERVICE CENTER

County	Map Effective Date
Claiborne County	4/19/2010
Hinds County	11/18/2009
Issaquena County	2/16/2012
Sharkey County	3/2/2012
Simpson County	9/2/2011
City of Canton	1/17/2025
City of Madison	1/17/2025
City of Crystal Springs	12/15/2008

County	Map Effective Date
Village of Puckett	6/9/2014

To further describe the extent of flooding across MEMA District 3, **Table 40** details the area of 100-year and 500-year floodplains. In total, there are 1,581,584 acres that are impacted by flooding events by either 100-year flood, 500-year flood and leveed protected areas. Issaquena County has the most flood impacted areas in acres. Extent expressed in rainfall amounts for previous occurrences were not detailed for events since 2020 and therefore are not included in the base plan for flood extent.

TABLE 40: MEMA DISTRICT 5 FLOOD IMPACTED AREA (ACRES)

FEMA Map Service Center - National Flood Hazard Layer (NFHL) *NFHL data for each of the MEMA Region 5 Counties was used to populate the table below*				
MEMA Region 5 Counties	Flood Impact Areas *(in Acres)*			Flood Impact Area Total
	100-Year Flood Zone	500-Year Flood Zone	Levee Protected Area	
Claiborne Co.	64,845.17	838.55	29,592.40	**95,276.12**
Copiah Co.	71,426.15	0.00	0.00	**71,426.15**
Hinds Co.	111,516.88	5,980.26	463.14	**117,960.28**
Issaquena Co.	258,537.40	58.27	22,215.28	**280,810.95**
Madison Co.	102,783.50	3,018.21	0.00	**105,801.71**
Rankin Co.	115,684.01	5,464.71	1,607.04	**122,755.76**
Sharkey Co.	246,607.79	0.00	0.00	**246,607.79**
Simpson Co.	58,516.19	326.17	0.00	**58,842.36**
Warren Co.	200,532.47	2,759.82	0.00	**203,292.29**
Yazoo Co.	265,754.31	75.65	12,980.83	**278,810.80**
Grand Total	**1,496,203.88**	**18,521.64**	**66,858.68**	**1,581,584.21**

Risk Variability Across Planning Area

Flood risk across MEMA District 5 is not uniform, it varies widely depending on local geography, land use, and historical flood patterns. Counties situated along major rivers or in low-lying areas, particularly in the Delta region, tend to face higher flood exposure due to frequent overbank flooding and poor drainage. These areas are often mapped within FEMA's 100-year floodplains, indicating a significant annual chance of flooding. In contrast, counties with higher elevations or improved stormwater infrastructure may experience lower flood risk, though they are still vulnerable during extreme weather events.

5.8.4. PREVIOUS OCCURRENCES

There has been a total of 229 flood events from 2015 to 2025. **Table 41** below compares historical flooding and flash flooding events between the previous planning cycle (2015-2020) and the current planning cycle (2020-2025). Based on the available NCEI data, which only provides event data at the county level, there have been fewer flooding and flash flood events in 2020-2025 than 2015-2020. Property damage between 2015-2020 for 137 tracked events was reported at over $11 million dollars compared to 2020-2025 for 92 tracked events was reported at over $12 million. This is significant because even though there were 45 fewer flooding events in the last 5 years, the amount of damage to property increased. Hinds County led all jurisdictions in the planning area with 34 events between 2015-2020 and 29 events between 2020-2025. Additionally, Simpson County is the only jurisdiction to report crop damage during this 10-year period. More detailed information for each county is in the Annexes. Flooding events are only tracked at the county level and the numbers below for the Cities of Canton, Madison, Crystal Springs and the Village of Puckett represent the statistics for Madison, Copiah and Rankin Counties.

TABLE 41: FLOODING AND FLASH FLOODING EVENTS IN MEMA DISTRICT 5 | SOURCE: NCEI

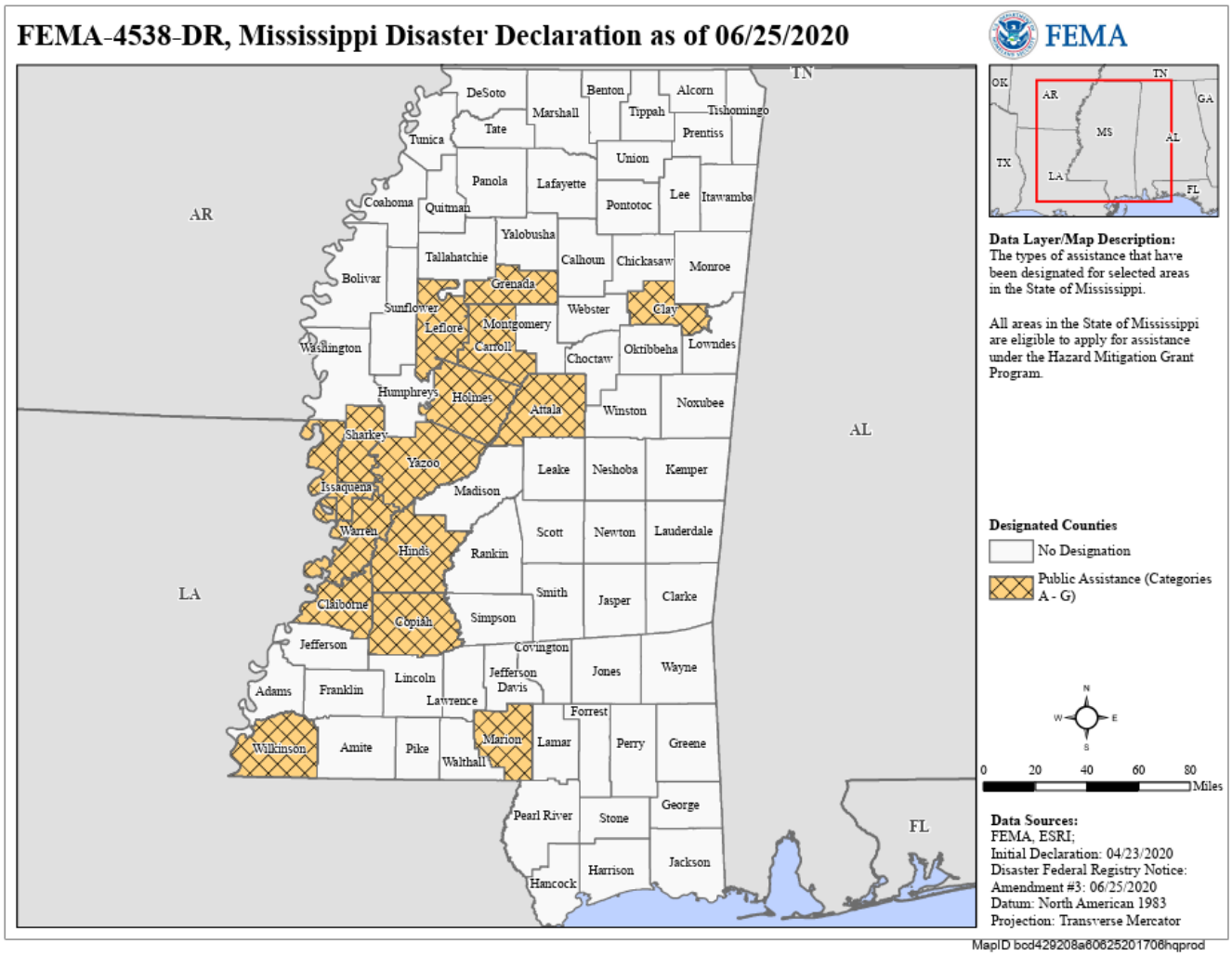
Jurisdiction	2015-2020 No of Events	2020-2025 No of Events	2015-2020 Property Damage ($)	2020-2025 Property Damage ($)	2015-2020 Crop Damage ($)	2020-2025 Crop Damage ($)
Claiborne County	4	5	$35,000	$12,000	--	--
Hinds County	34	56	$4,966,000	$4,196,000	--	--
Issaquena County	1	--	$9,000	--	--	--
Sharkey County	3	3	$33,000	$11,000	--	--
Simpson County	8	13	$114,000	$38,000	--	$15,000
City of Canton (Madison County)	22	21	$902,000	$3,354,000	--	--
City of Madison (Madison County) *	--	--	--	--	--	--
City of Crystal Springs (Copiah County)	6	12	$130,000	$410,000	--	--
Village of Puckett (Rankin County)	37	84	$4,142,000	$1,478,000	--	--
District 5 Totals	**137**	**108**	**$11,119,000**	**$12,853,000**	**--**	**$15,000**

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

5.8.4.1. FEBRUARY 10 – 18 FLOOD EVENT

The most recent event for which a Federal declaration was issued took place in early 2020. While the declaration covers flooding that occurred over an eight-day period in February, the District experienced heavy amounts of rainfall during succeeding weeks, thus exacerbating the situation that existed at the time of the declaration. **Figure 31** below shows the map of declared counties for FEMA DR-4538 Disaster declared on 4/23/2020. The map was updated on 6/25/2020 and signifies that seven out of the ten District 5 counties were included in the declaration – Claiborne, Copiah, Hinds, Issaquena, Sharkey, Warren and Yazoo.

FIGURE 31: FEMA DR-4538 DECLARATION AREAS



The U.S. Geological Survey (USGS) documented the extent of flooding along a reach of the Pearl River through the metropolitan area of Jackson, Mississippi following the flood event of February 10-26, 2020. The event was a result of heavy precipitation over a 72-hour period combined with pre-existing saturated soil conditions in the upper portions of the Pearl River basin. The February 2020 Pearl River flood was one of the most significant flood events to impact the Jackson metropolitan area in decades. Heavy rainfall of 8.2 to 8.6 inches fell across the upper Pearl River basin between February 10–13, 2020, on soils that were already highly saturated, resulting in rapid runoff and rising river stages. On February 17, the Pearl River at Jackson crested at 36.67 feet, marking the highest level since 1983 and the fourth-highest crest on record. The U.S. Geological Survey documented widespread headwater and backwater flooding across a 19-mile reach from the Ross Barnett Reservoir to Byram, identifying 72 high-water marks and extensive inundation affecting multiple neighborhoods and tributaries.

5.8.5. PROBABILITY OF FUTURE OCCURRENCES

Mississippi MEMA District 5, which includes several central and Delta counties, faces a considerable risk of future flooding, especially in areas near rivers, low-lying terrain, and historically flood-prone zones. The probability of flood events occurring in the future is Extremely Likely based on previous occurrences, alone. However, Mitigation Council members also considered their own experiences with flooding in their communities when rating the probability of flooding. The overall probability of flooding

across District 5, which is determined by averaging the scores of all participating jurisdictions, is **likely.** Geography and other factors led Mitigation Council members to assess the probability of flooding in District 5 communities as having significant differences—some communities considered the probability unlikely, while others considered the probability to be extremely likely. Full hazard ratings for each participating jurisdiction are shown in **Table 24**. Updated floodplain maps and FEMA's Risk MAP data show that many parts of the district fall within the 100-year floodplain, meaning they have a 1% chance of flooding in any given year.

5.8.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

Flooding in MEMA District 5 results in widespread impacts, including damage to homes, businesses, and critical facilities, often leading to costly repairs and displacement of residents—consistent with statewide concerns over repetitive flood loss and property vulnerability. These events also disrupt key transportation routes and strain aging infrastructure, as inundated roads, bridges, and drainage systems hinder mobility and emergency response. Economic repercussions follow, with business interruptions, infrastructure repair costs, and reduced local revenue reflecting patterns identified through Mississippi's flood-mapping and mitigation initiatives. Frequent flooding further burdens emergency management resources, emphasizing the importance of ongoing updates to District 5's hazard mitigation planning efforts.

To address these risks, local governments in District 5 are working with MEMA and FEMA to revise hazard mitigation plans and adopt modern floodplain management strategies. These efforts include improving drainage systems, restricting development in high-risk areas, and ensuring communities remain eligible for the National Flood Insurance Program. As climate change increases the intensity and unpredictability of rainfall, the likelihood of flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience. Based on the extent, vulnerability, and probability, Flooding poses a **High** risk to District 5. However, the risk varies on a local level, and specific hazard ratings for each community can be found in **Table 24.**

Mississippi MEMA District 5 exhibits varying levels of flood vulnerability across its counties, influenced by topography, proximity to water bodies, infrastructure conditions, and historical flood events. The following descriptions of low, moderate, and high vulnerability areas within the District are listed below.

- **High Vulnerability Areas**: Counties such as Issaquena, Sharkey, Warren and Yazoo are in the Delta region, characterized by flat terrain and proximity to major rivers. These areas have a history of repetitive flood losses and are frequently within FEMA-designated 100-year floodplains. Vulnerability is heightened by aging infrastructure, limited drainage capacity, and socioeconomic challenges.
- **Moderate Vulnerability Areas**: Counties including Copiah, Claiborne and Hinds Counties experience moderate flood risk due to mixed terrain and partial exposure to flood-prone zones. While not as frequently impacted as Delta counties, these areas still face risks from localized flooding and inadequate stormwater systems.
- **Lower Vulnerability Areas**: Madison, Rankin and Simpson Counties generally have higher elevations, resulting in lower overall flood risk. However, isolated flood events may still occur, particularly in areas with poor soil absorption or outdated infrastructure.

5.8.6.1. PEOPLE

Flooding presents a serious risk to residents across District 5, particularly in low-lying areas with a history of flooding events. Communities in counties like Issaquena and Sharkey are especially vulnerable due to their geography and limited infrastructure. Populations most at risk include older adults, low-income families, and individuals without access to flood insurance, lack of accessible emergency alert and notifications, or reliable transportation.

The impacts of flooding on people can be severe, ranging from physical danger and property damage to long-term disruptions in housing, healthcare, and employment. Flooding can also lead to emotional stress and financial instability. To reduce these risks, MEMA and local governments are investing in mitigation strategies such as elevating homes, improving drainage systems, and expanding public education on flood preparedness.

Both Issaquena and Sharkey Counties, located in the Northwestern part of the District, are entirely within the 100-year flood hazard area, meaning those populations in these areas are more prone to flooding events. There are 500-year flood hazard areas located throughout the planning area with the most prominent areas being in Claiborne and Hinds Counties. The jurisdictions of the City of Crystal Springs, the Village of Puckett and Sharkey County do not contain any areas within the 500-year flood zones. More detailed information for each county is in the Annexes.

HAZUS Flood Analysis

FEMA's HAZUS program provides software, data, methods, and guidance for estimating risk from natural hazards. HAZUS can estimate building damage, economic losses, displaced households, casualties, debris generation and more resulting from a natural hazard event and can be used in all phases of emergency management. HAZUS can complete analysis for a few hazards including floods, earthquakes, hurricanes, and tsunamis. Since HAZUS analyses can only be completed for a few hazards, the Plan will only include a HAZUS analysis for flooding because it poses a high risk the planning area.

The displaced population presented in **Table 42** is based on the inundation area of a 100-year flood scenario run as part of the Mississippi SHMP Update, with data broken down by MEMA District. Individuals and households will be displaced from their homes even when the home has suffered little or no damage either because they were evacuated (i.e., a warning was issued) or there was no physical access to the property because of flooded roadways. Displaced people using shelters are likely to be individuals with lower incomes and those who do not have family and friends living nearby with whom they could temporarily reside. Age plays a secondary role in shelter use in that there are some individuals who will go to a public shelter even if they have the financial means to go elsewhere. These will usually be younger, less established families and elderly families (HAZUS-MR4 User's Manual). HAZUS-MR4 does not model flood casualties given that flood-related deaths and injuries typically do not have the same significant impact on the medical infrastructure as those associated with other natural hazards like earthquakes.

TABLE 42: STATEWIDE FLOODING IMPACTS ON POPULATIONS | SOURCE: 2023 MEMA SHMP

District	Number of Households	Number of People needing shelter
District 1	3,193	379
District 2	3,615	305
District 5	2,383	390

District	Number of Households	Number of People needing shelter
District 4	3,289	555
District 5	5,345	1,219
District 6	2,255	123
District 7	1,413	84
District 8	2,506	178
District 9	4,281	465

5.8.6.2. STRUCTURES AND SYSTEMS

Flooding in District 5 can cause widespread damage to buildings, roads, utilities, and public infrastructure. Older homes and facilities in flood-prone areas are especially vulnerable to water intrusion, foundation damage, and mold. Roads and bridges may become impassable, while drainage systems often struggle to handle heavy rainfall, leading to backups and erosion. Flooding has significantly affected residential areas in the District in the past ten years. Between 2015-2020, flooding events have caused $11,119,000 in property damage compared to 2020-2025. During that timeframe, the District reported $12,853,000 in property damage, thus indicating that worsening flood conditions are likely to have an impact across the District in the future.

Essential services like water, sewer, and electricity are also at risk. Floodwater can contaminate drinking water, disrupt power supply, and damage wastewater systems, creating health and safety hazards. To reduce these impacts, mitigation efforts focus on elevating structures, reinforcing critical infrastructure, and upgrading stormwater systems to improve resilience.

Issaquena and Sharkey Counties, located in the northwestern portion of the District, lie entirely within the 100-year flood hazard area, placing local structures and infrastructure at elevated flood risk. These counties also contain the largest concentrations of levee-protected areas, primarily in their northern regions. Hinds County includes an additional levee-protected area along its western side within the City of Jackson. Across the broader planning area, 500-year flood hazard zones are present, with the most substantial areas occurring in Claiborne and Hinds Counties. More detailed information for each county is in the Annexes.

5.8.6.3. NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The U.S. Congress enacted the National Flood Insurance Act of 1968 to create the National Flood Insurance Program (NFIP). The program makes flood insurance available to homeowners whose communities participate in NFIP. It provides an insurance alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods. NFIP reduces the impact of flooding on private and public structures by providing flood insurance coverage to property owners, renters, and businesses, and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on existing, new, and improved structures

For communities that live near waterways (rivers, lakes, streams, etc.) the National Flood Insurance Program (NFIP) provides flood maps and flood insurance to reduce the risk from floods. Communities participating in the National Flood Insurance Program (NFIP), more specifically, the Community Rating System, are taking steps to minimize growth and development in the Special Hazard Flood Area

(SFHA), also known as the Flood Zone or 1% annual flooding. Communities that participate in the floodplain must adhere to the regulation of development in the floodplain which means minimizing or prohibiting new development in those areas.

However, structures located outside the Flood Zone are equally at risk, as NFIP statistics reveal, with 20-25% of all NFIP claims recorded by FEMA are from the owners of properties not located in the SFHA.[2] It is important for jurisdictions to thoroughly review proposals for new development to ensure a safe community in two respects. First, it would be unwise to erect new homes or businesses in areas that might flood, thus putting people and property in harm's way. Second, new construction alters the shape of the land and the direction in which water naturally flows. Many property owner reports flooding that only recently started to occur in their neighborhood after nearby development took place.

Community officials are responsible for making substantial improvement/substantial damage determinations before structures are repaired or improved as part of the local floodplain management regulations. Development in SFHAs is regulated by issuing permits and enforcing local floodplain requirements, including substantial damage, for the repairs of damaged buildings.

After a disaster, the floodplain manager assists and supports NFIP communities, including technical assistance and training on FEMA Substantial Damage Administrative Procedures (SDAP) workshops which provide training for local officials to effectively manage, document, and determine if buildings in floodplains are substantially damaged following a disaster. As well as FEMA's Disaster Recovery Reform Act (DRRA) Section 1206 which authorizes reimbursement through the Public Assistance (PA) program for costs incurred by local governments to enforce building codes and floodplain management ordinances after a major disaster. To implement and enforce substantial damage requirements, FEMA developed the tool to assist state and local officials in estimating substantial damage for residential and non-residential structures per the National Flood Insurance Program requirements adopted by the communities.

Damage Estimates are a part of the National Flood Insurance Program (NFIP). If a community participates in the NFIP, part of the responsibility of the local participating community is to perform damage estimates. These estimates are performed using a FEMA Substantial Damage Estimate software program. This program is used by the Mississippi Emergency Management Agency's (MEMA) Office of Mitigation Floodplain Management (FPM) Bureau to assist local communities in determining damage estimates as it relates to the NFIP. The FPM Bureau is tasked with assisting local communities with the training and deployment of the SDE program. However, it is the local community's responsibility to perform and document the damage estimates for compliance with the NFIP.

Substantial damage is defined as damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damage condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Scope of Work for SDEs assistance by MEMA's FPM Bureau

MEMA's FPM Bureau will assist any community with training and field work to ensure that the damage estimates by the community are compliant with the NFIP. The community must request assistance in writing to the FPM Bureau. After the request is made to the FPM Bureau, the information will be given to the Office of Mitigation Director. The community should be able to estimate the number of structures in the floodplain receiving damage from the event and pass it along to the FPM Bureau. At that point, the FPM Bureau and Office of Mitigation Director will make decisions on deployment. Any community requesting assistance from the FPM Bureau should be willing to have local individuals comprise the SDE teams and run the FEMA SDE program. If the damage if so widespread that the number of

[2] https://www.fema.gov/faq/low-risk-flood-zones#:~:text=Answer,beginning%20at%20$119%20a%20year.

requests or the number of structures supersede the capacity of the FPM Bureau, then a meeting with the Office of Mitigation Director and the State NFIP Coordinator to determine the course of action.

Field Deployment Procedures:

- Review of Safety Requirements.
- Review of the site.
- Review of SDE program.
- Review of data collection and evaluation.
- Review of data entry.
- Review of the data not to be collected on the first survey.
- Review of the program with the SDE teams.
- Review Crisis Track
- Data collection is not about speed. About quality.
- Calibration of the SDE teams {Minimum of three structures).
- Point out differences in residential, non-residential and manufactured homes.
- Choose Team leaders and points of contact.
- Data from all inspection teams from the first day should be reviewed. (Point out any issues).
- Data entry.

Equipment for SDE Teams:

- Flood maps for the area (Digital applications on smartphones are available).
- Teams to be comprised ideally of three-person teams (Minimum is two-person teams).
- Teams should have a local person on each team deployed to the field.
- Maps showing the area to be inspected (maps with addresses, Subdivision lot plats, and/or tax parcels).
- Digital Cameras
- GPS units
- Drone(s)
- Dry erase boards with markers and erasers.
- Safety Equipment (le. Boots, bug spray, snake protection, sunscreen, etc.).
- Field inspection forms.
- Each team must have a way of communicating with other teams and base of operations.
- Pens/pencils.
- Details list of areas to be covered for each day.
- If using tablets, ensure that the equipment is charged and ready to function.
- Paper SDE forms must pack up the tablets.

SDE Data Entry:

Prior to field deploying the MEMA FPM Lead should review Crisis Track and print a report for all structures that have received damage in the Special Flood Hazard Area. The structures that are listed in Crisis Track should be reviewed and have an SDE completed on them. Data entry should be performed by a local person after training on the program. It is best to have a one-point data entry source. Data entry will occur daily after the teams return from the field. FPM bureau person will stay with the data entry along with team leaders as the data is entered in the program. After each team filed inspection forms are entered in the program, the team leader can be dismissed. The FPM Bureau person will stay until all entries have been made for the day. The FPM bureau person will get a printed list of the day's inspections with percentage damage to turn into the FPM Bureau team leader. The FPM team leader will compile the number of inspections and the percentage damage into a report for the Office of Mitigation Director daily. All inspections to be determined between 50 and 60 percent damaged should be reevaluated by different filed teams. The local official should have a computer able to run the SDE software.

If using the tablet to run the software, FPM will export from tablet and import to local FPM computer of choice (may even print the reports for the local FPM). MEMA must retain a copy or the SDE inspections for follow-up of substantial damage.

Field inspection Teams:

SDE Field Inspection Teams should consist of three team members but no less than two members (two members responsible for measuring and one to record the data. All members should make the percent damage assessments.). All data collected must be clearly marked and written on filed inspection forms. Photos of structures should be clear with at least three photos at each location (addresses board, overall structure, water line if flooding, or damage to the structure. The drone should be utilized to assist with taking photos of the structure and fully assessing the structure for damage. At every inspection, make sure that you are clearly recognizable and give notice to property owner if applicable by knocking on doors and waiting for a response before proceeding. It is the responsibility of the filed team leader to maintain forms, equipment, and photos, etc. In areas that are still inaccessible, drone(s) should be used to view structures that are damaged and record the water lines.

Follow-up:

FPM Specialists will have monthly follow-ups with local FPMs that have substantially damaged structures to ensure compliance within their area.

Repetitive Damage to NFIP-Insured Structures

The NFIP helps mitigate the effects of flooding on existing, new, and improved structures. NFIP also tracks structural flood losses, including those considered Repetitive Losses (RL) and Severe Repetitive Losses (SRL). According to records provided by MEMA, there are 70 RL properties and no SRL properties across District 5. **Table 43** lists the county, community, and property type for all known RL properties within District 5.

Table 43. Repetitive Loss Properties in District 5

Type	County	Community	Property Type
Repetitive Loss	Claiborne County	Unincorporated area	Non-Business Non Residential
Repetitive Loss	Claiborne County	Unincorporated area	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Claiborne County	Unincorporated area	Single Family
Repetitive Loss	Claiborne County	Unincorporated area	Single Family
Repetitive Loss	Claiborne County	Unincorporated area	Single Family
Repetitive Loss	Claiborne County	Unincorporated area	Single Family

Repetitive Loss	Claiborne County	Unincorporated area	Single Family
Repetitive Loss	Claiborne County	Unincorporated area	Single Family
Repetitive Loss	Claiborne County	Unincorporated area	Single Family
Repetitive Loss	Claiborne County	Unincorporated area	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Copiah County	Unincorporated area	Single Family
Repetitive Loss	Copiah County	Hazlehurst	Single Family
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Hinds County	Jackson	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Hinds County	Jackson	Single Family
Repetitive Loss	Issaquena County	Unincorporated area	Single Family
Repetitive Loss	Issaquena County	Unincorporated area	Single Family
Repetitive Loss	Issaquena County	Unincorporated area	Single Family
Repetitive Loss	Issaquena County	Unincorporated area	Single Family
Repetitive Loss	Issaquena County	Unincorporated area	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Issaquena County	Unincorporated area	Single Family
Repetitive Loss	Issaquena County	Unincorporated area	Single Family
Repetitive Loss	Madison County	Canton	Single Family
Repetitive Loss	Rankin County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Rolling Fork	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Non-Business Non Residential
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Other Residential
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Non-Business Non Residential
Repetitive Loss	Sharkey County	Unincorporated area	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Sharkey County	Unincorporated area	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Single Family

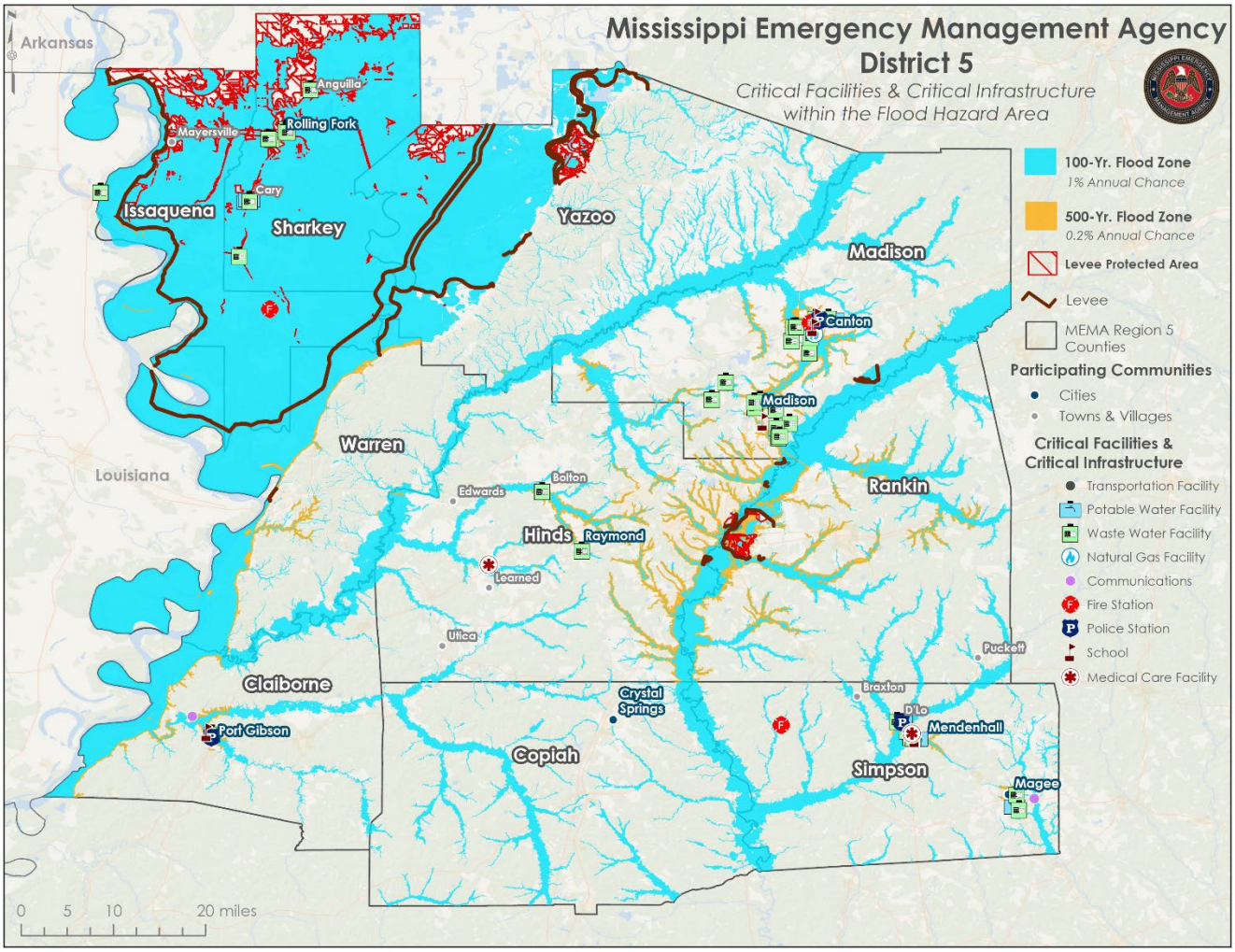
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Sharkey County	Unincorporated area	Single Family
Repetitive Loss	Simpson County	Mendenhall	Single Family
Repetitive Loss	Warren County	Vicksburg	Non-Residential Commercial (Non-Small Business)
Repetitive Loss	Warren County	Vicksburg	Single Family
Repetitive Loss	Warren County	Vicksburg	Single Family
Repetitive Loss	Warren County	Vicksburg	Single Family
Repetitive Loss	Warren County	Unincorporated area	Single Family
Repetitive Loss	Warren County	Unincorporated area	Single Family
Repetitive Loss	Warren County	Unincorporated area	Non-Business Non Residential
Repetitive Loss	Warren County	Unincorporated area	Single Family
Repetitive Loss	Warren County	Unincorporated area	Single Family
Repetitive Loss	Yazoo County	Unincorporated area	Single Family

The NFIP defines a repetitive loss property as an insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling ten-year period. At least two of the claims must be more than ten days apart. A repetitive loss property may or may not be currently insured by the NFIP. NFIP also defines an SRL property as structures accommodating one to four family residences whose owners have filed four or more claims of more than $5,000, or at least two claims cumulatively exceed the building's value.

5.8.6.4. CRITICAL FACILITIES

Flooding poses a significant threat to critical facilities throughout MEMA District 5, including emergency services, healthcare centers, water treatment plants, and public safety buildings. Facilities located in or near flood-prone areas are at risk of structural damage, equipment failure, and service disruption during flood events. Historical flooding events across the region show that significant disruptions can occur even during relatively short-duration rainfall or localized flash flooding, while prolonged or high-severity flood events greatly intensify these challenges. Consequently, all critical facilities within the District face varying levels of exposure to operational impacts from flooding. These impacts can include service interruptions, constraints on facility access, increased demand for resources, and added pressure on emergency response and recovery operations. For critical facilities in the District, there are 50 facilities located in the 100-year flood zone, four are in the 500-year flood zone and 27 located in levee protected areas. **Figure 32** displays the critical facilities and infrastructure in the District's flood hazard areas.

FIGURE 32: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE FLOOD HAZARD AREAS



To reduce vulnerability, mitigation strategies should prioritize elevating or floodproofing essential buildings, installation of backup power systems, and improving site drainage. Protecting critical infrastructure ensures continuity of operations during disasters and strengthens community resilience. More detailed information for each county is in the Annexes.

Community Lifelines

Flooding in MEMA District 5 can severely disrupt all eight community lifelines, which are essential to public safety, health, and daily functioning. Mitigation strategies should focus on protecting critical infrastructure, improving drainage, and ensuring continuity of operations across all lifelines to enhance community resilience. **Table 44** Describes the potential vulnerabilities of lifelines from floods within MEMA District 5.

TABLE 44: POTENTIAL VULNERABILITIES OF LIFELINES FROM FLOODS

Lifeline	FEMA Icon	Description of Impact
Communications		Flooding can damage telecom infrastructure, interrupting emergency alerts and coordination among agencies.
Energy (Power & Fuel)		Electrical systems and fuel supplies are vulnerable to water damage, leading to outages and service disruptions.
Food, Hydration, Shelter		Floodwater may contaminate drinking water sources, damage food supply chains, and displace residents, increasing demand for temporary shelter.
Hazardous Materials		Flooding can lead to spills or leaks from industrial sites, wastewater systems, and storage facilities, posing environmental and health risks.
Health & Medical		Hospitals and clinics may experience structural damage, power outages, and limited access, reducing their ability to provide care during emergencies.
Safety & Security		Flooded emergency response facilities and blocked roadways can delay law enforcement, fire, and rescue operations.
Transportation		Roads, bridges, and transit systems may be submerged or eroded, hindering evacuation, supply delivery, and access to services.

Lifeline	FEMA Icon	Description of Impact
Water & Wastewater Systems		Flooding can overwhelm water treatment plants and sewer systems, leading to contamination, service disruptions, and public health hazards.

5.8.6.5. NATURAL, HISTORIC AND CULTURAL RESOURCES

As mentioned above, Issaquena and Sharkey Counties are in high vulnerability flooding areas because they are in the Delta Region, while moderate vulnerability areas including Copiah, Claiborne and Hinds Counties experience moderate flood risk. Any natural, historical or cultural resources located in these areas have an increased risk of flood damage.

Flooding can cause significant damage to District 5's natural, historic, and cultural assets. Natural areas such as wetlands, forests, and waterways may experience erosion, pollution, and habitat loss, reducing their ecological value and ability to buffer future flood events. These changes can also affect recreational and conservation areas.

Historic buildings and cultural landmarks are at risk of structural damage, deterioration, and loss of historically significant materials. Flooding may also disrupt cultural traditions tied to specific locations or community spaces. Mitigation efforts should focus on identifying vulnerable sites, implementing protective measures like elevation or floodproofing, and preserving documentation of at-risk resources.

5.8.7. POTENTIAL IMPACTS

Flooding can devastate communities by causing significant damage to the economy, people, and properties. Within MEMA District 5 there are many areas that are within the 100- and 500-year floodplains. Floods can pose a risk to the population by creating conditions for people to down with high flood waters and injuries from debris. Residents can be displaced and without housing. Flood waters can be contaminated with sewage and other exposures which can spread infectious diseases. Floods can destroy homes, businesses, closed off roads, bridges, and disrupt power grids, water treatment plans, and hospitals. Additionally, flooding can destroy crops, injure and cause fatalities in livestock and disrupt food and the transportation of other goods in and out of the community.

5.8.8. IMPACTS OF CHANGES IN DEVELOPMENT

In general, increased development increases impervious surfaces which can decrease the absorption of water from the ground soaking. Increased impervious surface which can overwhelm drainage systems leading to more frequent flooding including flash flooding events. Land use can influence peak discharge of floods by modifying how rainfall is stored and running off the land surface into streams. When storage capacity is filled, there is more rapid runoff, and urban streams rise more quickly during storms which can increase flood risk.

Activities to reduce flood risk including participating in the National Flood Insurance Program (NFIP). All counties within MEMA District 5 have 100- and/or 500-year floodplains. Communities that participate in the NFIP are required to adopt regulations to minimize flood risk to new developments. Preventing new developments in floodplains can reduce flood risk and damage to structures which can save on potential losses. Additionally, building on existing floodplain can alter the ecosystem and could worsen flood impacts long-term.

5.9. SEVERE STORMS

5.9.1. DESCRIPTION

Severe storms are a common occurrence in the Delta Region and can develop at nearly any time, often triggered by cold fronts or atmospheric heating during the day. These storms may produce hazardous conditions including tornadoes, strong winds, lightning, hail, and heavy rainfall. This section emphasizes the risks associated with high winds, hail, and lightning resulting from thunderstorms.

According to the National Weather Service (NWS), a thunderstorm is defined as “a local storm produced by a cumulonimbus cloud and accompanied by lightning and thunder.” While thunderstorms themselves may not always cause direct harm, their associated elements—such as high winds, lightning, tornadoes, flash flooding, and hail—can lead to significant damage and loss.

The NWS classifies a thunderstorm as “severe” when it generates a tornado, wind speeds of at least 58 mph (50 knots), and/or hail measuring ¾ inch or more in diameter. Severe thunderstorms can cause structural damage, particularly due to high winds. High winds refer to sustained or gusting winds strong enough to pose a threat to crops, vegetation, buildings, infrastructure, and transportation systems. These winds are commonly associated with frontal weather systems and often occur alongside other severe weather phenomena like hail and lightning. Damage from high winds can result from airborne debris or from pressure exerted on vulnerable parts of structures, such as doors, windows, and roofs. In urban environments, wind speeds may intensify between closely spaced buildings due to the Venturi effect, increasing the potential for localized damage.

5.9.2. LOCATION

Severe storms pose a widespread hazard across the entire District 5 region, with no specific area immune to their impacts. The atmospheric conditions common in the southern United States contribute to the frequent development of these storms. Due to their unpredictable nature, it is difficult to determine exactly where they will strike or how severe their effects will be. Thunderstorms may bring high winds, hail, and lightning, all of which present risks to life and property. As such, all communities within the planning area are considered vulnerable to these storm-related hazards.

5.9.3. EXTENT

Severe storms in Mississippi MEMA District 5 are both frequent and widespread, with impacts that span across multiple counties in the Delta Region. Historically, Mississippi has experienced 50-billion-dollar severe storm events between 1980 and 2024, with nearly half of those occurring in the last five years alone. These events include lightning, thunderstorms, hailstorms and high wind incidents, which have caused extensive damage to homes, businesses, farms, and infrastructure. District 5 counties such as Hinds and Rankin (Village of Puckett) have repeatedly been affected, with over $35 million reported property damages since the last planning cycle.

The extent of these storms is not only measured by their frequency but also by their growing intensity. Climate trends suggest that severe weather events are becoming more powerful and less predictable, increasing the risk to communities across the District. The Mississippi State Hazard Mitigation Plan highlights that the Delta’s flat terrain, aging infrastructure, and rural vulnerabilities amplify the impact of these storms. As a result, the entire district faces a high level of exposure, requiring ongoing investment in mitigation, preparedness, and resilient development practices.

Figure 33 below shows how the National Oceanic and Atmospheric Administration (NOAA) and the National Weather Service (NWS) define and compare the most typical sizes of hail during a severe storm event.

FIGURE 33: HAIL SIZE CHART | SOURCE: NOAA AND NWS

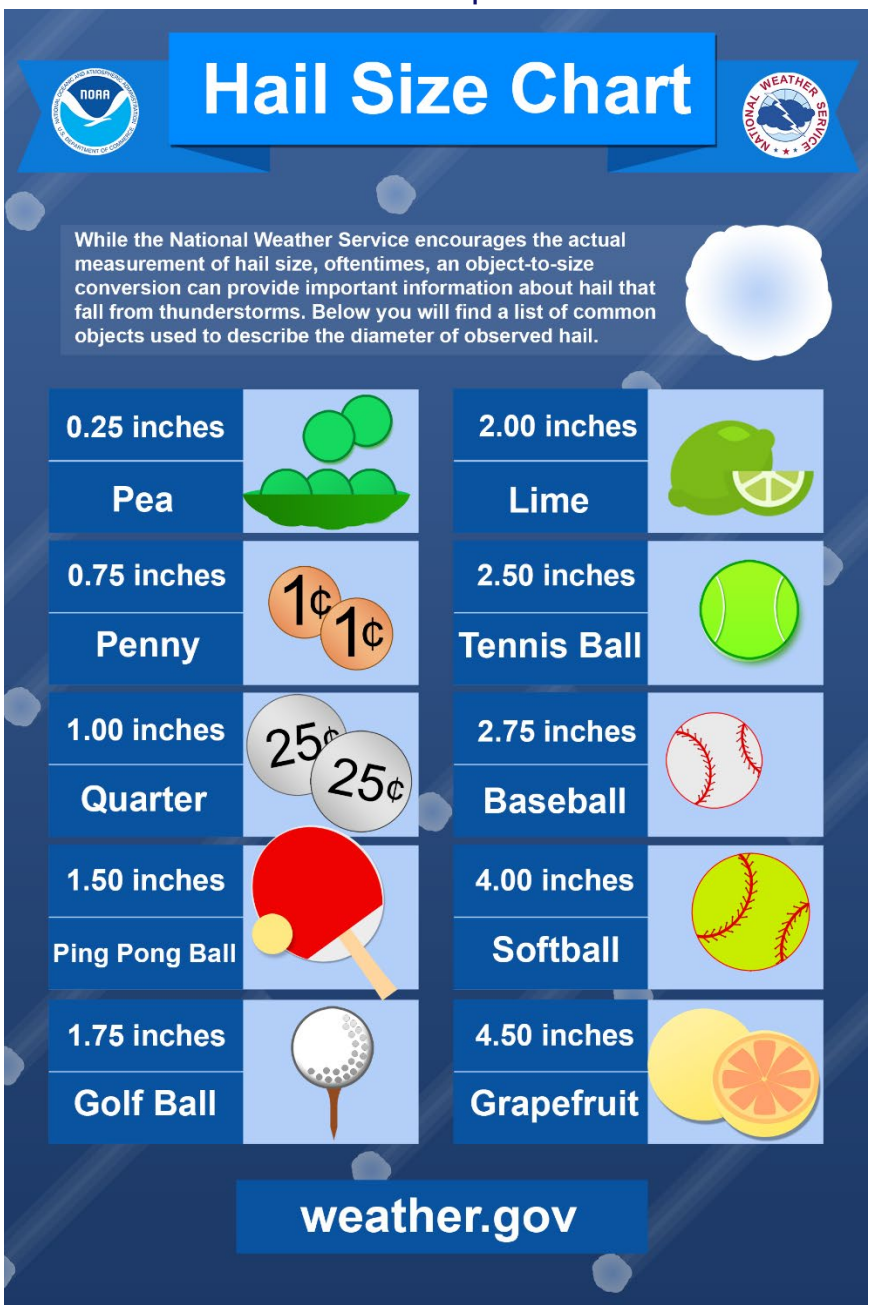


Table 45 below shows one of the first scales used to estimate wind speeds and their effects. The Beaufort scale is still used today to estimate wind strengths.

TABLE 45: BEAUFORT WIND CHART | SOURCE: NOAA AND NWS

Beaufort Number	Miles Per Hour (mph)	Terminology	Description
0	0 mph	Calm	Calm. Smoke rises vertically
1	1-3 mph	Light air	Wind motion visible in smoke

Beaufort Number	Miles Per Hour (mph)	Terminology	Description
2	4-7 mph	Light breeze	Wind is felt on exposed skin. Leaves rustle
3	8-12 mph	Gentle breeze	Leaves and smaller twigs in constant motion
4	13-18 mph	Moderate breeze	Dust and loose paper are raised. Small branches begin to move
5	19-24 mph	Fresh breeze	Smaller trees sway
6	25-31 mph	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult
7	32-38 mph	Near gale	Whole trees in motion. Some difficulty when walking into the wind
8	39-46 mph	Gale	Twigs are broken from trees. Cars veer on road
9	47-54 mph	Severe gale	Light structure damage
10	55-63 mph	Storm	Trees uprooted. Considerable structural damage
11	64-73 mph	Violent storm	Widespread structural damage
12	74-95 mph	Hurricane	Considerable and widespread damage to structures

5.9.4. PREVIOUS OCCURRENCES

Severe storms are a region-wide hazard in the Delta and are not confined to specific locations. All areas within the District 5 planning area are vulnerable due to the atmospheric conditions common in the southern United States, which frequently give rise to thunderstorms. These storms are unpredictable in both location and intensity, and often bring high winds, hail, and lightning.

Table 46 details the number of severe storms and other information from each event within the MEMA District 5 counties from 2020 to 2025. Hinds County had the highest number of thunderstorms (72) and the highest number of high wind events (8), while the Village of Puckett (Rankin County) had the highest number of hail events (6) and hail (21). Over the past 5 years, these events have caused over 30 million dollars in damage. Severe storm events are only tracked at the county level and the numbers below for the Cities of Canton, Madison, Crystal Springs and the Village of Puckett represent the statistics for Madison, Copiah and Rankin Counties.

TABLE 46: SEVERE STORMS IN MEMA DISTRICT 5 2020-2025 | SOURCE: NCEI

County	No. Events	Deaths	Injury	Property Damage	Crop Damage
Thunderstorms					
Claiborne County	26	--	--	$745,000	--
Hinds County	72	--	1	$3,288,000	--

County	No. Events	Deaths	Injury	Property Damage	Crop Damage
Issaquena County	12	--	--	$60,000	--
Sharkey County	18	--	--	$203,000	--
Simpson County	34	1	--	$1,145,000	--
City of Canton (Madison County)	49	--	1	$3,216,000	--
City of Madison (Madison County) *	--	--	--	--	--
City of Crystal Springs (Copiah County)	45	--	--	$1,971,000	$30,000
Village of Puckett (Rankin County)	62	1	2	$2,727,000	--
High Wind					
Claiborne County	2	--	--	$15,000	--
Hinds County	8	--	--	$86,000	--
Issaquena County	--	--	--	--	--
Sharkey County	1	--	--	$7,000	--
Simpson County	2	--	--	$15,000	--
City of Canton (Madison County)	3	1	--	$12,000	--
City of Madison (Madison County) *	--	--	--	--	--
City of Crystal Springs (Copiah County)	4	--	--	$14,000	--
Village of Puckett	5	--	--	$38,000	$1,000

County	No. Events	Deaths	Injury	Property Damage	Crop Damage
(Rankin County)					
Lightning					
Claiborne County	--	--	--	--	--
Hinds County	3	--	--	$222,000	--
Issaquena County	--	--	--	--	--
Sharkey County	--	--	--	--	--
Simpson County	--	--	--	--	--
City of Canton (Madison County)	3	--	--	$216,000	--
City of Madison (Madison County) *	--	--	--	--	--
City of Crystal Springs (Copiah County)	1	--	--	$10,000	--
Village of Puckett (Rankin County)	6	1	--	$415,000	--
Hail					
Claiborne County	2	--	--	$550,000	--
Hinds County	16	--	--	$17,950,000	--
Issaquena County	2	--	--	$55,000	--
Sharkey County	2	--	--	$20,000	--
Simpson County	10	--	--	$175,000	--
City of Canton (Madison County)	12	--	--	$1,590,000	--
City of Madison	--	--	--	--	--

County	No. Events	Deaths	Injury	Property Damage	Crop Damage
(Madison County) *					
City of Crystal Springs (Copiah County)	16	--	--	$3,621,000	$1,000
Village of Puckett (Rankin County)	21	--	--	$9,614,000	$5,000

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

5.9.4.1. HISTORIC THUNDERSTORM EVENTS

March 14-15, 2025, Storm Outbreak

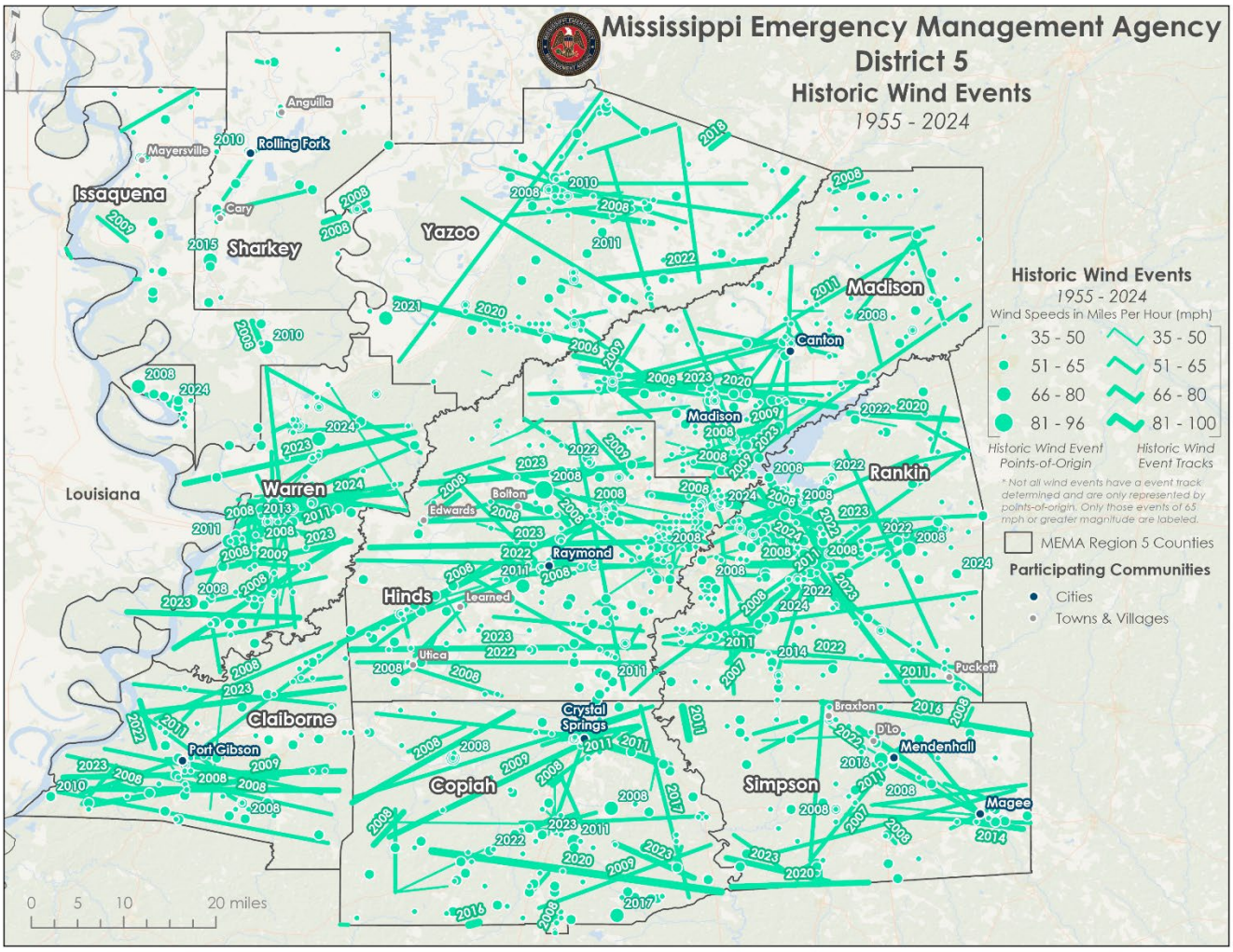
During the March 14–15, 2025 storm outbreak, the National Weather Service confirmed 18 tornadoes across Mississippi. The Mississippi Emergency Management Agency (MEMA) reported 831 homes, 37 businesses, and 20 farms damaged statewide. Of those homes, 131 were destroyed and 166 sustained major damage. Power outages affected thousands, with 581 outages still reported days after the event. This event caused four fatalities; 23 reported injuries and associated damages prompted a federal disaster declaration (DR-4874) which included Issaquena and Sharkey Counties.

These statistics emphasize the vulnerability of both physical structures and essential systems to severe weather, reinforcing the urgent need for targeted mitigation investments and infrastructure improvements throughout the District. The recurring nature of these events and widespread risk faced by communities in the Delta Region underscores the importance of proactive planning, preparedness, and resilience-building efforts.

5.9.4.2. HISTORIC WIND EVENTS

On March 4, 2025, a line of severe storms pushed across the region and produced damaging wind gusts that downed trees and power lines and damaged several structures. Ahead of the storms, strong gradient winds also produced damage to a similar degree. One downed power line started a brush fire, and a man was electrocuted by the downed lines. **Figure 34** displays documented historic wind events that occurred in MEMA District 5 between 1955-2024. All counties within the planning area have experienced historic wind events and can range from 35 to 83 mph.

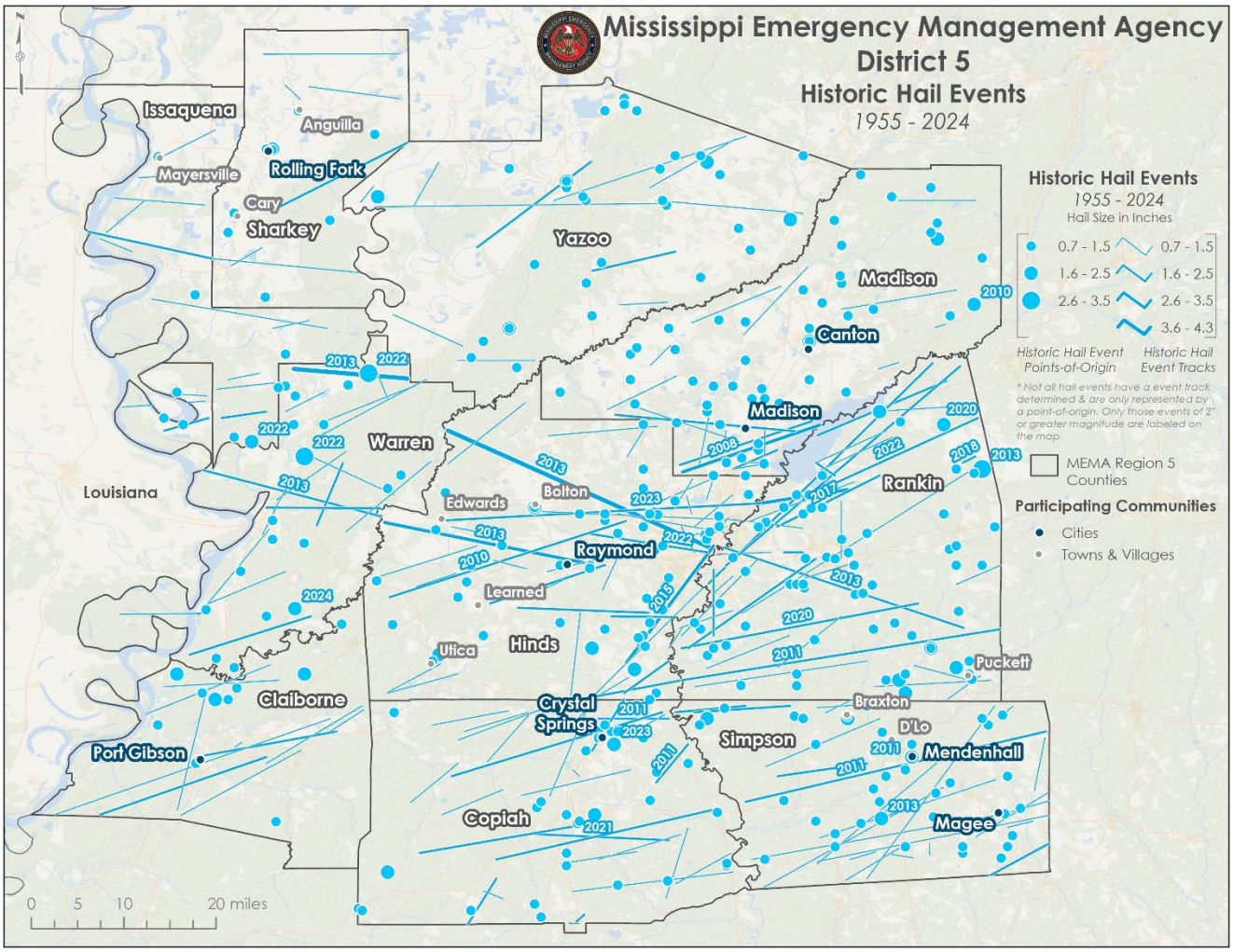
FIGURE 34: MEMA DISTRICT 5 HISTORIC WIND EVENTS 1955-2024



5.9.4.3. HISTORIC HAIL EVENTS

The District has experienced numerous historic hailstorm events. One such event occurred on March 26th, 2023, the juxtaposition of high instability and strong mid and upper-level shear was confined to central and southern Mississippi. A few predawn supercell thunderstorms developed along an eastward moving line with a break in activity through the remainder of the morning. Heating during the day resulted in vigorous redevelopment by afternoon. Near interstate 20, a stalled composite outflow boundary/cold front was lingering in the area and separated the unstable environment from a cooler, stable airmass to the north. The environment supported numerous supercell thunderstorms which produced swaths of large to very large hail, some as large as baseballs (2.75 inches), with much of the destructive hail confined to the vicinity of the boundary. A swath of large hail fell across Hinds County, continuing from the Warren County line near I-20 and then east-northeastward across the city of Edwards where hail as large as 2 inches was found. Hail continued to fall as the storm moved east into Rankin County. **Figure 35** displays where documented historic hail events occurred in MEMA District 5 counties between 1955-2024. Based on the map, all counties within the District experience historic hail events.

FIGURE 35: MEMA DISTRICT 5 HISTORIC HAIL EVENTS 1955-2024



5.9.5. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, 318 severe storm events occurred over a 5-year period. MEMA District 5 experiences a severe thunderstorm event at least once a year. The probability of a severe thunderstorm (producing high winds, hail, and lightning) occurring in the District is **Extremely Likely**.

Severe storms are persistent and widespread across Mississippi MEMA District 5, which includes much of the Delta Region. Due to the region's atmospheric conditions, particularly during spring and fall - District 5 frequently experiences thunderstorms capable of producing high winds, hail, and lightning. According to the National Weather Service and the Mississippi Hazard Dashboard, this area often falls within "Slight" to "Enhanced" risk zones during active weather periods, indicating a 30–45% chance of severe weather on those days. These probabilities reflect a moderate to high likelihood of future severe storm events, especially during peak storm seasons.

Recent storm activity reinforces this risk. In March and April 2025, multiple severe weather systems impacted the District, bringing wind gusts over 50 mph, large hail, and widespread power outages. These events caused significant damage to homes, infrastructure, and utilities in communities such as Hinds, and Sharkey. Given the frequency and intensity of these storms, all jurisdictions within District 5 should continue to prioritize preparedness and mitigation strategies to reduce future impacts.

5.9.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

Severe storms—including tornadoes, hail, and high winds—pose a significant threat to public safety, infrastructure, and local economies within District 5. Vulnerabilities in the district include aging buildings, limited access to storm shelters, and underdeveloped stormwater systems, which increase the risk of damage and disruption. Flooding is a common secondary hazard, particularly in low-lying areas. To address these risks, local mitigation strategies focus on constructing safe rooms, improving drainage infrastructure, enhancing public outreach and early warning capabilities, and updating building codes to strengthen resilience. These efforts support long-term risk reduction and community preparedness across the district. Based on the extent, vulnerability, and probability, Severe Storms poses a **High** risk to District 5 overall and each participating jurisdiction.

5.9.6.1. PEOPLE

Severe storms pose significant vulnerability to people, especially in areas like MEMA District 5, where atmospheric conditions frequently support the development of hazardous weather. This vulnerability stems from both direct physical threats and indirect social and economic impacts.

Severe storms can produce high winds, hail, lightning, and flash flooding—all of which can cause injury or death. High winds may turn debris into projectiles, damage homes, and disrupt transportation. Lightning strikes can lead to fatalities, fires, and power outages. Hail can injure individuals caught outdoors and damage vehicles and roofs. Flash flooding, often associated with intense rainfall, can trap people in vehicles or homes and lead to drowning, especially in low-lying or poorly drained areas. Between the 2020-2025 planning cycle, the District experienced some sever storm events causing four fatalities in Madison, Simpson and Rankin Counties and four reported injuries in Hinds, Madison and Rankin Counties.

Populations with limited access to safe housing, emergency services, or reliable communication systems are especially at risk. Vulnerable populations—such as the elderly, individuals with disabilities, and low-income households—may face greater challenges in preparing for, responding to, and

recovering from storm events. Severe storms can also disrupt local economies by damaging infrastructure, halting business operations, and increasing public spending on emergency response and recovery.

In MEMA District 5, where rural and underserved communities are common, these vulnerabilities are amplified. Limited infrastructure and emergency resources can delay response times and increase the long-term impact of storm events on residents.

5.9.6.2. STRUCTURES AND SYSTEMS

Severe storms pose substantial vulnerability to structures and systems across Mississippi MEMA District 5, particularly due to the District's exposure to high winds, hail, lightning, and flooding. These hazards can compromise both the physical integrity of buildings and the functionality of critical infrastructure. Essential infrastructure, including power grids, water treatment facilities, transportation systems, and communication networks—is highly vulnerable to disruption during severe storm events. This vulnerability is especially pronounced in MEMA District 5, where aging systems and limited redundancy increase the risk of failure.

Severe storms have significantly affected inhabited areas in the District in the past five years. Between 2020-2025, severe storms events have caused approximately $47,980,000 in property damage and $37,000 in crop damage. Hail and thunderstorms have caused the most property damage across the District at $13,355,000 and $33,575,000 respectively. Additionally, Hinds County and Rankin County rank first and second for most recorded severe storm events and reported damages.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. MEMA District 5 follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

5.9.6.3. CRITICAL FACILITIES

Essential infrastructure, including power grids, water treatment plants, transportation systems, and communication networks—is highly susceptible to disruption during severe storm events. The 2022 flooding in Jackson, Mississippi, serves as a stark example of how aging and underfunded systems can fail under extreme conditions, leaving entire communities without access to clean water or reliable electricity. In rural areas of MEMA District 5, this vulnerability is compounded by limited system redundancy and constrained emergency response capabilities, making recovery slower and impacts more severe.

Community Lifelines

Severe storms in Mississippi MEMA District 5 can severely disrupt all eight community lifelines, which are essential to public safety, health, and daily functioning. Mitigation strategies should focus on protecting critical infrastructure, improving restoration of utilities, and ensuring continuity of operations across all lifelines to enhance community resilience. **Table 47** describes the potential vulnerabilities of lifelines from severe storms within MEMA District 5.

TABLE 47: POTENTIAL VULNERABILITIES OF LIFELINES FROM SEVERE STORMS

Lifeline	FEMA Icon	Description of Impact
Communications		Severe storms can disrupt cell towers and fiber lines, limiting emergency coordination and public alerts, especially in areas with minimal redundancy.
Energy (Power & Fuel)		High winds and lightning can damage power lines and substations, causing widespread outages. Aging infrastructure and limited backup systems increase risk.
Food, Hydration, Shelter		Severe storms can interrupt food supply chains, contaminate water sources, and overwhelm shelter capacity. Vulnerable populations may face barriers to accessing these essential services.
Hazardous Materials		Severe storms may trigger chemical spills or releases from industrial sites, transportation routes, or storage facilities. These incidents pose risks to public health and the environment and require coordinated response from MEMA and other agencies.
Health & Medical		Storms can overwhelm healthcare facilities with injuries and disrupt access to medical care. The Mississippi State Department of Health coordinates emergency medical services, Strategic National Stockpile distribution, and health alerts to maintain continuity of care during disasters.
Safety & Security		Law enforcement and public safety operations may be disrupted by damaged facilities, blocked access routes, and communication failures.
Transportation		Roads and bridges are vulnerable to flooding, erosion, and debris, which can block emergency access and delay recovery.

Lifeline	FEMA Icon	Description of Impact
Water & Wastewater Systems		Flooding and power loss can disable treatment facilities, leading to unsafe or unavailable water—especially in rural areas with outdated systems.

5.9.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Severe storms can significantly impact natural, historic, and cultural resources across Mississippi MEMA District 5. Natural areas such as wetlands, forests, and river systems are vulnerable to erosion, flooding, and contamination from stormwater runoff. However, these ecosystems also serve as natural buffers that help absorb rainfall and reduce flood risk, but when damaged, they lose their protective function and biodiversity suffers.

Historic and cultural resources-including landmarks, cemeteries, monuments, and archaeological sites are also at risk. Many of these structures are older and not built to withstand high winds or flooding. Storms can cause irreversible damage to fragile materials, displace artifacts, and erode land around culturally significant sites. In the Mississippi Delta, where many historic and cultural assets are in low-lying or rural areas, the lack of protective infrastructure and documentation further increases their vulnerability. Preserving these resources requires proactive planning, including inventorying sites, integrating them into hazard mitigation strategies, and ensuring emergency response plans account for their protection.

5.9.7. POTENTIAL IMPACTS

Severe storms—including hail, and high winds—pose a recurring and serious threat to communities across MEMA District 5. These events can lead to widespread damage to residential, commercial, and agricultural properties, as well as critical infrastructure such as roads, bridges, and utilities. Power outages and blocked transportation routes often follow, disrupting emergency response and daily operations. Vulnerable populations, including elderly residents and those with limited financial resources, are especially at risk due to reduced access to safe shelter and recovery assistance.

In addition to physical damage, severe storms can have long-term economic and social impacts. Agricultural losses, business interruptions, displacement of residents, strain local resources and slow recovery. Repeated exposure to these hazards also accelerates the deterioration of aging infrastructure. These impacts highlight the need for proactive mitigation strategies, such as constructing safe rooms, improving drainage systems, enhancing early warning capabilities, and strengthening building codes. By addressing these vulnerabilities, communities can reduce future losses and improve resilience across the district.

5.9.8. IMPACTS OF CHANGES IN DEVELOPMENT

Changes in development across Mississippi MEMA District 5—such as urban expansion, infrastructure growth, and land use shifts—can significantly influence hazard vulnerability. As communities expand into flood-prone or storm-exposed areas, more people and assets are placed at risk. Increased impervious surfaces like roads and rooftops reduce natural absorption of rainfall, contributing to flash flooding and erosion. Development in low-lying or poorly drained areas also heightens exposure to stormwater runoff and infrastructure failure.

Additionally, rapid development can strain existing infrastructure systems, such as drainage, utilities, and emergency services, which may not be equipped to handle increased demand during severe

weather events. The loss of natural buffers like wetlands and forests further exacerbates vulnerability by removing protective barriers that help mitigate storm impacts. These changes underscore the need for updated planning, resilient building practices, and coordinated mitigation strategies to ensure that growth does not increase risk across the District.

5.10. SEVERE WINTER WEATHER

5.10.1. DESCRIPTION

Severe winter weather in Mississippi typically includes freezing rain, sleet, snow, and extreme cold temperatures. While these events are less frequent than in northern states, they pose significant risks due to the District's limited infrastructure and preparedness for such conditions. Ice storms are particularly hazardous, often leading to widespread power outages, transportation disruptions, and damage to trees and utility lines.

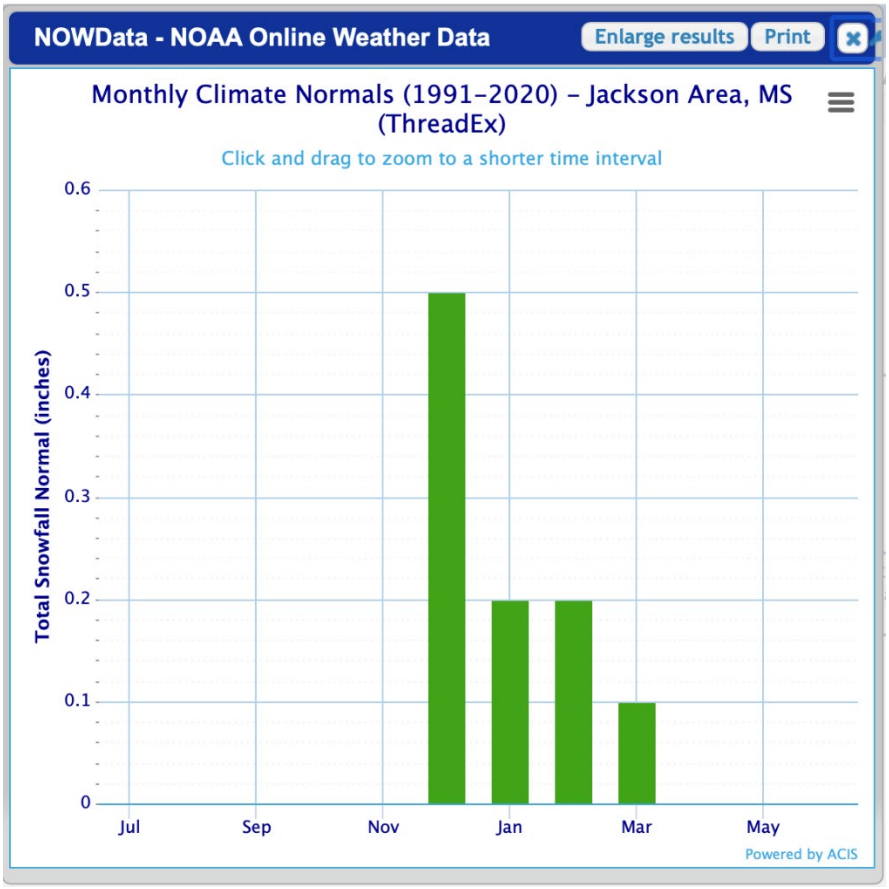
5.10.2. LOCATION

District 5 is in a transitional climate zone that occasionally experiences severe winter weather, including ice storms and freezing temperatures. The flat terrain and limited snow/ice removal resources increase the vulnerability of transportation networks and utility systems during such events. The planning area equally can experience severe winter weather, with locations with higher elevations with a higher chance of experiencing snowfall as the temperature may be cooler.

5.10.3. EXTENT

MEMA District 5 includes the counties of Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren and Yazoo. These counties are vulnerable to winter weather events, especially ice storms, which can affect large areas simultaneously. The flat terrain and rural infrastructure in many parts of District 5 exacerbate the impacts of icy conditions. The average amount of annual snowfall across the District is less than one inch (average of .6 inches). **Figure 36** displays the average accumulation of snowfall each year at Jackson, MS Weather Station which is near MEMA District 5. Based on the figure, the area is more likely to experience snowfall from November to March.

FIGURE 36: JACKSON AREA MONTHLY CLIMATE NORMALS FOR SNOWFALL (1991-2020) | SOURCE NOAA



From 2020 through 2025, Mississippi District 5 experienced several significant winter weather events demonstrating the district's vulnerability to ice storms, freezing rain, sleet accumulation, and extreme cold. Although severe winter weather is not an annual occurrence, events within this period showed that when winter storms do occur, they frequently reach a multi-county, regional scale and generate conditions capable of disrupting essential services, transportation, and local infrastructure.

The National Weather Service developed terms to categorize the severity of winter weather and can vary across the united states depending on the location. For example, a city in the southeast may have a different severity threshold than a city in Massachusetts that experiences snow more frequently. describes the difference between a winter weather advisory, winer storm watch, and winter storm warning. **Table 48** below explains the NWS warnings, watches and advisories.

TABLE 48: NWS WINTER WEATHER PRODUCTS

NWS Winter Storm Product	Description
Winter Storm Warning	Snow, sleet, or ice expected. Take Action. Confidence is high that a winter storm will produce heavy snow, sleet, or freezing rain and cause significant impacts.
Winter Storm Watch	Snow, sleep, ice possible. Be prepared. Confidence is medium that a winter storm could produce heavy snow, sleet, or freezing rain and cause significant impacts.

NWS Winter Storm Product	Description
Winter Weather Advisory	Wintry weather expected. Exercise caution. Light amounts of wintry precipitation or patchy blowing snow will cause slick conditions and could affect travel if precautions are not taken.

It is possible that winter weather may produce either freezing rain, sleet, and wind chill along with heavy snow. All these types of precipitation and byproducts of severe winter storms can create dangerous road conditions, which can harm drivers and disrupt critical infrastructure. The following are descriptions of freezing rain, sleet, and wind chill.

- **Freezing Rain**: rain that freezes when it hits the ground, creating a coating of ice on roads, walkways, trees and power lines.
- **Sleet**: rain that turns to ice pellets before reaching the ground. Sleet also causes moisture on roads to freeze and become slippery.
- **Wind Chill**: a measure of how cold people feel due to the combined effect of wind and cold temperatures. The wind chill index is based on the rate of heat loss from exposed skin. Wind chill and cold temperatures can cause hyperthermia.

Overall, during the 2020–2025 planning window, the extent of severe winter weather in District 5 is characterized by regional impacts affecting multiple counties, ice accumulation capable of damaging infrastructure, and conditions significant enough to prompt county-level emergency actions. These events confirm that winter storms in District 5, while sporadic, can create high-impact, multi-day disruptions requiring coordinated response and long-term mitigation planning.

5.10.4. PREVIOUS OCCURRENCES

Mississippi MEMA District 5 has experienced several impactful severe winter weather events over the past two decades, with ice storms and extreme cold being the most common threats. One of the severe winter storms to impact District 5 occurred in late January 2026. Winter Storm Fern brought extreme cold temperatures, snow, and icy conditions to large swaths of Mississippi, including District 5. ON February 6th, 2026, FEMA announced that federal assistance would be available to the state of Mississippi under DR-4899 MS. As of March 2026, the documented deaths in Mississippi attributable to Winter Storm Fern stands at 30, and some of these fatalities occurred in District 5 communities. Additionally, the Mississippi Insurance Department reported in late February that the claims filed from damages tallied over $107 million. It is important to note that official costs and fatalities have not yet been factored into the NCEI database, and the final figures may be different from what is currently being reported by media coverage.

Another significant event occurred in February 2021, when a prolonged Arctic air mass brought freezing rain, sleet, and snow across much of the state. District 5 counties saw widespread power outages due to ice accumulation on trees and power lines, hazardous road conditions, and disruptions to emergency services. The storm strained local resources, and many residents, especially in rural areas—faced extended periods without heat or electricity. This event highlighted the vulnerability of above-ground utilities and the need for improved winter weather preparedness.

Earlier events, such as the January 2018 cold snap, also demonstrated the District's susceptibility to extreme cold. Temperatures dropped well below freezing for several consecutive days, leading to burst water pipes, increased heating demands, and elevated risks for vulnerable populations such as the elderly and low-income households. While snowfall is rare in District 5, even light accumulation can cause significant transportation and safety issues due to limited snow removal equipment and public experience with winter driving. These occurrences underscore the importance of proactive mitigation strategies to reduce the impacts of future winter weather events.

According to the Mississippi Emergency Management Agency (MEMA), 29 injuries and 12 fatalities were reported in 10 counties since a winter storm blanketed much of Mississippi starting Jan. 14, 2024. During this event, there was one fatality reported from Sharkey and Rankin Counties. This severe winter weather event caused several schools across MEMA District 5 to close for either a day or two. The Mississippi Department of Transportation (MDOT) issued multiple alerts and advised extreme caution while driving.

Table 49 below compares historical severe winter weather events between the previous planning cycle (2015-2020) and the current planning cycle (2020-2025). Severe winter weather includes these types: Blizzard, Cold/Wind Chill, Extreme Cold/Wind Chill, Frost/Freeze, Heavy Snow, Ice Storm, Winter Storm, Winter Weather. Comparatively, there have been twice as many severe winter weather events from 2020-2025 than 2015-2020, with Madison and Rankin Counties experiencing the most severe winter weather events. Additionally, there has been about five times as much damage in the past five years than the previous planning cycle. Severe winter weather events are only tracked at the county level and the numbers below for the Cities of Canton, Madison, Crystal Springs and the Village of Puckett represent the statistics for Madison, Copiah and Rankin Counties.

TABLE 49: SEVERE WINTER WEATHER IN MEMA DISTRICT 5 | SOURCE: NCEI

County	2015-2020 No of Events	2020-2025 No of Events	2015-2020 Property Damage ($)	2025 2020-Property Damage ($)	2015-2020 Crop Damage ($)	2020-2025 Crop Damage ($)
Claiborne County	1	4	--	$203,000	--	--
Hinds County	4	4	$22,000	$153,000	--	--
Issaquena County	2	4	$10,000	$60,000	--	--
Sharkey County	2	4	--	$55,000	--	--
Simpson County	2	3	$75,000	$200,000	--	--
City of Canton (Madison County)	3	6	$4,000	$153,000	--	--
City of Madison (Madison County) *	--	--	--	--	--	--
City of Crystal Springs (Copiah County)	2	4	--	$185,000	--	--
Village of Puckett	4	8	$6,000	$363,000	--	--

County	2015-2020 No of Events	2020-2025 No of Events	2015-2020 Property Damage ($)	2025 2020-Property Damage ($)	2015-2020 Crop Damage ($)	2020-2025 Crop Damage ($)
(Rankin County)						

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

5.10.5. PROBABILITY OF FUTURE OCCURRENCES

Winter weather events remain a regular possibility in District 5, with at least one annual instance of light sleet, flurries, or minor snow accumulation expected each year. Historical data from the National Climatic Data Center indicates that Central Mississippi typically experiences snowfall greater than one inch every two to three years. More substantial snowfall events—three inches or more—generally occur about once every four years. For example, a winter storm in early 2025 brought an expected 2–4 inches of snow to Central and South Mississippi. In the past 10 years there have been 57 severe weather events, which are approximately six severe winter weather events per year. Mitigation Council members also considered their local experiences when assessing the probability of future occurrences. After averaging the probability of future occurrences for each participating jurisdiction, the assessed probability for winter storms across District 5 is **Likely.**

5.10.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

The risk of severe winter weather varies across MEMA District 5 due to differences in geography, infrastructure, population density, and local preparedness. Northern counties such as Issaquena, Madison, Sharkey and Yazoo tend to experience colder temperatures more frequently and may be slightly more prone to ice accumulation and freezing conditions. These areas also have more forested terrain, increasing the risk of tree damage and power outages during ice storms.

In contrast, counties like Hinds, Madison and Rankin are more densely populated and have greater concentrations of critical infrastructure. While these areas may experience slightly milder winter conditions, the potential impacts are magnified due to the higher number of residents, aging utility systems, and limited access to alternate heating sources. Rural counties in the Southern part of the district such as Claiborne, Copiah and Simpson face unique challenges due to sparse emergency services and longer response times, which can exacerbate the effects of prolonged cold or power outages.

Overall, while all counties in District 5 are vulnerable to severe winter weather, the type and severity of impacts vary based on local conditions. This variability underscores the need for tailored mitigation strategies that reflect each county's unique risk profile and capacity to respond. Based on the extent, vulnerability, and probability, Severe Winter Weather poses a **High** risk across District 5. Specific risk ratings for each participating jurisdiction can be found in **Table 24.**

5.10.6.1. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations in MEMA District 5. Residents who are elderly, disabled, or economically disadvantaged are at heightened risk during winter events due to limited access to reliable heating,

transportation, and emergency services. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms.

Low-income households may struggle to afford increased heating costs or to repair damage from burst pipes and frozen infrastructure. Individuals who rely on electric-powered medical equipment face life-threatening challenges when outages occur. Additionally, rural isolation can delay emergency response times, leaving residents without timely access to medical care or warming centers. Additionally, warning centers may not be accessible to communities who live in rural areas or communities without access to transportation. Children and school-aged youth are also vulnerable, as school closures can disrupt access to meals and safe environments.

Public health risks increase during extreme cold events, including hypothermia, frostbite, and carbon monoxide poisoning from improper use of space heaters or generators. These risks are compounded by limited public awareness and preparedness for winter weather in a District where such events are relatively infrequent. Language barriers, lack of transportation, and limited communication infrastructure further isolate at-risk groups, emphasizing the need for targeted outreach and inclusive emergency planning.

For the planning area, populations living in the Northern areas of the District are at an increased risk from severe winter weather. Those areas include Issaquena and Sharkey Counties and the Cities of Canton and Madison. Participating jurisdictions located in the Southern areas include Claiborne, Hinds and Simpson Counties, the City of Crystal Springs and the Village of Puckett, thus putting those populations at a slightly lower risk than the rest of the District.

5.10.6.2. STRUCTURES AND SYSTEMS

Severe winter weather poses a substantial threat to infrastructure and essential systems across MEMA District 5. The District's housing stock includes many older homes with limited insulation and outdated heating systems, making them particularly susceptible to damage from freezing temperatures and ice accumulation. Prolonged cold can lead to burst water pipes, roof damage from ice loads, and structural stress in buildings not designed for winter conditions. Mobile homes and manufactured housing, which are common in rural areas, are especially vulnerable due to their limited thermal protection and structural resilience. Additionally, agricultural operations are also at high risk, with crop damage and livestock losses posing economic challenges.

Above-ground utility lines are widespread throughout District 5 and are highly susceptible to ice accumulation and falling tree limbs, often resulting in extended power outages. These outages can disrupt heating, water supply, and communications, compounding risks for residents and emergency responders. Water and wastewater systems may also be compromised during freezing events, especially in communities with aging infrastructure or limited backup power capabilities.

Transportation systems are another critical vulnerability. Roads in District 5 are not routinely treated for ice or snow, and local governments often lack the equipment and resources for rapid response. This can lead to hazardous driving conditions, impede emergency services, and isolate communities during winter storms. Schools, hospitals, and emergency shelters may face operational challenges if access is restricted or if backup systems fail during prolonged outages.

Overall, the combination of aging infrastructure, limited winterization, and rural service delivery models increases the vulnerability of structures and systems in District 5, underscoring the need for targeted investments in resilience and preparedness. Structures and systems in the Northern portion of the District—including Issaquena and Sharkey Counties and the Cities of Canton and Madison—face a higher risk from severe winter weather. Participating jurisdictions in the Southern part of the District, such as Claiborne, Hinds, and Simpson Counties, along with the City of Crystal Springs and the Village

of Puckett, may experience a comparatively lower winter weather risk than the District as a whole. In contrast, Claiborne and Simpson Counties experienced the most reported property damage associated with severe winter storm events between 2020-2025.

5.10.6.3. CRITICAL FACILITIES

Hospitals, emergency shelters, and water treatment plants may experience significant operational challenges during prolonged power outages, extreme cold, or freezing conditions. Extended loss of electricity can disrupt heating systems, reduce the availability of medical equipment, impair communication capabilities, and strain backup power supplies. Water and wastewater treatment facilities are also vulnerable, as freezing temperatures can damage pipes and pumps, reduce treatment capacity, and compromise water quality or distribution.

Historical events across the region demonstrate that these types of disruptions can occur even with short-duration cold weather, and prolonged or severe winter storms amplify these risks. As a result, all critical facilities within the District face varying degrees of exposure to operational impacts from severe winter weather. This includes potential service interruptions, increased resource needs, and heightened demands on emergency response systems.

Community Lifelines

Severe winter weather in Mississippi MEMA District 5 can severely disrupt all eight community lifelines, which are essential to public safety, health, and daily functioning. Mitigation strategies should focus on protecting critical infrastructure, improving restoration of utilities, and ensuring continuity of operations across all lifelines to enhance community resilience. **Table 50** describes the potential vulnerabilities of lifelines from floods within MEMA District 5.

TABLE 50: POTENTIAL VULNERABILITIES OF LIFELINES FROM SEVERE WINTER WEATHER

Lifeline	FEMA Icon	Description of Impact
Communications		Weather-related damage to infrastructure disrupts emergency alerts and public information, especially in areas with poor connectivity.
Energy (Power & Fuel)		Ice storms damage power lines, causing extended outages and limiting access to heating fuels.
Food, Hydration, Shelter		Frozen pipes and power loss disrupt water access and heating; vulnerable populations may lose access to safe shelter and food.

Lifeline	FEMA Icon	Description of Impact
Hazardous Materials		Freezing conditions can compromise containment and monitoring systems, increasing risk of spills or exposure.
Health & Medical		Cold-related illnesses rise; outages affect medical equipment and facility operations, especially in rural areas.
Safety & Security		Icy roads and power outages delay emergency response and compromise public safety systems.
Transportation		Untreated roads become hazardous, isolating communities and delaying emergency and supply services.
Water & Wastewater Systems		Frozen pipes and power outages disrupt water supply and wastewater treatment, risking contamination and service loss.

5.10.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Severe winter weather can significantly impact on the District's natural, historic, and cultural assets. Ice storms and freezing temperatures often damage forests, wetlands, and wildlife habitats, leading to tree loss, habitat disruption, and increased runoff pollution from de-icing agents. These environmental changes can have lasting effects on local ecosystems and water quality.

Historic buildings and cultural landmarks—many of which are not winterized—are vulnerable to structural damage from ice accumulation, freeze-thaw cycles, and water intrusion. Museums, libraries, and community centers may also face operational disruptions due to power outages or heating failures, putting valuable artifacts and archives at risk. These impacts highlight the need for protective measures and emergency planning to preserve the district's environmental and cultural heritage.

5.10.7. POTENTIAL IMPACTS

Severe winter weather in MEMA District 5 can result in significant disruptions and damage across multiple sectors. Ice storms and freezing rain are the most common threats, often leading to widespread power outages, hazardous road conditions, and damage to trees and utility infrastructure.

Snow accumulation, though less frequent, can contribute to roof collapses and increased demand for emergency services. These conditions can isolate rural communities, delay emergency response, and hinder transportation and supply chains.

Public health risks include hypothermia, frostbite, and carbon monoxide poisoning due to improper heating during power outages. Vulnerable populations such as the elderly and low-income households are particularly at risk. Economic impacts may include temporary business closures, agricultural losses, and increased costs for emergency response and recovery. Mitigation strategies should include installation of backup generators at critical facilities, establishment of warming centers, tree maintenance programs to reduce debris hazards, and public education campaigns focused on winter weather preparedness and safety.

5.10.8. IMPACTS OF CHANGES IN DEVELOPMENT

Recent and ongoing development in MEMA District 5 can influence vulnerability to severe winter weather in both positive and negative ways. Expansion of residential areas, particularly in rural counties, may increase exposure to winter hazards if new housing lacks adequate insulation, backup power, or access to emergency services. Rapid growth with updated building codes or infrastructure improvements can cause less strain on utility systems, making them less susceptible to outages during ice storms or extreme cold.

On the other hand, development can also present opportunities to reduce risk. Investments in modern infrastructure—such as underground utilities, energy-efficient buildings, and improved roadways—can enhance resilience. However, uneven development across the district means that some communities benefit more than others, leaving gaps in preparedness and response capacity. As development continues, integrating hazard mitigation into planning and zoning decisions will be critical to reducing long-term vulnerability.

5.11. TORNADO

5.11.1. DESCRIPTION

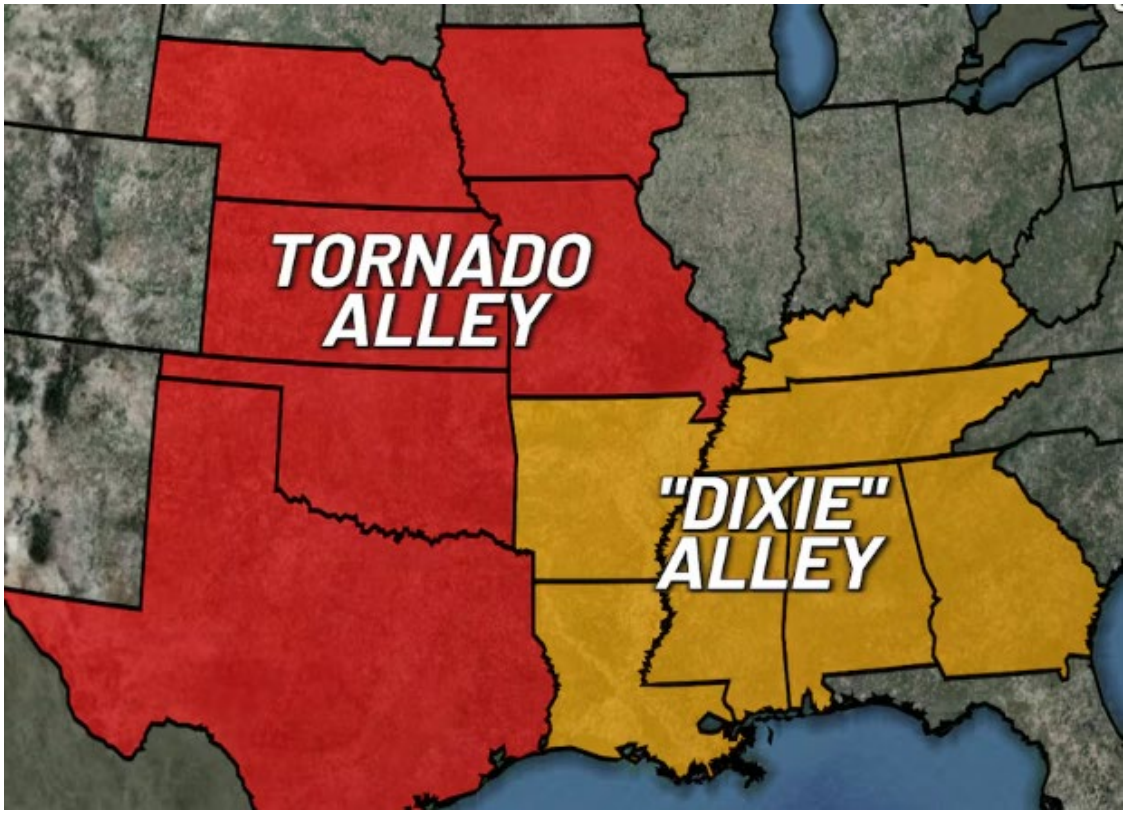
Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments. A tornado typically appears as a rotating, funnel-shaped cloud stretching from a thunderstorm to the ground, with wind speeds that can reach up to 300 miles per hour. Their paths of destruction may span over a mile in width and extend to 50 miles or more.

While some tornadoes are clearly visible, others may be hidden by heavy rain or low-hanging clouds. In some cases, tornadoes develop so quickly that there is little time for warning. Just before a tornado strikes, the wind may suddenly calm, and the air may become eerily still. Even if the funnel is not visible, a swirling cloud of debris can indicate a tornado's presence. Tornadoes usually form near the rear edge of a thunderstorm, and it's not uncommon to see clear, sunlit skies behind them.

5.11.2. LOCATION

Tornadoes occur throughout Mississippi and in MEMA District 5. Tornado Alley is used to describe an area where tornadoes frequently occur in the Great Plains, encompassing northern Texas to Nebraska. Since 1971, the areas East of Tornado Alley, including the states of Arkansas, Louisiana, Tennessee, Kentucky, Alabama, Georgia and Mississippi, have been referred to as Dixie Alley. This area includes much of the area of the lower Mississippi Valley. "Dixie Alley" is a commonly used term, referring to areas in the southern United States that are particularly susceptible to powerful tornadoes. It is believed to be distinct from the more well-known "Tornado Alley" due to its high occurrence of strong, long-track tornadoes that move at faster speeds. The term was coined by Allen Pearson, the Director of the National Severe Storms Forecast Center, after witnessing a devastating tornado outbreak in 1971 that resulted in more than 9 long-track, violent tornadoes and claimed the lives of 121 people. **Figure 37** below shows the location of both Tornado Alley and the Dixie Alley, which encompasses all of Mississippi.

FIGURE 37: TORNADO ALLEY AND DIXIE ALLEY | SOURCE: ACCUWEATHER



5.11.3. EXTENT

Tornado occurrences are inherently unpredictable, and there is no reliable way to identify specific locations that are more likely to experience strikes over time. As a result, the MEMA District 5 Region is considered uniformly vulnerable to tornado hazards. The figure below illustrates the tracks of several major tornado events that have affected the region. Although no clear pattern can be identified from this data, areas impacted previously may face a slightly higher likelihood of experiencing future events. Within the District and historically since 1995, most tornado events have occurred within the Central and Northeastern areas of the District including Hinds, Madison, Rankin, Warren and Yazoo Counties. For the planning area, the average number of annual tornado events range from Low (0.48) in Issaquena County to High (3.2) in Hinds County. For a visual representation of average annual tornadoes across the District, please see **Figure 39** in the previous occurrence section below.

To assist in measuring the gust wind speeds of tornadoes, the Enhanced Fujita (EF) Scale, implemented in 2007, is used by the National Weather Service to classify tornado intensity. It replaced the original Fujita (F) Scale and bases its ratings on estimated wind speeds derived from observed damage to structures and vegetation. **Table 51** describes the Enhanced Fujita Scale.

TABLE 51: THE ENHANCED FUJITA SCALE | SOURCE: NOAA

Rating	Wind Speeds (Mph)	Description of Impact
0	63-97	Loss of roof covering material (<20%), gutters, and/or awnings, loss of vinyl or metal siding.

Rating	Wind Speeds (Mph)	Description of Impact
1	79-178	Broken glass in doors and windows, uplift of roof deck and significant loss of roof covering (>20%), collapse of chimneys and garage door.
2	103-142	Entire house shifts off foundation, and/or large sections of roof structure removed; most walls remain standing.
3	127-178	Most walls collapse except for the small interior rooms.
4	142-198	All walls collapsed.
5	165-220	Complete destruction of engineered and/or well-constructed residence; slab swept clean.

To communicate tornado risk to the public, the National Weather Service will issue either a tornado watch, a tornado warning or a tornado emergency, described in **Table 52**.

TABLE 52: TORNADO WATCHES AND WARNING DESCRIPTIONS | SOURCE: NOAA

Issued Product	Description
Tornado Watch	Tornadoes are possible in and near the watch area. Review and discuss your emergency plans and check supplies and your safe room. Be ready to act quickly if a warning is issued or you suspect a tornado is approaching. Acting early helps to save lives! Watches are issued by the Storm Prediction Center for counties where tornadoes may occur. The watch area is typically large, covering numerous counties or even states.
Tornado Warning	A tornado has been sighted or indicated by weather radar. There is imminent danger to life and property. Move to an interior room on the lowest floor of a sturdy building. Avoid windows. If in a mobile home, a vehicle, or outdoors, move to the closest substantial shelter and protect yourself from flying debris. Warnings are issued by your local forecast office. Warnings typically encompass a much smaller area (around the size of a city or small county) that may be impacted by a tornado identified by a forecaster on radar or by a trained spotter/law enforcement who is watching the storm.
Tornado Emergency	A tornado emergency is the National Weather Service's highest alert level. It is issued when a violent tornado has touched down in the watch area. There is a severe threat to human life and property, with catastrophic damage confirmed. Immediately seek refuge in the safest location possible. Call friends and family who are within the watch area to ensure they are aware of the situation. If you see a tornado approaching, do not attempt to outrun it in a vehicle, shelter in place. Once safe, be sure to monitor your local forecast for the latest updates.

5.11.4. PREVIOUS OCCURRENCES

Mississippi MEMA District 5 has experienced several tornado events in 2025. In mid-March, an EF-2 tornado struck Issaquena and Sharkey Counties, prompting damage assessments for both public infrastructure and individual homes. Later that month, two tornadoes—ranging from EF-0 to EF-2—affected areas of District 5 including Sharkey and Simpson Counties, damaging homes and farms but fortunately causing no reported injuries or fatalities.

Historically, Mississippi has seen significant tornado activity, with over 3,300 tornadoes recorded since 1950, resulting in more than 500 fatalities and billions in property damage. In 2025 alone, the state has already experienced 106 tornadoes, causing 9 fatalities, multiple injuries and approximately $18 million in damage. MEMA continues to coordinate assessments and recovery efforts across affected districts, including District 5, to support impacted communities. The most significant tornado event in the District during this planning cycle occurred in Sharkey County in March 2023. This single EF-4 tornado event spanned over 18 miles causing approximately $83 million in property damage and inflicting 150 injuries and 14 fatalities. **Figure 38** shows where historic tornado events have occurred in MEMA District 5 from 1950 to 2024, while **Figure 39** displays the annual occurrences of tornadoes across the planning area. Based on the maps, most of the stronger tornadoes occurred in the Southeastern Counties (Hinds and Rankin). All counties experience tornadoes based on previous events.

FIGURE 38: MEMA DISTRICT 5 HISTORIC TORNADO EVENTS 1950-2024

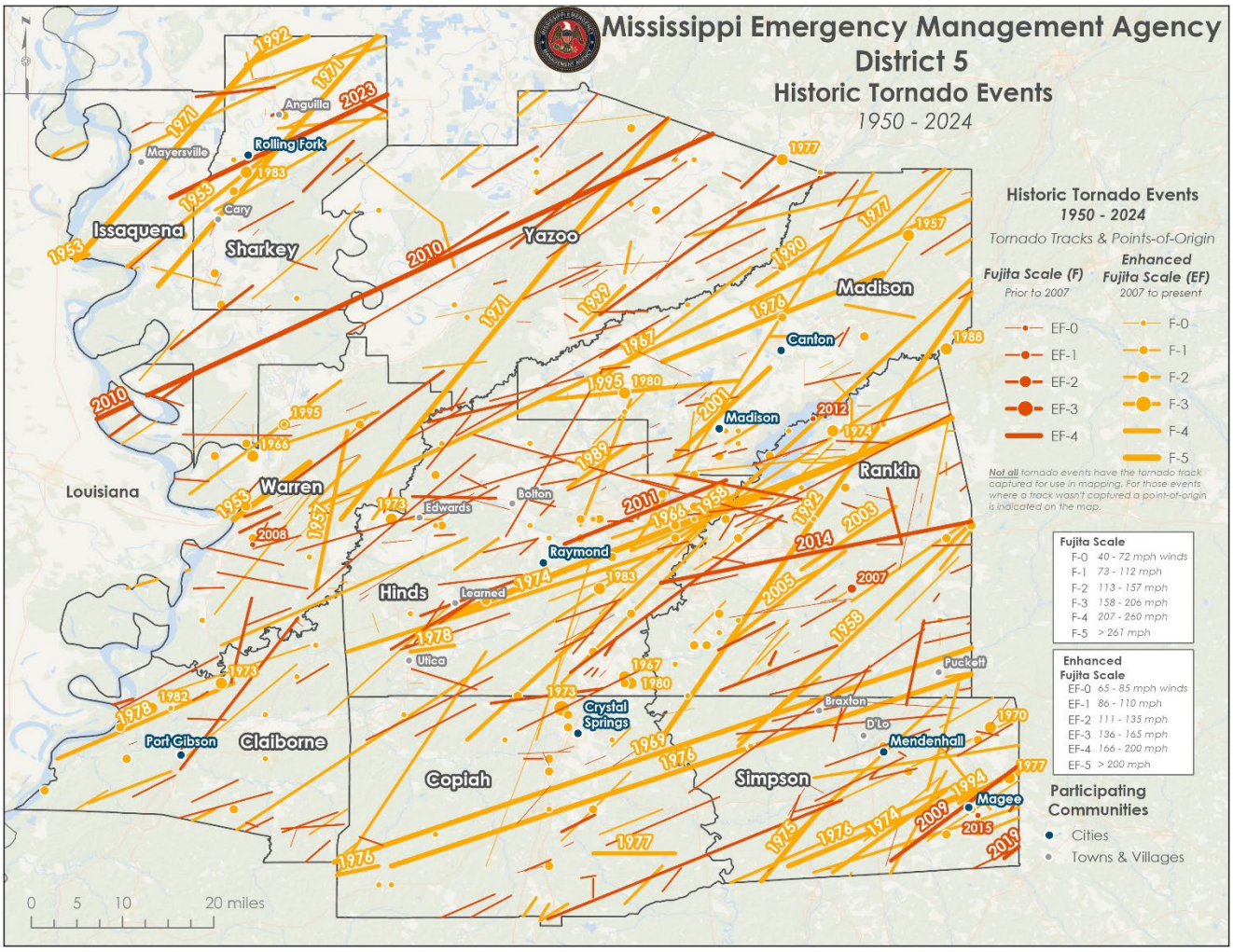


FIGURE 39: AVERAGE ANNUAL TORNADO OCCURRENCES IN MEMA DISTRICT 5

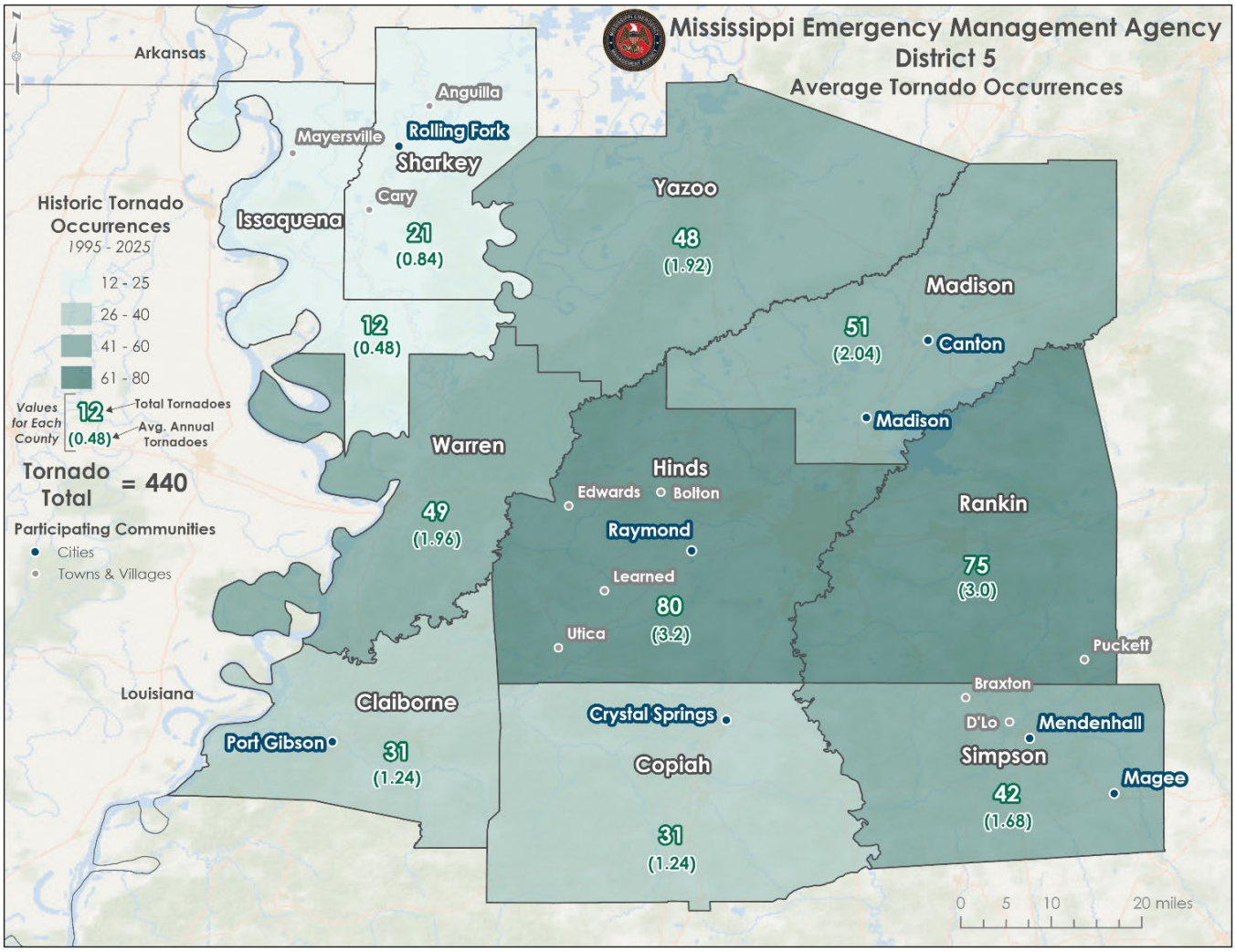


Table 53 details the tornado counts for MEMA District 5, based on historical county level data from 2020 through 2025. Since 2020, there have been 37 tornadoes which have caused 14 deaths, 153 injuries, and over $92,000,000 in damages. The strongest tornado to have occurred in MEMA District 5 was an EF-4. **Figure 40** shows historical tornadoes from 1950 to 2023 where there were 620 tornadoes that occurred in MEMA District 5. During that timeframe, Hinds (112) and Rankin (99) Counties have experienced the highest number of tornadoes within the District.

TABLE 53: TORNADOES REPORTED IN MEMA DISTRICT 5 BETWEEN 2020-2025 | SOURCE: NCEI

Total Tornados	Total Deaths	Total Injuries	Property Damages	Average Length	Average Width	Strongest Tornado
37	14	153	$92 Million	6.8 Miles	550 Yards	EF4/195mph

FIGURE 40: TORNADO EVENTS PER COUNTY IN MEMA DISTRICT 5 | SOURCE: 2023 STATE OF MISSISSIPPI SHMP

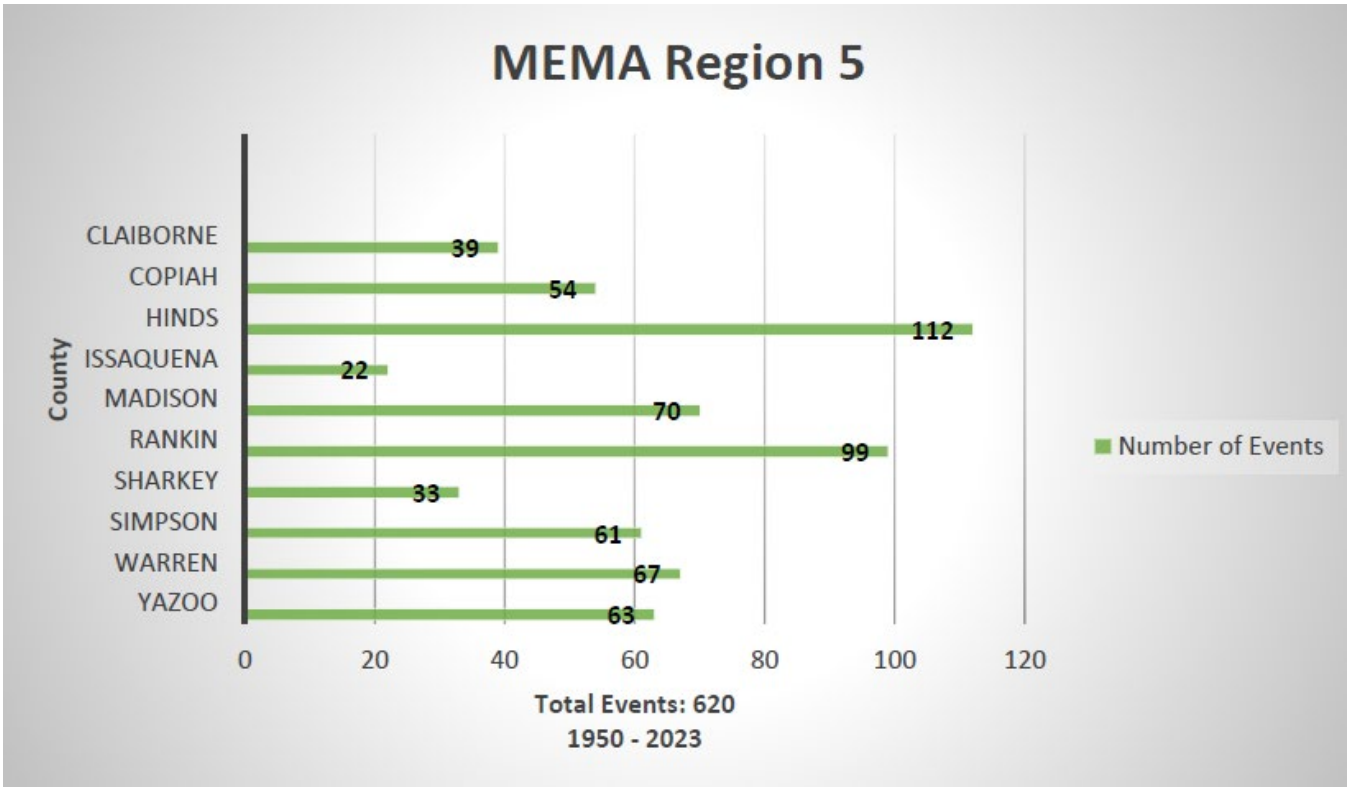


Figure 41 below shows the number of tornado events and reported property damage from tornadoes from 1950-2022 for the entire District.

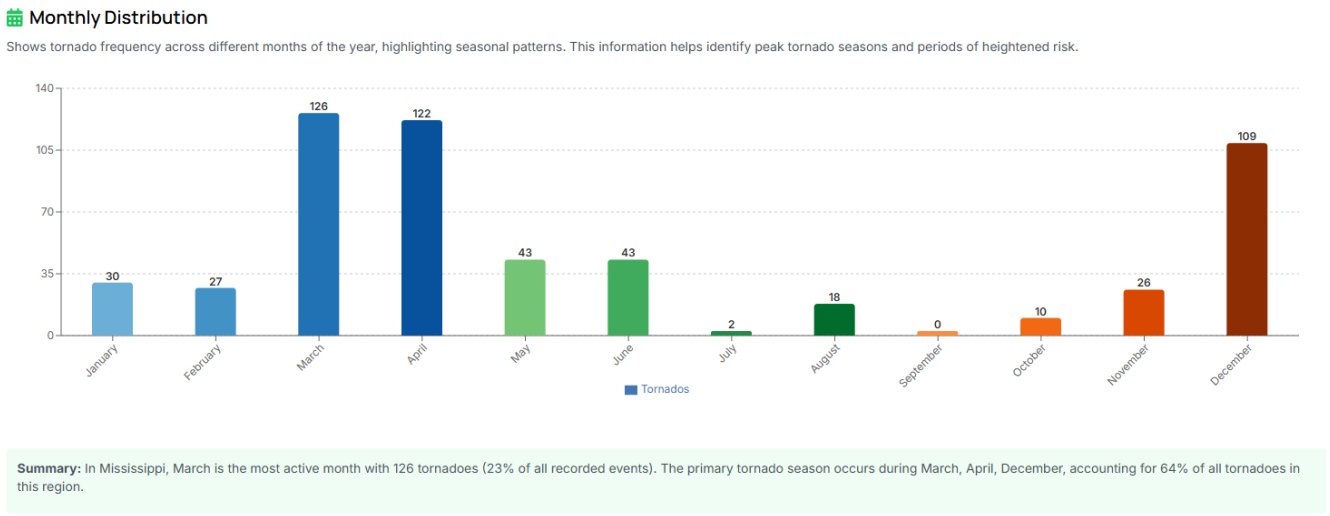
FIGURE 41: TORNADO DAMAGE ASSESSMENT (1950-2022) | SOURCE: 2023 STATE OF MISSISSIPPI SHMP

MEMA Region 5				
County	Event	Total Value of Property (2022 MS Department of Revenue)	Reported Property Damage (NCDC) 1950 - 2022	Percent of Property Damage
Claiborne	39	$395,679,089	$27,225,000	6.88%
Copiah	54	$1,294,921,200	$10,812,000	0.83%
Hinds	112	$12,474,623,347	$95,838,000	0.77%
Issaquena	22	$152,402,798	$3,800,000	2.49%
Madison	70	$13,389,673,314	$46,583,000	0.35%
Rankin	99	$13,402,856,152	$144,866,000	1.08%
Sharkey	33	$284,485,274	$28,299,000	9.95%
Simpson	61	$1,529,314,041	$27,754,000	1.81%
Warren	67	$3,861,953,833	$34,047,000	0.88%
Yazoo	63	$1,308,545,622	$149,036,000	11.39%
Totals	**620**	**$48,094,454,670**	**$568,260,000**	**1%**

5.11.5. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, approximately 7 tornadoes occur every year in MEMA District 5. The probability of future occurrences of tornadoes across District 5 is **Highly Likely**. Historical data indicates a consistent pattern of tornado activity in the District. The annualized frequency metric, derived from this dataset, provides an estimate of the average number of tornado occurrences per year. **Figure 42** below displays the historical breakdown of tornadoes recorded by month. It is likely that most tornadoes will occur in March, April, and December. **Table 24** shows the specific ratings, including assessed probability of future occurrences, for each participating jurisdiction.

FIGURE 42: MONTHLY BREAKDOWN OF STATEWIDE TORNADO ACTIVITY



5.11.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

Mississippi District 5 is highly vulnerable to tornado hazards due to its historical frequency of events, population density, and concentration of critical infrastructure. Tornadoes pose a direct threat to life safety and property, particularly in urbanized areas and surrounding communities. Vulnerable populations—including elderly residents, low-income households, and those living in mobile homes—face elevated risks due to limited access to shelter and recovery resources.

District 5's vulnerability is elevated due to its population density, aging infrastructure, and concentration of critical facilities. Tornadoes pose a threat to life safety, property, and economic stability. Vulnerable populations, including the elderly and low-income households, may face additional challenges during and after tornado events.

Tornado risk across the district is not uniform, with variations driven by differences in terrain, population concentration, infrastructure development, and local emergency management capabilities. Counties such as Hinds and Madison, which contain larger population centers and more developed infrastructure, face elevated risk from tornadoes due to greater exposure and potential for cascading impacts. These areas are more likely to experience significant property damage, disruption of services, and challenges in post-disaster recovery. In contrast, counties like Issaquena and Sharkey may be more rural and less densely populated, but they still face considerable vulnerability due to older housing stock, limited access to safe shelters, and fewer emergency response resources. These factors can increase the severity of tornado impacts despite lower exposure levels. Based on the extent, vulnerability, and probability, Tornadoes pose a **High** risk across District 5.

5.11.6.1. PEOPLE

Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. **Table 54** details the number of mobile or manufactured homes for each county in MEMA District 5. Claiborne and Issaquena Counties have 1,272 and 265 total number of mobile or

manufactured homes respectively, which is 30% of their total housing. As mentioned above, the March 2023 EF-4 tornado event caused 14 fatalities of which, nine were in mobile or manufactured homes.

Beyond physical harm, tornadoes can cause significant human impacts, including displacement, mental health challenges, and disruption of access to essential services. Vulnerable populations—such as low-income households, the elderly, and individuals with disabilities—may face compounded risks due to limited mobility, lack of resources, or inadequate shelter options. These vulnerabilities underscore the need for targeted mitigation strategies, such as public education, early warning systems, and the development of community safe rooms in high-risk areas.

In District 5, tornadoes occur less frequently than other hazards, which may lead to lower public awareness and preparedness. This lack of readiness can delay response efforts, especially given the short warning times typically associated with tornadoes. Such delays increase vulnerability, particularly in communities with limited access to safe shelter or emergency resources. Strengthening public education, early warning systems, and structural mitigation measures is essential to reduce future risks.

TABLE 54: MOBILE/MANUFACTURED HOMES IN MEMA DISTRICT 5 | SOURCE: 2023 STATE OF MISSISSIPPI SHMP

County	Number of Mobile/ Manufactured Housing	Percentage of Total Housing
Claiborne County	1,272	29.9%
Hinds County	3,954	3.9%
Issaquena County	265	30.2%
Sharkey County	547	22.6%
Simpson County	3,080	27.2%
City of Canton (Madison County)	2,140	7.4%
City of Madison (Madison County) *	--	--
City of Crystal Springs (Copiah County)	2,487	22.4%
Village of Puckett (Rankin County)	8,920	19.6%

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

5.11.6.2. STRUCTURES AND SYSTEMS

Tornadoes pose a significant threat to structures and systems across Mississippi MEMA District 5, which includes central counties such as Hinds, Madison and Rankin. Recent tornado events, including EF-3 and EF-4 storms, have caused widespread damage to homes, businesses, farms, and public infrastructure. During this planning cycle, tornado events have caused over $92 million dollars in reported property damage and $186,000 in crop damage. Hundreds of residential structures have been destroyed or severely damaged, and critical facilities like schools, fire stations, and police departments

are often left inoperable due to roof failures, debris impacts, and power outages. Transportation routes are frequently blocked, delaying emergency response and recovery efforts. Additionally, Agricultural operations are also at high risk, with crop damage and livestock losses posing economic challenges.

To mitigate these impacts, local hazard mitigation plans should prioritize safe room construction, wind retrofitting of vulnerable buildings, and hardening of essential infrastructure. Adoption of disaster-resistant building codes, improved zoning practices, and enhanced public warning systems are also key strategies.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. MEMA District 5 follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

5.11.6.3. CRITICAL FACILITIES

Tornadoes can severely impact critical facilities in Mississippi MEMA District 5, compromising essential services during and after a disaster. Facilities such as hospitals, emergency operations centers, police and fire stations, and schools are vulnerable to structural damage from high winds and debris. Common issues include roof failure, broken windows, and compromised walls, which can render these buildings inoperable at a time when they are most needed.

Operational disruptions are also common due to power outages, blocked access routes, and damage to communication systems. Facilities not built to tornado-resistant standards may fail to provide safe shelter or maintain continuity of operations. Hinds and Rankin Counties have experienced the most tornado events since 1950 and have an average occurrence of 3 tornado events per year, thus making critical facilities and infrastructure in these areas at a slightly higher risk. All critical facilities and infrastructure throughout the District are at some level of risk. To reduce these risks, local hazard mitigation plans should prioritize retrofitting critical facilities, constructing safe rooms, and installing backup power systems. These measures help ensure that vital services remain functional during tornado events and support community resilience.

Community Lifelines

Tornadoes can significantly disrupt FEMA's Community Lifelines in Mississippi MEMA District 5, affecting the systems that support public health, safety, and daily life. Critical services such as emergency response, healthcare, and public safety may be compromised when facilities are damaged or inaccessible. Power outages from downed lines and damaged substations can halt operations at hospitals, shelters, and emergency centers, while communication failures limit the ability to issue warnings and coordinate response efforts.

Transportation routes are often blocked by debris, delaying emergency services and supply deliveries. Water and wastewater systems may be damaged, leading to sanitation concerns and boil water advisories. Additionally, tornadoes frequently destroy homes and displace residents, straining shelter capacity and food distribution networks. These cascading impacts highlight the importance of strengthening lifeline infrastructure through mitigation measures such as safe room construction, utility hardening, and improved emergency planning to ensure community resilience during tornado events. **Table 55** outlines the potential impacts to lifelines from a tornado event.

TABLE 55: POTENTIAL VULNERABILITIES OF LIFELINES FROM TORNADOS

Lifeline	FEMA Icon	Description of Impact
Communications		Cell towers, internet infrastructure, and emergency broadcast systems can be damaged, limiting public warnings and coordination.
Energy (Power & Fuel)		Tornadoes frequently down power lines and damage substations, causing widespread outages. Fuel stations may be destroyed or inaccessible.
Food, Hydration, Shelter		Tornadoes disrupt food supply chains, contaminate water systems, and destroy homes, leading to mass displacement and shelter needs.
Hazardous Materials		Tornadoes can damage industrial facilities, leading to chemical spills, fires, or air/water contamination.
Health & Medical		Hospitals and clinics may be damaged or inaccessible, leading to delays in medical care. There's often a surge in trauma cases and mental health needs.
Safety & Security		Tornadoes destroy police stations, fire departments, and emergency operation centers, delaying law enforcement, fire response, and search and rescue operations.
Transportation		Roads, bridges, railways, and airports may be blocked or destroyed, delaying emergency response and supply delivery.

Lifeline	FEMA Icon	Description of Impact
Water & Wastewater Systems		Water treatment plants and wastewater systems may be compromised, leading to boil water advisories and sanitation issues.

5.11.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Tornadoes can have significant impacts on natural, historic, and cultural resources throughout Mississippi District 5. Natural resources such as forests, wetlands, and wildlife habitats may be damaged or destroyed by high winds, flying debris, and uprooted vegetation. These impacts can lead to long-term ecological disruption, erosion, and loss of biodiversity.

Historic and cultural resources, including landmarks, heritage buildings, cemeteries, and tribal sites—are particularly vulnerable due to their age, structural fragility, and irreplaceable value. Tornadoes may cause partial or complete destruction of these assets, resulting in the loss of community identity, historical continuity, and tourism value. Hinds and Rankin Counties have experienced the most tornado events since 1950 and have an average occurrence of three tornado events per year, thus making natural, historic, and cultural resources in these areas slightly higher risk. All natural, historical, and cultural resources throughout the District are at some level of risk. Recovery and preservation efforts for these resources are often costly and time-consuming, underscoring the importance of proactive mitigation measures such as documentation, structural reinforcement, and protective zoning.

5.11.7. POTENTIAL IMPACTS

Tornadoes pose a significant threat to communities across MEMA District 5, which includes central Mississippi counties such as Hinds, Madison and Rankin, and others. These storms can cause widespread destruction in a short period, with impacts varying based on storm intensity, population density, and local infrastructure. Key factors determining potential impacts include the following:

- **Residential and Commercial Damage**: Tornadoes can destroy homes, mobile housing units, and businesses. Recent events in Mississippi have resulted in hundreds of homes being damaged or destroyed, with some counties reporting dozens of affected businesses and farms.
- **Loss of Life and Injuries**: Tornadoes have led to fatalities and serious injuries, particularly in areas with vulnerable housing or limited access to safe shelter.
- **Utility Disruptions**: Power outages are common, sometimes lasting for days. These outages affect heating, cooling, medical equipment, and communication systems.
- **Transportation and Access Issues**: Debris and damaged infrastructure can block roads and bridges, delaying emergency response and recovery efforts.
- **Economic and Agricultural Losses**: Tornadoes can damage crops, equipment, and livestock, impacting local economies and food supply chains.
- **Public Health and Safety Concerns**: Displacement, exposure to the elements, and contaminated water sources can pose health risks, especially for vulnerable populations.

These impacts highlight the need for robust mitigation strategies, including early warning systems, public education, safe room development, and resilient infrastructure planning.

5.11.8. IMPACTS OF CHANGES IN DEVELOPMENT

Tornadoes also have the potential to significantly influence future development patterns. Future regulations may require stricter building codes, land use restrictions, and enhanced mitigation measures to reduce exposure. Development in tornado-prone areas may be discouraged or redirected; while rebuilding efforts post-disaster may lead to more resilient construction practices. Infrastructure investments may shift toward protective features such as safe rooms, hardened utilities, and improved emergency access routes.

Over time, repeated tornado impacts can alter community growth trajectories, affect housing affordability, and influence economic development priorities. Strategic planning is essential to ensure that future development aligns with hazard mitigation goals, supports vulnerable populations, and enhances long-term resilience across District 5.

5.12. TROPICAL STORM/HURRICANE

5.12.1. DESCRIPTION

Tropical storms and hurricanes are naturally occurring events that produce damaging high winds, storm surge flooding, tornadoes, and torrential rainfall capable of causing inland flooding. The Atlantic hurricane season begins on June 1 and ends on November 30, but hurricanes have developed outside of the designated season. Mississippi has been subject to winter and spring extra-tropical storms driving higher than normal tides from southerly and southeasterly winds. The Mississippi Coast has also experienced tropical depressions and tropical storms which have caused higher-than-normal tides, storm surges, and gusting winds.

The following terms are used to describe tropical storms / hurricanes:

- **Tropical Wave**: A trough or cyclonic curvature maximum in the trade-wind easterlies. The wave may reach maximum amplitude in the lower middle troposphere.
- **Tropical Depression**: A tropical cyclone with maximum sustained surface wind speeds (using the U.S. 1-minute average) of 33 kt (38 mph or 62 km/hr) or less.
- **Tropical Storm**: A tropical cyclone with maximum sustained surface wind speed (using the U.S. 1-minute average) ranges from 34 kt (39 mph or 63 km/hr) to 63 kt (73 mph or 118 km/hr).
- **Hurricane**: A tropical cyclone with maximum sustained surface winds (using the U.S. 1minute average) of 64 kt (74 mph or 119 km/hr) or more.

5.12.2. LOCATION

Although the Mississippi Delta is located over 200 miles inland from the Gulf Coast, it remains vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. These systems can generate damaging winds, intense rainfall, tornadoes, and flash flooding. Such hazards pose a significant risk to the District's population, infrastructure, and agricultural economy. The whole district is at risk of tropical storms and hurricanes.

5.12.3. EXTENT

While MEMA District 5 is located inland and does not experience direct coastal impacts, it remains vulnerable to the inland effects of hurricanes and tropical storms that make landfall along the Gulf Coast. As these systems move northward, they can retain significant strength and produce hazardous conditions across the district.

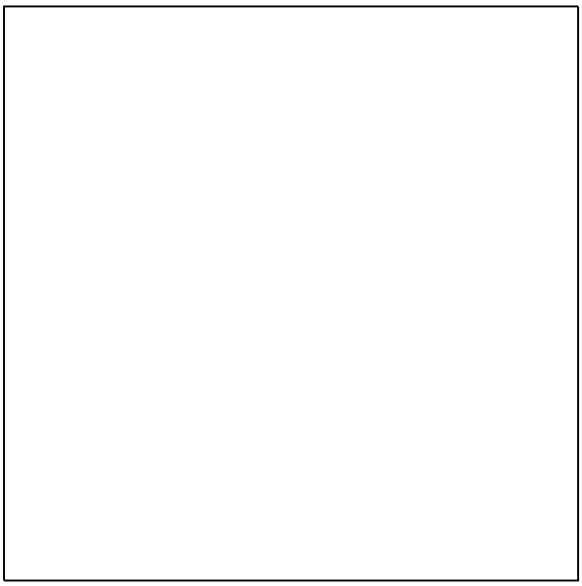
The extent of hurricane-related impacts in District 5 typically includes:

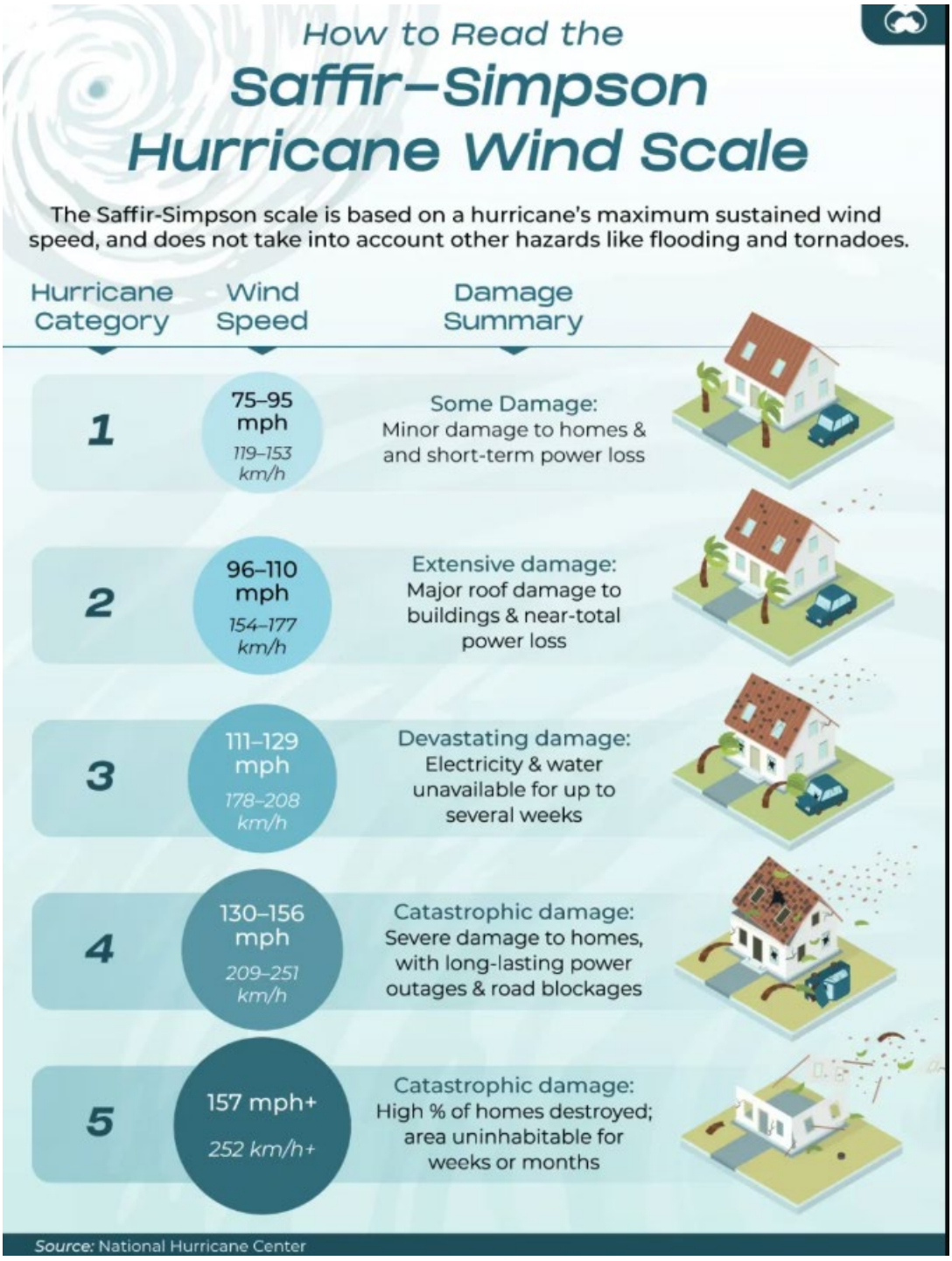
- Sustained winds ranging from 30 to 60 mph, with higher gusts possible depending on storm intensity and track.
- Heavy rainfall totals exceeding 6 inches in a 24-hour period, leading to flash flooding and saturated soils.
- Tornadoes, often spawned in the outer bands of tropical systems, which can cause localized but severe damage.
- Extended power outages due to downed trees and utility infrastructure.
- Agricultural losses, particularly in areas with vulnerable crops and livestock.

Although the district is not subject to storm surge, the inland movement of hurricanes can still result in widespread disruption. The severity of impacts depends on the storm's strength at landfall, forward speed, and interaction with other weather systems.

The Saffir-Simpson Hurricane Wind Scale ranks storms from 1 (weakest) to 5 (strongest) based on their sustained wind speeds, indicating potential property damage. **Figure 43** details the different hurricane categories and their level of impact.

FIGURE 43: SAFFIR-SIMPON HURRICANE WIND SCALE | SOURCE: NATIONAL HURRICANE CENTER





5.12.4. PREVIOUS OCCURRENCES

Although MEMA District 5 is located inland, it has experienced the effects of several significant hurricanes and tropical storms over the past few decades. These systems, while often weakened by the time they reach the District, have still produced damaging winds, heavy rainfall, tornadoes, and widespread power outages.

Notable events include Hurricane Katrina (2005), which caused extensive inland damage across Mississippi, including District 5 counties, through high winds and tornadoes. Hurricanes Rita (2005), Gustav (2008), and Isaac (2012) also brought heavy rain and localized flooding. More recently, Hurricane Ida (2021) tracked through the center of the District, producing tropical storm-force winds and flash flooding. Hurricane Ida moved into Mississippi on August 30 moving slowly through the District before turning Northeast and moved across the Jackson metro area as a tropical storm and into Northeast Mississippi as a tropical depression through the early morning of August 31. Ida brought tropical storm force gusts to portions of Mississippi, which brought down trees and power lines. Rainfall amounts of 4-8 inches occurred, which resulted in localized flooding. At least three homes suffered damage from falling trees and another home had roof damage. This event alone caused at least $420,000 in property damage across Copiah, Claiborne, Hinds, Madison and Simpson Counties.

These events highlight the district's continued vulnerability to the inland impacts of tropical systems. **Figure 44** displays the historic hurricane events in the planning area and **Figure 45** shows the projected landfall for the 2021 Hurricane Ida event. Based on historical events, there have been several tropical storms that have impacted MEMA District 5.

FIGURE 44: MEMA DISTRICT 5 HISTORIC HURRICANE EVENT MAP

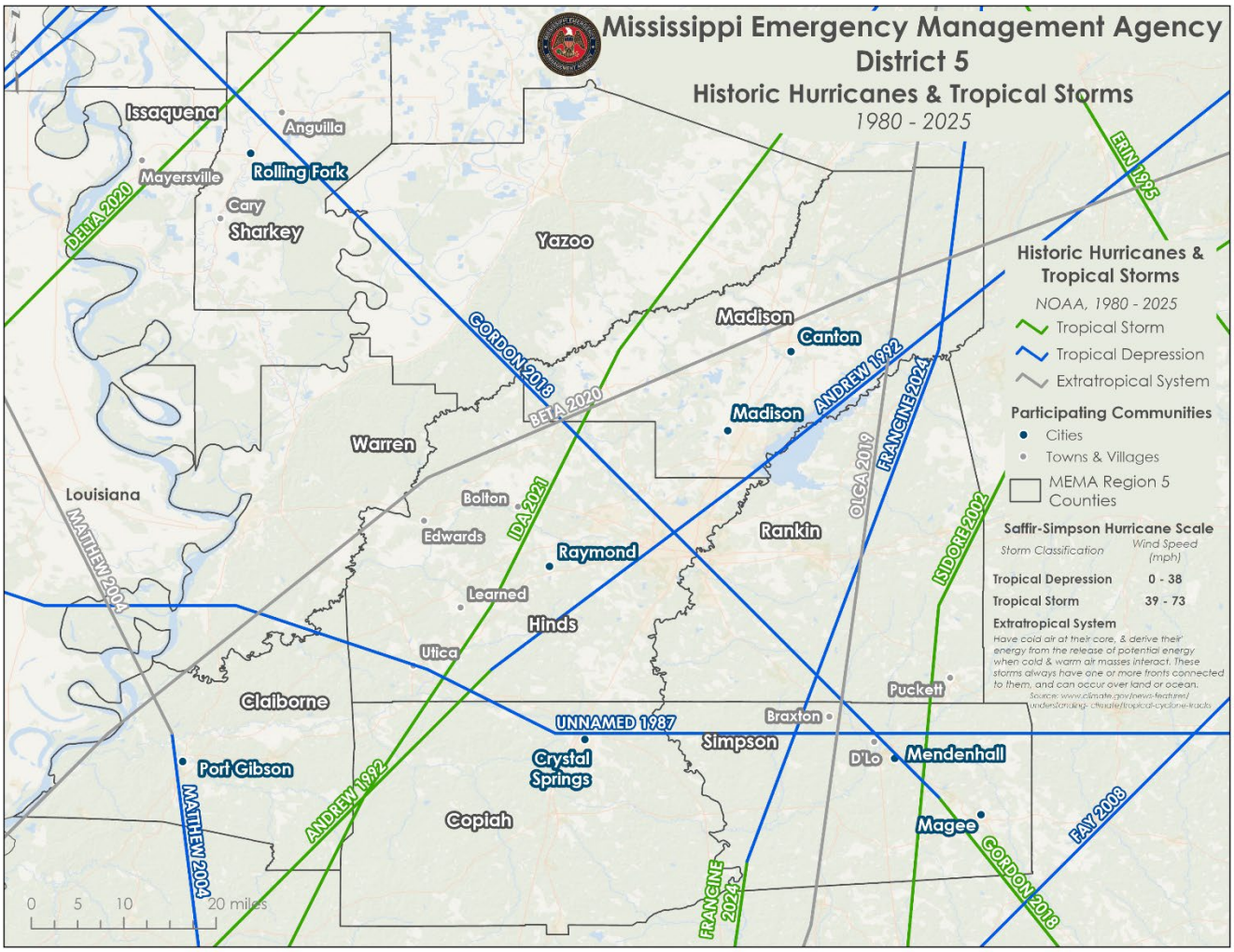
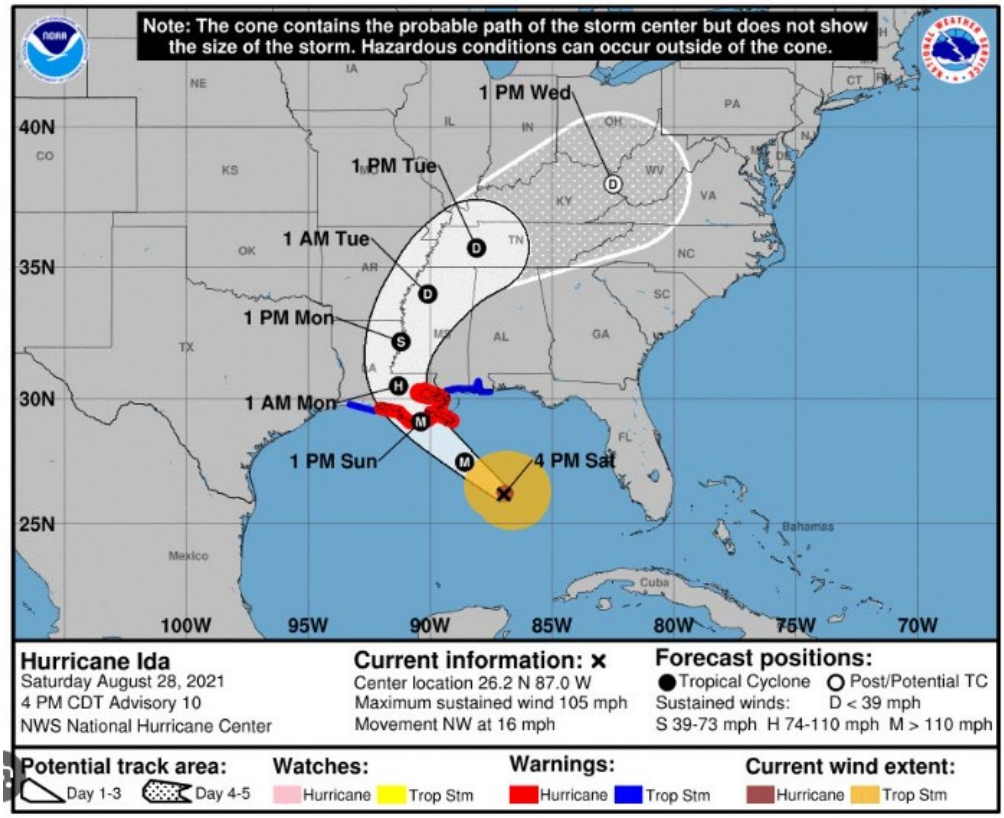


FIGURE 45: HURRICANE IDA PROJECTED LANDFALL 2021 | SOURCE: NOAA



5.12.5. PROBABILITY OF FUTURE OCCURRENCES

Although MEMA District 5 is located inland, the probability of experiencing hurricane-related impacts remains **Low** due to the district's proximity to the Gulf Coast and historical storm tracks. Tropical systems that make landfall along the Mississippi or Louisiana coasts frequently move inland, bringing heavy rainfall, strong winds, and tornadoes to central Mississippi. Climate trends and increased storm intensity may further elevate the risk in future decades. While direct hurricane strikes are unlikely, the district remains vulnerable to the secondary impacts of these systems, particularly flooding, wind damage, and power outages. The assessed probabilities of tropical storms affecting each participating jurisdiction are shown in **Table 24**.

5.12.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

MEMA District 5 is vulnerable to the inland impacts of hurricanes, particularly high winds, heavy rainfall, flash flooding, and tornadoes. While the district is not exposed to coastal storm surge, its communities remain at risk due to aging infrastructure, limited drainage capacity, and widespread rural development. Vulnerable populations include residents in mobile homes, low-income households, and those with limited access to emergency services.

The risk associated with hurricanes varies across MEMA District 5 due to differences in geography, land use, population density, and infrastructure. Southern counties in the district, such as Claiborne, Copiah and Simpson, tend to experience more frequent and intense impacts due to their proximity to

typical inland storm tracks. These areas are more likely to see higher wind speeds, heavier rainfall, and increased tornado activity from tropical systems.

In contrast, Northern counties like Issaquena, Madison, and Sharkey may experience less frequent hurricane-related impacts, though they remain vulnerable to flooding and wind damage from remnants of major storms. Rural areas with large agricultural operations face elevated risks due to crops and livestock exposure, while urban centers may be more susceptible to infrastructure disruption and prolonged power outages. Understanding this variability is essential for tailoring mitigation strategies to local conditions and ensuring that resources are allocated effectively across the district.

Critical infrastructure such as power lines, roads, and communication systems is susceptible to disruption during hurricane events. Agricultural operations are also at high risk, with crop damage and livestock losses posing economic challenges. Urban areas may experience prolonged power outages and localized flooding, while rural communities may face delayed response and recovery due to limited resources. Understanding these vulnerabilities is essential for prioritizing mitigation actions, improving emergency preparedness, and enhancing community resilience across the district. Based on the extent, vulnerability, and probability, tropical storms pose a **Medium** risk to District 5, overall. Risk ratings for each individual participating jurisdiction are shown in **Table 24.**

5.12.6.1. PEOPLE

Residents of MEMA District 5 face varying levels of vulnerability to hurricane impacts, particularly those related to wind damage, flooding, and power outages. Populations most at risk include individuals living in mobile homes or substandard housing, elderly residents, people with disabilities, and low-income households with limited access to transportation or emergency resources.

Rural communities may experience delayed emergency response and recovery due to geographic isolation and limited infrastructure. Urban areas, while more connected, may face challenges related to shelter capacity, evacuation logistics, and utility disruptions. Additionally, households without access to reliable communication channels may be less informed about storm warnings and protective actions. Targeted outreach, improved sheltering options, and enhanced emergency planning are critical to reducing vulnerability and building resilience among these populations.

Based on previous occurrences, tropical storms and hurricanes have caused damages to homes and roofs from high winds. Damage to people and their residences are possible to continue in the future.

5.12.6.2. STRUCTURES AND SYSTEMS

Structures and systems across MEMA District 5 are vulnerable to the impacts of hurricanes, particularly high winds, heavy rainfall, and tornadoes. Residential buildings, especially mobile homes and older structures not built to modern wind-resistant standards, are at elevated risk of damage or destruction. Public facilities such as schools, government buildings, and emergency shelters may also face operational disruptions if not adequately hardened.

Critical infrastructure, including power lines, water systems, roads, and communication networks—is susceptible to outages and physical damage during hurricane events. Prolonged power loss can affect emergency response, healthcare services, and water supply. Transportation systems may be compromised by debris, flooding, or washouts, delaying recovery efforts and access to essential services. Mitigation efforts should prioritize strengthening vulnerable structures, improving utility resilience, and ensuring continuity of operations for essential systems.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storms like high winds. MEMA District 5 follows Mississippi's statewide

building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

5.12.6.3. CRITICAL FACILITIES

Critical facilities across MEMA District 5, including hospitals, emergency operations centers, fire stations, schools, and shelters—are vulnerable to hurricane-related impacts such as high winds, flooding, and power outages. Facilities located in low-lying or poorly drained areas are particularly at risk of flood damage, which can disrupt essential services and delay emergency responses.

Many facilities rely on above-ground utilities, making them susceptible to service interruptions during storm events. Backup power systems may be limited or outdated, increasing the risk of operational failure during prolonged outages. Additionally, older buildings not constructed to modern wind-resistant standards may be more prone to structural damage.

Protecting critical facilities is essential to maintaining continuity of operations during and after hurricane events. Mitigation strategies should focus on structural hardening, floodproofing, and ensuring reliable backup power and communication systems.

Community Lifelines

Tropical storms and hurricanes can significantly disrupt FEMA's Community Lifelines in Mississippi MEMA District 5, affecting the systems that support public health, safety, and daily life. Critical services such as emergency response, healthcare, and public safety may be compromised when facilities are damaged or inaccessible. Power outages from downed lines and damaged substations can halt operations at hospitals, shelters, and emergency centers, while communication failures limit the ability to issue warnings and coordinate response efforts.

Hurricanes can significantly disrupt community lifelines across MEMA District 5, even as inland events. High winds, heavy rainfall, and tornadoes can damage or disable essential services that support public safety and well-being. **Table 56** outlines the potential impacts to lifelines from a tropical storm/hurricane event.

TABLE 56: POTENTIAL VULNERABILITIES OF LIFELINES FROM TROPICAL STORMS/HURRICANES

Community Lifeline	FEMA Icon	Description of Impact
Communications		Cell towers and internet services may be disrupted, affecting coordination and public information during response efforts.

Community Lifeline	FEMA Icon	Description of Impact
Energy (Power & Fuel)		Above-ground power infrastructure is highly vulnerable to wind and falling debris, often resulting in widespread outages.
Food, Hydration, Shelter		Flooding and power outages can compromise water systems, food supply chains, and shelter operations, especially in rural areas.
Hazardous Materials		Flooding and high winds may compromise containment systems, leading to spills or leaks that pose serious risks to public health, water quality, and the environment.
Health & Medical		Healthcare facilities may experience power loss or structural damage, limiting access to critical care and emergency services.
Safety & Security		Emergency response operations may be delayed due to blocked roads, damaged facilities, or communication outages.
Transportation		Flooded roads, debris, and damaged bridges can isolate communities and hinder evacuation, supply delivery, and emergency access.
Water & Wastewater Systems		Heavy rainfall can overwhelm treatment facilities and drainage infrastructure, leading to service disruptions and potential contamination of drinking water supplies. Wastewater systems may also be compromised, resulting in environmental hazards and public health risks.

5.12.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Hurricanes can cause significant damage to natural, historic, and cultural resources across MEMA District 5. Heavy rainfall and flooding may erode natural landscapes, damage wetlands, and disrupt

ecosystems, while high winds can uproot trees and destroy habitat areas. These impacts can reduce biodiversity and affect recreational and conservation lands.

Historic buildings and cultural landmarks are especially vulnerable due to age, structural fragility, and limited storm-resistant features. Flooding and wind damage can lead to irreversible loss of heritage assets, including museums, churches, cemeteries, and historic districts. Protecting these resources requires targeted mitigation efforts such as elevation, structural reinforcement, and emergency planning tailored to preservation needs.

5.12.7. POTENTIAL IMPACTS

Mississippi MEMA District 5, located in the central part of the state, is vulnerable to the inland impacts of tropical storms and hurricanes that make landfall along the Gulf Coast. While the district is not directly exposed to coastal storm surge, it frequently experiences hazardous conditions from these systems, including high winds, heavy rainfall, and tornadoes. Key factors determining potential impacts include the following:

- **Wind Damage**: Tropical systems can bring strong winds capable of damaging roofs, downing trees, and disrupting power lines, even far inland.
- **Flooding**: Prolonged and intense rainfall often leads to flash flooding and riverine flooding, especially in low-lying and urbanized areas with limited drainage capacity.
- **Tornadoes**: Hurricanes and tropical storms frequently spawn tornadoes, which can cause localized but severe damage to homes, infrastructure, and vegetation.
- **Power and Utility Disruptions**: Extended outages can affect critical services, including water supply, communications, and healthcare access.
- **Public Health and Safety Risks**: Floodwaters may carry contaminants, increasing the risk of waterborne illnesses. Mold growth in flooded structures can also pose respiratory hazards.
- **Displacement and Shelter Needs**: Damage to homes may require temporary sheltering, particularly for vulnerable populations such as the elderly, low-income households, and individuals with disabilities.

These risks highlight the importance of proactive mitigation measures, including improved drainage infrastructure, public education campaigns, and enhanced emergency response capabilities.

5.12.8. IMPACTS OF CHANGES IN DEVELOPMENT

Tropical storms and hurricanes pose significant challenges to current and future development in MEMA District 5. As communities expand, particularly into low-lying or poorly drained areas, the risk of flood damage increases due to reduced natural absorption and aging infrastructure. High winds and tornadoes associated with these storms can damage homes, businesses, and utilities, leading to costly repairs and long-term recovery needs.

Rapid development, especially in vulnerable housing sectors such as mobile homes or low-income neighborhoods, may outpace mitigation planning and strain emergency response capabilities. Additionally, disruptions to transportation, power, and water systems can hinder economic activity and public safety. These risks highlight the need for resilient land use planning, updated building codes, and strategic investment in infrastructure to ensure that growth in District 5 is sustainable and better protected against future storm events.

5.13. WILD/URBAN INTERFACE (WUI) FIRE

5.13.1. DESCRIPTION

Wildfires are uncontrolled fires that ignite and spread through combustible vegetation in forests, grasslands, rural areas, or other undeveloped landscapes. These events may be referred to by various names—such as brush fires, grass fires, forest fires, or wildland fires—depending on the type of vegetation involved. Wildfires can grow rapidly, often fueled by dry conditions, wind, and terrain, and may change direction unpredictably, posing significant threats to life, property, and natural resources.

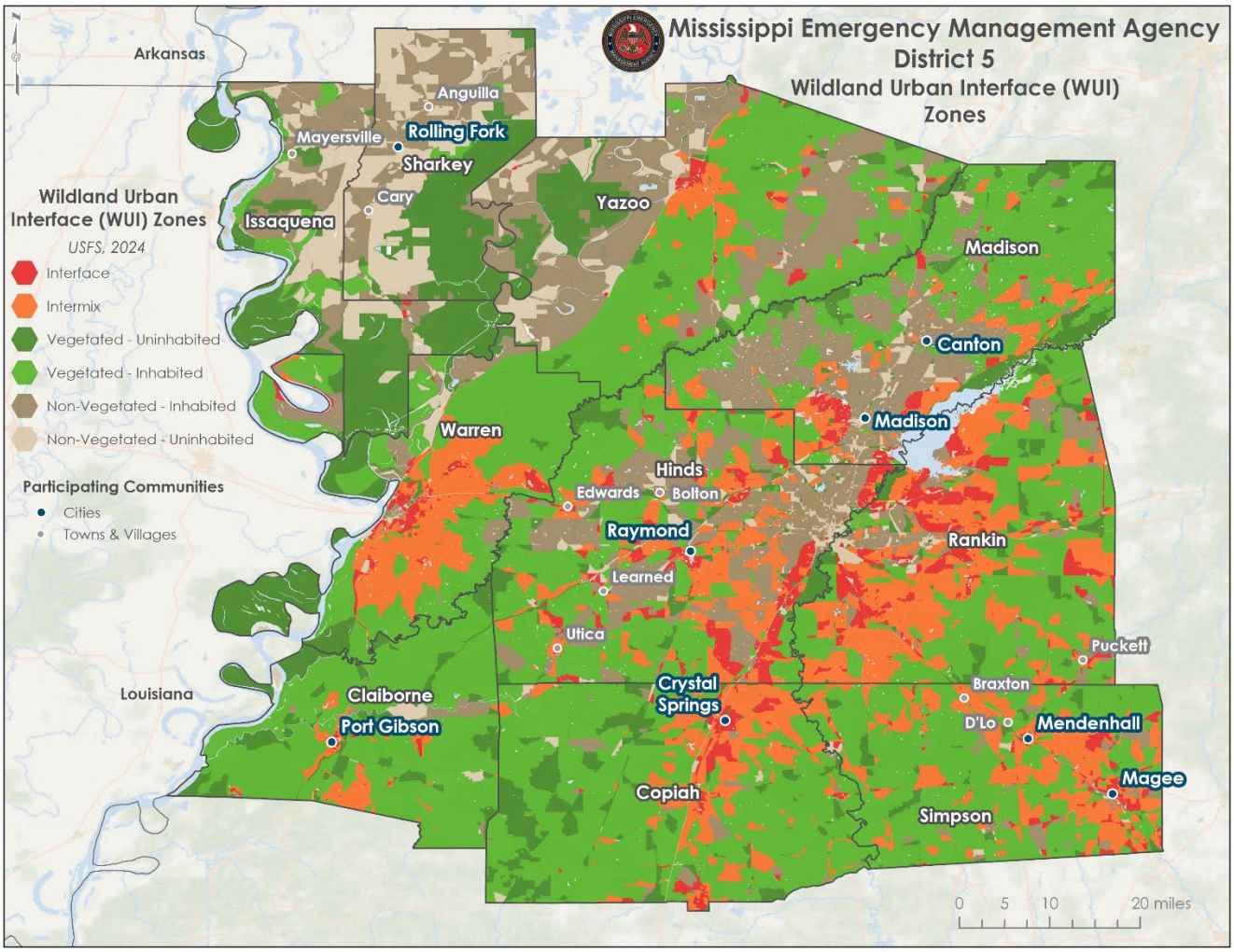
Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas.

5.13.2. LOCATION

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. These fires pose a growing threat in Mississippi, particularly in MEMA District 5, because it features a mix of urban centers, suburban growth corridors, and rural forested lands. The District's pine and hardwood forests, combined with invasive grasses and seasonal drought, create conditions conducive to fast-moving wildfires.

Figure 46 shows the Wildland/Urban Interface (WUI) zones are located within MEMA District 5. The District has a mix of interface and intermix zones. Most of the interface zones are in the center of the District including Copiah, Hinds, Madison and Rankin Counties.

FIGURE 46: MEMA DISTRICT 5 WILDFIRE URBAN INTERFACE (WUI) ZONES



5.13.3. EXTENT

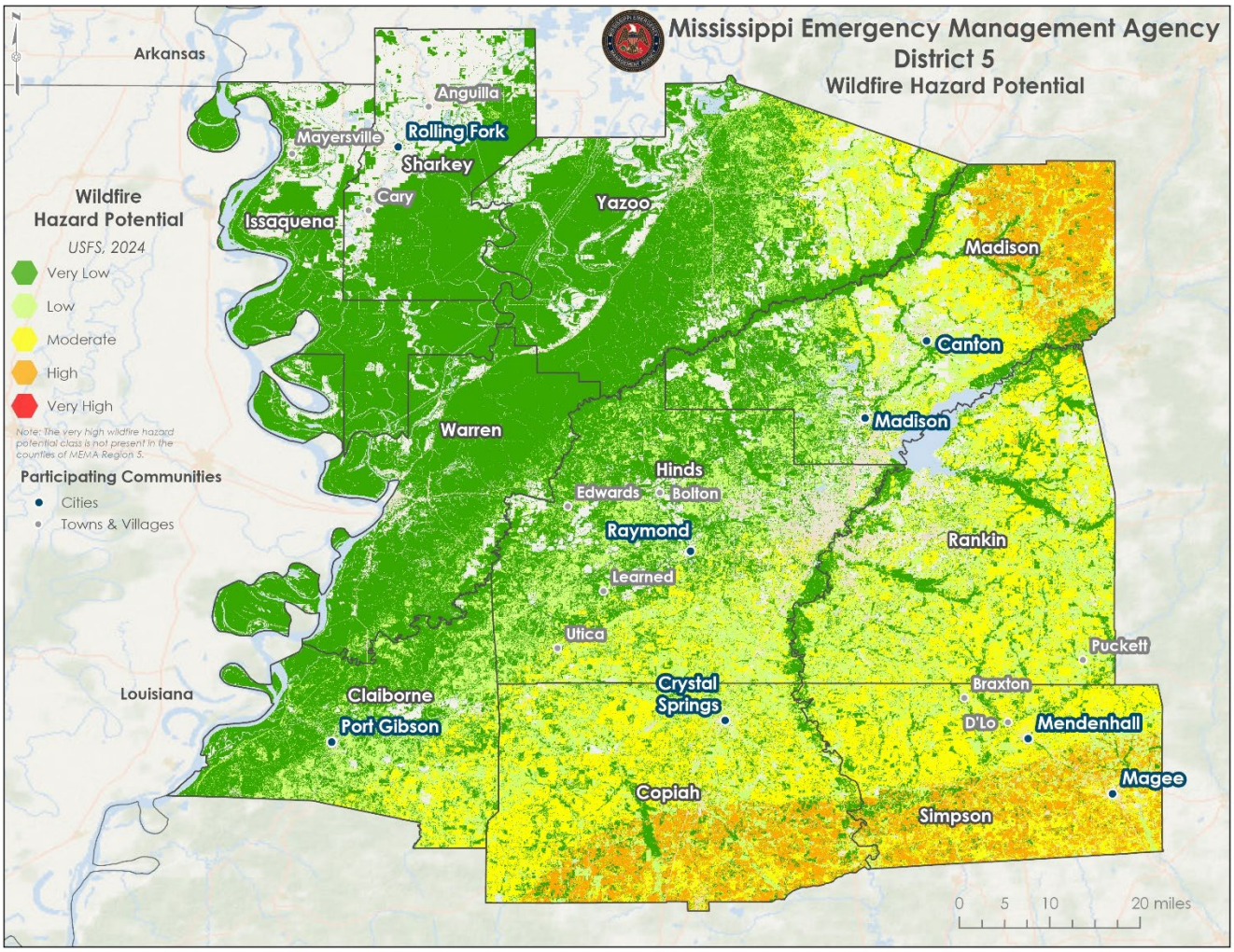
Wildland/Urban Interface (WUI) wildfire conditions in MEMA District 5 are shaped by the region's extensive areas where human development borders or intermingles with wildland vegetation, creating conditions where even relatively small wildfires can threaten homes, infrastructure, and critical community assets. The Mississippi Forestry Commission notes that wildfire occurs in the state far more frequently than many residents realize; Mississippi recorded 2,502 wildfires burning 52,982 acres in 2024, with 5,000 structures protected from potential loss—demonstrating that wildfire is a recurrent hazard with the capacity to affect developed areas statewide, including those within District 5.

The extent of a WUI fire hazard in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development. Fires can range from small, quickly contained grass fires to large-scale wildfires that threaten multiple communities and critical infrastructure. Based on previous occurrences, there have been 442.25 acres burned from National Fire Information Council (NIFC) perimeters and 1,959.79 Monitoring Trends in Burn Severity (MTBS) perimeters, with a grand total of 2,402.04. Fires can range from small, quickly contained grass fires to large-scale wildfires that threaten multiple communities and critical infrastructure.

- **Fire Intensity**: Fires may range from low-intensity surface fires to high-intensity crown fires, particularly in pine-dominated forests.
- **Burn Area**: Typical wildfires in Mississippi burn tens to hundreds of acres, but under extreme conditions, fires can exceed 1,000 acres.
- **Duration**: Most fires are contained within 24–72 hours, but prolonged drought and wind can extend suppression efforts.
- **Seasonality**: Peak fire activity occurs during late winter and early spring (February–April) and again in late summer to early fall (August–October), coinciding with dry conditions and increased human activity.
- **Fire Behavior Factors**: Wind speed, fuel load (including invasive grasses like cogon grass), and terrain influence fire spread and severity.

The extent of impact is greatest in areas where development borders forested or grassy lands, especially in rapidly growing counties. These areas face elevated risk due to increased ignition sources and limited defensible space. **Figure 47** displays areas within MEMA District 5 that are in Very Low to High Wildfire Hazard Potential areas. These areas vary in the level of wildfire potential based on several factors. Like the WUI map shown in **Figure 46**, many of the hazard potential areas are located on the Eastern and Southern sides of the District where there are more vegetated lands.

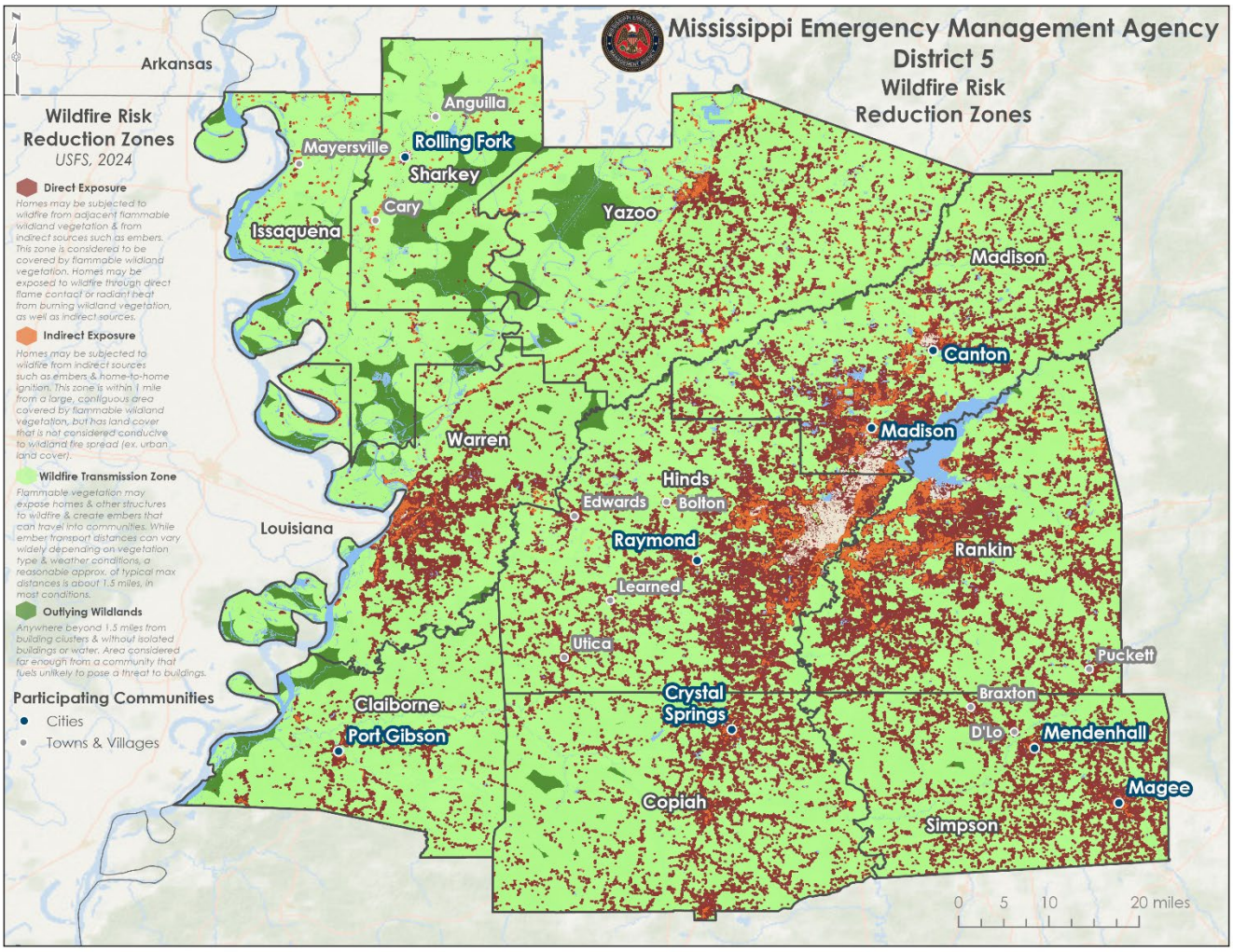
FIGURE 47: MEMA DISTRICT 5 WILDFIRE HAZARD POTENTIAL



The United States Forest Service (USFS) developed the wildfire risk reduction zones to identify areas that are at higher risk of wildfires and support communities in identifying areas to prioritize risk reduction and mitigation actions. **Figure 48** displays the risk reduction zones for MEMA District 5 which include the following:

- **Direct Exposure**: homes may be subjected to wildfire from adjacent flammable wildland vegetation & from indirect sources such as embers. The zone is covered by flammable wildland vegetation. Homes may be exposed to wildfire through direct flame contact or radiant heat from burning wildland vegetation, as well as indirect sources.
- **Indirect Exposure**: Homes may be subjected to wildfire from indirect sources such as embers & home-to-home ignition. This zone is within 1 mile of a large, contiguous area covered by flammable wildland vegetation, but has land cover that is considered conducive to wildland fire spread (ex: urban land cover).
- **Wildfire Transmission Zone**: Flammable vegetation may expose homes & other structures to wildfire & create embers that can travel into communities. While ember transport distances can vary widely depending on vegetation type & weather conditions, a reasonable approximately of typical max distances is about 1.5 miles in most conditions.
- **Outlying Wildlands**: Anywhere from 1.5 from building clusters and without isolated buildings or water. Area considered for enough from community that fuels unlikely to pose a threat to buildings.

FIGURE 48: MEMA DISTRICT 5 WILDFIRE RISK REDUCTION ZONES



5.13.4. PREVIOUS OCCURRENCES

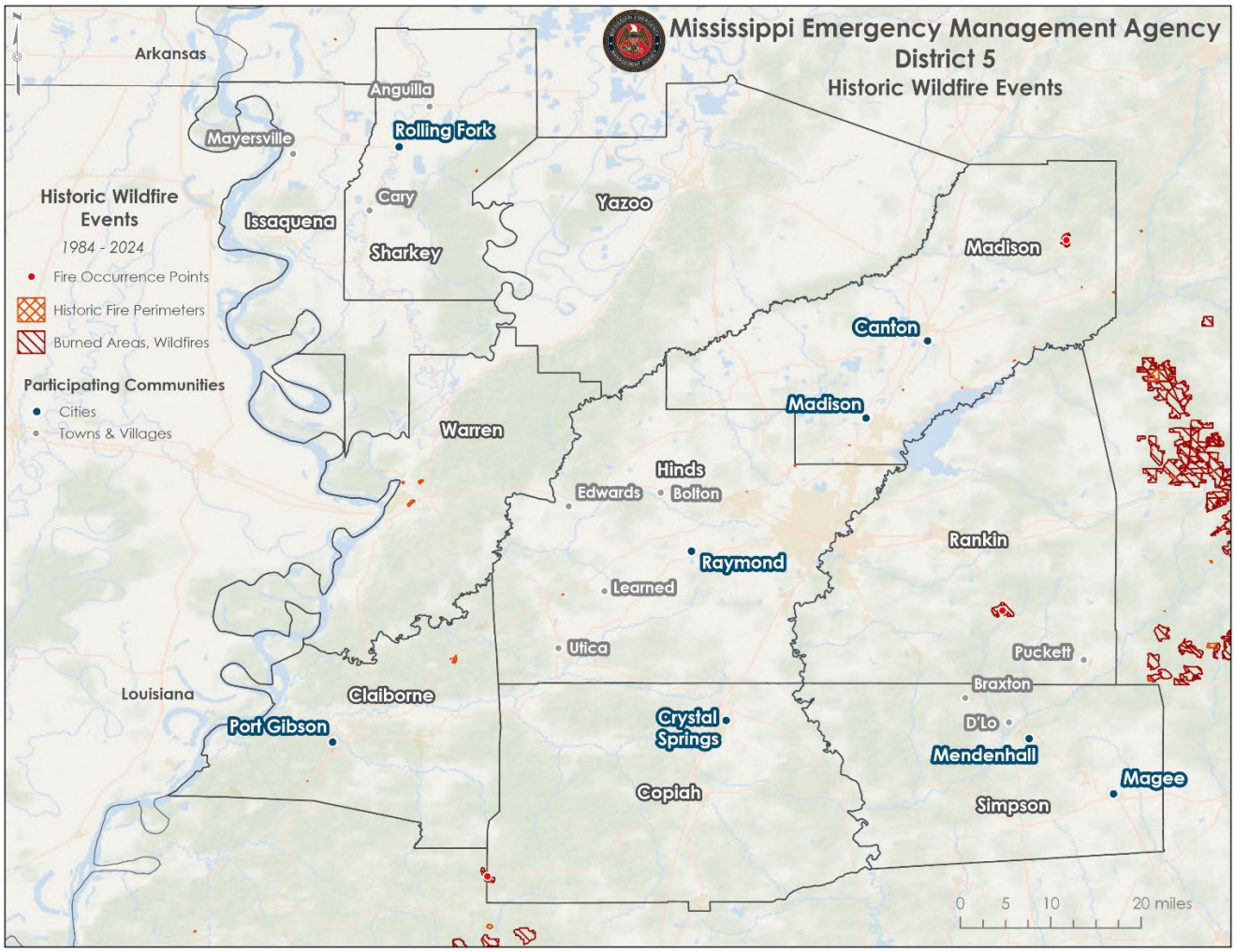
Mississippi experiences hundreds of wildfires annually, many of which affect counties within MEMA District 5. While wildfire activity varies year to year, the District consistently faces risk due to its mix of forested land, rural development, and seasonal fire conditions.

Between 2020 and 2025, wildfire activity in MEMA District 5 remained generally low to moderate, with occasional spikes during Mississippi's two primary fire seasons: January–March and July–November. Most wildfires were small and quickly contained, but several larger incidents occurred, particularly during periods of drought and elevated fire danger. In Fiscal Year 2023, the Mississippi Forestry Commission responded to over 1,000 wildfires statewide, burning nearly 20,000 acres, with some fires affecting counties within District 5.

Notable wildfires in District 5 during this period ranged from 65 to over 600 acres, with impacts including temporary road closures, smoke hazards, and minor property damage. These events highlight the importance of continued wildfire mitigation efforts, including public education on safe burning practices, vegetation management, and coordination with state forestry and emergency services. While wildfire risk in District 5 is lower than in western states, changing climate conditions and human activity necessitate proactive planning and preparedness.

Figure 49 depicts the historic wildfires in the MEMA District 5's planning area. Historic wildfires have occurred throughout the District to include Claiborne, Copiah, Madison, Rankin and Warren Counties.

FIGURE 49: MEMA DISTRICT 5 HISTORIC WILDFIRES 1984-2024



5.13.5. PROBABILITY OF FUTURE OCCURRENCES

Historical data indicates that Mississippi experiences hundreds of wildfires annually, with many occurring in District 5 counties. Seasonal dry periods, human-caused ignitions, and the expansion of development into forested and rural areas all contribute to the ongoing risk, which is more likely to occur on the western side of the District. The assessed future probability of a wildfire in District 5 is **Likely**, although the probability within each participating jurisdiction ranges significantly. Some communities assessed that wildfires were unlikely to affect their community, while other communities indicated that the probability of wildfires was extremely likely. The assessed probabilities for all participating jurisdictions are shown in **Table 24**. Wildland/Urban Interface (WUI) fires are expected to remain a recurring hazard in MEMA District 5 due to the District's climate, vegetation, and development trends

Figure 50 gives a snapshot of potential wildland fire from March 2, 2026, created by the National Interagency Coordination Center (NICC). The map shows that the entire State of Mississippi has an above normal wildfire potential for March 2026. While **Figure 51** and **Figure 52** displays a wildland fire potential outlook as normal for both April and May 2026.

FIGURE 50: SIGNIFICANT WILDLAND FIRE POTENTIAL OUTLOOK MARCH 2026 | SOURCE: NICC

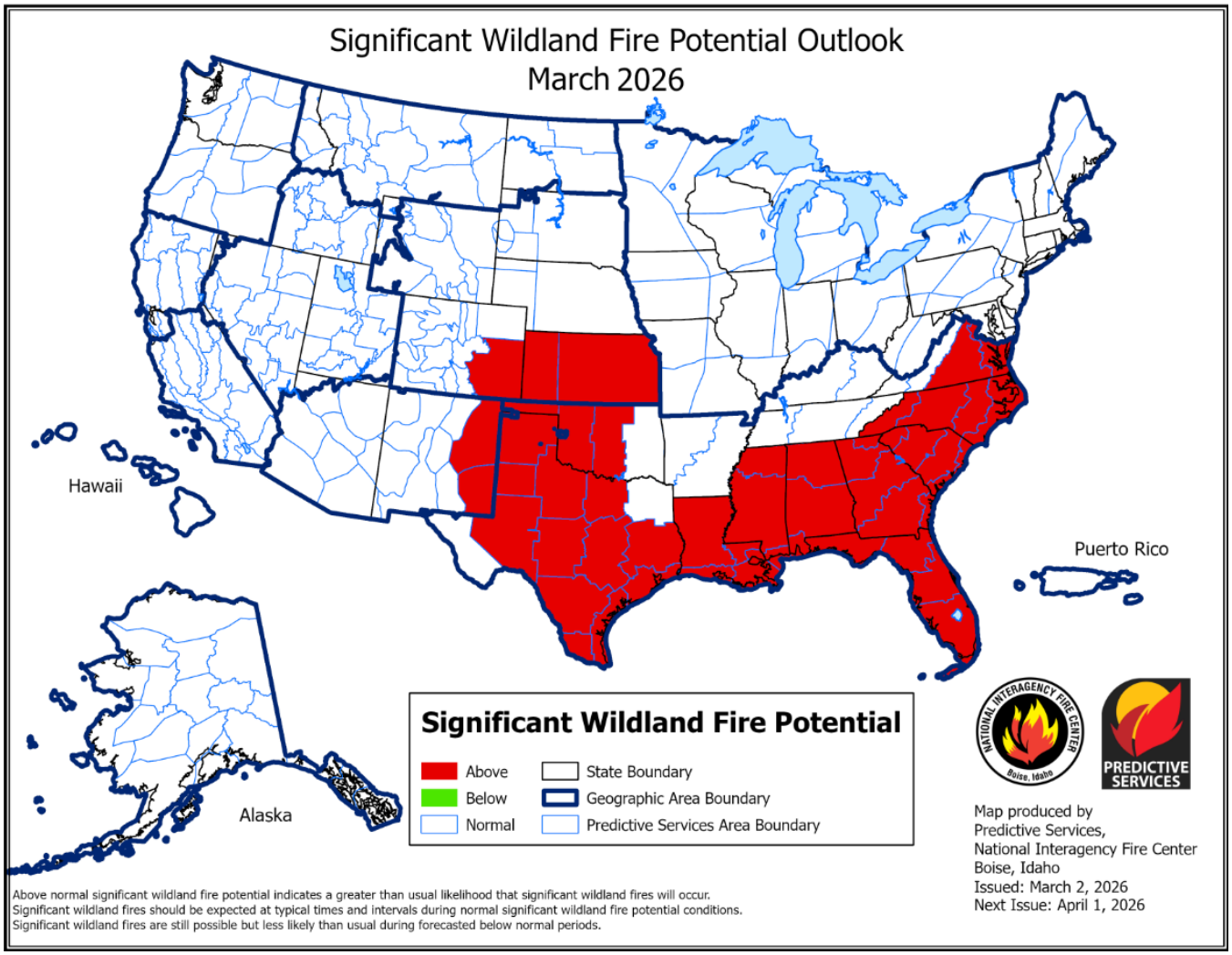


FIGURE 51: SIGNIFICANT WILDLAND FIRE POTENTIAL OUTLOOK APRIL 2026 | SOURCE: NICC

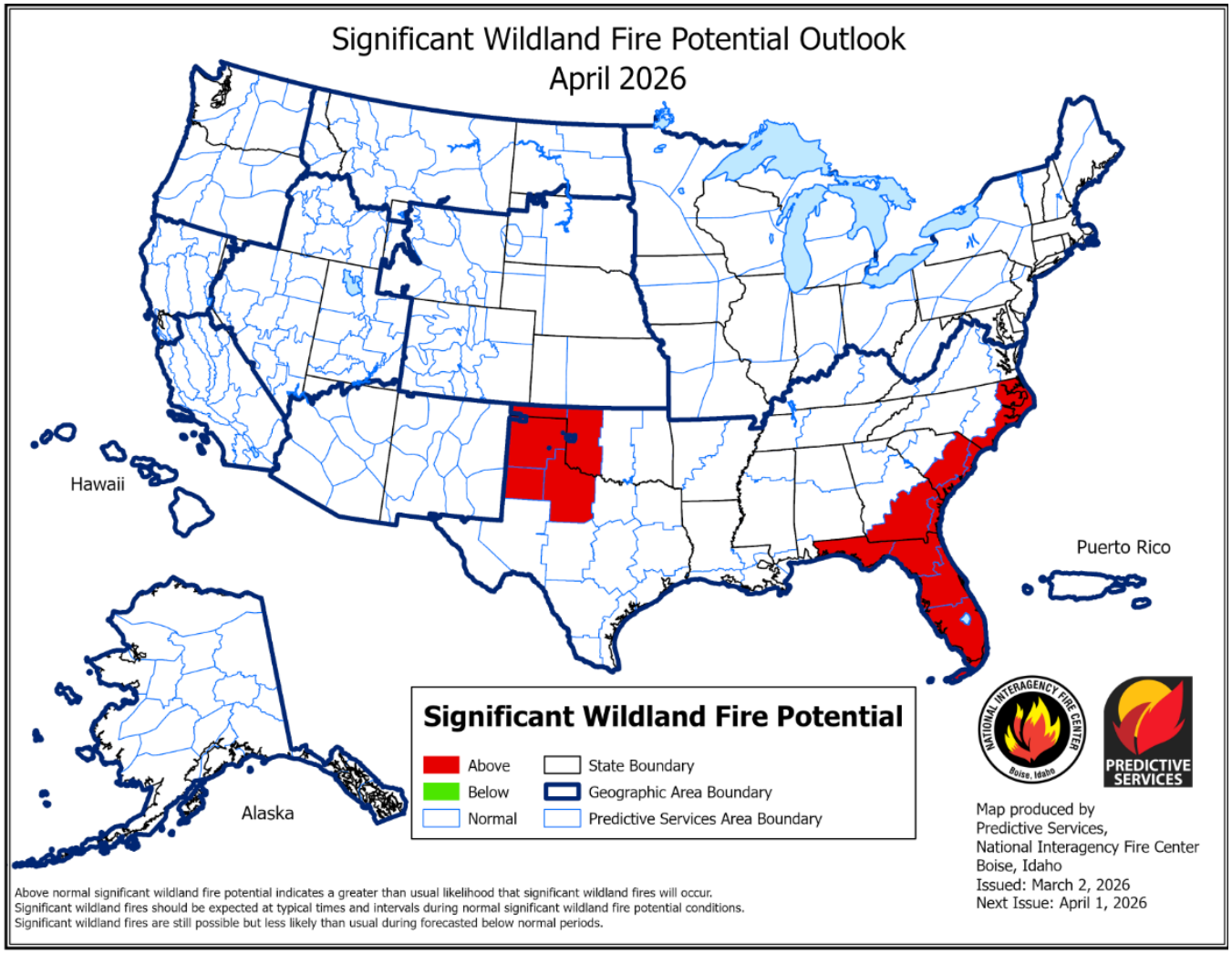


FIGURE 52: SIGNIFICANT WILDLAND FIRE POTENTIAL OUTLOOK MAY 2026 | SOURCE: NICC

5.13.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

MEMA District 5 faces moderate but growing vulnerability to wildland-urban interface (WUI) fires due to expanding development into forested areas, high fuel loads, and limited wildfire response capacity. Several counties within the district contain WUI zones where homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk and complicating suppression efforts. Vulnerable populations, including elderly residents and low-income households—may face challenges in evacuation and recovery.

Local fire departments, many of which are volunteer based, often lack specialized training and equipment for wildland fire response. While some counties have developed Community Wildfire Protection Plans (CWPPs), coverage is inconsistent across the district. These plans identify high-risk areas, assess structure ignitability, and propose mitigation actions such as fuel reduction and public

education. Strengthening interagency coordination, expanding CWPPs, and securing mitigation funding are key strategies to reduce wildfire vulnerability in District 5.

While wildfire risk is present throughout the district, it is not uniform. Localized conditions—such as fuel type, topography, access for fire suppression, and proximity to development—play a significant role in determining the level of risk. This variability underscores the need for targeted mitigation strategies that reflect the unique characteristics and vulnerabilities of each county within the planning area. Based on the extent, vulnerability, and probability, wildfires pose a **Medium** risk to District 5. Some communities determined that the overall risk posed by wildfires differed from that of the District, overall, and the ratings for each jurisdiction are shown in **Table 24**.

5.13.6.1. PEOPLE

Populations across MEMA District 5 face varying degrees of vulnerability to WUI fires, depending on factors such as proximity to wildland areas, housing density, socioeconomic conditions, and access to emergency services. Vulnerable populations include:

- Residents in rural or isolated areas, where emergency response times may be longer and fire suppression resources are limited.
- Low-income households, which may lack the resources to implement defensible space, retrofit homes, or evacuate quickly.
- Elderly individuals and those with disabilities, who may require additional assistance during evacuations or sheltering.
- Mobile home communities, which are more susceptible to fire damage due to construction materials and density.

In urbanizing areas, the expansion of housing into fire-prone zones increases the number of people and structures exposed to wildfire hazards. Public awareness, preparedness, and access to early warning systems also vary across the district, influencing how effectively communities can respond to fire threats. For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Issaquena and Sharkey Counties and the City of Madison, thus putting those populations at a slightly lower risk than the rest of the District.

5.13.6.2. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are increasingly exposed to wildfire risk, particularly in areas where development extends into forested or brush-covered landscapes. Residential areas are especially vulnerable due to their proximity to wildland fuels and the presence of homes built without fire-resistant materials or adequate defensible space.

Critical systems—including power lines, water infrastructure, roadways, and communication networks—are also at risk. Wildfires can damage or disrupt these systems, leading to service outages, restricted emergency access, and delays in response and recovery efforts. Vulnerability is heightened in rural areas with limited firefighting resources, aging infrastructure, and constrained evacuation routes.

Structures and systems within the planning area that fall in zones ranging from high to low wildfire hazard potential face elevated risk. These zones include southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton, and the Village of Puckett. In contrast, participating jurisdictions situated in areas with very low wildfire hazard potential—such as Issaquena

and Sharkey Counties and the City of Madison—experience somewhat reduced risk compared to the rest of the District.

As development continues in the wildland-urban interface, the exposure of both structures and essential systems is expected to grow. This underscores the need for mitigation actions such as fire-adapted building codes, infrastructure hardening, and strategic land use planning. Additionally, The Community Wildfire Protection Plan (CWPP) is a collaboratively developed plan by local, state, tribal, and federal partners to identify wildfire risks and prioritize mitigation actions for a specific area. Within MEMA District 5, only Simpson and Copiah counties have a CWPP in place.

5.13.6.3. CRITICAL FACILITIES

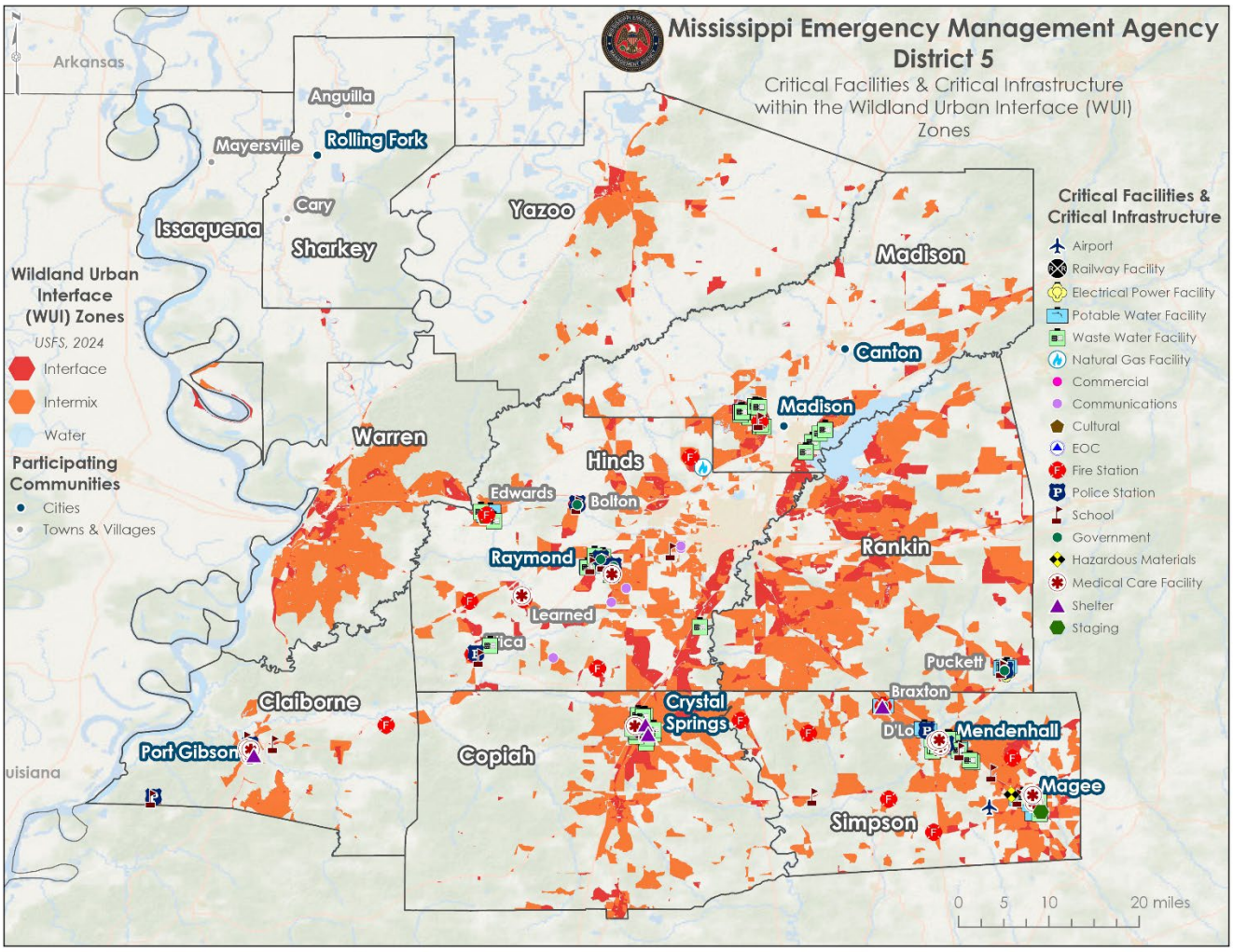
Critical facilities across MEMA District 5 are vulnerable to disruption or damage from WUI fires, particularly those located near forested or undeveloped areas. These facilities include emergency operations centers, fire stations, hospitals, schools, water treatment plants, power substations, and communication infrastructure. Wildfires can impact critical facilities in several ways:

- Direct damage from flames or radiant heat, especially for facilities constructed with combustible materials or lacking defensible space.
- Service disruption due to damaged power lines, water systems, or communication towers.
- Restricted access caused by road closures or hazardous conditions, which can delay emergency response and evacuation efforts.
- Overburdened emergency services, particularly in rural areas with limited firefighting resources and mutual aid capacity.

Protecting critical facilities from wildfire impacts is essential to maintaining public safety and continuity of operations during emergencies. This requires proactive mitigation measures such as fuel reduction, defensible space maintenance, fire-resistant construction, and integration of wildfire risk into facility sitting and capital improvement planning.

The District has a total of 211 critical facilities located in WUI Zones; 153 are in the WUI interface areas and 58 are in the WUI intermix areas. Participating jurisdictions with the most critical facilities in WUI Zones include Hinds County, Simpson County, the City of Crystal Springs and the City of Madison. Due to very limited WUI Zones, the Counties of Issaquena and Sharkey do not have any critical facilities located in the WUI zones. **Figure 53** below displays the critical facilities and infrastructure in the District's wildfire urban interface zones.

FIGURE 53: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE WUI ZONES



Community Lifelines

Wildfires and urban fires can significantly disrupt FEMA's Community Lifelines in Mississippi MEMA District 5, affecting the systems that support public health, safety, and daily life. Critical services such as emergency response, healthcare, and public safety may be compromised when facilities are damaged or inaccessible. Power outages from downed lines and damaged substations can halt operations at hospitals, shelters, and emergency centers, while communication failures limit the ability to issue warnings, evacuations, and coordinate response efforts.

Wildfires can significantly disrupt all eight community lifelines, especially in areas where critical infrastructure and services are located near wildland-urban interface zones. **Table 57** outlines the potential impacts to lifelines from a wild/urban fire event.

TABLE 57: POTENTIAL VULNERABILITIES OF LIFELINES FROM WILD/URBAN FIRES

Lifeline	FEMA Icon	Description of Impact
Communications		Fires can damage telecommunications infrastructure, including cell towers and fiber optic lines, disrupting emergency alerts and coordination among response agencies.
Energy (Power & Fuel)		Wildfires can damage power lines, substations, and fuel storage sites, leading to outages and fuel supply disruptions. Restoration may be delayed in remote or heavily impacted areas.
Food, Hydration, Shelter		Fires may damage water treatment and distribution systems, affecting potable water supplies. Displacement of residents may increase demand for emergency shelter and food assistance, especially in rural areas with limited resources.
Hazardous Materials		Fires near industrial or agricultural facilities may ignite or release hazardous materials, posing risks to public health and the environment.
Health & Medical		Smoke and poor air quality can worsen respiratory conditions and strain healthcare systems. Medical facilities may face increased patient loads or evacuation if directly threatened by fire.
Safety & Security		Wildfires can threaten law enforcement facilities, fire stations, and emergency operations centers. Evacuations, road closures, and degraded visibility may delay emergency response and reduce public safety.
Transportation		Road closures due to fire or smoke can hinder evacuations and emergency access. Damage to roads, bridges, or rail lines can disrupt regional mobility and supply chains.

Lifeline	FEMA Icon	Description of Impact
Water & Wastewater Systems		Wildfires can damage water treatment plants, pump stations, storage tanks, and distribution lines, leading to service interruptions or contamination.

5.13.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Wildfire and Wildland-Urban Interface (WUI) activity in MEMA District 5 poses significant risks to the District's natural, historic, and cultural resources. Wildfires can degrade ecosystems by destroying native vegetation, fragmenting wildlife habitats, and increasing soil erosion and water pollution. Smoke and airborne pollutants also impact air quality, affecting both environmental and human health.

Culturally and historically significant sites—such as cemeteries, battlegrounds, and historic buildings—are vulnerable to direct fire damage and indirect impacts from suppression efforts and post-fire erosion. Additionally, traditional cultural landscapes and sacred sites may be lost or altered, disrupting Indigenous and local heritage practices. As development expands into WUI zones, the risk to these resources grows, especially in areas that may not be traditionally fire-prone but are increasingly exposed due to climate change and land use shifts. Proactive mitigation strategies, including mapping vulnerable sites and engaging communities, are essential to protect these irreplaceable assets.

Claiborne County and Hinds County have the most historical and cultural resources compared to the other jurisdictions within the District, therefore the resources in these two counties are at a slightly higher risk of damage from wild/urban fires than the rest of the District.

5.13.7. POTENTIAL IMPACTS

As development continues to expand into wildland areas across MEMA District 5, the risk of wildfire-related damage to natural, historic, and cultural resources is expected to increase. Wildfires can lead to the loss of native vegetation, degradation of wildlife habitats, and long-term impacts on soil and water quality. These environmental changes may also affect recreational areas, wetlands, and other ecologically sensitive zones.

Historic structures, cemeteries, archaeological sites, and culturally significant landscapes are particularly vulnerable to both direct fire damage and indirect impacts such as erosion and suppression activities. Without proactive mitigation, future wildfire events could result in the permanent loss of irreplaceable heritage assets and disruption of traditional cultural practices. The growing Wildland Urban Interface (WUI) in District 5 underscores the need for integrated planning efforts that prioritize resource protection, community education, and fire-adapted development strategies.

5.13.8. IMPACTS OF CHANGES IN DEVELOPMENT

Wildfire and WUI (Wildland-Urban Interface) conditions are increasingly shaping how development occurs in MEMA District 5. As communities expand into forested and rural areas, the risk of wildfire exposure grows—prompting changes in land use planning, building practices, and infrastructure design. Development in these areas often leads to fragmented habitats and increased ignition sources, which heighten the potential for wildfires and complicate emergency response efforts.

These risks are influencing how local governments and planners approach growth. There's a growing need to incorporate wildfire resilience into zoning regulations, building codes, and hazard mitigation

plans. Without these adjustments, new developments may face greater vulnerability to fire damage, especially in areas not historically considered fire prone. As climate and land use patterns shift, integrating fire-adapted strategies into development decisions is becoming essential to protect both communities and surrounding natural and cultural resources.

5.14. HAZARDOUS MATERIAL INCIDENTS

5.14.1. DESCRIPTION

A hazardous materials (HAZMAT) incident involves the accidental release or spill of chemical, biological, or radiological substances either within a structure or into the surrounding environment. This hazard category includes large-scale releases or those that meet legally mandated reporting thresholds. Smaller spills that can be safely managed by trained personnel familiar with the substance and site protocols are not addressed within this Plan.

The risk to public health and safety increases significantly when hazardous materials are released near populated areas, such as residential neighborhoods, commercial districts, or transportation corridors. Improper handling or accidental discharge of these substances can lead to contamination, exposure-related illnesses, and disruptions to local infrastructure and emergency services.

5.14.2. LOCATION

Hazardous materials incidents can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, agricultural operations, and facilities that store or use chemicals. Interstate highways, rail lines, pipelines and distribution centers increase the likelihood of spills or releases during transport. Urban areas with dense commercial and industrial activity, such as Jackson and surrounding communities, are particularly vulnerable due to the concentration of hazardous substances and population exposure. Maps of associated pipelines located in Claiborne, Hinds, Issaquena, Sharkey and Simpson Counties can be found in their respective annexes.

Due to the extensive network and diverse types of hazardous material transportation routes within the planning area, along with numerous factors influencing vulnerability, it is challenging to pinpoint specific locations or populations at great risk. However, several major transportation corridors are known to carry hazardous materials regularly. These include Interstate 55, Interstate 20, Interstate 220, U.S. U.S. Highway 51, Highway 61, U.S. Highway 80, State Highway 27, and State Highway 80. The presence of these routes increases the potential for hazardous materials incidents throughout the district, particularly near densely populated areas and critical infrastructure. **Figure 54** details the major ground transportation within MEMA District 5.

FIGURE 54: GROUND TRANSPORTATION IN MEMA DISTRICT 5

The District includes 3 major Class I Freight Railroads, the Canadian National Railway (formerly Illinois Central Railroad), which traverses through Claiborne, Copiah, Hinds and Madison Counties. The Norfolk Southern Railway runs through Hinds County while CSX Transportation operates in Claiborne County. These railroads provide routes where hazardous materials are transported via train to locations throughout the State of Mississippi and throughout the United States.

5.14.3. EXTENT

The extent of a HAZMAT incident can range from a small, localized spill to a large-scale release requiring regional emergency response and public evacuation. Incidents involving volatile or toxic substances may affect air and water quality, disrupt transportation, and pose serious health risks to nearby residents and workers. The severity of impact depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures.

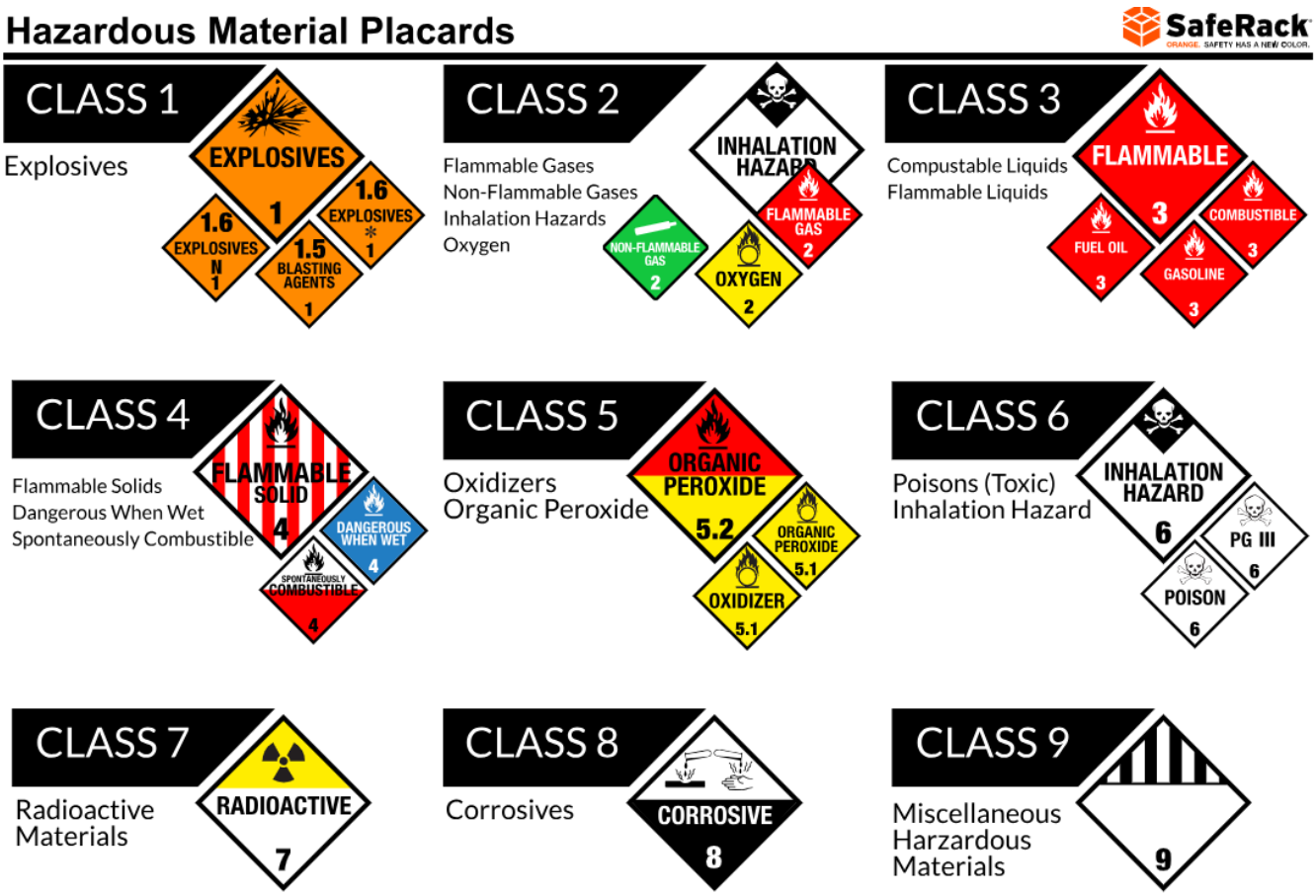
Controls on certain hazardous materials help to limit and mitigate potential hazardous material incidents. The Superfund Amendments and Reauthorization Act (SARA) Title III Section 313 Emergency Planning and Community Right-to-Know Act (EPCRA), which is also known as “SARA, Title III”, requires certain facilities to report both routine and accidental chemical releases. Reports must be submitted annually to the U.S Environmental Protection Agency (EPA) and the State Emergency

Response Commission (SERC). The law establishes specific thresholds for reporting and defines other requirements including how to report immediate incidents, and coordinate with community public safety and other officials through Local Emergency Planning Committees (LEPC), whose membership must include, at a minimum:

- Elected state and local officials
- Police, fire, civil defense [emergency management] and public health professionals
- Environment, transportation, and hospital officials
- Facility (industry) representatives
- Representatives from community groups and the media

The LEPC is responsible for developing a community emergency response plan, reviewing the plan at least annually, and providing information about chemicals in the community to citizens upon request. **Figure 55** details the types of hazardous materials placards that are posted on all four sides and at each end of a transport vehicle, freight container, or rail car, ensuring they are clearly visible, unobstructed, durable, and oriented horizontally.

FIGURE 55: US DEPARTMENT OF TRANSPORTATION HAZARDOUS MATERIALS PLACARDS | SOURCE: US DOT



5.14.4. PREVIOUS OCCURRENCES

Mississippi MEMA District 5 has experienced various hazardous materials incidents, primarily involving transportation-related spills, industrial accidents, and chemical releases. These incidents typically occur near major highways, rail lines, and industrial zones, such as those found in and around urban centers. Past events have included fuel spills, ammonia leaks, and pesticide releases, some of which required evacuations, road closures, and multi-agency emergency response.

The Mississippi Department of Environmental Quality's Emergency Response Division and MEMA coordinate responses to these incidents, ensuring containment, cleanup, and public safety. All reportable releases must be communicated to the State Warning Point, and larger incidents may trigger federal involvement through agencies like the EPA or FEMA. **Table 58**, **Table 59** and **Table 60** details the Environmental Protection Agency (EPA) Toxic Release Inventory for District 5 facilities from 2014 – 2024. Hinds County had the most recorded number of reported toxic releases in the planning area during this timeframe while both Issaquena and Sharkey Counties each reported zero during that same 10-year period.

TABLE 58: EPA TOXIC RELEASE INVENTORY SUMMARY FOR MEMA DISTRICT 5 (2014-2017) | SOURCE: EPA

	2014		2015		2016		2017	
Jurisdiction	**No. Facilities**	**No. Reports**	**No. Facilities**	**No. Reports**	**No. Facilities**	**No. Reports**	**No. Facilities**	**No. Reports**
Claiborne County	1	1	1	1	1	1	1	1
Hinds County	16	39	16	39	17	36	14	35
Issaquena County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sharkey County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Simpson County	1	0	1	0	1	0	1	0
City of Canton (Madison County)	8	26	9	28	9	30	9	32
City of Madison (Madison County) *	--	--	--	--	--	--	--	--
City of Crystal Springs (Copiah County)	5	7	5	8	5	9	4	8
Village of Puckett (Rankin County)	10	22	11	21	11	19	11	19

	2014		2015		2016		2017	
District 5 Totals		**95**		**97**		**95**		**95**

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

TABLE 59: EPA TOXIC RELEASE INVENTORY SUMMARY FOR MEMA DISTRICT 3 (2018-2021) | SOURCE: EPA

	2018		2019		2020		2021	
Jurisdiction	**No. Facilities**	**No. Reports**	**No. Facilities**	**No. Reports**	**No. Facilities**	**No. Reports**	**No. Facilities**	**No. Reports**
Claiborne County	1	1	1	1	1	1	1	1
Hinds County	12	35	14	36	13	34	12	37
Issaquena County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sharkey County	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Simpson County	1	0	1	0	1	0	1	0
City of Canton (Madison County)	8	31	9	31	9	27	8	27
City of Madison (Madison County) *	--	--	--	--	--	--	--	--
City of Crystal Springs (Copiah County)	5	9	5	9	5	10	3	8
Village of Puckett (Rankin County)	11	19	11	19	11	20	10	16
District 5 Totals		**95**		**96**		**92**		**89**

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

TABLE 60: EPA TOXIC RELEASE INVENTORY SUMMARY FOR MEMA DISTRICT 3 (2022-2024) | SOURCE: EPA

	2022		2023		2024	
Jurisdiction	**No. Facilities**	**No. Reports**	**No. Facilities**	**No. Reports**	**No. Facilities**	**No. Reports**

Claiborne County	1	1	1	1	1	1
Hinds County	12	39	12	42	10	38
Issaquena County	N/A	N/A	N/A	N/A	N/A	N/A
Sharkey County	N/A	N/A	N/A	N/A	N/A	N/A
Simpson County	1	0	1	0	1	0
City of Canton (Madison County)	9	28	9	28	9	29
City of Madison (Madison County) *	--	--	--	--	--	--
City of Crystal Springs (Copiah County)	3	8	4	9	5	8
Village of Puckett (Rankin County)	10	16	8	15	8	15
District 5 Totals		**92**		**95**		**91**

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

5.14.5. PROBABILITY OF FUTURE OCCURRENCES

While the number of previously documented hazardous materials incidents over the past 10 years exceeded an average of 90 per year, the Mitigation Council felt that many of these events were small-scale events and were appreciably different than major events that would pose health risks at a community-wide scale. When factoring in lived experiences and an understanding of local circumstances, Mitigation Council members assessed the probability of future hazardous materials events as either unlikely or low. The overall probability across District 5 of hazardous materials incidents, which was determined by averaging individual community ratings, is **Unlikely.** Individual ratings for District 5 communities are shown in **Table 24.**

While many incidents may be minor and quickly contained, the frequency of transport and storage activities increases the chance of larger events that could impact public health, safety, and the environment. With major highways, rail lines, and facilities regularly handling and transporting hazardous substances, the potential for accidental spills or releases remains ongoing. As development and industrial operations continue to grow, the probability of future occurrences may rise unless they are mitigated through improved safety practices, infrastructure upgrades, and coordinated emergency planning.

5.14.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how

vulnerable each category is based on hazard and community characteristics. More detailed county level information can be found in each county's respective annex.

Hazardous material incidents pose a significant threat to public health, safety, and the environment, particularly in communities located near transportation corridors, industrial facilities, and storage sites. Vulnerability to such incidents is influenced by proximity to hazardous materials, population characteristics, and emergency response capacity.

Risk variability for hazardous material incidents across Mississippi MEMA District 5 is shaped by the region's diverse infrastructure, land use, and emergency preparedness levels. Counties with major transportation corridors—such as highways and rail lines elevated risks due to the frequent movement of hazardous substances. Additionally, areas with industrial facilities, fuel depots, and agricultural chemical storage sites are more prone to fixed-facility incidents. These locations increase the likelihood of chemical spills, fires, or airborne releases that could impact nearby populations and ecosystems.

Urban counties within District 5 may be more vulnerable due to higher population density and the presence of critical facilities like hospitals, schools, and nursing homes, which complicate evacuation and shelter-in-place procedures. In contrast, rural counties may have fewer people at risk but often lack specialized HazMat response teams and resources, leading to delayed containment and mitigation. Environmental sensitivity also varies, with some areas more susceptible to long-term contamination due to proximity to water bodies or agricultural land. Overall, the district's risk profile for hazardous materials incidents requires tailored mitigation strategies that reflect local conditions, infrastructure, and response capabilities. Based on the extent, vulnerability, and probability, hazardous material incidents pose a **Low** risk to District 5. Individual risk ratings for District 5 jurisdictions are available in **Table 24**.

5.14.6.1. PEOPLE

In MEMA District 5, the risk and vulnerability to people from hazardous material incidents vary based on location, population characteristics, and emergency preparedness. Communities near major transportation routes—such as highways and rail lines—are at higher risk due to the frequent movement of hazardous substances. Industrial zones and agricultural areas with chemical storage facilities also present elevated risks of fixed-site incidents. These events can lead to chemical spills, fires, or airborne releases that threaten public health and safety.

Vulnerability is especially high among populations with limited mobility, such as the elderly, individuals with disabilities, and residents of schools, hospitals, and correctional facilities. These groups may face challenges during evacuation or shelter-in-place orders. Rural counties, while less densely populated, often lack specialized HazMat response teams and resources, which can delay containment and increase exposure. Additionally, low-income communities may struggle with access to protective equipment, transportation, and timely information, further increasing their vulnerability. As mentioned above, Hinds County had the most recorded number of reported toxic releases in the planning area during this timeframe thus making populations in the County at a slightly higher risk of hazardous material incidents. Similarly, all populated areas in the District where hazardous materials are either stored or transported are at risk. Tailored mitigation strategies and coordinated emergency planning are essential to reduce these risks and protect vulnerable populations across the district.

5.14.6.2. STRUCTURES AND SYSTEMS

In MEMA District 5, the risk to structures and systems from hazardous material incidents varies based on proximity to transportation routes, industrial facilities, and the resilience of local infrastructure. Structures located near highways, rail lines, and chemical storage sites are at greater risk of exposure to spills, fires, or airborne contaminants. This includes residential buildings, commercial properties, and critical facilities such as schools, hospitals, and emergency shelters. Older or poorly maintained

structures may be more vulnerable to contamination or damage due to inadequate ventilation, structural integrity, or lack of protective barriers.

Systems—such as water supply networks, electrical grids, and communication infrastructure—can also be compromised during a HazMat incident. For example, a chemical spill near a water source could contaminate drinking water systems, while fires or explosions could disrupt power and emergency communications. The resilience of these systems depends on redundancy, backup power availability, and the presence of emergency protocols. Counties with robust infrastructure and coordinated emergency planning are better equipped to contain impacts and restore services quickly, while those with limited resources may face prolonged disruptions and cascading effects. Hinds County had the most recorded number of reported toxic releases in the planning area during this 10-year timeframe thus making populations in the County at a slightly higher risk of hazardous material incidents. Similarly, all populated areas in the District where hazardous materials are either stored or transported are at risk.

5.14.6.3. CRITICAL FACILITIES

Critical facilities—such as hospitals, emergency operations centers, fire stations, schools, nursing homes, and water treatment plants—face varying levels of risk from hazardous material (HazMat) incidents depending on their location, structural resilience, and operational readiness.

Facilities located near major transportation corridors or industrial zones are at higher risk of exposure to chemical spills, fires, or airborne toxins. These incidents can disrupt operations, damage infrastructure, and endanger occupants, especially in facilities that house vulnerable populations like the elderly or children. Additionally, facilities without proper ventilation systems, backup power, or shelter-in-place protocols are more susceptible to contamination and operational failure during a HazMat event.

The vulnerability of critical facilities also depends on their ability to maintain continuity of operations. Facilities with emergency plans, trained staff, and coordination with local emergency management agencies are better equipped to respond and recover. Conversely, those lacking these resources may experience prolonged disruptions, affecting public safety and essential services across the district.

Community Lifelines

Hazardous materials incidents can significantly disrupt FEMA's Community Lifelines in Mississippi MEMA District 5, affecting the systems that support public health, safety, and daily life. Critical services such as emergency response, healthcare, and public safety may be compromised when facilities are damaged or inaccessible. Power outages from downed lines and damaged substations can halt operations at hospitals, shelters, and emergency centers, while communication failures limit the ability to issue warnings, evacuations, and coordinate response efforts. **Table 61** details the potential vulnerabilities of lines from hazardous materials incidents.

TABLE 61: POTENTIAL VULNERABILITIES OF LIFELINES FROM HAZARDOUS MATERIALS

Lifeline	FEMA Icon	Description Of Impact
Communications		Infrastructure damage or contamination can disrupt communication towers or data centers. Reduced ability to issue public alerts, coordinate response, and maintain situational awareness.

Lifeline	FEMA Icon	Description Of Impact
Energy (Power & Fuel)		Fires or explosions from HazMat incidents can damage power lines, substations, or fuel storage facilities. Power outages affecting critical infrastructure and emergency response operations.
Food, Hydration, Shelter		Chemical spills can contaminate water sources and agricultural areas.
Hazardous Materials		Direct involvement of hazardous substances requires specialized response teams and equipment. Limited local capacity may delay containment, increasing exposure and environmental damage.
Health & Medical		HazMat exposure can cause respiratory, neurological, or skin-related health issues. Overburdened hospitals and clinics, especially in rural counties with limited capacity; potential contamination of medical facilities.
Safety & Security		Exposure to toxic substances can threaten public safety, requiring evacuations, shelter-in-place orders, and law enforcement support. Disruption of law enforcement operations and emergency management coordination, especially if facilities are contaminated or overwhelmed.
Transportation		HazMat spills on highways or rail lines can shut down major transportation routes. Delays in emergency response, supply chain disruptions, and increased risk to commuters and freight operators.
Water & Wastewater Systems		Contamination from chemical spills near surface water sources or groundwater wells, potentially leading to unsafe drinking water and service disruptions.

5.14.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Hazardous material (HazMat) incidents pose significant risks to natural, historic, and cultural resources across MEMA District 5. These resources include wetlands, rivers, forests, historic buildings,

archaeological sites, and culturally significant landmarks. A chemical spill or airborne release can contaminate soil and water, damage ecosystems, and degrade the physical integrity of historic structures.

Natural resources such as wildlife habitats and water bodies are particularly vulnerable to long-term environmental damage, which can disrupt biodiversity and recreational use. Historic and cultural sites may suffer irreversible harm if exposed to corrosive or toxic substances, especially if they lack protective infrastructure or are located near transportation corridors or industrial zones. Hinds County had the most recorded number of reported toxic releases in the planning area during this timeframe thus making populations in the County at a slightly higher risk of hazardous material incidents. Similarly, all populated areas in the District where hazardous materials are either stored or transported are at risk.

5.14.7. POTENTIAL IMPACTS

A hazardous material incident in MEMA District 5 could result in widespread and serious impacts across public health, infrastructure, the environment, and community systems. Immediate threats include exposure to toxic substances, which can cause respiratory distress, chemical burns, and long-term health effects, especially among vulnerable populations such as children, the elderly, and individuals with disabilities. Evacuations or shelter-in-place orders may be necessary, disrupting daily life and straining emergency services.

Beyond health concerns, HazMat incidents can contaminate water sources, damage transportation routes, and compromise critical facilities like hospitals, schools, and emergency operations centers. Environmental impacts may include long-term degradation of soil, water, and ecosystems, while historic and cultural resources could suffer irreversible damage. Economic disruptions may arise from business closures, costly cleanup efforts, and reduced property values. These cascading effects highlight the need for coordinated planning, robust emergency response capacity, and targeted mitigation strategies across the district.

5.14.8. IMPACTS OF CHANGES IN DEVELOPMENT

A hazardous material incident in MEMA District 5 can significantly impact local development patterns and planning decisions. Areas affected by chemical spills or toxic releases may face restrictions on future land use due to contamination, environmental degradation, or proximity to high-risk transportation corridors. This can lead to changes in zoning, reduced property values, and limitations on residential or commercial expansion near industrial or HazMat-prone zones.

Additionally, local governments may need to revise development codes and standards to incorporate enhanced safety measures, such as buffer zones, improved ventilation requirements, and emergency access routes. Infrastructure investments may shift toward reinforcing critical systems—like water, wastewater, and energy networks—to withstand potential HazMat exposure. These changes aim to reduce future vulnerability and ensure that new development aligns with updated hazard mitigation strategies.

5.15. NUCLEAR POWER PLANT INCIDENTS

5.15.1. DESCRIPTION

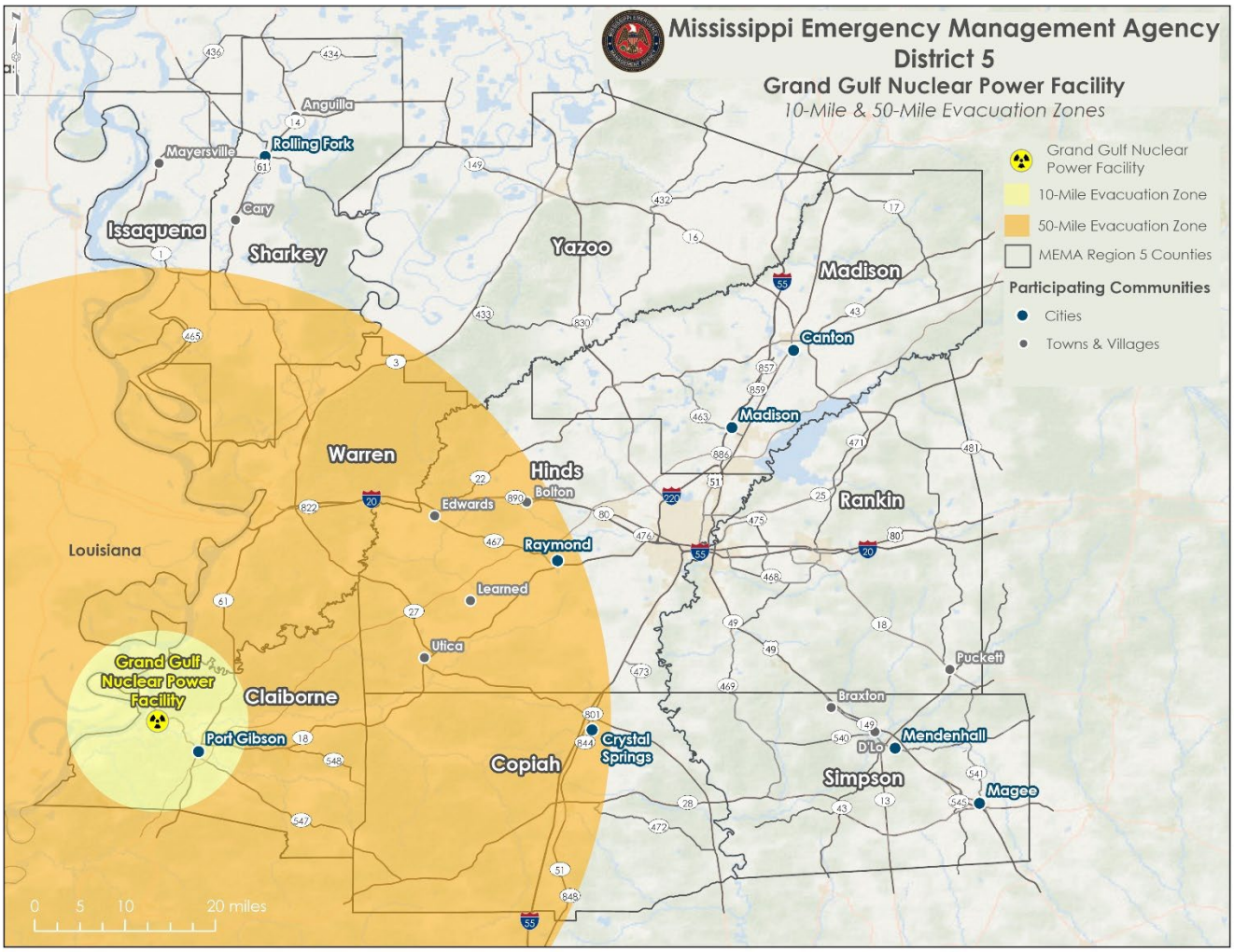
A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies.

Grand Gulf Nuclear Station (GGNS) is the only nuclear power plant in Mississippi. In 2012, Grand Gulf completed a power upgrade that makes the facility the largest single-unit nuclear power plant in the country and the fifth largest in the world. The facility operates a boiling water reactor with output of 1,443 megawatts. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP) includes a 50-mile radius from the facility, and the primary concern for this area is contamination by radioactive material of the water supplies, food crops and livestock.

5.15.2. LOCATION

The Grand Gulf Nuclear Station is located on a 2,100-acre site near Port Gibson in western Claiborne County and is operated by Entergy. While the plant is outside many local jurisdictions, its proximity means that surrounding counties could be affected by an incident depending on wind patterns, water systems, and transportation routes. Radioactive materials may be transported through District 5 via highways or rail. Like all nuclear power plants, the Grand Gulf Nuclear Station must periodically receive shipments of new nuclear fuel rods for use in its reactor. Containers used to ship fuel rods are designed to withstand severe accidents, and the US Nuclear Regulatory Commission (NRC) estimates that there is only about a one-in-a-billion chance that an accident would result in a release of any radioactive material. The location of Grand Gulf Nuclear Station, as well as the 10-mile and 50-mile evacuation zones, is shown below in **Figure 56**.

FIGURE 56: GRAND GULF 10-MILE AND 50-MILE EVACUATION ZONES



5.15.3. EXTENT

The potential severity of a nuclear power plant incident at Grand Gulf Nuclear Station can vary widely, from minor operational issues with no offsite impact to a major accident involving significant radioactive release. The scale of impact depends on several factors, including the plant's proximity to populated areas, prevailing weather conditions such as wind direction and precipitation, and the effectiveness of emergency protective measures like evacuation and sheltering. Even a small release of radioactive material can pose health risks and require extensive monitoring and public safety actions.

The NRC has established Emergency Classifications that group events or conditions according to (1) potential or actual effects or consequences, and (2) resulting onsite and offsite response actions. The emergency classifications increase in severity from Notification of Unusual Event (NOUE); Alert; Site Area Emergency (SAE); and General Emergency (GE). **Table 62** below describes the NRC Emergency Classifications.

TABLE 62: NRC EMERGENCY CLASSIFICATIONS | SOURCE: NRC

Issued Product	Description	Purpose
Notification of Unusual Event (NOUE)	A situation is in progress or already completed which could potentially degrade the plant's level of safety or indicate a security threat to the facility.	This classification ensures the first steps for future response are being carried out, that operations staff are at the, ready, and that the plant systematically handles unusual event information and decision-making.
Alert	Events are in progress or have occurred which have (or could) substantially degrade the plant safety; or, a security event that could threaten site personnel or damage to site equipment is in progress.	This classification ensures that emergency personnel are ready and available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required and also ensures that offsite authorities receive current information on plant status.
Site Area Emergency (SAE)	Events are in progress or have occurred which have caused (or likely will cause) major failures of plant functions that protect the public or involve security events with intentional damage or malicious acts that could lead to the likely failure of (or prevent effective access to) equipment needed to protect the public.	A SAE declaration ensures: a) emergency response centers are staffed; b) monitoring teams are dispatched; c) personnel required for evacuating nearby areas are at duty stations if the situation becomes more serious; d) proper consultation with offsite authorities; and e) government authorities are providing updates to the public.
General Emergency (GE)	Events are in progress or have occurred which: a) have caused (or shortly will cause) substantial reactor core damage, with the potential for uncontrolled releases of radioactive material; or b) involve security events that deny plant staff physical control of the facility.	A GE declaration initiates predetermined protective actions for the public including: a) continuous dose monitoring by the licensee and offsite organizations; b) additional protective measures as necessitated by potential or actual releases; c) consultation with offsite authorities; and d) updates to the public by government authorities.

In the event of a significant incident, consequences could include acute radiation exposure, long-term cancer risks, and contamination of soil and water resources that may persist for decades. Economic impacts could be severe, including disruption of agriculture, business closures, and costly cleanup operations. Transportation routes and critical infrastructure may also be affected, placing additional strain on emergency services and recovery efforts. While the likelihood of such an event is low due to strict safety protocols, the potential consequences make it a high-impact hazard for MEMA District 5.

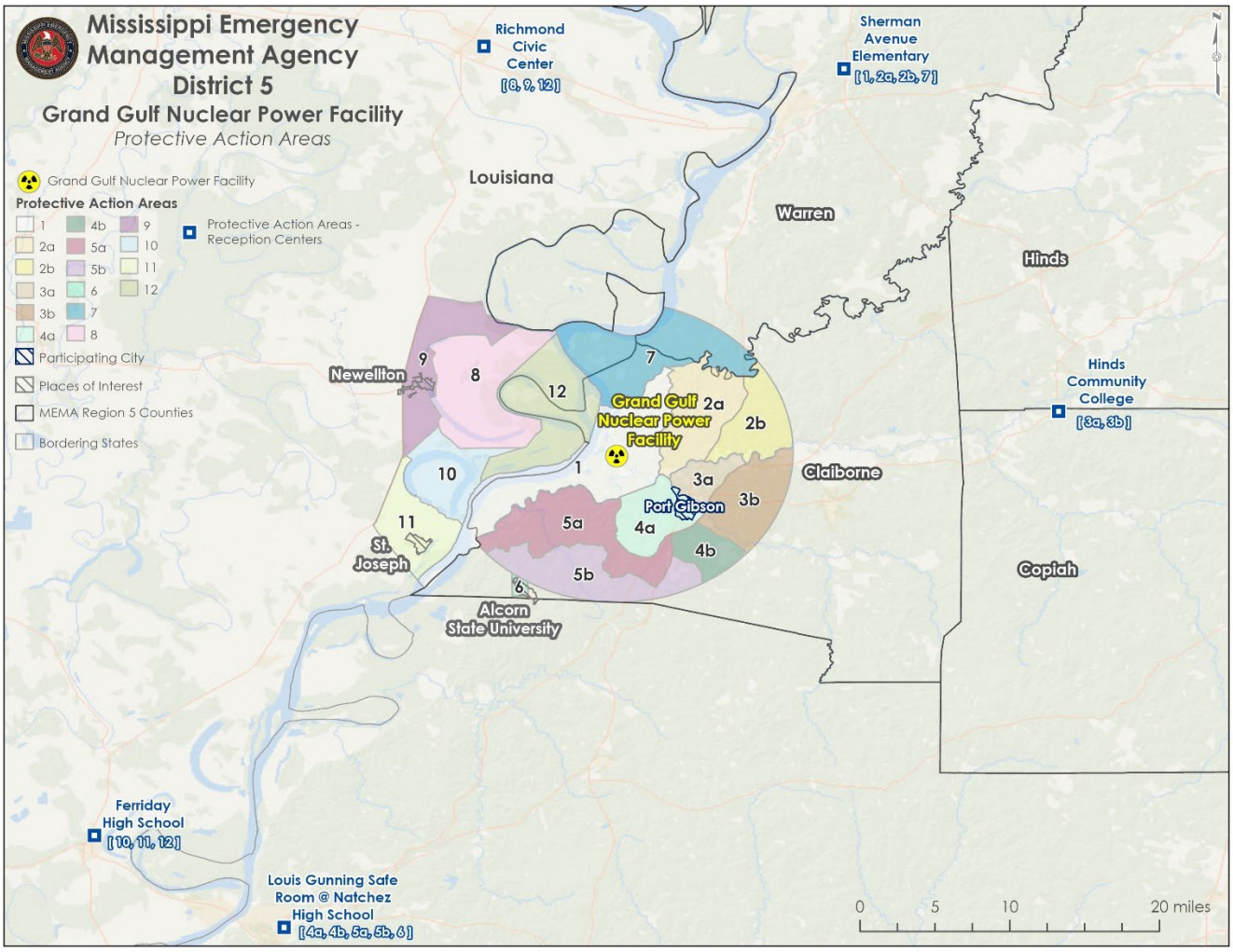
The Grand Gulf Nuclear Station (GGNS) has 12 numbered Protective Action Areas. In MEMA District 5, this includes areas 1-7, with the remaining areas 8-12 located to the West of GGNS in the State of Louisiana. Even though the areas in MEMA District 5 are numbered 1-7, there are actually 11 Protective Action Areas in the District (1, 2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 6 & 7). **Table 63** below lists the 11 Grand Gulf Nuclear Station's Protective Action Areas within the District. The table also lists the locations of these Protective Action Areas, the primary evacuation routes from each specific area and the reception centers to which evacuated personnel report to. A map of the Protective Action Areas and Reception Centers can be found in **Figure 57**.

TABLE 63: GRAND GULF PROTECTIVE ACTION AREAS AND RECEPTION CENTERS | SOURCE: ENTERGY

Protective Action Areas	Location	Primary Evacuation Routes	Reception Center
1	Between Big Black River and Bayou Pierre west of Old Grand Gulf Road	U.S. Highway 61 north to Vicksburg (Warren County)	Sherman Avenue Elementary School Vicksburg, MS
2a	Between Big Black River and Bayou Pierre west of Hwy. 61 to Old Grand Gulf Road	U.S. Highway 61 north or Mississippi Route 462 east to Vicksburg (Warren County)	Sherman Avenue Elementary School Vicksburg, MS
2b	Between Big Black River and Bayou Pierre, east of Hwy. 61	U.S. Highway 61 north or Mississippi Route 462 east to Vicksburg (Warren County)	Sherman Avenue Elementary School Vicksburg, MS
3a	Between Bayou Pierre and Little Bayou Pierre, west of Natchez Trace Parkway	Mississippi Highway 18 east to Utica (Hinds County)	Hinds Community College Utica Campus Utica, MS
3b	Between Bayou Pierre and Little Bayou Pierre, east of Natchez Trace Parkway	Mississippi Highway 18 east to Utica (Hinds County)	Hinds Community College Utica Campus Utica, MS
4a	Between Little Bayou Pierre and Widows Creek south and east of Bayou Pierre to Natchez Trace Parkway, including Port Gibson	Mississippi Route 547 south to Mississippi Highway 28 east to Hazlehurst (Copiah County). Take I 55 N to the Gallman Exit. Bear right onto W Gallman Rd. Turn immediately to the left onto Epps Ln. Continue to the Safe Room	Louis Gunning Safe Room 323 Liberty Road Natchez, MS 39120
4b	Between Little Bayou Pierre, south and east of Natchez Trace Parkway and north of Gordon Station Road	Mississippi Route 547 south to Mississippi Highway 28 east to Hazlehurst (Copiah County). Take I 55 N to the Gallman Exit. Bear right onto W Gallman Rd. Turn immediately to the left onto Epps Ln. Continue to the Safe Room	Louis Gunning Safe Room 323 Liberty Road Natchez, MS 39120
5a	Between Bayou Pierre and Russum- Westside Road east to Widows Creek	Mississippi Route 552 east to U.S. Highway 61 south to Natchez (Adams County)	Louis Gunning Safe Room 323 Liberty Road Natchez, MS 39120
5b	South of Russum- Westside Road from Ferry Road east to Gordon Station Road	Mississippi Route 552 east to U.S. Highway 61 south to Natchez (Adams County)	Louis Gunning Safe Room 323 Liberty Road Natchez, MS 39120
6	Alcorn State University	Mississippi Route 552 east to U.S. Highway 61 south to Natchez (Adams County)	Louis Gunning Safe Room 323 Liberty Road Natchez, MS 39120

Protective Action Areas	Location	Primary Evacuation Routes	Reception Center
7	North of Big Black River and east of Mississippi River	U.S. Highway 61 north to Vicksburg (Warren County)	Sherman Avenue Elementary School Vicksburg, MS
Claiborne County Schools: Students in Claiborne County, Mississippi, will be evacuated to the following reception center.			Louis Gunning Safe Room 323 Liberty Road Natchez, MS 39120

FIGURE 57: GRAND GULF PROTECTIVE ACTION AREAS AND RECEPTION CENTERS | SOURCE: ENTERGY



5.15.4. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. However, historical examples such as Three Mile Island (1979), Chernobyl (1986), and Fukushima Daiichi (2011) demonstrate the potential severity of such events. Grand Gulf Nuclear Station has maintained a strong safety record, but minor operational alerts have occurred in the past without offsite consequences.

- **1/7/2021**: Coolant leak exceeding 10 gallons per minute for more than 15 minutes. The cause was investigated. By the end of the day the leakage rate dropped to 0.3 gallons per minute, and plan parameters returned to normal.
- **11/17/2018**: A fire was discovered under the B reactor feedwater pump. The fire involved oil accumulated under the feedwater pump. The B reactor feedwater pump was tripped offline, and reactor power was reduced to 48% power due to the reduction in feedwater flow. The reactor remained stable, and there was no apparent damage to plant equipment. The fire was extinguished approximately 24 minutes after detection. No external assistance was needed.
- **6/19/2013**: CO2 was discharged into the electrical switchgear room in the auxiliary building. No injuries or fatalities were found, and the cause was investigated. Normal operations resumed later in the day.
- **4/11/2012**: A fire was reported inside the 'A' Main Condenser and not extinguished within 15 minutes of detection. The fire brigade was dispatched to combat the fire and the area was evacuated. The Claiborne County Fire Department was notified to provide assistance. No injuries were reported, and the fire was extinguished approximately 36 minutes after it was detected.

5.15.5. PROBABILITY OF FUTURE OCCURRENCES

The probability of a major nuclear incident is **Unlikely**, given strict regulatory oversight and safety protocols. However, the potential consequences are high, making this a low-probability, high-impact hazard. Natural hazards such as severe storms, flooding, or seismic activity could increase risk factors. The Fukushima Daiichi nuclear accident in 2011 is the most recent major nuclear event, and it was primarily caused by a M_w 9.0-9.1 earthquake and subsequent tsunami causing extensive damage to nearly all of the facility's backup power sources. According to an NRC report, the estimated risk each year of an earthquake is intense enough to cause damage to the reactor core at Grand Gulf Nuclear Station, 1 in 83,333.

5.15.6. VULNERABILITY ASSESSMENT

To understand how vulnerable the District is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The following section details and discusses how vulnerable each category is based on hazard and community characteristics. Based on the extent, vulnerability, and probability, nuclear power plant incidents poses a **Low** risk to District 5. Individual community risk ratings are shown in **Table 24**, and additional information can be found in each county's respective annex.

5.15.6.1. PEOPLE

In MEMA District 5, the risk and vulnerability to people from a nuclear power plant incidents vary based on location, population characteristics, and emergency preparedness. Residents located within the 10-mile Plume Exposure Pathway Emergency Planning Zone (EPZ) are the most vulnerable, as this area is designated for immediate protective actions—such as evacuation or shelter-in-place—should a radiological release occur. Individuals in this zone will receive official warnings through sirens,

tone-alert receivers, and broadcast media, and may be directed to take protective measures based on the severity of the incident.

Vulnerability is especially high among populations with limited mobility, such as the elderly, individuals with disabilities, and residents of schools, hospitals, and correctional facilities. These groups may face challenges during evacuation or shelter-in-place orders. Additionally, low-income communities may struggle with access to protective equipment, transportation, and timely information, further increasing their vulnerability. Tailored mitigation strategies and coordinated emergency planning are essential to reduce these risks and protect vulnerable populations across the district.

In MEMA District 5, the populations at greatest risk include those residing in Claiborne County as well as any neighboring communities that lie within the boundaries of the 10-mile and 50-mile EPZ. MEMA District 5 counties that are in 50-mile evacuation zones include Copiah, Hinds, Issaquena, Sharkey, Warren and Yazoo. The location of the 10-mile and 50-mile evacuation zones is shown above in **Figure 56**.

5.15.6.2. STRUCTURES AND SYSTEMS

The primary risk to structures and systems is the possibility that an event at the Grand Gulf Nuclear Station will force it to be taken offline. The reactor at the Grand Gulf Nuclear Station is the most powerful single reactor in the United States, and in 2025 it produced an average of 957,725 Megawatt-hours each month. For comparison, that is enough to meet the average monthly energy needs of over one million homes. If the Grand Gulf Nuclear Station is unable to provide energy, it will immediately strain energy supply and increase demand for the services of other energy producers in the region. Depending on the length of the outage, energy-intense systems and services such as water treatment, healthcare, education, data management, and more could experience interruptions.

Direct physical damage to structures is not a likely result of hazardous events at the Grand Gulf Nuclear Station, although indirect damage may occur from the cascading effects of interruptions to the power availability. In the unlikely event of a major accident resulting in an uncontrolled release of radioactive material, it is possible that contaminated areas may no longer be safe for human habitation. While contaminated homes and businesses might remain structurally sound, the risk of exposure could force individuals to leave, and the value of contaminated homes and businesses would effectively drop to nothing.

5.15.6.3. CRITICAL FACILITIES

Like other structures in the planning area, it is unlikely that a nuclear power plant incident will directly damage or destroy critical facilities. However, this type of event could still have consequences which disrupt operations at critical facilities. If radioactive materials are released and contaminate the area, facilities in the affected areas may be temporarily closed until safety assessments are completed and conditions are considered safe. Additionally, protective actions associated with a radiological incident—such as evacuation orders, shelter-in-place directives, or restricted access zones—could limit the ability of personnel to reach facilities or continue normal operations. Public buildings such as schools, government offices, medical facilities, community centers, and more may suspend service, which could leave communities without key services. Communities which receive water from above-ground sources may also experience water shortages if water treatment plants and pumping stations are shut down due to the risk of on-site contamination or the potential for contaminated water sources to expose community members if normal water services remain operational. Some communities in District 5 utilize subsurface water sources which are less likely to be contaminated by airborne radioactive materials, but groundwater contamination could still occur, and subsurface water sources will still need to be monitored for unsafe levels of radioactivity.

An uncontrolled release of radioactive materials following a nuclear power plant incident in District 5 could quickly strain healthcare services. Depending on the scale of the release, some facilities may need to be evacuated, and the transfer of medical patients to other facilities which remain operational could reduce the capacity of these facilities to treat patients that need medical services for any reason. Additionally, the treatment of patients who have been exposed to radiation may require specialized medical equipment and expertise. While the Claiborne County Medical Center has agreed to accept injured personnel and/or victims of radiation related accidents, not all medical facilities in the district are prepared to treat individuals exposed to radiation. Patients may need to be decontaminated and kept in a separate area to avoid exposing other patients to radiation. Medical staff will also need to take additional precautions to avoid exposure, themselves. The nature of radiation exposure is such that it is difficult to initially detect exposure visually, unless the exposure is extremely high. Fear of potential exposure could lead many individuals in the affected areas to seek medical attention, and this surge could further strain the resources of medical facilities.

Community Lifelines

There are a number of impacts that a nuclear power plant incident could have on community lifelines in the planning area. It is important to note that the impacts of such an event are difficult to describe to a high degree of specificity for two reasons. First, the scale of an event can vary; hazardous incidents at nuclear power plants in the United States are rare, and the ones that have occurred are nearly all resolved without radiological contamination. However, there have been a small number of disasters involving nuclear power plants that have demonstrated the widespread risk that comes with the worst-case scenarios. Second, there have only been two nuclear power plant incidents classified as “Major Accidents” by the International Atomic Energy Agency (IAEA), neither of which occurred in the United States. This means that there is a lack of historical precedent that can be referenced to understand how these events unfold in the United States. Planning and procedures are designed to anticipate different outcomes but predicting how individuals will react to a major accident is partially speculative. **Table 64** details the potential vulnerabilities of lines from nuclear power plant incidents.

TABLE 64: POTENTIAL VULNERABILITIES OF LIFELINES FROM A NUCLEAR POWER PLANT INCIDENT

Lifeline	FEMA Icon	Description of Impact
Communications		Like other hazards, a nuclear emergency would likely facilitate a surge in use communications usage. If the licensed operator and/or proper authorities are slow to communicate with the public, individuals may not understand how they should react. Unpredictable and fear-driven actions can complicate response efforts.
Energy (Power & Fuel)		Disruption of a major energy producing facility like the Grand Gulf Nuclear Station could force other power generating stations to make up for a significant portion of the region’s overall energy demand.
Food, Hydration, Shelter		Supply chain interruptions affect food availability and distribution. Increased demand for sheltering and sanitation services in vulnerable populations.

Lifeline	FEMA Icon	Description of Impact
Hazardous Materials		Increased generation of medical and radioactive waste requires enhanced handling and disposal protocols. In the unlikely event that the area is exposed to high levels of radiation, special care should be taken to isolate individuals and equipment which may become irradiated.
Health & Medical		Surge in demand for healthcare services. Radiation can lead to increased cancer rates and other health maladies that may not be immediately apparent. In the unlikely event that individuals are exposed to high levels of radiation, special protective measures are necessary to avoid exposing nurses and doctors treating the affected individuals. It may also be appropriate to distribute iodine tablets to individuals in the area, with an emphasis on children.
Safety & Security		Radiological emergencies present a unique challenge due to the characteristics of radioactivity. It will be important for officials to maintain order, as a panic can hamper response efforts and create new challenges.
Transportation		In the event of a general emergency, it is important to facilitate an orderly evacuation along predetermined routes. A surge of traffic on backroads can create hazardous driving conditions and prevent the timely evacuation of residents.
Water & Wastewater Systems		In the unlikely event that radiation is released into the area surrounding the Grand Gulf Nuclear Station, it is possible that waterways may become contaminated. The largest and closest waterway is the Mississippi River.

5.15.6.4. NATURAL, HISTORIC AND CULTURAL RESOURCES

Accidents at nuclear power plants are rare, and events that result in the release of radioactive materials are even rarer. For events where radioactive material is not released, the impact on natural, historic, and cultural events is minimal. However, in the unlikely event that radioactive material is released, the impact on natural resources could be substantial. Contamination could render spaces unsafe for human habitation and lead to the area being quarantined for safety reasons. Additionally, it is possible that it may be necessary to destroy animal populations to avoid the possibility of contaminated animals further spreading radioactivity. The Grand Gulf Nuclear Station, which is the only nuclear power plant operating in District 5, is immediately adjacent to the Mississippi River. A worst-case scenario could involve radioactive material being released into river, contaminating the waterway and exposing large populations that are downstream to the risk of radiation exposure. Historic and cultural resources could fall into disrepair if contamination requires them to be abandoned and quarantined. Without proper maintenance, historic buildings may quickly degrade to a point where they are unrecoverable.

5.15.7. POTENTIAL IMPACTS

It is important to remember that the Grand Gulf Nuclear Station has been operating since the 1980's, and there have been no events that have exposed District 5 residents to unsafe levels of radiation. Nuclear facilities operate under strict oversight from the NRC and maintain multiple redundant safety systems designed to prevent significant releases of radioactive material. The plant has had four events that are classified as "Unusual Events" by the NRC. These events did not result in any documented injuries, fatalities, or radioactive releases. Despite the low probability of a major accident, the risk cannot be 100% eliminated, and the RHMC felt it was important for this plan to explore some of the potential impacts if a radioactive release did occur.

Moderate incidents that involve the release of small amounts of radioactive material or precautionary protective actions could lead to temporary disruptions to District 5 communities. Local officials may issue shelter-in-place or evacuation recommendations within designated planning zones while environmental monitoring is conducted. Schools, businesses, and public facilities in affected areas may close temporarily, and transportation routes may be restricted to support evacuations and emergency response operations. These precautionary measures could interrupt normal community activities, even though the actual health risks to the public may be low.

A more severe accident—though unlikely—could have broader consequences. In a scenario where a significant release of radioactive material occurs, contamination of land, water, and infrastructure could require extended evacuations, decontamination efforts, and environmental monitoring and control measures. Agricultural areas could face restrictions on crop harvesting or livestock production until safety thresholds are met, and some residential or commercial properties could be unusable for extended periods depending on contamination levels. Such conditions are likely to place strain on local healthcare systems, emergency responders, and public information systems as agencies work to manage the situation and protect public health.

Longer-term impacts could include severe economic disruption, population displacement, and changes in land use within affected areas. Businesses may be forced to close, property values may decline, and local governments could incur significant costs associated with environmental cleanup and infrastructure restoration. While the probability of a major nuclear accident is very low, hazard mitigation planning considers these scenarios to ensure that communities, emergency responders, and public institutions are prepared to protect residents and recover effectively should an event occur.

5.15.8. IMPACTS OF CHANGES IN DEVELOPMENT

Recent trends in District 5 communities around Grand Gulf Nuclear Station suggest that population levels have generally declined over the previous decade, and new development is limited. If this continues, the area is likely to remain relatively rural in nature, and the number of people living in the 10-mile and 50-mile emergency planning zones remains unchanged or slightly decreasing. Emergency planning documents produced by Grand Gulf Nuclear Station estimate that slightly more than 10,000 people live within a 10-mile radius of the plant, and this number is not expected to increase significantly in the near future.

Should development increase or urbanization expand in the future, more people could reside within the plant's 10-mile and 50-mile emergency planning zones, increasing the potential for human exposure during an incident. While urbanization could reduce agricultural losses—such as the need to cull livestock or restrict crop harvests—it could amplify public health consequences, placing greater demands on emergency services, healthcare systems, and evacuation infrastructure. Planning for nuclear hazards must therefore consider not only current population and land-use patterns but also potential shifts in demographics and development that could alter the scale and type of impacts from a major plant accident.

6. MITIGATION STRATEGY

This section provides the blueprint for the participating jurisdictions of the MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Mitigation Council and the findings and conclusions of the Capability and Risk Assessments. It consists of the following six subsections:

- Strategy Process
- Mitigation Goals
- Status of Previous Plan Actions
- Updated Mitigation Plan Actions
- Prioritizing Actions for Implementation
- Implementation of Mitigation Actions

The intent of the Mitigation Strategy is to provide the communities in the MEMA District 5 Region with the goals that will serve as guiding principles for future mitigation policy and project administration, along with an analysis of mitigation techniques deemed available to meet those goals and reduce the impact of identified hazards. It is designed to be comprehensive, strategic, and functional in nature:

In being comprehensive, the development of the strategy includes a thorough review of all hazards and identifies extensive mitigation measures intended to not only reduce the future impacts of high-risk hazards, but also to help the region achieve compatible economic, environmental, and social goals.

In being strategic, the development of the strategy ensures that all policies and projects proposed for implementation are consistent with pre-identified, long-term planning goals.

In being functional, each proposed mitigation action is linked to established priorities and assigned to specific departments or individuals responsible for their implementation with target completion deadlines. When necessary, funding sources are identified that can be used to assist in project implementation.

6.1. STRATEGY PROCESS

Step 1: The initial step in developing the Mitigation Strategy is to establish mitigation goals. These goals serve as broad, long-term objectives that guide the community's efforts to reduce risk. They are achieved through the implementation of specific mitigation actions, which may include both policy measures—such as adopting local ordinances to regulate development in hazard-prone areas—and physical projects designed to address targeted risks, such as acquiring and relocating structures with repetitive loss histories.

Step 2: The next step is to identify, evaluate, and analyze potential mitigation measures that support the established goals. This process is ongoing and sustained through the development and maintenance section of the Plan. New mitigation options will continue to be explored as opportunities arise, data and technology advance, funding becomes available, and the Plan is updated over time.

Step 3: The final step in developing the Mitigation Strategy is selecting and prioritizing specific mitigation actions for communities within the MEMA District 5 Region. Each county and participating jurisdiction maintains its own mitigation Action Plan, located at the close of each Annex, tailored to its unique needs and concerns. These action plans provide clear, actionable strategies and represent the most critical outcome of the mitigation planning process.

6.2. MITIGATION GOALS

The primary goal of all local governments is to promote the public health, safety, and welfare of its citizens. In keeping with this standard, the MEMA District 5 counties and the participating municipalities have reviewed their identified three goal statements for local hazard mitigation planning in the district and their associated Objectives. At the request of the Mississippi Emergency Management Agency, the region's strategy was reviewed for alignment with the state's goals. These Goals and Objectives are broadly aligned with the goals as outlined in the 2023 State Hazard Mitigation Plan, without contradiction.

Building off the mitigation goals and the identification, consideration, and analysis of available mitigation measures conducted in the last update, the following goals have been reaffirmed by the Mitigation Council.

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

6.3. STATUS OF PREVIOUS MITIGATION PLAN ACTIONS

Each participating jurisdiction updated its list of mitigation actions based on the review of the risk assessment and existing capabilities. **The mitigation actions include community-specific details and are documented in each county's detailed mitigation action plan within the Annex section of this plan.**

Each prioritized action has accompanying information, like the departments assigned responsibility for implementation, potential funding sources, and an estimated target date or timeframe for completion. Many actions that require continued efforts with no determined completion date have been given a timeline designation of "continuous action". Examples of these actions include public education, maintenance/upgrade of emergency service systems, RFC/NFIP, enforcement of regulations, training/education, etc. The collection of actions serves as a "menu" of mitigation policies and projects and serves as an important tool for monitoring success or progress over time.

The changes made to the 2026 Mitigation Action Plans were minor when compared to the edits noted in the 2020 plan. Overall, the structural modifications intended to streamline and group actions have been maintained, proving that these changes were positive and helpful. However, while some communities maintained the changes implemented to remove actions identified as falling into the Preparedness Phase of the Emergency Management Cycle, some communities have reinstated them. Disaster preparedness initiatives - such as providing weather radios to residents and NIMS training, which represent actions a community takes to prepare for a hazard event – have been reincorporated to show alignment between this Hazard Mitigation Plan and other community preparedness planning efforts. Each community has made the decision to either maintain the removal or reinstate independently. Not all Deleted actions have bene reinstated. The actions selected to be kept have been noted as such in the Mitigation Action Plans.

6.3.1. UPDATED MITIGATION ACTIONS

The 2026 update of the Mitigation Plan includes status changes since the Plan was last approved. Mitigation actions that were marked as deleted in the last plan were removed during this update, unless they were reinstated. Any actions deleted or completed from this update remain in the plan with the deleted or completed status. The intention will be to remove them during the 2030 update.

The mitigation actions proposed by each of the participating jurisdictions are listed in each of the annexes. For the 2026 update, each jurisdiction reviewed their existing actions. Through this review, it was determined that some mitigation actions were completed, others were no longer appropriate and removed, and most were actions which communities hope to see through but still have work to do.

The participants are not committed to undertaking every action suggested in this list but rather are proposing an extensive list of potential actions that they may wish to pursue, depending on the availability of funding. The potential benefits and costs of each action were weighed when deciding whether or not to include it in the plan. However, a detailed and quantitative benefit-cost analysis will be performed prior to implementation of actions when additional detailed project cost information has been developed.

6.4. PRIORITIZING ACTIONS FOR IMPLEMENTATION

The District 5 Mitigation Council reviewed the project prioritization process from the previous plan and agreed to adopt the same process as part of the 2026 update. The Mitigation Council members representing the participating jurisdictions considered the following factors when identifying priority actions:

- The benefit-cost ratio (BCR) of proposed projects—BCR is a measure of the return on investment the community can expect to receive, and one of the most important factors in determining whether or not to implement an action. Communities may opt to conduct a full benefit-cost analysis, or may consider the relative costs and benefits qualitatively, depending on the availability of detailed project cost information.
- Degree to which the project impacts or protects life safety
- Degree to which the project reduces the need for response actions
- Size of the population who would benefit from the action
- Benefit to the county's economy overall
- Useful life of project, taking into consideration the expected impacts of climate change
- Benefits to underserved communities
- Other non-monetary benefits not specified here

Using these factors, the mitigation actions were prioritized as "high," "medium," or "low" by members of the Mitigation Council. Descriptions of these priority classifications are provided in **Table 65**. In addition to prioritizing mitigation actions for this plan update, the Mitigation Council members will use these categories when determining how to allocate available hazard mitigation funding or identifying which actions to pursue in the coming year during annual plan reviews. The jurisdictions within District 5 operate under tight budget constraints and must use prudence in the allocation of funds. They will continue to strive to justify implementation based on long-term financial investments regarding potential mitigation projects.

TABLE 65: MITIGATION ACTIONS PRIORITIZATION CLASSIFICATIONS

Classification	Descriptions
High	Mitigation actions with "high" priority were determined to be the most cost effective and most compatible with the participating jurisdictions' unique needs.
Moderate	Actions with a "moderate" priority were determined to be cost-effective and compatible with jurisdictional needs but may be more challenging to complete administratively or fiscally than "high" priority actions.
Low	Actions with a "low" priority were determined to be important community needs, but the community likely identified several potential challenges in terms of implementation (e.g. lack of funding, technical obstacles).

The mitigation actions included in the MEMA District 5 HMP do not represent a commitment by participating communities to take on every listed action. Rather, this is a list of *potential* actions that they may wish to pursue, depending on the availability of funding.

6.5. IMPLEMENTATION OF MITIGATION STRATEGIES

Educating county and jurisdictional leadership, staff, and community members about the benefits of completing mitigation actions is the best way to ensure seamless integration between mitigation planning and other local planning efforts. The jurisdictions in District 5 continue to work on developing strategies and opportunities to better incorporate the mitigation actions from the previous plan into on-going local planning activities. Local plan integration will be carried forward as a new mitigation action for all the jurisdictions within the region.

To this end, a copy of the updated 2026 RHMP will be hosted virtually by several participating jurisdictions for the purpose of easy reference to incorporate the identified mitigation actions into the ongoing review and implementation of other planning and development regulations, and for review by the general public, State Planning and Development Districts, and those retained by the MEMA and other State agencies to support community mitigation efforts.

7. PLAN MONITORING, EVALUATION AND UPDATES

This section discusses how the MEMA District 5 Mitigation Strategy and Mitigation Action Plan will be implemented and how the Regional Hazard Mitigation Plan will be evaluated and enhanced over time. This section also discusses how the public will continue to be involved in a sustained hazard mitigation planning process. It consists of the following seven subsections:

- Plan Maintenance Overview
- Monitoring the Plan
- Evaluating the Plan
- Incorporation into Existing Planning Mechanisms
- Incorporation of Mitigation Strategies into Other Local Planning Mechanisms
- Sources of Grant Funding
- Method for Continued Regional Public Participation

7.1. PLAN MAINTENANCE OVERVIEW

The District 5 Regional Hazard Mitigation Council (RMHC) members will be responsible for implementing the strategies outlined within the Plan and update and maintain the Plan according to the guidelines set forth below. Members of the RMHC will ensure that representation is maintained across all jurisdictions, and contact information for designated representatives will be maintained. If changes in personnel, responsibilities, or political structures require a jurisdiction to update its designated representative, this will be communicated to the RHMC within 60 days. County Emergency Management Directors or their designate will serve as a representative on the RMHC. District 5 jurisdictions will use the Plan's goals, as well as continued analysis of hazard risks and capabilities, to weigh the availability of community resources against the cost and benefit for each mitigation action. This is to say, the action will be reviewed against the staff time and financial resources needed to implement it. Participating jurisdictions understand the value of the Plan and the extent to which plan elements lend themselves to mitigating hazard of concern. The participating jurisdictions intend to maintain, update, and implement the 2026 District 5 RHMP using the following method and schedule.

7.1.1. MONITORING, EVALUATING AND UPDATING THE PLAN

The Mitigation Council will keep the Plan current by monitoring, evaluating, and updating the Plan FEMA defines these efforts as follows.

- **Monitoring**: tracking the implementation of the plan over time
- **Evaluating**: assessing the effectiveness of the plan at achieving its stated purpose and goals
- **Updating**: reviewing and revisiting the plan at least once every five years

The District 5 Mitigation Council is the planning group responsible for ongoing coordination and participation in the plan maintenance process and will coordinate this effort with MEMA.

7.2. MONITORING THE PLAN

RHMC representatives will collect information from their respective communities to monitor the Plan and revise it as needed. RHMC is responsible for monitoring the Plan and maintaining oversight so that the plan remains compliant with the hazard mitigation grant program requirements. This means that the RHMC will sustain necessary documentation and conduct routine Plan reviews. In this effort, the RHMC will coordinate with council members to ensure that the council retains representatives from each participating jurisdiction. MEMA has offered to help coordinate annual meetings over the course of the plan's life cycle, but the responsibility to prepare for these meetings rests with each member of the RHMC.

Each of the jurisdictions in District 5 represented in this Plan will independently implement their own jurisdiction specific mitigation actions and collaborate the carrying out regional mitigation actions, including Plan monitoring, evaluation and updating. Each mitigation action in this plan is prioritized and assigned to a specific department, agency, or position, who will carry out the action when staff time and funding are available to support the action. Timelines are given for each mitigation action, where appropriate, and potential funding sources are identified. In addition, each mitigation action is prioritized based on a common set of criteria, which enables jurisdictions to move specific actions forward as funding opportunities arise. Annual plan monitoring will help track progress on each proposed mitigation action.

Participating jurisdictions may coordinate to communicate plan updates to the public when applicable. This may include activities such as, but not limited to, developing Plan amendments, completing mitigation actions, notifying the public of available mitigation programs, and related efforts.

During annual meetings, the Mitigation Council will address issues that may have occurred since the most recent Plan update, assess events affecting the planning area to determine if changes in the plan are required, and complete the monitoring and evaluation worksheets developed for the purpose of documenting the monitoring process. RHMC members will also be responsible for carrying out the following tasks:

- Distribute and maintain information related to recent hazard impacts and the current status of mitigation actions
- Invite other agencies/departments to participate in meetings

When warranted, the RHMC will schedule post-disaster event meetings with the District 5 RHMC members following Federally and/or State declared disasters, as well as other events that result in significant damage. If significant changes, updates, or amendments to the Plan are suggested by the District 5 Mitigation Council, they will inform MEMA's Bureau of Mitigation Planning to determine If and what appropriate action that should be taken.

7.3. EVALUATION THE PLAN

Prior to the required five-year update, the RHMC will meet on an annual basis, at a minimum, to look at the plan and discuss possible updates and progress implementing mitigation actions. The form detailed in Appendix D will be distributed to the RMHC members annually. Completion of this form is not required, but it is available as a useful and standardized form which may be used by council members and other local officials assigned with responsibility for implementing mitigation actions to track and report progress implementing mitigation actions included in this document. This form can also be used by local jurisdictions to submit new actions identified for inclusion in this document between the five-year required update. District 5 Mitigation Council members are responsible for collecting additional mitigation actions from their jurisdiction and completing the form as needed to provide updates to existing actions.

In addition to the form detailed in Appendix D, members of the District 5 Mitigation Council may use the Plan Evaluation Checklist (see Appendix E), to evaluate the Plan and make recommendations for future plan updates and enhancements. The Checklist will be completed whenever changes are made to the plan.

The Plan Evaluation Checklist includes the following components:

- Evaluate the goals and objectives ensuring they address current and expected conditions
- Identify status and effectiveness of mitigation actions
- Determine any changes in the nature or magnitude of risks identified in the Plan
- Evaluate current resources for adequacy in implementing the Plan
- Document any implementation problems with other agencies, including technical, political, legal or coordination issues
- Evaluate the effectiveness of the District 5 Mitigation Council
- Evaluate the effectiveness of the participating jurisdiction's capabilities to further support the Plan Evaluation Checklist

The need to complete the Plan Evaluation Checklist and Mitigation Action Implementation Worksheet will be assessed at each annual RHMC meeting (at a minimum).

7.3.1. UPDATING THE PLAN

In accordance with federal regulations, the Mississippi District 5 Regional Hazard Mitigation Plan is updated every five years. The District 5 Mitigation Council Chairman will complete a yearly progress report, as described in the Evaluation Section above, to improve the documentation of the progress made by the participating jurisdictions on the strategies defined in this Plan. In doing so, the Plan will become more of a "living document" this proactive and integrates with the planning area's future initiatives.

If a significant event or changes in regulation warrant an update of the Plan, the Chairman will meet with the Mitigation Council and the MEMA Mitigation Bureau to determine the course of action to be used to update the Plan. If a Plan update is approved, the same procedures used in developing the original plan will be followed and will incorporate opportunities for the public to have input and provide comments. **Table 66** below details the 5-year schedule for updating the 2026 Plan.

TABLE 66: MEMA DISTRICT 5 5-YEAR PLAN UPDATE SCHEDULE

Year 1	Year 2	Year 3	Year 4	Year 5
Annual District 5 Mitigation Council Meeting	Annual District 5 Mitigation Council Meeting	Annual District 5 Mitigation Council Meeting	Annual District 5 Mitigation Council Meeting	MEMA & District 5 Mitigation Council lead Plan update process
District 5 jurisdictions proceed with mitigation action implementation.	District 5 jurisdictions proceed with mitigation action implementation	District 5 jurisdictions proceed with mitigation action implementation	District 5 jurisdictions proceed with mitigation action implementation and consider additional mitigation projects.	MEMA & District 5 Mitigation Council host a minimum of 3 Mitigation Council planning meetings.
District 5 jurisdictions incorporate this Plan into other municipality plans.	District 5 jurisdictions incorporate this Plan into other municipality plans.	District 5 jurisdictions incorporate this Plan into other municipality plans.	District 5 jurisdictions incorporate this Plan into other municipality plans.	District 5 jurisdictions incorporate outreach strategy, which includes municipal meetings, public workshops and public surveys.
District 5 jurisdictions, in coordination with MEMA, seek funding for regional mitigation projects	District 5 jurisdictions, in coordination with MEMA, seek funding for regional mitigation projects	District 5 jurisdictions, in coordination with MEMA, seek funding for regional mitigation projects	District 5 jurisdictions, in coordination with MEMA, seek funding for regional mitigation projects	District 5 jurisdictions in coordination with MEMA seeks funding for regional mitigation projects
District 5 initiates mitigation planning review process for lessons learned.	District 5 Mitigation Council maintains communication with all municipalities to incorporate the Regional plan into other plans.	District 5 Mitigation Council maintains communication with all municipalities to incorporate the Regional plan into other plans.	District 5 Mitigation Council maintains communication with all municipalities to incorporate the Regional plan into other plans.	MEMA & District 5 Mitigation Council hosts meetings for additional stakeholders such private businesses and relevant speakers.
District 5 Mitigation Council will have a meeting following any largescale disasters to discuss potential mitigation actions.	District 5 Mitigation Council will have a meeting following any largescale disasters to discuss potential mitigation actions.	District 5 Mitigation Council will have a meeting following any largescale disasters to discuss potential mitigation actions.	District 5 Mitigation Council will have a meeting following any largescale disasters to discuss potential mitigation actions.	District 5 Mitigation Council will have a meeting following any largescale disasters to discuss potential mitigation actions.

7.4. INTEGRATING MITIGATION STRATEGIES INTO OTHER LOCAL PLANNING MECHANISMS

Integrating components of the Plan with other planning mechanisms is the responsibility of each participating jurisdiction. All participating jurisdictions have agreed to integrate the information and strategies in this plan into other local planning mechanisms by reviewing and referencing this plan when updates are made to other planning mechanisms. This includes development ordinances, Emergency Operations Plans, Floodplain Management Plans, Comprehensive/Growth Management Plans, Zoning Regulations, Capital Improvement Plans, and more. Additionally, District 5 will integrate elements of the Plan into future regional planning documents. To support this effort, the updated plan will be distributed to participating jurisdictions to facilitate incorporation of mitigation actions into the review and implementation of planning and development regulations. The integration process and schedule of incorporating elements of this Plan will vary based on the specific plan's update cycle. The yearly mitigation council meetings will provide another opportunity for jurisdictions to track the progress on the integration of this Plan into local planning mechanisms.

While all participating jurisdictions have agreed to the process of reviewing and referencing this hazard mitigation plan whenever they update other local planning mechanisms, several jurisdictions identified specific plans they have to integrate elements of this plan into other mechanisms. **Table 67** below provides additional detail regarding how participants in this plan intend to integrate the plan into other planning mechanisms, as well as whether any aspects of the previous hazard mitigation plan were integrated into other planning mechanisms.

TABLE 67: PLAN INTEGRATION BY JURISDICTION

Jurisdiction	How did you integrate the previous hazard mitigation plan into other planning mechanisms?	How will you integrate the new hazard mitigation plan into other planning mechanisms?
Claiborne County	The previous plan was not integrated into other planning mechanisms	Claiborne County intends to integrate the new hazard mitigation plan by: • Updating development and floodplain ordinances to reflect new hazard data • Adding mitigation priorities and hazard information to the Emergency Operations Plan during its next update • Using new hazard maps and risk data when updating the Comprehensive Plan and other county plans • Sharing the plan across departments to guide land-use decisions, capital projects, and grant applications
City of Port Gibson	There is no documentation of the previous plan being integrated into other planning mechanisms.	Port Gibson will integrate the plan into other planning mechanisms as they are updated.
Hinds County	Previous plan was used in conjunction with floodplain management to plan for exercises.	Hinds County will utilize information from the new plan to prepare for emergencies, plan for mitigation

Jurisdiction	How did you integrate the previous hazard mitigation plan into other planning mechanisms?	How will you integrate the new hazard mitigation plan into other planning mechanisms?
		strategies, and assist with speedy recovery.
City of Raymond	The City of Raymond has not incorporated the previous plan into other planning mechanisms.	Upon completion of the Regional Hazard Mitigation Plan for District 5, Raymond will discuss the plan as a leadership team and develop additional activities perceived as necessary.
Town of Bolton	The previous plan was integrated through: • Informal integration into infrastructure planning • Consideration during grant applications and project prioritization • Coordination with county emergency management operations	The Town of Bolton will integrate the new plan by: • Aligning infrastructure projects with identified hazard risks • Updating local ordinances and development practices as needed • Incorporating mitigation priorities
Town of Edwards	The previous plan was not integrated into other planning mechanisms	Development ordinance to show new data. Develop and incorporate new priorities into our plans and coordinate with the community officials.
Town of Learned	Learned was not involved in the previous plan, therefore it was not integrated into other planning mechanisms	Mayor and Board of Alderman will be involved upon completion of the plan.
Town of Utica	Maps and priorities were incorporated into public safety and emergency operations plans.	Utica will integrate aspects of the plan when updating development ordinances, setting new priorities for emergencies operations plans, and incorporating maps into other community plans.
Issaquena County	There is no documentation of the previous plan being integrated into other planning mechanisms.	Issaquena County will integrate the plan into other planning mechanisms as they are updated.
Town of Mayersville	There is no documentation of the previous plan being integrated into other planning mechanisms.	Mayersville will integrate the plan into other planning mechanisms as they are updated.
Sharkey County	Sharkey County installed warning sirens and sought funding for community SAFE room.	Sharkey County will update and incorporate priorities from this plan into the county's EOP.
City of Rolling Fork	There is no documentation of the previous plan being integrated into other planning mechanisms.	Rolling Fork will integrate the plan into other planning mechanisms as they are updated.
Town of Anguilla	There is no documentation of the previous plan being integrated into other planning mechanisms.	Anguilla will integrate the plan into other planning mechanisms as they are updated.

Jurisdiction	How did you integrate the previous hazard mitigation plan into other planning mechanisms?	How will you integrate the new hazard mitigation plan into other planning mechanisms?
Town of Cary	There is no documentation of the previous plan being integrated into other planning mechanisms.	Cary will integrate the plan into other planning mechanisms as they are updated.
Simpson County	The County's EOP was updated to match the previous plan.	Simpson County will update its EOP and Community Development Plan to align them with this plan.
City of Magee	There is no documentation of the previous plan being integrated into other planning mechanisms.	Magee will integrate the plan into other planning mechanisms as they are updated.
City of Mendenhall	The EOP was updated to match the previous plan.	The community is planning to update its EOP and Community Development Plan and will align them with this plan.
Town of D'Lo	The EOP was updated to match the previous plan.	The community is planning to update its EOP and Community Development Plan and will align them with this plan.
Village of Braxton	The EOP was updated to match the previous plan.	The community is planning to update its EOP and Community Development Plan and will align them with this plan.
City of Canton	Updated community ordinances to reflect new hazards	Update development ordinance to reflect changes in hazard characteristics
City of Madison	The city continues to review ordinances an emergency plans on a yearly basis.	All the information received in the new hazard mitigation plan will be reviewed along with other plans to ensure implementation.
City of Crystal Springs	There is no documentation of the previous plan being integrated into other planning mechanisms.	Crystal Springs will integrate the plan into other planning mechanisms as they are updated.
Village of Puckett	There is no documentation of the previous plan being integrated into other planning mechanisms.	Puckett will integrate the plan into other planning mechanisms as they are updated.

7.5. SOURCES OF GRANT FUNDING

Mitigation actions will likely need funding for implementation. Below is a list of the funding sources for mitigation projects, as well as program parameters and project eligibility.

7.5.1. FEDERAL RESOURCES

Hazard Mitigation Assistance (HMA) Grants: The Federal Emergency Management Agency (FEMA) provides funding for three Hazard Mitigation Assistance Grant Programs. These programs, described in detail in FEMA's Hazard Mitigation Assistance Program and Policy Guide, March 23, 2023, are summarized for future reference when mitigation activities are implemented. The grant programs are administered within the State of Mississippi by the Mississippi Emergency Management Agency, Office of Mitigation. A brief description of each program is provided below, followed by a list of eligible activities by program in **Table 68**.

Hazard Mitigation Grant Program (HMGP): HMGP ensures that state, local, tribal and territorial governments have the financial opportunity to plan for and implement mitigation measures that reduce the risk of loss of life and property from future natural disasters during the reconstruction process following a disaster. HMGP is authorized by Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) and implemented in regulations at 44 Code of Federal Regulations (CFR) §§ 206.430-440.

Hazard Mitigation Grant Program Post Fire (HMGP-PF): HMGP-PF assistance is available to help communities implement hazard mitigation measures after wildfire disasters in any area that receives a Fire Management Assistance Grant (FMAG) declaration. FEMA can provide HMGP Post Fire assistance for hazard mitigation measures that substantially reduce the risk of future damage, hardship, loss or suffering in any area affected by a fire for which assistance was provided under Section 420 of the Stafford Act.

Flood Mitigation Assistance (FMA): FMA is a competitive program that provides funding to states, local communities, federally recognized tribes and territories. Funds can be used for projects that reduce or eliminate the risk of flood damage to structures insured by the National Flood Insurance Program (NFIP).

The National Flood Insurance Reform Act of 1994 amended Section 1366 of the National Flood Insurance Act of 1968 and directed FEMA to provide financial assistance in the form of grants for planning and carrying out activities designed to reduce the risk of flood damage to structures covered under contracts for flood insurance with the NFIP. **Table 68** lists the eligible activities for each HMA grant program. To be eligible, activities must meet all requirements referenced in the 2025 Hazard Mitigation Assistance Program and Policy Guide.

TABLE 68: ELIGIBLE HMA ACTIVITIES BY PROGRAM

Eligible Activities	HMGP	HMGP Post Fire	FMA
Capability and Capacity Building			
New Plan Creation and Updates	Yes	Yes	Yes
Planning-Related Activities	Yes	Yes	Yes
Advance Assistance	Yes	Yes	No
Project Scoping	No	No	Yes

Eligible Activities	HMGP	HMGP Post Fire	FMA
Financial Technical Assistance	No	No	Yes
Partnerships	No	No	Yes
Codes and Standards	Yes	Yes	No
Innovative Capability- and Capacity-Building	Yes	Yes	Yes
Hazard Mitigation Projects			
Property Acquisition and Structure Demolition or Relocation	Yes	Yes	Yes
Mitigation Reconstruction	Yes	Yes	Yes
Structure Elevation	Yes	Yes	Yes
Stabilization	Yes	Yes	Yes
Flood Risk Reduction	Yes	Yes	Yes
Floodproofing	Yes	Yes	Yes
Tsunami Vertical Evacuation	Yes	Yes	No
Safe Room	Yes	Yes	No
Wildfire Mitigation	Yes	Yes	No
Retrofit	Yes	Yes	Yes
Secondary Power Source	Yes	Yes	No
Warning Systems	Yes	Yes	No
Aquifer Recharge, Storage and Recovery	Yes	Yes	Yes
Innovative Hazard Mitigation Project	Yes	Yes	Yes
Management Cost	Yes	Yes	Yes

7.5.2. STATE RESOURCES

Listed below are agencies providing programs that support communities developing and implementing a range of mitigation projects. As appropriate, communities should consider accessing programs managed by these agencies and other sources to further local, regional, and state mitigation goals

- Mississippi Emergency Management Agency – FEMA Public Assistance (PA)
- Mississippi Development Authority
- Mississippi Department of Environmental Quality

- Mississippi Office of Homeland Security
- Mississippi State Department of Health
- Mississippi Department of Marine Resources
- Mississippi Department of Transportation
- Mississippi Emergency Management Agency FEMA/National Flood Insurance Program (NFIP)
- Mississippi Department of Wildfire, Fisheries and Parks
- Mississippi Forestry Commission
- US Army Corps of Engineers
- USDA Natural Resources Conservation Service
- USDA Rural Development
- HUD's National Disaster Resilience Competition

7.5.3. OTHER GRANT SOURCES

FEMA Public Assistance (PA) 406 Mitigation Grant Program: PA is available for counties included in a FEMA presidential disaster declaration. If they are eligible to receive PA funding, the community must develop a valid and eligible Project Worksheet in a timely manner, and the FEMA PA group administering the disaster must agree with the community on the importance of the project. Project types include, but are not limited to, floodproofing, wind protection, road elevation, drainage upgrades/improvements. The FEMA web site with information about this program may be found here: https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit.

Department of Housing and Urban Development (HUD) Community Development Block Grant program Disaster Recovery (CDBG-DR) Program: CBDG-DR funding is made available on a case-by-case basis by the U.S. Congress and is usually authorized after larger disaster events that have received a presidential disaster declaration. The program generally covers projects related to acquisition or elevation of residential structures, but funding can also be made available to small businesses, including the elevation of rental properties. Funding can be used to enhance community code enforcement. For more information about CDBG-DR, and for additional information on this program, visit https://www.hudexchange.info/programs/cdbg-dr/.

Department of Housing and Urban Development (HUD) Community Development Block Grant program Disaster Recovery Program - Mitigation (CDBG-MIT): The U.S. Congress makes program funding available on a case-by-case basis. Funding is usually authorized after larger disaster events that have already received a presidential disaster declaration. The program generally covers projects related to acquisition or elevation of residential structures, but funding can also be made available to small businesses, including the elevation of rental properties. Funding can be used to enhance community code enforcement. For more information about CDBG-MIT, visit the program web site at https://www.hudexchange.info/programs/cdbg-mit/.

US Army Corps of Engineers (USACE) Mitigation: The USACE Flood Control (Structural & Non-Structural). Section 205 of the 1948 Flood Control Act, as amended, authorizes the U.S. Army Corps of Engineers to develop and construct small flood control projects. Each project is limited to a Federal cost share of $7,000,000 and must be economically justified, environmentally sound, and technically feasible. Section 14 of the 1946 Flood Control Act, as amended, authorizes USACE to develop and construct streambank protection to protect public facilities and non-profit public facilities.

7.6. METHOD FOR CONTINUED REGIONAL PUBLIC PARTICIPATION

The District 5 Mitigation Council is committed to continuing public outreach and public involvement. If significant changes are required of the plan by MEMA/FEMA, the District 5 Mitigation Council will notify the public and encourage their participation in meetings to provide input and review any changes. The Mitigation Council may also send notifications to the public on plan amendments, completion of mitigation actions, and notification of programs available for mitigation, etc. To this end, the public will remain involved in the importance of this plan. Public involvement during public discussions will remain involved in the importance of this plan. Public involvement during the plan's monitoring and evaluation process will be fostered through the strategies listed below.

- Each jurisdiction's website and/or social media outlets
- Public meetings advertised in local newspapers and local websites
- Mitigation Council members will update their local constituency (officials, stakeholders and the public) of implementation and update process
- Copies of this plan will be available for public view in each participating County's Emergency Management Office and/or other departments(s) as deemed appropriate by each participating jurisdiction.

During the five-year planning cycle. District 5 Mitigation Council will meet with various local and state agencies/organizations to strengthen relationships, identify partnering opportunities to address identified mitigation actions, and increase awareness of the capabilities these groups can provide. It will also use conferences local and regional workshops, and seminars regarding emergency preparedness, response and recovery operations is another opportunity to meet with local agencies, surrounding communities and state agencies. These conferences are typically held each year and posted on the Mississippi Emergency Management Agency's webpage. Below is a list of annual conferences:

- National Hurricane Conference
- Mississippi Preparedness Summit "Partners in Preparedness"
- Gulf States Hurricane Conference (MS, LA, TX, AL)
- Mississippi Civil Defense Emergency Management Association

It is recommended that the plan be made publicly accessible through county, city, and town websites to allow review by the public, State Planning and Development Districts, and consultants engaged by MEMA and other State agencies to support community mitigation initiatives.

1. INTRODUCTION

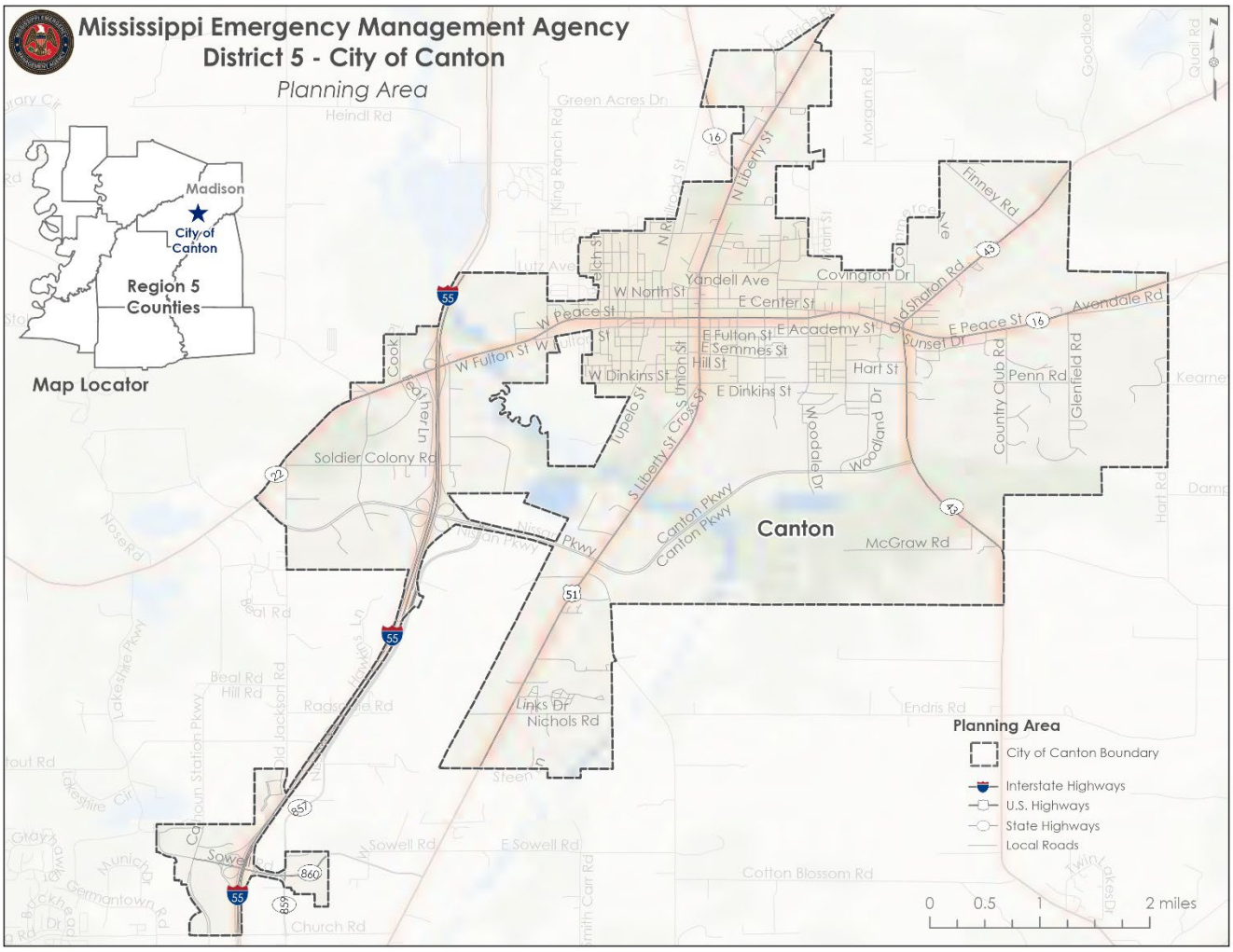
This annex provides more detailed information about City of Canton. It includes:

- A more localized community profile, including more detailed mapping, population and demographic information, and critical facilities information
- Local-level Hazard Identification and Risk Assessment (HIRA) information, including some more localized hazard maps and conclusions related to hazard risk and how it varies across the planning area
- A localized vulnerability assessment, including the likely impact of profiled hazards on critical facilities in City of Canton
- A detailed capability assessment, describing resource and tools available to the county and municipalities to participate in hazard mitigation and reduce hazard risk
- A mitigation strategy, describing a variety of actions the county and municipalities may opt to take to reduce the risk associated with profiled hazards over the useful life of this plan

2. COMMUNITY PROFILE

This section provides a more detailed profile of City of Canton. The City is in the center of Madison County, which is located in the Northeastern part of the planning area and **Figure 1** below shows the planning area for the City of Canton. The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey—such as poverty, lack of transportation, crowded housing, and minority status—to quantify a community's relative vulnerability. This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). According to the 2022 CDC Social Vulnerability Index, Madison County has an overall **low** (0.0494) level of vulnerability. However, due to its urbanized location, assumptions could be made that the City of Canton's population might have a slightly higher score than the County as a whole.

FIGURE 1: CITY OF CANTON



2.1. POPULATION AND DEMOGRAPHICS

Population information from the last three Census counts for the City of Canton is summarized below, showing trends since the year 2010. A summary of population trends is summarized in **Table 1**. Overall, the population trend in the City is decreasing. The race and ethnicity demographics of the City of Canton are shown in **Table 2**. The majority of the City is African-American (75%).

TABLE 1: POPULATION TRENDS | SOURCE: 2024 U.S. CENSUS DATA

Jurisdiction	2010 Census	2020 Census	2024 Census (Estimate)	Percent Change 2020-2024
City of Canton	13,077	11,943	10,811	-9.5%

TABLE 2: DEMOGRAPHICS IN PERCENT | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
City of Canton	19.9%	75%	5.4%	0%	0%	2.7%

Table 3 summarizes what percentage of the population of the City of Canton belongs to certain vulnerable populations according to the U.S. Census. The City has a high percentage of residents living below the poverty line at 33.3%.

TABLE 3: VULNERABLE POPULATIONS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
City of Canton	33.3%	549	1,666	1,500

The table below provides annual estimates of housing units in the City of Canton. A summary of information in **Table 4** below displays the trends over time. The number of housing units within the City has declined since 2020.

TABLE 4: ANNUAL ESTIMATES OF HOUSING UNITS IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023	2024
City of Canton	5,407	4,971	4,959	4,997	5,203

Employment in the City of Canton is largely focused on manufacturing; there are several other large industries located within Madison County. Error! Reference source not found. below summarizes employment information in the City. The highest number of employment for the City is within the management, business, science, and arts occupation.

TABLE 5: EMPLOYMENT IN THE CITY OF CANTON | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Management, business, science and arts occupations	Service occupations	Sales and office occupations	Natural resources, construction and maintenance occupations	Production, transportation and material moving occupations
City of Canton	1,173	901	1,189	451	862

2.2. INFRASTRUCTURE, CRITICAL FACILITIES AND ENERGY ASSETS

2.2.1. CRITICAL FACILITIES AND INFRASTRUCTURE

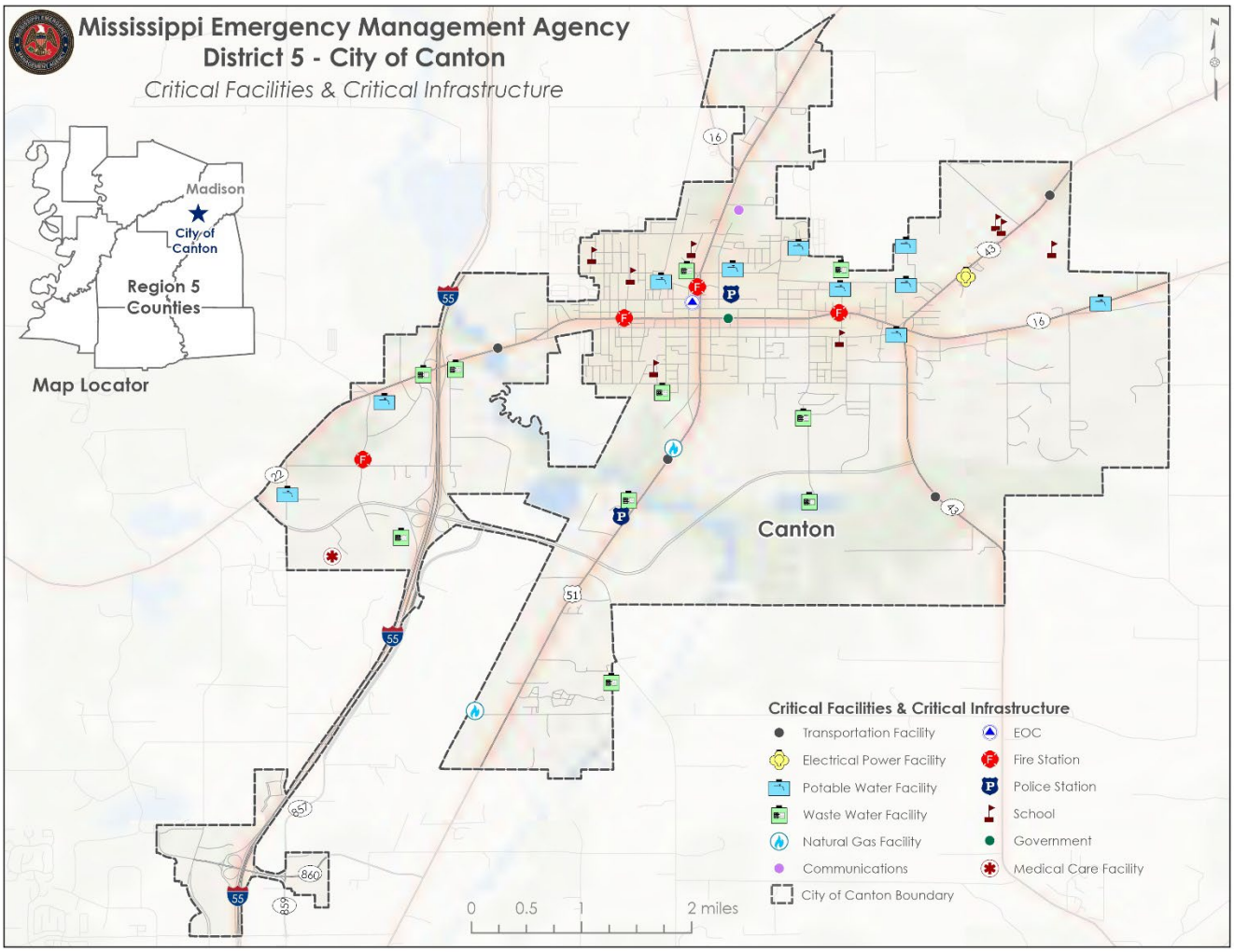
Certain assets and facilities are considered as being of importance for City of Canton. **Table 6** below is a list of the critical facilities within City of Canton. **Figure 2** below displays a map showing the locations of these critical facilities and infrastructure located within the City. There is a total of 47 critical facilities within the City. The table below consists of facilities identified in the previous plan for each community as well as facilities identified by HAZUS. These facilities were sent to each community representative of the Mitigation Council for review and given a chance to provide changes.

TABLE 6: CITY OF CANTON CRITICAL FACILITIES AND INFRASTRUCTURE

Facility Type	Facility Name	Facility Location
Communications	WMGO 1370	City of Canton
Electrical Power Facility	Hwy 43 Substation	City of Canton
EOC	Madison County Emergency Operations Center	City of Canton
Fire Station	Canton Fire Department Station 1	City of Canton
Fire Station	Canton Fire Department Station 2	City of Canton
Fire Station	Canton Fire Department Station 3	City of Canton
Fire Station	Canton Fire Department Station 4	City of Canton
Government	Canton - City Hall	City of Canton
Medical Care Facility	Merit Health Madison	City of Canton
Natural Gas Facility	Gulf South Regulator Station	City of Canton
Natural Gas Facility	Nissan Gas Metering Station	City of Canton
Police Station	Canton Police Department	City of Canton
Police Station	Madison County Sheriff's Department / Madison County Detention Center	City of Canton
Potable Water	Commerce Water Tank	City of Canton
Potable Water	Jitney Jungle Water Tank	City of Canton
Potable Water	Old Jackson Well and Tank	City of Canton
Potable Water	Standpipe Water Tank	City of Canton
Potable Water	Well 4	City of Canton
Potable Water	Well 5	City of Canton
Potable Water	Well 7	City of Canton
Potable Water	Well 8	City of Canton
Potable Water Facility	Sonat Regulation Station	City of Canton
Potable Water Facility	Tip H. Allen Water Treatment Plant	City of Canton
Potable Water Facility	Water Treatment Plant 2	City of Canton

Facility Type	Facility Name	Facility Location
School	Canton Career Center	City of Canton
School	Canton Educational Services Center	City of Canton
School	Canton Elementary School	City of Canton
School	Canton Public 9th Grade School	City of Canton
School	Canton Public High School	City of Canton
School	Huey L. Porter Middle School	City of Canton
School	Jimmie M. Goodloe Elementary School	City of Canton
School	Mc Neal Elementary School	City of Canton
School	Nichols Middle School	City of Canton
Transportation Facility	Highway 22 West Bridge	City of Canton
Transportation Facility	Highway 43 North Bridge	City of Canton
Transportation Facility	Highway 43 South Bridge	City of Canton
Transportation Facility	Highway 51 South Bridge	City of Canton
Waste Water Facility	Cameron Lift Station	City of Canton
Waste Water Facility	Cathy Circle Lift Station	City of Canton
Waste Water Facility	CAV Center Station	City of Canton
Waste Water Facility	Links Station	City of Canton
Waste Water Facility	Madison County Lift Station	City of Canton
Waste Water Facility	McCarty Lift Station	City of Canton
Waste Water Facility	Northeast Lift Station	City of Canton
Waste Water Facility	Papaws Lift Station	City of Canton
Waste Water Facility	South Lagoon	City of Canton
Waste Water Facility	Union Lift Station	City of Canton

FIGURE 2: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE



2.2.2. TRANSPORTATION

Transportation in the City of Canton includes the list below and **Figure 2** above displays them on a map.

- Interstate 55
- U.S. Highway 51
- State Highways 16, 22, 43, 857, 859 and 860

2.2.3. ENERGY ASSETS

Oil, natural gas pipelines and electric transmission lines traverse the City and the County. The list below breaks down the energy infrastructure within the City.

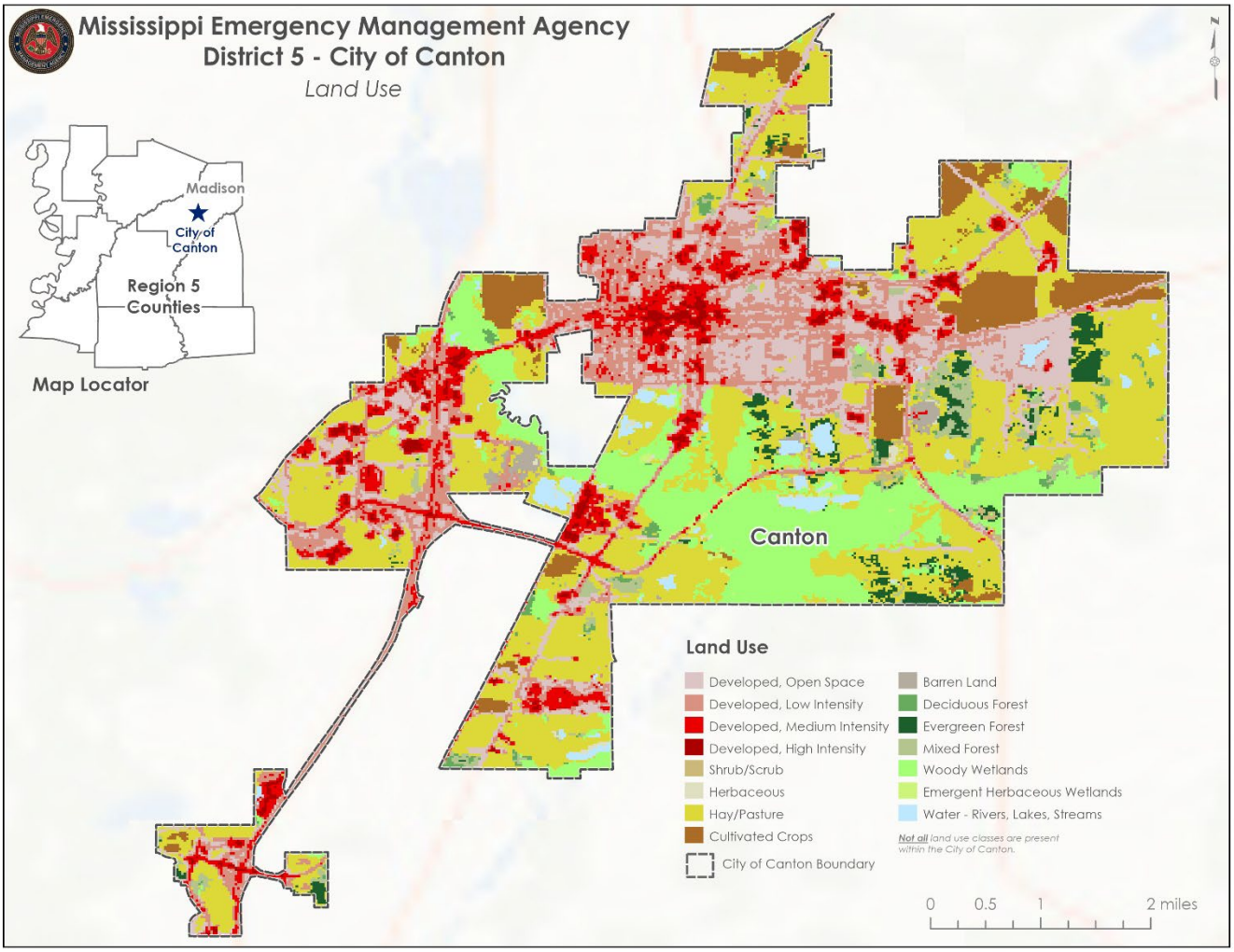
- **Power Plant:** There are no utility-scale power plants located inside the City of Canton
- **Substation:** Ragsdale Solar Park Interconnection Substation (230/34.5 kV)
- **Transmission:** Pickens – South Canton Transmission Line

- **Pipelines:** Mississippi hosts extensive natural gas, crude oil, and refined product pipeline networks, and portions of these systems traverse Madison County

2.3. LAND USE AND DEVELOPMENT

The City of Canton encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, and growing residential development in the Northern and Northwestern parts of the City. **Figure 3** displays the land use and development throughout the City.

FIGURE 3: CITY OF CANTON LAND USE AND DEVELOPMENT



2.4. HISTORIC AND CULTURAL RESOURCES

Cultural resources and historical assets are generally unique or irreplaceable in nature due to their age or unique properties or characteristics. **Table 7** below provides a list of known cultural resources and historic assets in the City of Canton. In total, there are six historic and cultural resources.

TABLE 7: HISTORIC AND CULTURAL RESOURCES IN THE CITY OF CANTON

Cultural Resource	General Location	Resource Type
Madison County Jail	City of Canton	Building
Kirkpatrick Dental Office	City of Canton	Building
Charles F. Smith House	City of Canton	Building
Canton High School	City of Canton	Building
Mt. Zion Baptist Church	City of Canton	Building
Young House	City of Canton	Building

2.5. CHANGES IN DEVELOPMENT AND PRIORITIES

This section outlines recent and anticipated changes in development and priorities within City of Canton. **Table 8** lists the City's responses to these questions in the Capability Assessment.

TABLE 8: CITY OF CANTON CHANGES IN DEVELOPMENT AND PRIORITIES

Jurisdiction	Changes in Development in the Past Five Years	Changes in Development Anticipated in the Next Five Years	Changes in Community Priorities over the Past Five Years
City of Canton	Yes	The development of Canton West	Yes, Amazon and the Canton Mega Site

3. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. More generalized information about the goals of the capability assessment, including the process and methodology, is presented in the Capability Assessment portion of the base plan.

This section articulates specific information about the capabilities of City of Canton.

3.1. CITY OF CANTON CAPABILITIES AND RESOURCES

3.1.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to City of Canton to support hazard mitigation.

TABLE 9: CITY OF CANTON STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Madison County	
Engineering	Y	Waggoner Engineer	
Procurement	Y	City Clerk	
Floodplain Management	Y	Building and Development	
Land Use, Land Management, or Development Planning	Y	Building and Development	
Grant-writing	Y	Michelle Crowle	
Geographic Information Systems (GIS)	Y	Waggoner Engineer	
Other reported staff and technical capabilities: N/A			

3.1.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in City of Canton that might support hazard mitigation efforts.

TABLE 10: CITY OF CANTON PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)		X		2023
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan		X		2023
Continuity of Operations Plan (COOP)	X			
Disaster Recovery Plan		X		2015
Economic Development Plan		X		2023
Emergency Operations Plan (EOP)		X		
Floodplain Management Plan / Flood Mitigation Plan		X		2020
Historic Preservation Plan		X		2023
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)		X		2023
Threat Hazard Identification and Risk Assessment (THIRA)		X		2023

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms: N/A				

3.1.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further details regarding the participation of City of Canton in the NFIP program, including how development in the floodplain is regulated.

TABLE 11: CITY OF CANTON FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Building and Development
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	Requiring a building permit
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	Maintain public outreach
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	Yes, class 10
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes, 1/17/25

3.1.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support City of Canton's hazard mitigation efforts.

TABLE 12: CITY OF CANTON FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes, 2023
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	Yes, 2023 Fire Codes
Do you have a land use or development ordinance?	Yes
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	N/A

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	State funding

3.2. ABILITY TO EXPAND CAPABILTIES

As part of the capability assessment process, each jurisdiction was asked to discuss their ability to expand upon the capabilities discussed earlier in this section. Below is a summary of the information provided by each participant regarding how they can strengthen their ability to conduct hazard mitigation measures in the future. **Table 13** below lists the City's responses to these questions in the Capability Assessment.

TABLE 13: CITY OF CANTON'S ABILITY TO EXPAND CAPABILITIES

Jurisdiction	Self-Reported Information Regarding Ability to Expand Capabilities
City of Canton	Update the Comprehensive Plan

4. HAZARD IDENTIFICATION & RISK ASSESSMENT

The Hazard Identification and Risk Assessment (HIRA) process, described in more detail in the HIRA section of the base plan, involves identifying potential hazards, evaluating their likelihood and potential consequences, and estimating and describing the level of risk these hazards present to a community.

Since 1969, Madison County* has been included in 20 federal disaster declarations, of which six occurred since this plan was last updated. **Table 14** describes these events.

TABLE 14: CITY OF CANTON FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4790	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Hinds, Madison	6/10/2024
DR-4727	Severe Storm, Straight-line Winds, Tornadoes	Madison, Rankin, Warren, Yazoo	8/12/2023
EM-3569	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
EM-3548	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020
DR-4528	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4081	Hurricane	Claiborne, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1604	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005
DR-1594	Hurricane	Madison, Rankin	7/10/2005
DR-1360	Severe Storm, Flooding, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Warren, Yazoo	2/23/2001
DR-1398	Severe Storm, Tornado	Hinds, Madison, Sharkey	12/7/2001
DR-1360	Severe Storm, Tornado	Madison, Yazoo	2/23/2001
DR-906	Severe Storm, Tornado	Claiborne, Issaquena, Madison, Sharkey, Warren, Yazoo	5/17/1991
DR-888	Flooding, Severe Storm, Tornado	Madison, Simpson	1/3/1991
DR-895	Flooding, Severe Storm, Tornado	Copiah, Simpson	3/5/1991
DR-683	Flooding, Severe Storm, Tornado	Claiborne, Hinds, Madison, Rankin, Warren, Yazoo	6/1/1983

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-577	Severe Storm, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-499	Flooding, Severe Storm, Tornado	Copiah, Madison, Simpson	4/1/1976
DR-271	Hurricane	Copiah, Hinds, Madison, Rankin, Simpson	8/18/1969

** Madison County numbers are represented under the City of Canton and are the same for the City of Madison.*

As described in the "HIRA Methodology" section of the base plan, participants in this plan update reconsidered the relative risk posed by the profiled hazards by conducting a hazard ranking process. **Table 15** below provides a summary of how those hazards were ranked by the City of Canton.

TABLE 15: HAZARD RANKING FOR THE CITY OF CANTON

Jurisdiction	Dam/Leve Failure	Drought	Earthquake	Expansive Soils	Flood	Severe Storms	Severe Winter Weather	Tornado	Tropical Storm / Hurricane	Wil/Urban Interface (WUI) Fire	Hazardous Material Incidents	Nuclear Power Plant Incidents
City of Canton	Low	Med	Low	Low	High	High	Med	High	Med	Low	Low	Low

Each of the 12 natural and manmade hazards discussed in this section are described in more detail in the HIRA section of the base plan. **Table 16** below shows the hazard scores for the City of Canton. This section endeavors to provide more detailed, local-level information, mapping, and conclusions for these hazards wherever relevant.

TABLE 16: CITY OF CANTON HAZARD RISK SCORES

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption e	Probability	Hazard Risk Score
Dam/Levee Failure	3	2	2	2	2	1	**11**
Drought	4	1	1	1	3	3	**30**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	1	2	1	1	1	**6**

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption e	Probability	Hazard Risk Score
Flood	4	2	2	2	2	4	**48**
Severe Storms	4	2	2	2	3	5	**65**
Severe Winter Weather	4	1	1	1	2	2	**18**
Tornado	4	2	2	2	3	3	**39**
Tropical Storms	4	1	1	1	3	2	**20**
Wild/Urban Interface Fire	2	1	1	1	2	2	**14**
Hazardous Material Incidents	4	1	1	1	2	1	**9**
Nuclear Power Plant Incident	0	0	0	0	0	1	**0**

4.1. DAM/LEVEE FAILURE

4.1.1. LOCATION AND EXTENT

There are 276 dams in Madison County, but there are zero dams located in the City of Canton. The Northern tip of the City has partially mapped inundation areas of the 7 Starr Lake Dam which is classified as a high hazard dam.

Dam classifications were designed based on the potential impacts of failure. The potential impacts from each dam classification are detailed below in the event of a dam failure.

- **High Hazard Dam**: In the event of the failure of a high-hazard dam, loss of life is probable, as are economic, environmental, and lifeline impacts.
- **Significant Hazard Dam**: In the event of the failure of a significant hazard dam, loss of life is not expected, but economic, environmental, and lifeline impacts are expected.
- **Low Hazard Dam**: In the event of the failure of a low-hazard dam, there is no anticipated loss of life, and economic, environmental, and lifeline impacts are expected to be minimal, with losses principally limited to the owner's property.

Figure 4 below shows the location of the 7 Star Lake Dam and **Figure 5** below shows the inundation areas of the dam impacting the Northern part City of Canton. There are zero critical facilities located within the mapped inundation areas of the 7 Star Lake Dam, but there are several essential transportation roadways located in the inundation areas. There are also no levees located in or impacting the City of Canton. More information on dams and levee failures across the District can be found in the base plan.

FIGURE 4: LOCATION AND INUNDATION AREAS OF UPSTREAM DAMS

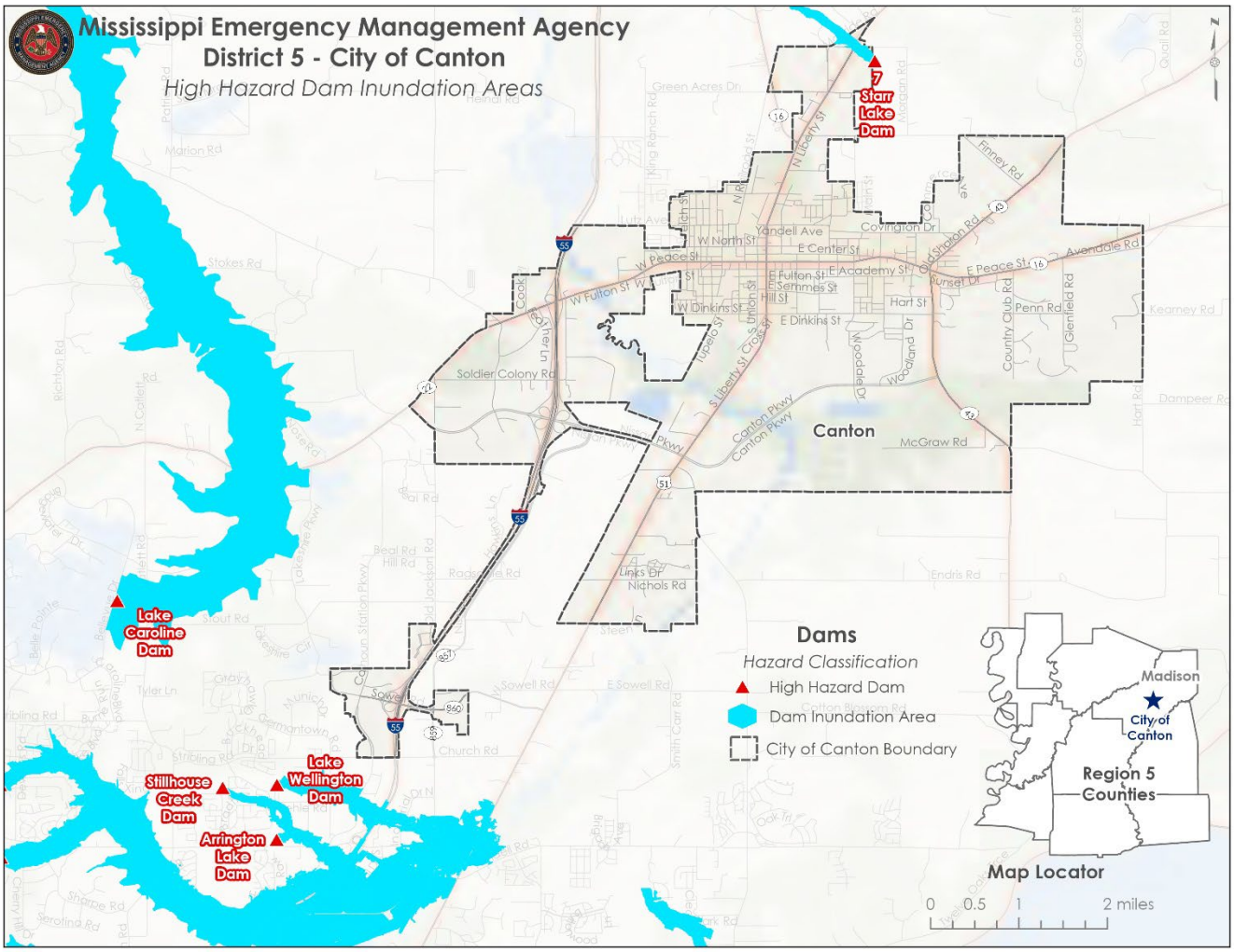
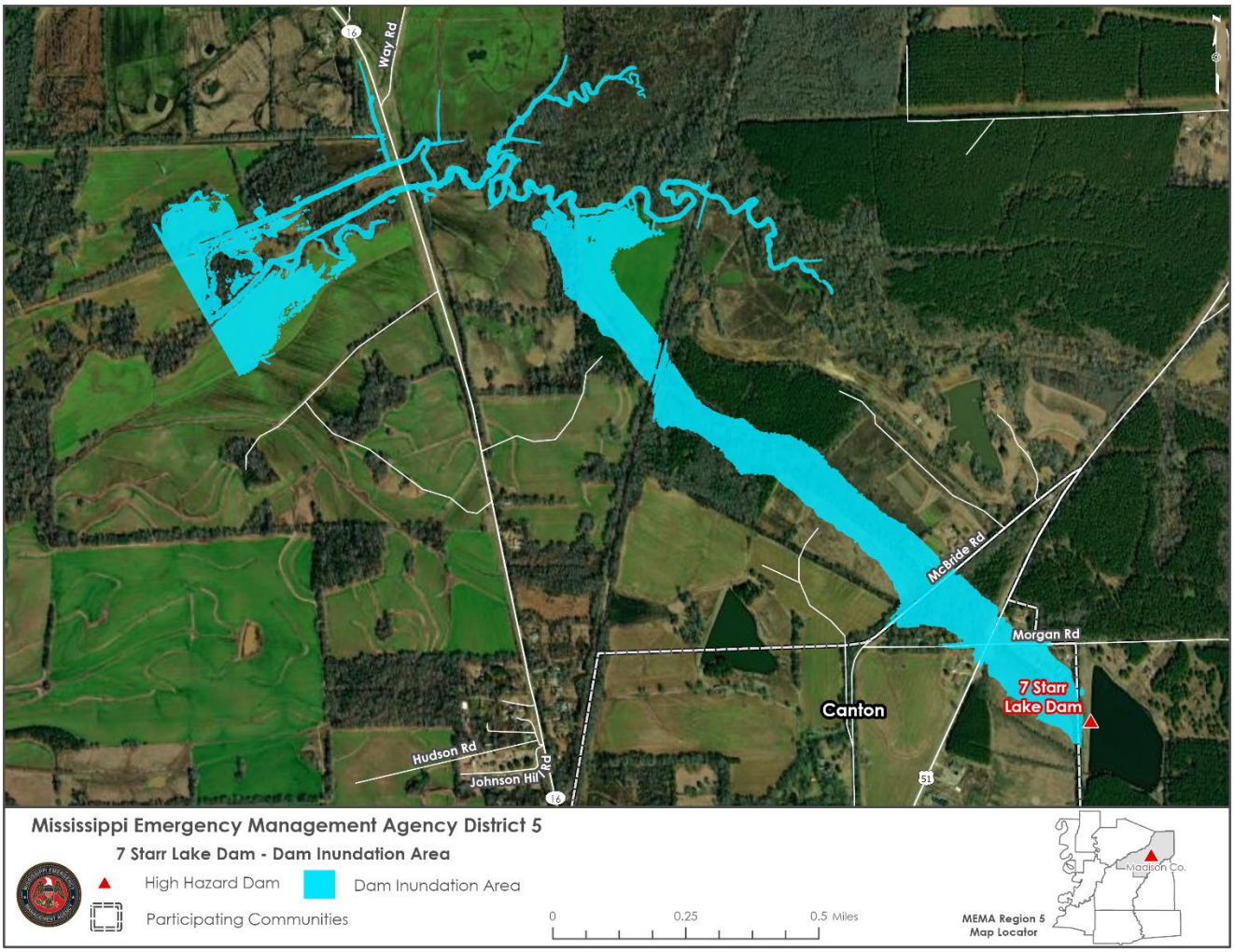


FIGURE 5: LOCATION AND INUNDATION AREAS OF 7 STAR LAKE DAM



4.1.2. PREVIOUS OCCURRENCES

Since the last plan update, MDEQ Dam Safety Division has recorded three breaches in Madison County, but none in the vicinity of the City of Canton. It is important to note that some failures may not have been detected and reported.

4.1.3. PROBABILITY OF FUTURE OCCURRENCES

Structural vulnerabilities in dams may be observable through external inspection; however, failure can still occur unexpectedly, even during fair weather conditions. A sunny day breach, particularly in earthen dams, can result in sudden and severe flooding. Even though there are zero dams in the City's Planning area, with the Northern tip of the City partially mapped inundation areas of the 7 Starr Lake Dam. Based on these factors the probability of future occurrences is **Unlikely**.

4.1.4. LOCALIZED VULNERABILITY ASSESSMENT

4.1.4.1. OVERALL VULNERABILITY

There are 276 dams in Madison County, however there are zero dams located in the City of Canton. Because the inundation map of the 7 Starr Lake Dam does include the Northern part of the City, the

overall vulnerability is **Low**. This section provides further contextualization for the anticipated vulnerability to dam failure.

4.1.4.2. CRITICAL FACILITIES

There are zero critical facilities in City of Canton within the mapped inundation area of an upstream dam. However, all structures located downstream of a dam are at some level of risk.

4.1.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are zero cultural, historic or natural resources in City of Canton within the mapped inundation area of an upstream dam.

4.1.4.4. PEOPLE

The primary impact of dam failure is flooding, which is more likely to impact older adults, low-income families, and individuals without access to reliable transportation. As with many other hazards, vulnerable populations—such as low-income households, the elderly, and individuals with disabilities—may face compounded risks due to limited mobility, lack of resources, or inadequate shelter options. In the City, individuals living in poverty are very high at 33%. These populations can experience disproportionate impacts to dam failures and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Canton has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.1.4.5. STRUCTURES AND SYSTEMS

Dam failure can result in sudden and severe impacts to structures and systems in the County due to rapid flooding, high-velocity water flow, and debris transport downstream of a breached dam. Residential, commercial, and public structures located within dam-inundation areas may experience extensive structural damage or complete destruction as foundations, walls, and load-bearing components are undermined by erosion and scour. Transportation systems, including roads, bridges, and culverts, are particularly vulnerable to washouts and structural failure, which can isolate communities and impede emergency response and recovery efforts. Transportation infrastructure in the mapped inundation areas of the 7 Starr Lake Dam include State Highway 16, Morgan Road and McBride Road. All structures and systems located downstream of a dam are considered at some level of risk.

4.1.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in City of Canton may lead to a decrease in the populations in the inundation zone of each dam. A related decrease in the number of impervious surfaces from urbanization can reduce runoff and strain on existing drainage systems, potentially decreasing the likelihood of overtopping or erosion near dam and levee sites.

4.2. DROUGHT

4.2.1. LOCATION AND EXTENT

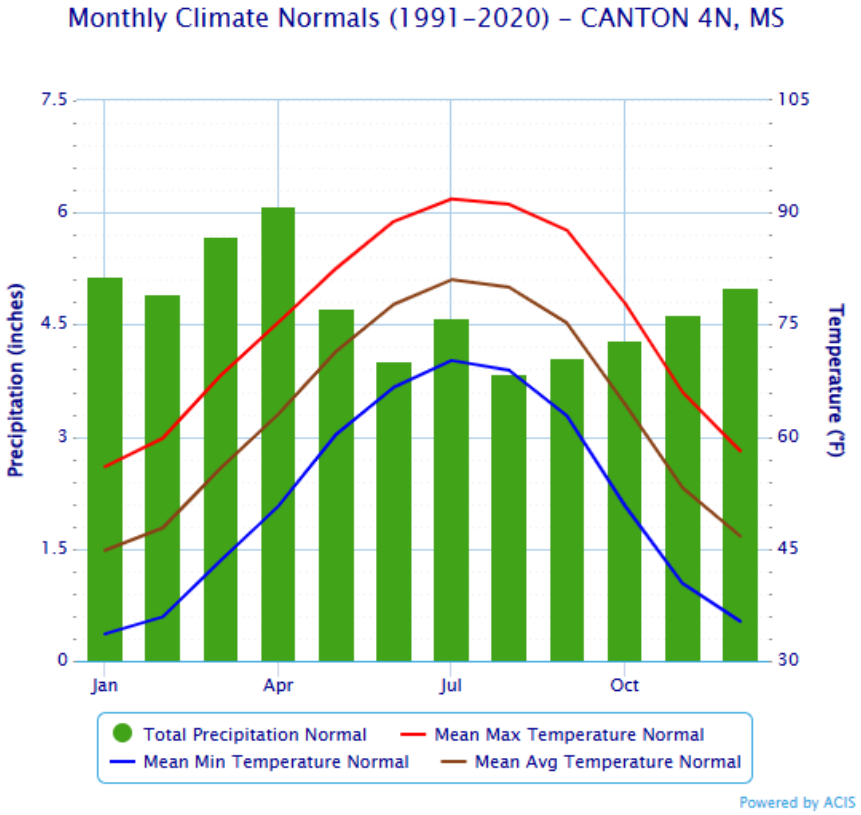
Drought events are only tracked at the county level and the numbers below represent the statistics for Madison County. Drought affects the entire planning area equally; Madison County and the City of Canton are not more or less susceptible to drought than other communities in District 5. For more information on drought across the District, refer to the base plan.

and **Figure 7** below display the monthly precipitation and temperature normals for the area surrounding Canton 4N, MS National Weather Service (NWS) station. According to the data, the City experiences about 57 inches of precipitation annually with an average mean temperature of 63 degrees. The hottest months are May through September while the wettest months are March and April.

FIGURE 6: MONTHLY NORMAL PRECIPITATION AND TEMPERATURE – CANTON 4N, MS | SOURCE: NWS

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	5.15	56.0	33.6	44.8
February	4.92	59.8	35.9	47.8
March	5.69	68.2	43.4	55.8
April	6.09	75.3	50.7	63.0
May	4.73	82.5	60.3	71.4
June	4.02	88.8	66.6	77.7
July	4.60	91.8	70.2	81.0
August	3.84	91.1	68.9	80.0
September	4.06	87.6	62.8	75.2
October	4.30	77.9	50.8	64.4
November	4.64	66.0	40.4	53.2
December	5.01	58.1	35.3	46.7
Annual	57.05	75.3	51.6	63.4

FIGURE 7: MONTHLY CLIMATE NORMALS – CANTON 4N, MS | SOURCE: NWS



4.2.2. PREVIOUS OCCURRENCES

Between the 2015 and 2020 plans, seven droughts occurred in Madison County, causing $80,000 in property damages and $521,000 in crop damages. Between the 2020 and 2025, there were five drought events causing zero reported property damage and over $20 million dollars in crop damage.

4.2.1. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 13 drought events in the past 10 years which is about one or more drought events occurring per year. Therefore, the probability of a drought event occurring in the future is **Likely**.

4.2.2. LOCALIZED VULNERABILITY ASSESSMENT

4.2.2.1. OVERALL VULNERABILITY

The drought vulnerability assessment in the base plan highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Within the City of Canton, drought poses a **Moderate** risk due to potential impacts, largely to public health, agriculture, and the local economy. This section provides further contextualization for the anticipated vulnerability to drought.

4.2.2.2. CRITICAL FACILITIES

Drought poses a slow-onset but significant risk to critical facilities in the City of Canton by stressing water supply systems, increasing wildfire risk, and disrupting essential services. Prolonged dry

conditions can reduce groundwater and surface water availability needed for drinking water, sanitation, medical care, and fire suppression, potentially affecting facilities such as hospitals, emergency services, schools, and government buildings. Drought conditions also elevate wildfire danger, which can strain fire response capabilities and threaten nearby infrastructure, while increased heat and energy demand may place additional stress on electrical systems supporting critical operations.

4.2.2.1. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Drought can damage cultural, historic, and natural resources in the City and County by reducing soil moisture and water levels needed for their preservation. Prolonged dry conditions may harm historic sites, stress forests and wetlands, increase wildfire risk, and degrade ecosystems and culturally important water resources, potentially leading to long-term loss.

4.2.2.2. PEOPLE

As noted in the base plan, drought poses a significant threat to public health and safety, particularly when it disrupts access to clean and sufficient water supplies, and particularly for vulnerable populations—such as low-income households, the elderly, and individuals with disabilities. In the City, individuals living below the poverty level are very high at 33%. These populations can experience disproportionate impacts to droughts and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Canton has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.2.2.3. STRUCTURES AND SYSTEMS

Although drought doesn't typically cause direct physical damage to buildings or infrastructure, systems reliant on water (particularly those supporting agricultural operations) are the most vulnerable. Madison County has a total approximate land area of 457,093 acres, of which 43.3% is farmland (510 farms totaling 197,702 acres of farmland). These portions of the county and their structures and systems are more vulnerable to impact than others. Non-agricultural critical facilities such as transportation infrastructure, utility infrastructure, and public buildings are unlikely to be affected by drought across the planning area, including in City of Canton.

4.2.2.4. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in City of Canton may lead to lower strain on water systems during times of drought in the future.

4.3. EARTHQUAKE

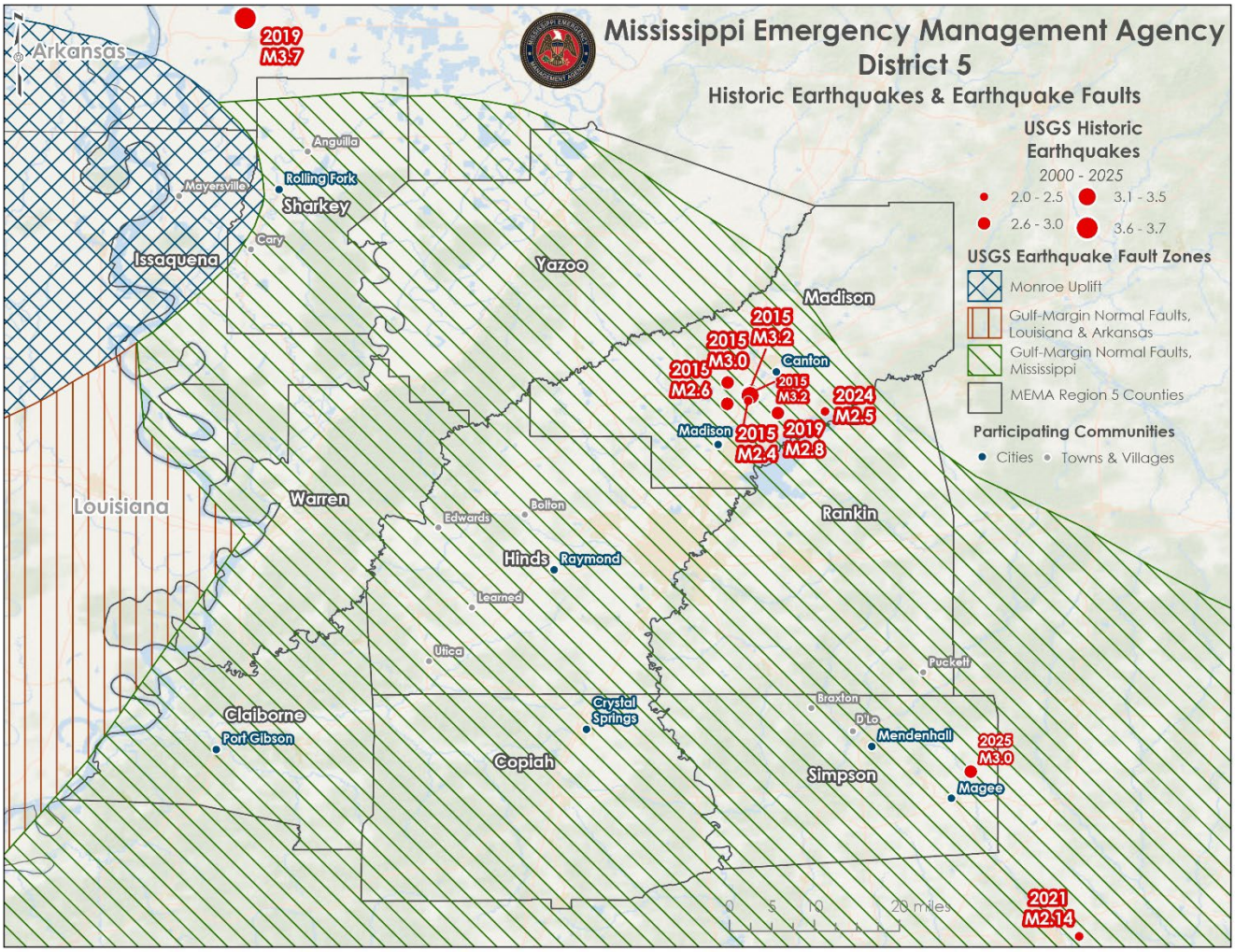
4.3.1. LOCATION AND EXTENT

The earthquake seismic risk in MEMA District 5 varies from low to very high. Madison County is more susceptible to earthquakes than some other communities in District 5 due to areas where the earthquake's seismic risk is low, high and very high. The liquefaction zone severity decreases to very low zones towards the Northern and Southern parts of the County. The City of Canton lies within the very high liquefaction zone. If a strong earthquake were to occur, Madison County may experience higher shaking and damage compared to other counties such as Hinds and Rankin Counties. For more information on earthquakes across the District, refer to the base plan.

4.3.2. PREVIOUS OCCURRENCES

As noted in the base plan, Mississippi experiences relatively low seismic activity, although there have been some minor earthquakes producing light shaking felt in District 5 in recent history. Since 2000, there have been eight earthquakes in MEMA District 5. The strongest was a magnitude 3.2 that occurred in Madison County in 2015. Most of the earthquakes happened in Madison County and occurred in 2015. **Figure 8** below shows the historic earthquakes in the District since the last plan update.

FIGURE 8: MEMA DISTRICT 5 HISTORIC EARTHQUAKES 2000-2025



4.3.3. PROBABILITY OF FUTURE OCCURRENCES

As noted in the base plan, Mississippi MEMA District 5 is unlikely to experience damaging earthquakes, but it is not entirely free from seismic risk. Based on data from the past ten years, there have been nine earthquakes in District, most of which have occurred in Madison County. While strong earthquakes are unlikely, minor to moderate shaking could occur in City of Canton, especially from seismic sources like the New Madrid Seismic Zone (NMSZ), is **Unlikely** to occur.

4.3.4. LOCALIZED VULNERABILITY ASSESSMENT

4.3.4.1. OVERALL VULNERABILITY

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. City of Canton contains very high to low liquefaction susceptibility zones. It also contains earthquake soil classifications of E (soft soil) and F (soils requiring site-specific evaluation, such as liquefiable soils, peats, or certain clays). These two factors put the City at a **Low** risk of earthquake impacts compared to the rest of the district. This section provides further contextualization for the anticipated vulnerability of earthquakes.

Figure 9 shows the liquefaction susceptibility zones and **Figure 10** displays the earthquake soils near the City of Canton.

FIGURE 9: MEMA DISTRICT 5 LIQUEFACTION SUSCEPTIBILITY ZONES

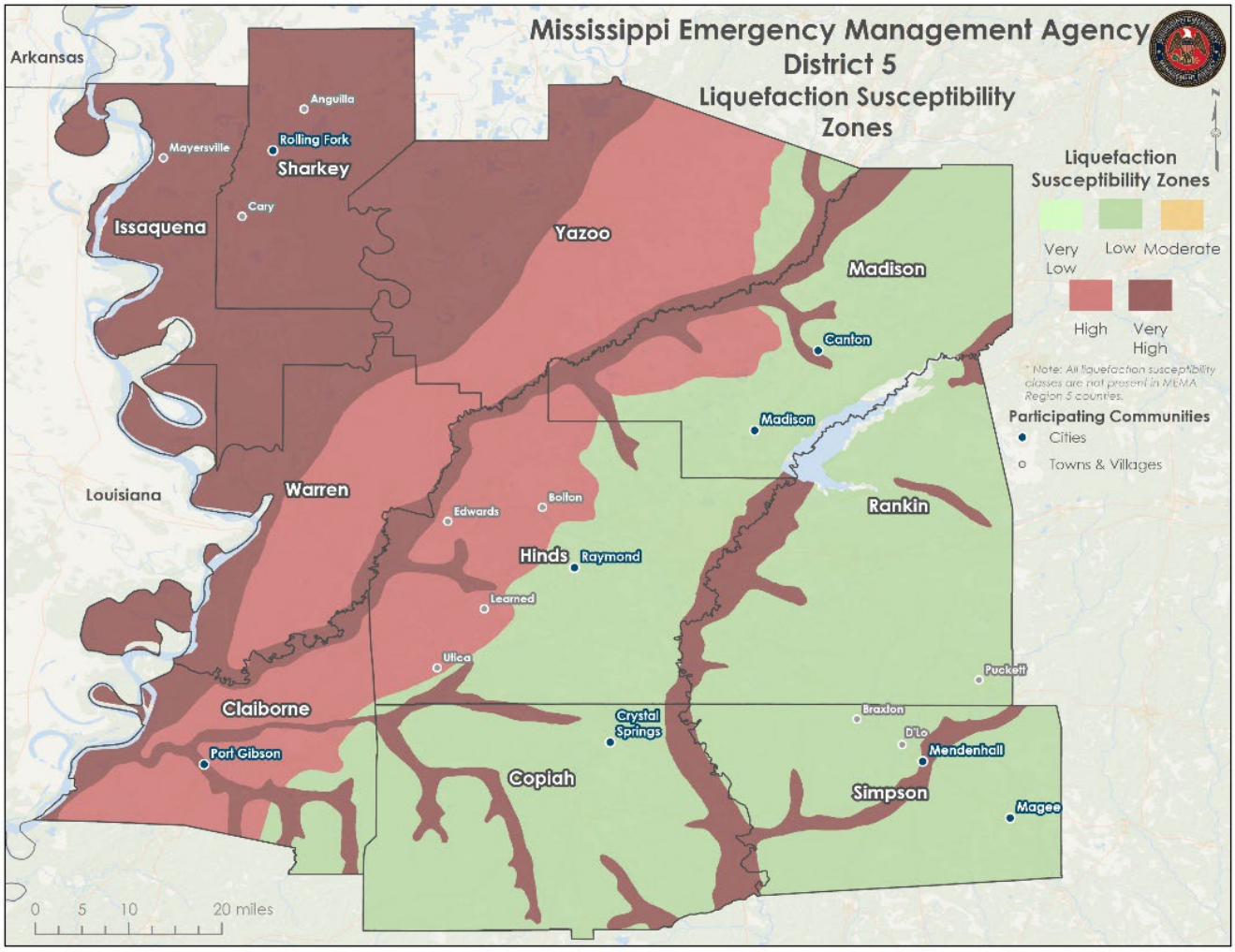
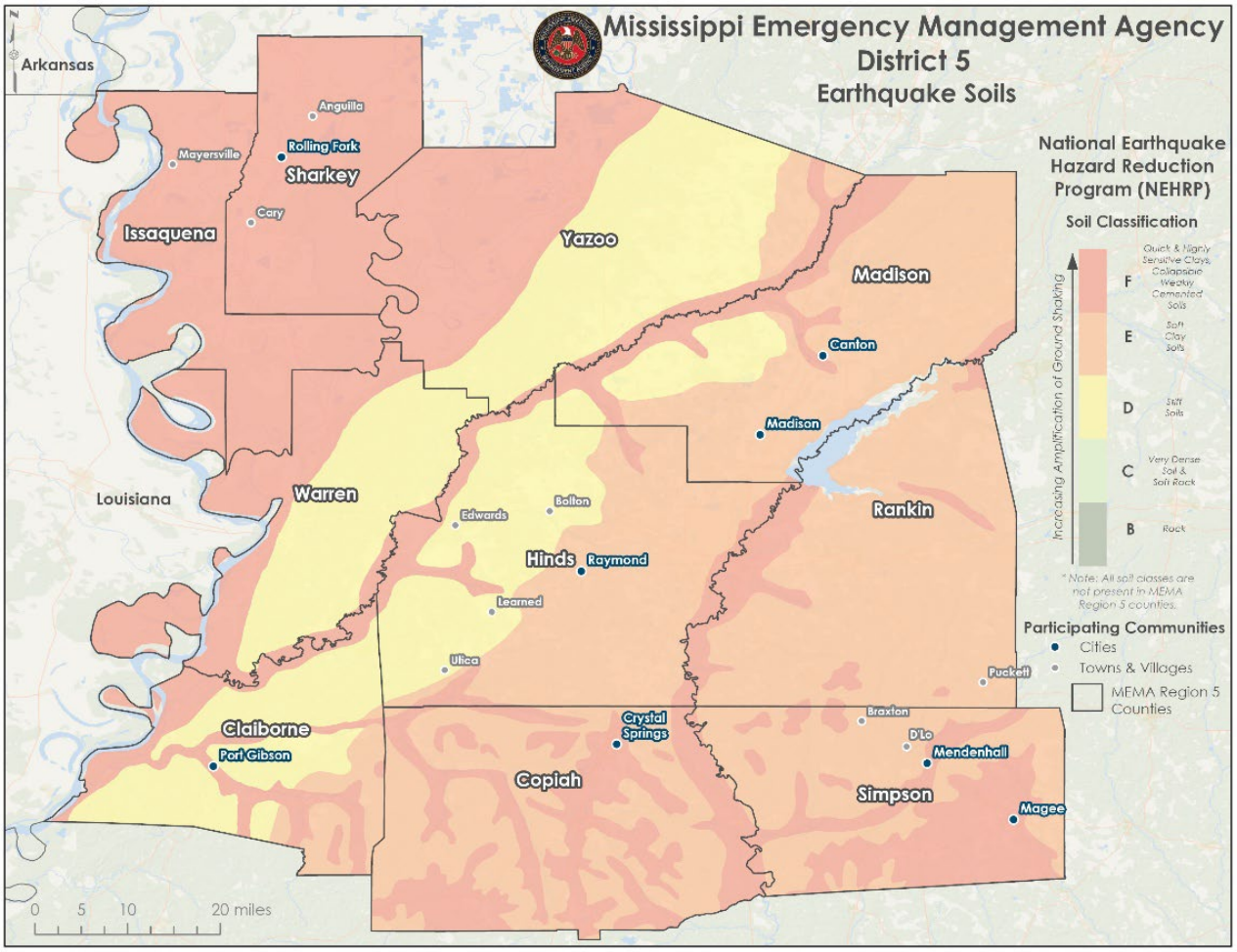


FIGURE 10: MEMA DISTRICT 5 EARTHQUAKE SOILS



4.3.4.2. CRITICAL FACILITIES

Seismic activity associated with the New Madrid Seismic Zone could result in ground shaking that damages critical facilities and infrastructure. Earthquake impacts may disrupt essential services and utilities and damage transportation routes, potentially limiting access to critical facilities and hindering emergency response and recovery efforts. In the event of a rare strong earthquake, critical facilities within high liquefaction susceptibility zones and moderate seismic risk are most at risk of earthquake impacts.

4.3.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Earthquakes have the potential to damage cultural, historic, and natural resources through ground shaking and ground deformation associated with regional seismic activity such as the New Madrid Seismic Zone. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be particularly vulnerable due to age, unreinforced masonry construction, or shallow foundations that are susceptible to cracking or collapse during seismic events. Natural resources may be affected through soil instability, slope failure, altered drainage patterns, and damage to wetlands, streams, or wildlife habitats. In the event of a rare strong earthquake, resources within high liquefaction susceptibility zones and moderate seismic risk are the most at risk of earthquake impacts.

4.3.4.4. PEOPLE

Some populations may face greater risk to earthquakes--the relatively short warning time typically provided for earthquakes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

As noted in the base plan, although earthquakes are rare, urban communities with increased access to emergency services and infrastructure that may be disrupted by the impacts of an earthquake are at increased risk, as are vulnerable populations. Even though the residents of City of Canton are less likely to belong to one of these vulnerable populations than residents of District 5 in general, historical earthquakes in the District have occurred in Madison County, thus putting people in the City at a slightly higher risk of impacts of earthquakes than the rest of the District.

4.3.4.5. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking. Because the City of Canton has soils and geography that put it at a slightly higher risk of earthquake impacts, structures and systems within the City are likely to be higher than the rest of the District.

4.3.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

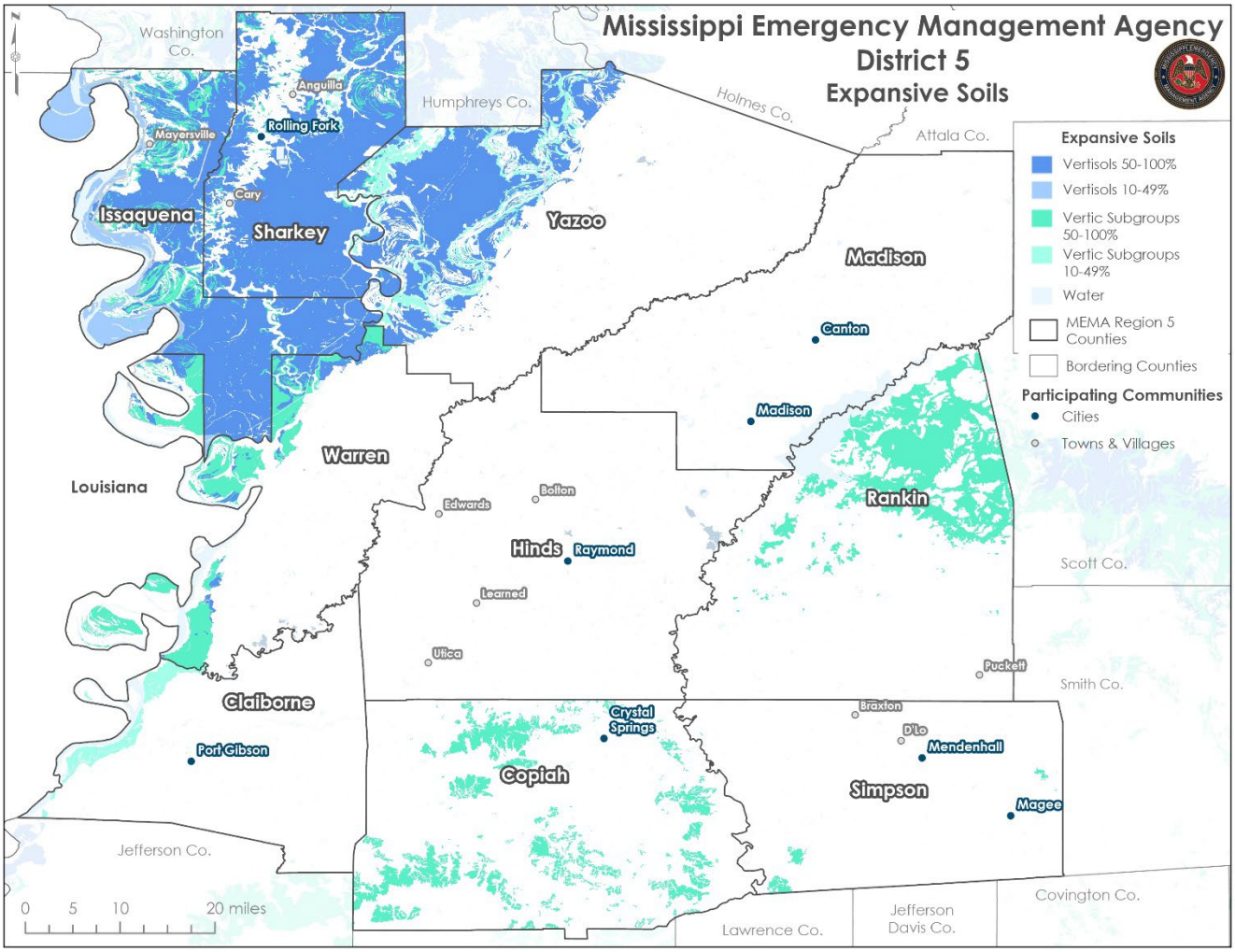
The decrease in development and population in City of Canton may lead to lower impacts of earthquakes on its residents in the future. However, any new development would be at risk of during a strong earthquake event as the liquefaction and soils within the City are susceptible to increased risk and damage.

4.4. EXPANSIVE SOILS

4.4.1. LOCATION AND EXTENT

As noted in the base plan, expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. City of Canton does not have expansive soils and therefore is not at risk of its impact. More information about location and extent of expansive soils within the District is provided in the base plan. **Figure 11** displays where expansive soils are in the District and based on the map, there are no expansive soils within the City of Canton. More information on expansive soils across the District, refer to the base plan.

FIGURE 11: MEMA DISTRICT 5 EXPANSIVE SOILS



4.4.2. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the D5 Region, including Madison County and the City of Canton.

4.4.3. PROBABILITY OF FUTURE OCCURRENCES

Since there are no expansive soils within the City of Canton, the probability of future occurrences is **Unlikely.**

4.4.4. LOCALIZED VULNERABILITY ASSESSMENT

4.4.4.1. OVERALL VULNERABILITY

There are no expansive soils located in the City of Canton; therefore, the risk of expansive soils is **Low**.

4.4.4.2. CRITICAL FACILITIES

Expansive soil does not pose a risk to the City of Canton; therefore, no critical facilities are impacted or vulnerable.

4.4.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Expansive soil does not pose a risk to the City of Canton, therefore no cultural, historic, or natural resources are impacted or vulnerable.

4.4.4.4. PEOPLE

The risk factors for expansive soils are structural and not demographic in nature. The people of City of Canton are at overall lower relative risk than the rest of the District, due to a lack of expansive soil within the City.

4.4.4.5. STRUCTURES AND SYSTEMS

Structures and systems within the City of Canton are at overall lower relative risk than the rest of the District, due to there being no expansive soils in the planning area.

4.4.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Expansive soil does not pose a risk to the City of Canton, therefore changes in development do not impact the risk posed to the City. However, if expansive soils were persistent in the City, the decrease in development and population in the City of Canton may lead to lower impacts of expansive soils on its residents in the future. Although this risk can be significantly mitigated with smart planning and zoning decisions, including restricting or regulating development in high-risk areas.

4.5. FLOOD

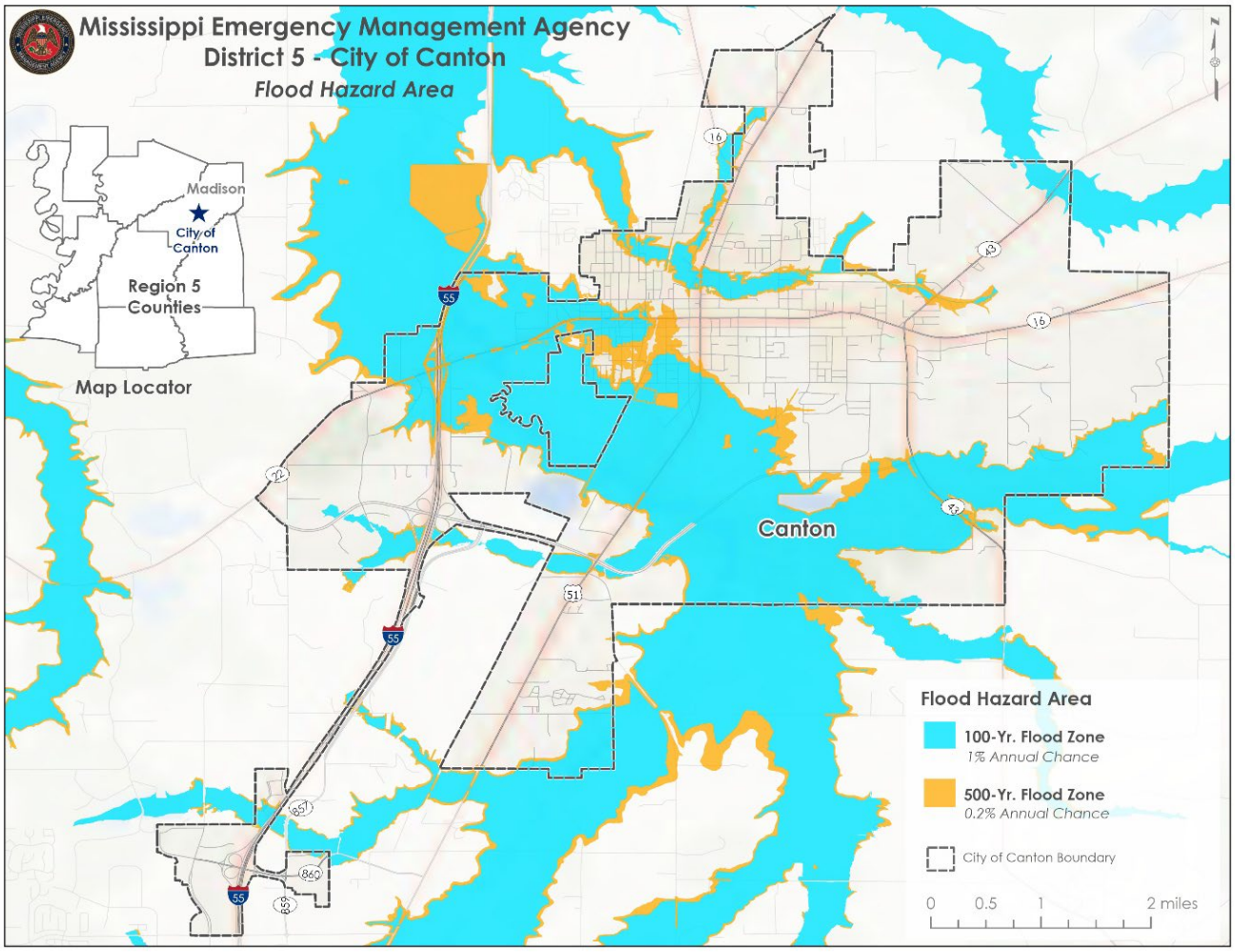
4.5.1. LOCATION

Flooding events are mainly tracked at the county level and the numbers below represent the statistics for Madison County. Floods are the most common type of natural disaster, occurring when water overflows onto land that is typically dry after heavy rainfall, storm surges, or rapid snowmelt. Flooding often leads to significant impacts on both human life and the environment. This section provides detailed information about the location, extent, previous occurrences, and overall vulnerability of communities within City of Canton to flooding than is provided in the base plan. More information on flooding across the District, refer to the base plan.

For purposes of this hazard profile and vulnerability analysis, the geographic location/extent for river flooding will be primarily considered as those areas at risk to the 100-year flood (also known as the 1% annual chance flood). The 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. However, the accompanying maps also show the 500-year floodplains (also known as the 0.2% annual chance floodplains) for two major reasons. First, climate models suggest that the planning area should anticipate rain events with increasing intensity in the coming years and decades. Second, any future population growth may result in new development within or near 500-year floodplains.

Figure 12 below shows the location of flood hazard areas within City of Canton. The main waterways in the City of Canton are centered around multiple creeks within the planning area. These include Bear Creek, Batchelor Creek and Little Bear Creek.

FIGURE 12: CITY OF CANTON FLOOD HAZARD AREAS



4.5.2. EXTENT

Riverine flooding is among the most significant hazard in the planning area due to its ability to impact large geographic areas, threatening a significant number of people and properties, the relatively small amount of flood water that it takes to cause significant injury or property damage, and the ability of flood water to linger for days, causing extensive damage. Because variations in geography, elevation, and building design mean that the same flood can cause a wide variety of extents of damage to different structures, the variation in extent across the County is most accurately captured by the flood zone mapping provided above under “location.”

The most significant recorded flooding event in the State’s history, indicating the potential extent of the threat of the flood hazard, was in 1927, when persistent heavy rainfall and run-off inundated 27,000 square miles. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

4.5.3. PREVIOUS OCCURRENCES

Since 1976 there have been five federal disaster declarations pertaining to flooding in Madison County, details of which are provided below in **Table 17**. The most significant recorded flooding event in City of Canton in the past five years, indicating the potential extent of the threat of the flood hazard, was in

2022. This event started when a low-pressure system spinning over northern Louisiana and southern Arkansas brought several rounds of showers and thunderstorms producing heavy rain. This resulted in widespread flooding of roads, homes, and businesses around the state. There was significant flooding across Canton. Many homes and numerous vehicles were flooded, and many roads and streets were underwater.

However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

TABLE 17: FLOODING-RELATED MAJOR DISASTER DECLARATIONS IN MADISON COUNTY

Disaster Number	Description	(Declaration Date) and Incident Period	Individual Assistance	Public Assistance
DR-4790	Severe Storm, Tornadoes, Straight-line Winds, Flooding	(6/10/2024) 4/8/2024-4/11/2024	Y	N
DR-1360	Severe Storm, Flooding, Tornado	(2/23/2001) 2/16/2001-3/15/2001	Y	N
DR-888	Flooding, Severe Storm, Tornado	(1/3/1991) 12/19/1990-1/14/1991	Y	N
DR-683	Flooding, Severe Storm, Tornado	(6/1/1983) 6/1/1983	Y	N
DR-499	Flooding, Severe Storm, Tornado	(4/1/1976) 4/1/1976	Y	Y

** Federal disaster areas are only tracked at the county level. The disasters above represent the statistics for Madison County.*

Between the 2015 and 2020 plans, there were 22 flooding events in Madison County, causing $902,000 in property damage. Since the 2020 plan, there have been 21 such events, causing $3,354,000 in damage, no fatalities, and no injuries according to information provided by the NCEI. Additional information on these events is provided in **Table 18.**

Table 18. Individual Flood Events 2020-2025

Date	Time (CST-6)	Event Description	Assessed Damages	Estimated Flood Depth
01/02/2020	18:00	Flooding occurred on Yandell Road near Highway 51. Numerous roads were flooded in Canton. Flooding also occurred along the I-55 frontage road near Madison.	$50,000	6 inches
01/03/2020	08:00	Approximately 12 water rescues occurred in Canton due to lingering flood waters in homes.	$100,000	6 inches
01/03/2020	09:58	East Sowell Road was flooded.	$5,000	6 inches
01/03/2020	09:59	Old Yazoo Road near Patrick Farm Road was flooded.	$10,000	6 inches
02/10/2020	13:55	Rocky Hill Road was washed out due to flash flooding.	$10,000	4 inches
02/10/2020	14:20	Water approached homes on Wilson Street.	$5,000	4 inches
07/16/2021	15:46	Heavy rainfall from slow moving thunderstorms resulted in a few instances of flash flooding across far southern Madison County. Several	$10,000	6 inches

		roads were flooded, including Rice Road at Old Canton Road.		
04/13/2022	18:35	Peace Street in downtown Canton was flooded with a foot deep of water in some places.	$5,000	12 inches
08/02/2022	07:20	Widespread flooding along with some significant flooding occurred across the Canton area due to heavy rainfall. Radar estimated rainfall of 5 to 8 inches fell in and to the north of Canton. Numerous streets were flooded with multiple cars stalled or partially submerged in flood waters. Water also entered several buildings and homes.	$1,000,000	8 inches
08/02/2022	07:40	Numerous streets flooded in Canton with some vehicles stalled or partially submerged in flood waters, along with water entering buildings and homes.	$50,000	6 inches
08/02/2022	08:35	Multiple streets were flooded across the County.	$20,000	6 inches
08/24/2022	07:00	There was significant flooding across Canton. Many homes and numerous vehicles were flooded, and many roads and streets were under water. Six homes experienced major flooding, and another 5 experienced minor flooding.	$1,000,000	10 inches
08/24/2022	07:00	Significant flooding across Canton. Many homes flooded along with numerous vehicles flooded as well. Many roads and streets were also underwater.	$1,000,000	10 inches
08/24/2022	07:00	Person was rescued from a vehicle in 2 feet of water at Highway 16 and Lottville Road.	$20,000	24 inches
08/24/2022	10:12	Widespread flooding on Ridgewood road has made the road impassable. Stalled cars were also reported.	$50,000	6 inches
01/08/2023	05:00	Flooding occurred along Stout Road Near Canton.	$5,000	4 inches
01/25/2024	10:13	Creeks and fields were flooded.	$1,000	4 inches
04/10/2024	11:45	There was flash flooding near the intersection of Stout Road and Lakeshire Circle.	$1,000	4 inches
04/10/2024	13:00	A portion of MS Highway 43 was flooded at Honeysucker Road.	$1,000	4 inches
04/10/2024	13:00	After earlier flash flooding, floodwaters remained pooled for several hours at the intersection of Stout Road and Lakeshire Circle.	$1,000	4 inches

4.5.4. PROBABILITY OF FUTURE OCCURRENCES

There have been 43 flooding events over the past ten years in Madison County. However, data from the NCEI Storm Events Database does not provide enough granularity to be certain how many of these events impacted the City of Canton. Based on county-level information and previous experience, representatives from the City of County assessed the probability of future flooding events in the City as **Highly Likely**. As climate change increases the intensity and unpredictability of rainfall, the likelihood of

flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience.

4.5.5. LOCALIZED VULNERABILITY ASSESSMENT

4.5.5.1. OVERALL VULNERABILITY

As noted in the base plan, flooding can cause widespread damage to buildings, roads, utilities, and public infrastructure, and can significantly impact all eight community lifelines as well as natural, historical, and cultural resources. A significant portion of the City of Canton is within a flood hazard area, and the community faces additional risks from localized flooding and inadequate stormwater systems. Therefore, the City is at a **High** risk of impacts from flooding events. This section provides further contextualization for the anticipated vulnerability to flooding events.

4.5.5.2. CRITICAL FACILITIES

Flooding poses a significant risk to critical facilities in the City of Canton by causing structural damage, inundating mechanical and electrical systems, and disrupting essential services. Flood events can impact hospitals, fire stations, law enforcement facilities, schools, emergency operations centers, and water and wastewater infrastructure, particularly those located in low-lying areas or within Special Flood Hazard Areas. Inundation of utility systems may contaminate drinking water supplies, impair wastewater treatment, and result in power and communications outages that hinder emergency response and continuity of government. Flooded roads and bridges can also restrict access to critical facilities, delaying emergency services, evacuation, and recovery efforts. **Figure 13** displays the critical facilities and infrastructure in the flood hazard areas. **Table 19** below lists the critical facilities in the City of Canton that are in the 1% annual chance and 0.2% annual chance floodplains. There are about 17 critical facilities within the floodplain.

FIGURE 13: CRITICAL FACILITIES IN THE FLOOD HAZARD AREAS

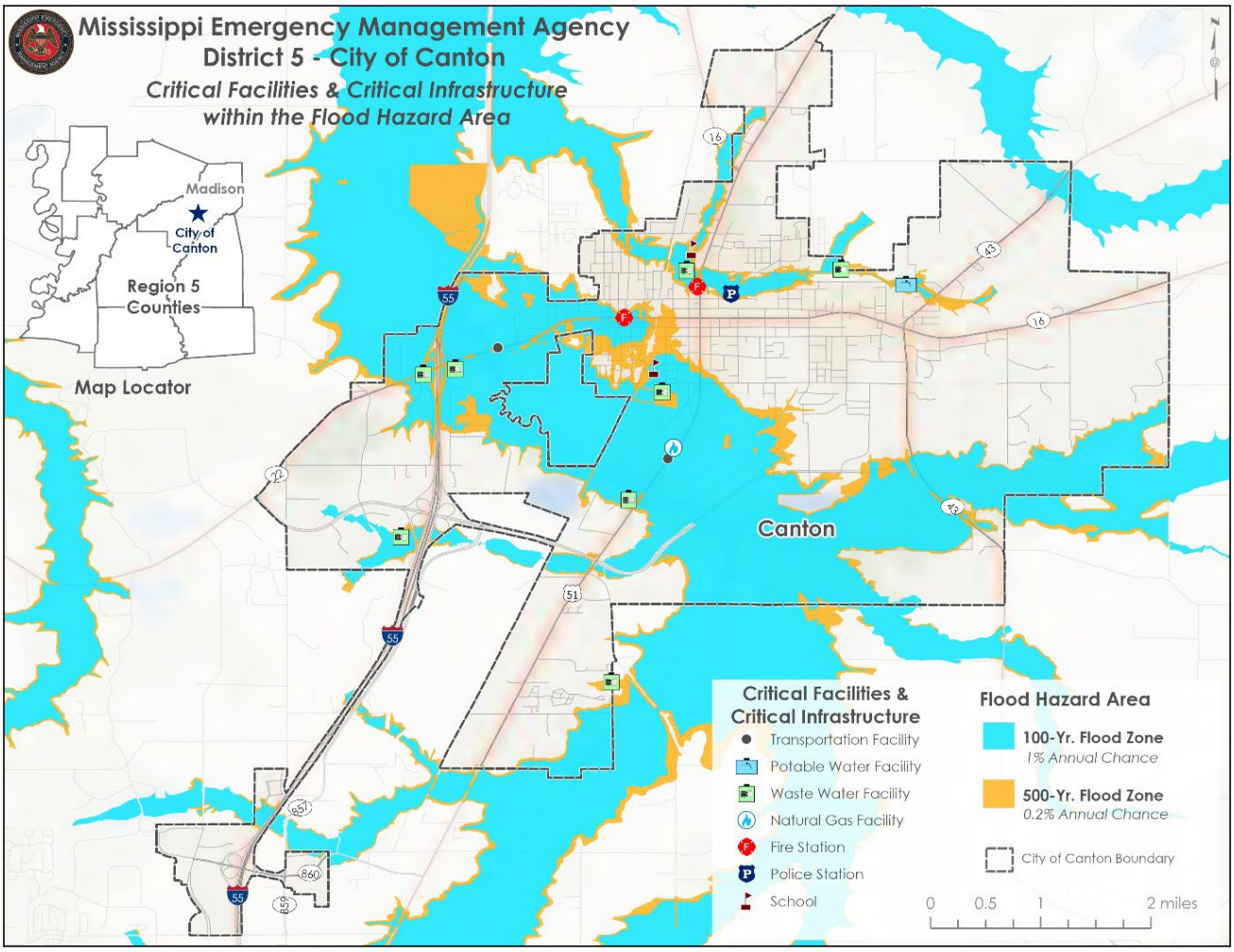


TABLE 19: CRITICAL FACILITIES IN THE FLOODPLAIN

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
City of Canton	Fire Station	Canton Fire Department Station 1	N	Y
City of Canton	Fire Station	Canton Fire Department Station 3	N	Y
City of Canton	Natural Gas Facility	Gulf South Regulator Station	N	Y
City of Canton	Police Station	Canton Police Department	N	Y
City of Canton	Potable Water	Well 5	N	Y

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
City of Canton	School	Canton Career Center	Y	N
City of Canton	School	Canton Educational Services Center	N	Y
City of Canton	Transportation Facility	Highway 22 West Bridge	N	Y
City of Canton	Transportation Facility	Highway 51 South Bridge	N	Y
City of Canton	Waste Water Facility	Cameron Lift Station	N	Y
City of Canton	Waste Water Facility	CAV Center Station	N	Y
City of Canton	Waste Water Facility	CAV Center Station	Y	N
City of Canton	Waste Water Facility	Madison County Lift Station	N	Y
City of Canton	Waste Water Facility	McCarty Lift Station	N	Y
City of Canton	Waste Water Facility	Northeast Lift Station	N	Y
City of Canton	Waste Water Facility	Papaws Lift Station	N	Y
City of Canton	Waste Water Facility	Union Lift Station	N	Y

4.5.5.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Flooding can adversely impact cultural, historic, and natural resources in the City by causing erosion, structural damage, and long-term degradation of sensitive sites and landscapes. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be damaged by prolonged inundation, saturated soils, or repeated flood events, particularly where foundations, grave markers, or unreinforced masonry are exposed to water and shifting ground conditions. Floodwaters can erode soil and displace or destroy archeological materials, resulting in irreversible loss of cultural resources. Natural resources are also vulnerable, as flooding can alter stream channels, degrade wetlands, reduce water quality, damage vegetation, and disrupt wildlife habitats. While some ecosystems may recover over time, repeated or severe flooding can permanently alter natural and cultural landscapes.

4.5.5.4. PEOPLE

Some populations may face greater risk to flooding--the relatively short warning time typically provided for flooding means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations most at risk of the impacts of flooding include older adults, low-income families, and individuals without access to flood insurance or reliable transportation, as these can make it more

difficult to evacuate when flood warnings occur. These populations can experience disproportionate impacts to floods and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Canton has a low SVI score and therefore may recover faster than other residents of District 5.

4.5.5.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, flooding has caused over $3,354,000 in damage in the past five years within Madison County and is expected to continue in the future. Flooding poses a significant risk to structures and critical systems in the City by causing physical damage, inundation, and operational disruptions. Floodwaters can damage building foundations, walls, and interiors, particularly in structures located in low-lying areas or flood-prone zones, leading to costly repairs and long-term structural degradation. Electrical, mechanical, and HVAC systems are especially vulnerable to water damage, which can result in power outages and prolonged service interruptions. Flooding may also impair transportation networks, water distribution, wastewater treatment, and drainage systems, reducing access to essential services and facilities. These impacts can disrupt emergency responses, government operations, and community recovery efforts, especially when flood events are recurrent or severe.

4.5.5.6. NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The National Flood Insurance Program (NFIP) is a federal program managed by FEMA that provides flood insurance to property owners, renters, and businesses in participating communities. It aims to reduce flood damage by restricting floodplain development and offering affordable insurance, as standard homeowners insurance typically does not cover flood damage. The City of Canton is a participating community in the NFIP. Additionally, the City participates in the Community Rating System (CRS). The CRS is a voluntary program within the National Flood Insurance Program (NFIP) that reduces flood insurance premiums for policyholders in communities that exceed minimum floodplain management requirements. For more information about the NFIP, reference **Section 5.8.6.3** in the base plan.

According to current data from the NFIP, there is one Repetitive Loss properties in City of Canton as of 2026 and it is a single-family residence, shown in **Table 19**. Due to the repetitive nature of these losses, structures meeting the NFIP definitions of repetitive loss and severe repetitive loss should be prioritized for mitigation measures, as these measures are likely to be relatively cost effective.

TABLE 20: REPETITIVE LOSS AND SEVERE REPETITIVE LOSS PROPERTIES IN CITY OF CANTON

Jurisdiction	Number of Repetitive Loss Properties (2025)	Number of Severe Repetitive Loss Properties (2025)	Total Number of Flood Claims	Total Amount ($) of Flood Claims
City of Canton	1	--	--	--

4.5.5.7. IMPACTS OF CHANGES IN DEVELOPMENT

The decrease in development and population in City of Canton may lead to lower impacts of flooding. A decrease in the number of structures in the floodplain allows for more permeable surface to absorb floodwater, along with lower strain on stormwater management systems that can contribute to an overall reduction in the severity of flood events.

Appendix A: City of Canton

4.6. SEVERE STORMS

4.6.1. LOCATION AND EXTENT

Severe storm events are only tracked at the county level and the numbers below represent the statistics for Madison County. Severe storms are a region-wide hazard in the Mississippi Delta and are not confined to specific locations. Severe storms affect the entire planning area equally; City of Canton and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. More information on severe storms across District, refer to the base plan.

4.6.2. PREVIOUS OCCURRENCES

Recent events highlight the destructive potential of these storms. Since 2020, the following events have taken place in Madison County:

- 49 thunderstorms, causing $3,216,000 in property damage
- Three occurrences of severe lightning, causing $216,000 in property damage
- Three high wind events, causing $12,000 in property damage
- 12 hailstorms, causing $1,590,000 in property damage

Refer to the base plan for visuals on District wide historic wind and hail events and more information on how the hazard impacts the District as a whole.

4.6.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 67 severe storm events in the past five years. Therefore, the probability of severe storms occurring in the future within Madison County is **Extremely Likely**, especially during peak storm seasons. These storms are expected to occur multiple times per year.

4.6.4. LOCALIZED VULNERABILITY ASSESSMENT

4.6.4.1. OVERALL VULNERABILITY

As noted above, the risk of severe storms (due to the frequency and ubiquity of these events) is largely equal across the entire planning area, posing risks to natural and cultural resources and community lifelines, as discussed in the base plan. However, demographic and development factors can cause variation in vulnerability to this risk. Based on the frequency and the extent of damage that severe storms can cause the risk of severe storms is **High** for the City of Canton. This section provides further contextualization for the anticipated vulnerability of severe storm events.

4.6.4.2. CRITICAL FACILITIES

Since severe storms impact the planning area equally, all critical facilities are at risk of severe storm impacts. Severe storm events, including strong thunderstorms accompanied by high winds, heavy rainfall, hail, and lightning, present an ongoing risk to critical facilities in the City. These storms can cause damage to essential buildings such as hospitals, emergency response facilities, schools, government offices, roof failure, shattered windows, and impacts of debris.

4.6.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Severe storm events can adversely affect cultural, historic, and natural resources in the City through high winds, heavy rainfall, flooding, hail, and lightning. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, falling trees, erosion, or prolonged moisture exposure, particularly where resources are older or lack protective reinforcement. Intense rainfall can erode soils and displace archeological materials, leading to the loss of historic

context and integrity. Natural resources may also be impacted by severe storms that could damage forests, alter stream channels, degrade wetlands, and reduce water quality through increased sedimentation and runoff.

4.6.4.4. PEOPLE

The wind, hail, lightning, and flooding often produced by severe storms can lead to injury or death. Some populations may face greater risk to severe storms--the relatively short warning time typically provided for severe storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. These populations can experience disproportionate impacts to severe storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Canton has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.6.4.5. STRUCTURES AND SYSTEMS

Aging infrastructure and limited emergency resources without redundancies increase the vulnerability of structures and systems in City of Canton to the impacts of severe storms. However, this vulnerability is not markedly higher or lower in the City than the rest of the District; the vulnerability of structures and systems across D5 is described in more detail in the base plan. Since 2020, severe storms have caused approximately $5,000,000 in damage. It is expected that in the next several years, similar damage from severe storms will continue to occur.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Madison County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.6.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The decrease in development and population in City of Canton means fewer people and structures for storms to damage. Additionally, lower strain on stormwater management systems can contribute to an overall reduction in the likelihood of severe storms to lead to flooding.

4.7. SEVERE WINTER WEATHER

4.7.1. LOCATION AND EXTENT

Severe storm events are only tracked at the county level and the numbers below represent the statistics for Madison County. Severe winter weather is a region-wide hazard in the Mississippi Delta and is not confined to specific locations. Winter storms affect the entire planning area equally; City of Canton and its jurisdictions are not more or less susceptible to their impact than other communities in District 5. More information on the extent of the threat posed by these storms is provided in the base plan. However, the extent of these storms is limited, with an average amount of annual snowfall in Madison County of 0-1 inches. More information on severe winter weather across the District, refer to the base plan.

4.7.2. PREVIOUS OCCURRENCES

Several impactful severe winter weather events have occurred in City of Canton over the past two decades. The most significant of these in recent years include:

- The January 2018 cold snap that led to challenges like burst pipes, increased heating demands, and risk to seniors and other vulnerable populations
- The February 2021 freezing rain, sleet, and snow event that led to widespread power outages due to ice accumulation
- The January 2014 snowstorm led to significant travel hazards

Between 2015 and 2020, there were three severe winter weather events in Madison County, causing $4,000 in property damage. Since the 2020 plan update, there have been six such events, causing $153,000 in damage.

4.7.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been nine events in the past 10 years which is about one event every year. Therefore, the probability of a severe winter storm occurring in the City is **Low**.

4.7.4. LOCALIZED VULNERABILITY ASSESSMENT

4.7.4.1. OVERALL VULNERABILITY

All counties within District 5 are vulnerable to the impact of severe winter storms. Because it is closer to the Northern portion of the region, winter weather in City of Canton may be slightly more severe than across the region. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the County's natural, historic, and cultural assets, as discussed in the base plan. Based on the frequency and the severity of severe winter storms, the risk to the City of Canton is **Moderate**. Severe winter storms can disrupt utility and critical infrastructure which can significantly disrupt the City. This section provides further contextualization for the anticipated vulnerability of severe winter storms.

4.7.4.2. CRITICAL FACILITIES

Severe winter weather, including freezing temperatures, ice, and occasional snow, can disrupt critical facilities in the City by causing power outages, damaging water and wastewater systems, and limiting transportation access. Freezing conditions may result in broken pipes, equipment failures, and interruptions to essential services at hospitals, emergency response facilities, schools, and government buildings. Based on previous occurrences, historical events have caused frozen and bursting pipes.

4.7.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Although severe winter weather occurs infrequently, its effects can result in lasting damage to sensitive cultural, historic, and natural resources. Severe winter weather can adversely affect cultural, historic, and natural resources in the City by causing structural stress, moisture damage, and ecological disruption. Historic buildings, cemeteries, and monuments may experience cracking, spalling, or material deterioration due to freeze–thaw cycles, while ice accumulation and fallen trees can damage structures and cultural landscapes. Natural resources are also vulnerable, as winter weather can damage vegetation, alter wildlife habitats, and degrade water quality through increased runoff and erosion.

4.7.4.4. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations. As with other hazards, those who are elderly, disabled, or economically disadvantaged are at heightened risk due to limited access to reliable heating, transportation, and emergency services, and a reduced ability to physically withstand cold temperatures. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms. These populations can experience disproportionate impacts to severe winter weather and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Canton has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.7.4.5. STRUCTURES AND SYSTEMS

During extreme severe winter storms, the City is likely to experience infrastructure strain, including power outages, traffic disruptions, and increased demand for emergency services and shelters. While these areas may experience slightly milder winter conditions, the potential impacts are magnified due to the higher number of residents, aging utility systems, and limited access to alternate heating sources.

4.7.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Stagnant population growth and population reduction in the City of Canton reduce the strain on electrical and other utility systems, reducing the likelihood that these systems experience failure during significant events. However, this may also contribute to slower emergency response times, increasing risk.

4.8. TORNADO

4.8.1. LOCATION AND EXTENT

Mot tornado events are only tracked at the county level and the numbers below represent the statistics for Madison County. Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments. Due to the unpredictable nature of tornado formation and the ability for the entire planning area to be impacted by severe storms, the entirety of City of Canton is equally likely to experience a tornado of any magnitude. Tornados of any strength on the Enhanced Fujita (EF) scale are possible throughout the county. More information on tornadoes across the District, refer to the base plan.

4.8.2. PREVIOUS OCCURRENCES

Between 1950 and 2022, there were 70 tornadoes reported in Madison County, causing a total of $46,583,000 in property damage. Madison County ranks third in most tornado events and forth in reported property damage across District 5. Refer to the base plan for maps and more information on District wide historic tornado events.

4.8.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 70 tornadoes in the past 72 years which is nearly 1 tornado event occurring each year. Historical data spanning 72 years indicates a consistent pattern of tornado activity across District 5, indicating that tornadoes are **Likely** to occur.

4.8.4. LOCALIZED VULNERABILITY ASSESSMENT

4.8.4.1. OVERALL VULNERABILITY

More populous and developed counties like City of Canton face elevated risk from tornadoes due to greater exposure and potential for cascading impacts. These areas are more likely to experience significant property damage, disruption of services, and challenges in post-disaster recovery. Additionally, mobile homes are extremely susceptible to high winds and may sustain more damage or be flipped over during a strong tornado. Tornadoes cause flying debris which can be dangerous for people in the surrounding areas and other buildings, infrastructure, and critical facilities. Due to the severity tornadoes can cause, they pose a **High** risk to the City. This section provides further contextualization for the anticipated vulnerability to tornadoes.

4.8.4.2. CRITICAL FACILITIES

Tornadoes pose a serious risk to critical facilities in the City of Canton due to extreme winds and flying debris that can cause sudden and severe structural damage. Facilities such as hospitals, emergency response buildings, schools, and water or wastewater infrastructure may experience roof failure, wall collapse, or loss of utilities, leading to immediate service interruptions. Power and communications outages are common during tornado events, and debris-blocked roads can restrict access to critical facilities and delay emergency response.

4.8.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tornadoes can significantly impact cultural, historic, and natural resources in the City through extreme winds, flying debris, and associated storm damage. Historic structures, cemeteries, monuments, and archeological sites may sustain damage or complete loss due to building collapse, fallen trees, or debris impacts, particularly where resources are older or lack structural reinforcement. Cultural landscapes and historic settings can also be altered by the destruction of surrounding features such as fences, vegetation, and access paths. Natural resources may be affected through forest damage, habitat loss, soil erosion, and disruption of wildlife caused by wind and debris.

4.8.4.4. PEOPLE

Some populations may face greater risk to tornadoes--the relatively short warning time typically provided for tornadoes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Population data for mobile or manufactured homes are only tracked at the county level and the numbers below represent the statistics for Madison County. Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. 2,140 (7.4%) of the residents of Madison County reside in mobile or manufactured homes, placing them at increased risk. These populations can experience disproportionate impacts to tornadoes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Canton has a low SVI score and therefore may recover faster than other residents of District 5.

4.8.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that do not have safe rooms or have not been retrofitted for extreme winds are vulnerable to the impacts of tornados, including in City of Canton, as described in the base plan. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of tornadoes. City of Canton may be at slightly higher risk of these impacts simply because it is more developed than other jurisdictions in the district, and there are more such facilities to be impacted.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. Madison County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.8.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The decrease in development and population in City of Canton means fewer people and structures for tornado damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tornadoes.

4.9. TROPICAL STORM/HURRICANE

4.9.1. LOCATION AND EXTENT

Like the rest of District 5, City of Canton is inland but is still vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. This risk is not measurably varied across the County or planning area, except for low-lying and flood-prone areas that might be more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

The extent of the impacts of tropical storm typically includes sustained winds of 30-60 MPH with higher gusts, heavy rainfalls of six or more inches in a 24-hour period, and occasional tornadoes. For more information on the impacts of tropical storms and hurricanes across the District, refer to the base plan.

4.9.2. PREVIOUS OCCURRENCES

City of Canton is inland but has experienced the direct impacts of tropical storms in the past. The tracks of the following storms have passed directly through Madison County, producing damaging wind, heavy rainfall, power outages, and occasional tornadoes:

- Tropical Depression Francine (2024)
- Tropical Storm Ida (2021)
- Beta (2020)
- Tropical Depression Andrew (1992)

4.9.3. PROBABILITY OF FUTURE OCCURRENCES

Although the City of Canton is located inland, the probability of experiencing hurricane-related impacts remains **Low**. The County and the City of Canton can expect to experience the effects of a tropical storm or hurricane approximately every 5 to 10 years, although climate trends and increased storm intensity may elevate risk.

4.9.4. LOCALIZED VULNERABILITY ASSESSMENT

4.9.4.1. OVERALL VULNERABILITY

Being in the Northern half of the district, Madison County and the City of Canton are likely to experience slightly less frequent and intense tropical storm impacts than the district overall. Due to the low frequency, geography, and potential damage from tropical storms and hurricanes, they pose a **Moderate** risk to the City. This section provides further contextualization for the anticipated vulnerability of tropical storms and hurricanes.

4.9.4.2. CRITICAL FACILITIES

Although tropical storms and hurricanes weaken as they move inland, they can affect critical facilities in the City through heavy rainfall, strong winds, and localized flooding that strain infrastructure and disrupt essential operations. Hospitals, emergency response facilities, schools, government buildings, and water or wastewater systems may experience structural damage, power and communications outages, and flooding of mechanical or electrical components. Excessive rainfall can also overwhelm drainage systems and flood roadways, restricting access to critical facilities and delaying emergency response.

4.9.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tropical storms and hurricanes can adversely impact cultural, historic, and natural resources in the City through heavy rainfall, strong winds, localized flooding, and prolonged soil saturation. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure,

flooding, or erosion, particularly where structures and sites are older or not designed to withstand prolonged moisture exposure. Excessive rainfall can erode soils and displace archeological materials, while flooding may degrade cultural landscapes and historic settings. Natural resources are also vulnerable, as tropical storm impacts can damage forested areas, alter stream channels, degrade wetlands, and reduce water quality due to increased runoff and sedimentation.

4.9.4.4. PEOPLE

Some populations may face greater risk to tropical storms--the relatively short warning time typically provided for tropical storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. These populations can experience disproportionate impacts to tropical storms and hurricanes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Canton has a low SVI score and therefore may recover faster than other residents of District 5.

4.9.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. The City may be at slightly higher risk of these impacts simply because it is more developed than other counties in the district, and there are more such facilities to be impacted. As noted above, low-lying and flood-prone areas are more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Madison County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.9.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The decrease in development and population in City of Canton means fewer people and structures for these storms to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tropical storms.

4.10. WILD/URBAN INTERFACE (WUI) FIRE

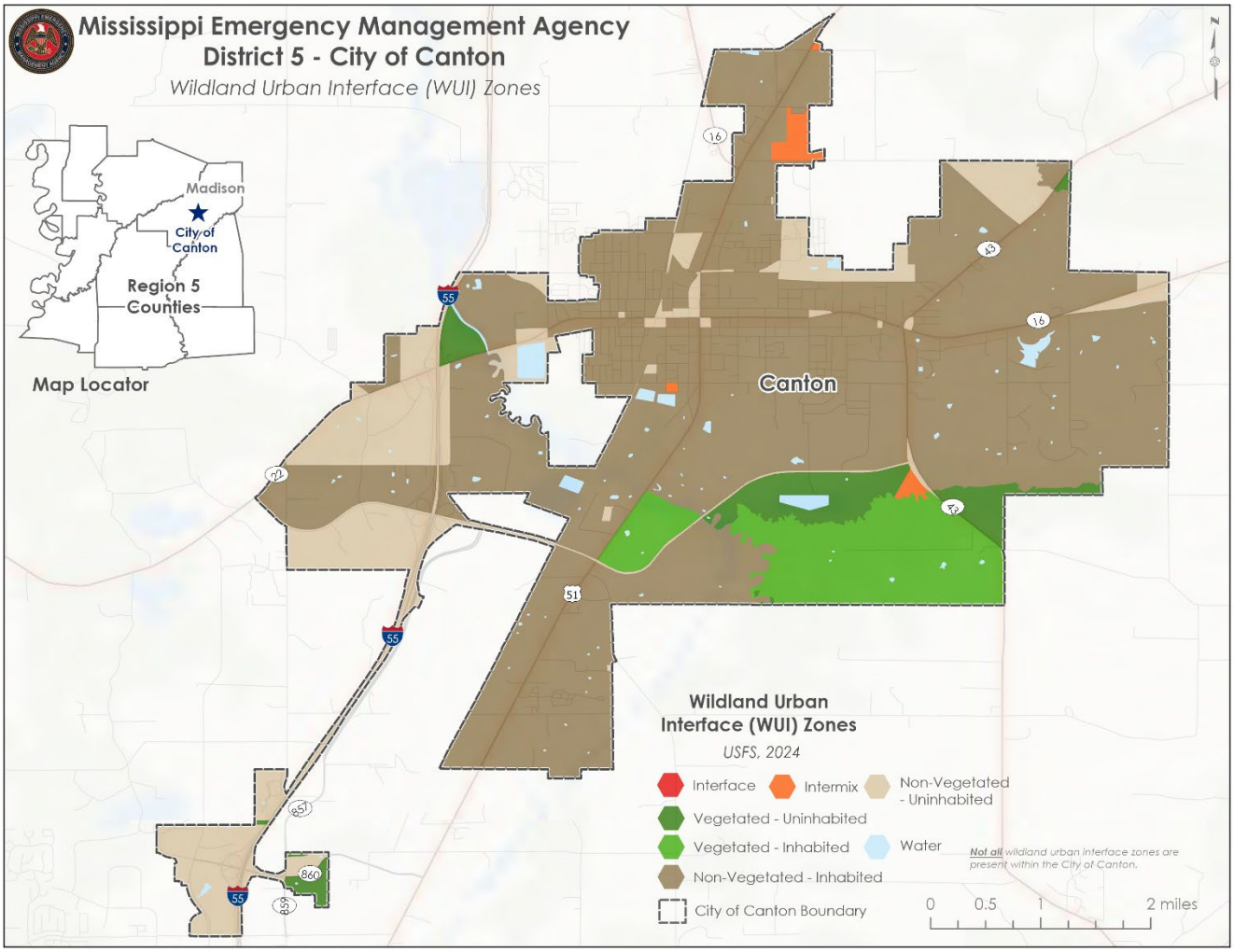
4.10.1. LOCATION AND EXTENT

Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas. There are two types of WUI Zones, and they are briefly described below.

- **Interface:** Development is bordered by wildlands on at least one side.
- **Intermix:** Development is surrounded on two or more sides by wildlands.

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. **Figure 14** below is a map showing the area where this hazard is most significant in City of Canton. The City has few areas that are within the WUI zones (intermix) which are concentrated in the northern and central part of the City. For more information on urban fires and WUI fires across the District, refer to the base plan.

FIGURE 14: WILDLAND URBAN INTERFACE (WUI) AREA IN CITY OF CANTON



The extent of a potential WUI fire impact in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development, but is not substantively different in the City of Canton than in the District overall. This extent is described further in the base plan.

4.10.2. PREVIOUS OCCURRENCES

Canton has experienced several notable urban fires and recurring small-scale wildland fire activity, underscoring the City's vulnerability to both structure and outdoor fire hazards. In Madison County, there have been 38 urban fires. Using Madison County as a proxy to understand the number of urban fires that have occurred, the City of Canton has experienced several fires from 1992-2020. Significant urban incidents include the destruction of the historic Shackleford House in 2020, where most of the structure was lost to fire, as well as major building fires such as the 2016 blaze at the old Federal Compress Building and a 2023 commercial fire that destroyed two local businesses. It is also important to note that some District 3 participating communities provided anecdotal information that previous fire events have not been captured using state level data. Due to this data limitation, it is possible that the number of previous occurrences could be more than reported.

4.10.3. PROBABILITY OF FUTURE OCCURRENCES

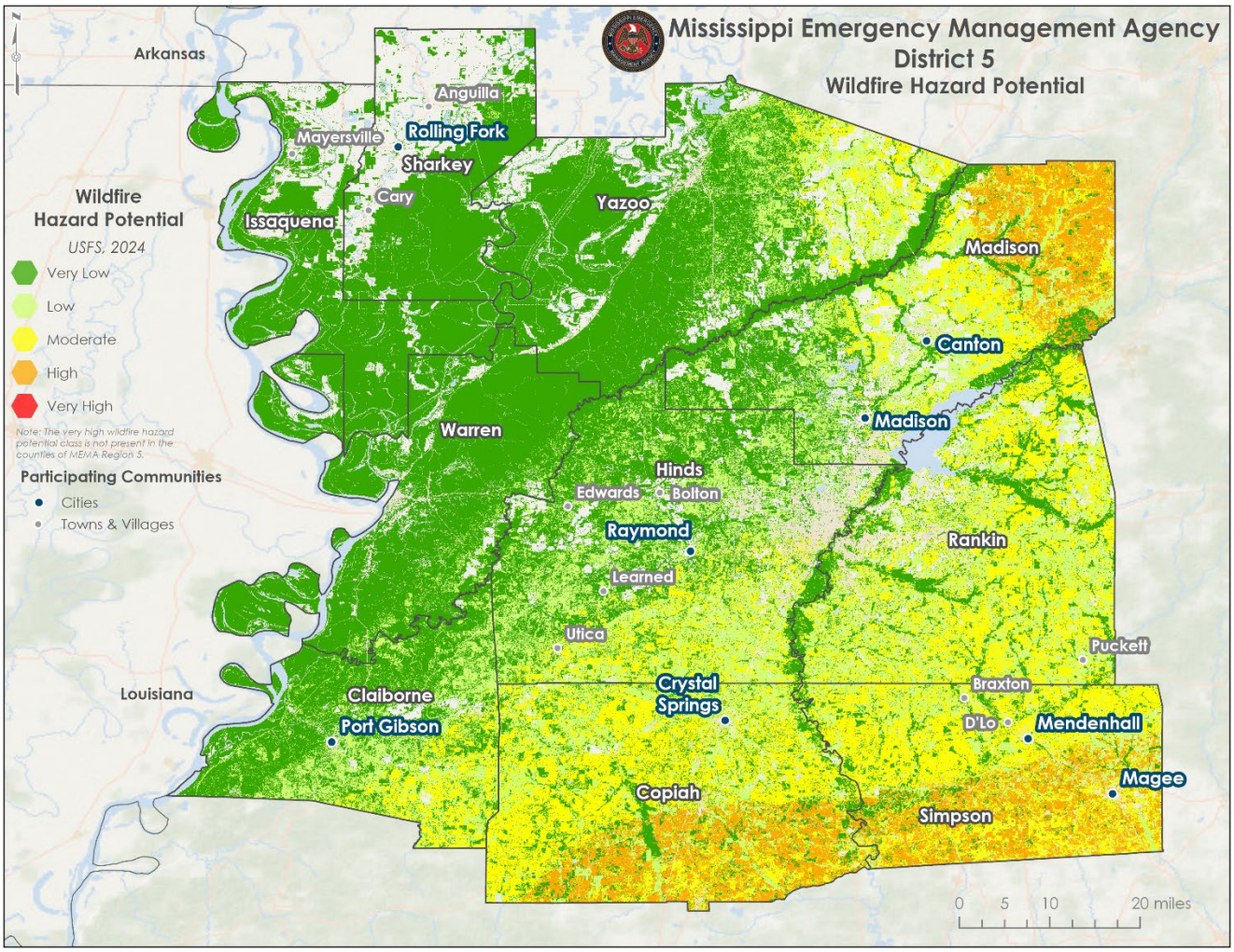
Wildland/Urban Interface (WUI) fires are expected to remain a recurring hazard in Madison County and the City of Canton. Hundreds of wildfires occur in Mississippi each year, indicating that such fires may likely to occur in the City. However, based on local capacity to respond to such fires, the impact on the City is relatively low. The probability of the City responding to a severe fire is **Low**.

4.10.4. LOCALIZED VULNERABILITY ASSESSMENT

4.10.4.1. OVERALL VULNERABILITY

Cities like Canton in the eastern part of the district, due to a variety of geographic factors like drier climate and soils and trends in development, are more susceptible to both WUI and urban fire. As seen in **Figure 15** below, wildfire hazard potential is generally low across the City. Therefore, urban and WUI fires pose a Low risk to the City. This section provides further contextualization for the anticipated vulnerability to urban/wildfires.

FIGURE 15: MEMA DISTRICT 5 WILDFIRE HAZARD POTENTIAL



4.10.4.2. CRITICAL FACILITIES

The City of Canton does not have any critical facilities located in the WUI. However, fire events can disrupt electrical power, communications, and water supplies needed for medical care, emergency response, and fire suppression, while evacuation orders and hazardous conditions may limit staff access to critical facilities. Wildfires occurring in or near the wildland-urban interface can also restrict transportation routes and delay response efforts.

4.10.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Urban and wildland fires can cause significant damage to cultural, historic, and natural resources in the City through flame exposure, extreme heat, smoke, and post-fire environmental degradation. Historic structures, cemeteries, monuments, and archeological sites may be damaged or lost because of direct fire contact, structural weakening from heat, falling trees, or fire-suppression activities. The destruction of surrounding vegetation can alter historic settings and cultural landscapes, reducing their integrity and context. Natural resources are particularly vulnerable, as fires can result in the loss of forested areas and wildlife habitat, degrade air and water quality, and increase erosion and sediment runoff following vegetation loss.

4.10.4.4. PEOPLE

For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Issaquena and Sharkey Counties and the City of Madison, thus putting those populations at a slightly lower risk than the rest of the District.

Because it is more urban, people in the City may be at slightly lower risk from wildfire, as the higher access to road infrastructure and warning systems may make evacuation easier. Populations most at risk of the impacts of fires include older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate when these fires occur, and harder. These populations can experience disproportionate impacts to urban and WUI fires and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Canton has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.10.4.5. STRUCTURES AND SYSTEMS

City of Canton contains limited areas of direct exposure to wildfire risk, as shown in the Wildfire Risk Reduction Zones map in the base plan. In these areas, homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk, and complicating suppression efforts. The City does not have a Community Wildfire Protection Plan (CWPP) in place, which could help address and reduce risk in the future.

4.10.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In urban areas like City of Canton, the expansion of housing into fire-prone zones like forested and rural areas increases the number of people and structures exposed to wildfire hazards. While WUI area in the City is limited, development in these areas can lead to fragmented habitats and increased ignition sources, which heighten the potential for wildfires and complicate emergency response efforts.

4.11. HAZARDOUS MATERIAL INCIDENTS

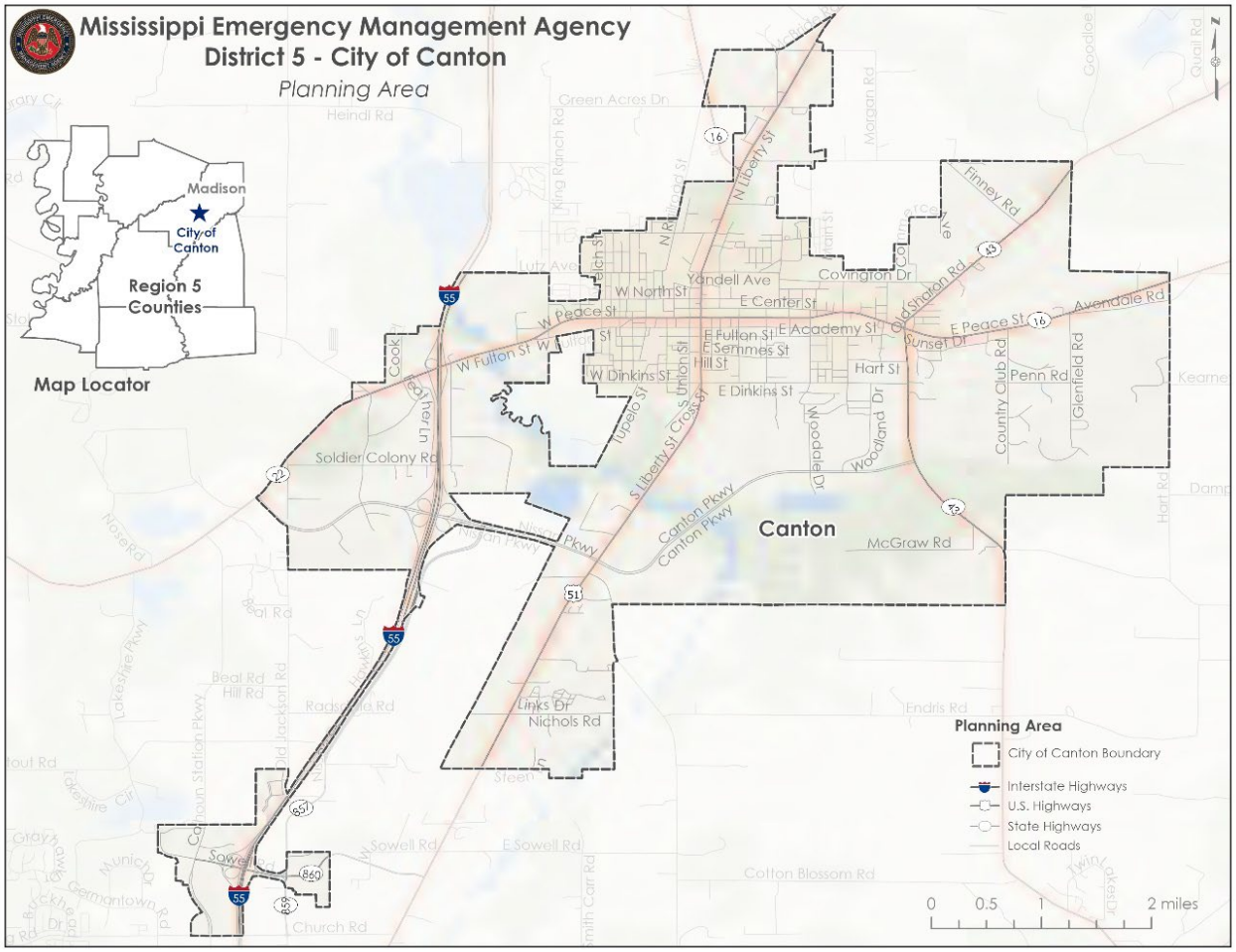
4.11.1. LOCATION AND EXTENT

Hazardous material releases and reports are only tracked at the county level and the numbers below represent the statistics for Madison County. Hazardous materials incidents (HazMat) can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, agricultural operations, and facilities that store or use chemicals. In City of Canton, these include:

- Interstate 55
- U.S. Highway 51
- State Highways16, 22, 43, 857, 859 and 860

As noted in the base plan, the severity of the impact from HazMat incidents depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures. Because City of Canton is more urban, impacts of a release on the surrounding population might be more significant due to population density, although shorter emergency response times may impact the severity of an incident. **Figure 16** below displays the ground transportation in the City. For more information on hazardous materials incidents across the District, refer to the base plan.

FIGURE 16: GROUND TRANSPORTATION IN THE CITY OF CANTON



4.11.2. PREVIOUS OCCURRENCES

In Madison County, there has been a total of 317 hazardous materials releases reported to the EPA since 2014. There is no information about whether any of these releases occurred in the City of Canton. However, County data is being used to understand risk to the City.

- 2014: 26 reports at 8 facilities
- 2015: 28 reports at 9 facilities
- 2016: 30 reports at 9 facilities
- 2017: 32 reports at 9 facilities
- 2018: 31 reports at 8 facilities
- 2019: 31 reports at 9 facilities
- 2020: 27 reports at 9 facilities
- 2021: 27 reports at 8 facilities
- 2022: 28 reports at 9 facilities
- 2023: 28 reports at 9 facilities

- 2024: 29 reports at 9 facilities

4.11.3. PROBABILITY OF FUTURE OCCURRENCES

The likelihood of future hazardous materials incidents in City of Canton is considered **Unlikely**, primarily due to the district's extensive transportation infrastructure and industrial activity, and the fact that a major spill in an adjacent jurisdiction could impact City of Canton. With major highways, rail lines, and facilities regularly handling and transporting hazardous substances, the potential for accidental spills or releases remains ongoing.

4.11.4. LOCALIZED VULNERABILITY ASSESSMENT

4.11.4.1. OVERALL VULNERABILITY

More populous and developed jurisdictions like Madison County and the City of Madison face elevated risk from HazMat incidents due to greater exposure and potential for cascading impacts. These areas are more likely to experience HazMat incidents, and to experience significant disruption of services when they do occur. However, due to the City's capacity to respond to such events, the overall risk of a hazardous material incident in the City is **Low.** This section provides further contextualization for anticipated vulnerability to hazardous material incidents.

4.11.4.2. CRITICAL FACILITIES

Hazardous materials incidents can threaten critical facilities in the City by causing contamination, toxic exposure, or fire and explosion hazards that force evacuations or temporary closures. Facilities such as hospitals, schools, emergency response buildings, government offices, and water or wastewater systems may experience service disruptions due to safety concerns, restricted access, or impacts to supporting utilities. Emergency operations can also be strained as resources are diverted to containment and cleanup efforts.

4.11.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Hazardous materials incidents can negatively affect cultural, historic, and natural resources in the City through contamination of soil, water, vegetation, and sensitive sites. Historic buildings, cemeteries, and archeological resources may be damaged by chemical spills, airborne releases, or cleanup activities that disturb structures and surrounding landscapes. Natural resources are particularly vulnerable, as hazardous substances can pollute streams, wetlands, and groundwater, harm wildlife, and degrade ecosystems for extended periods.

4.11.4.4. PEOPLE

Populations most at risk of the impacts of hazardous materials incidents are those living near transportation corridors, industrial facilities, and storage sites, who are more likely to be lower income. This population is also less likely to have reliable access to transportation, complicating evacuation efforts. Other vulnerable populations include older adults, children, and those with respiratory conditions, who may face challenges during shelter-in-place orders. These populations can experience disproportionate impacts to hazardous material incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Canton has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.11.4.5. STRUCTURES AND SYSTEMS

Because the City is more urban than the rest of the district, people in City of Canton may be at slightly higher risk from HazMat incidents due to the relative number of facilities that might cause releases.

However, higher access to road infrastructure and warning systems may make evacuation easier than in other areas, as would higher emergency response capability. Impacts on lifelines and to natural, cultural, and historic resources are generally consistent across the planning area and are described in the base plan.

4.11.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In urban areas like the City of Canton, slowed population growth and population decline can lead to reduced access to emergency services and increased response times, which can increase risk from hazardous materials incidents.

4.12. NUCLEAR POWER PLANT INCIDENTS

4.12.1. LOCATION AND EXTENT

A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies.

Grand Gulf Nuclear Station is the only nuclear power plant in Mississippi. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP), includes a 50-mile radius from the facility. Madison County, including the City of Canton, is outside of the 50-mile radius from the facility. For information on the impacts of nuclear power plan incidents across the District, refer to the base plan.

4.12.2. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. Madison County, including the City of Canton, is outside of the 50-mile radius from the facility.

4.12.3. PROBABILITY OF FUTURE OCCURRENCES

With no documented instances of nuclear power plant incidents impacting Canton, the probability of future occurrences is considered **unlikely.** However, it is important to acknowledge that the probability of manmade hazards can shift as regulations are tightened or loosened, infrastructure ages, and security conditions change. Additionally, site security and other sensitive information is not factored into this plan because it is intended to be a public document.

4.12.4. LOCALIZED VULNERABILITY ASSESSMENT

4.12.4.1. OVERALL VULNERABILITY

While the impacts of a nuclear power plant incident could potentially be severe for communities in the nearby area, the City of Canton is outside of the 50-mile Ingestion Exposure Pathway Zone. This distance, combined with the assessed low probability of a nuclear power plant incident, led to the assessment that this hazard is a **low** risk to the City of Canton. However, emergency management and planning personnel should still evaluate the full range of potential community impacts in the event of a nuclear power plant incident.

4.12.4.2. CRITICAL FACILITIES

Since Madison County, including the City of Canton, is outside of the 50-mile radius from the facility, no critical facilities are expected to be impacted or vulnerable to any nuclear power plant incidents that can be reasonably anticipated.

4.12.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Since Madison County, including the City of Canton, is outside of the 50-mile radius from the facility, no cultural, historic, or natural resources are expected to be impacted or vulnerable to any nuclear power plant incident that can be reasonably anticipated.

4.12.4.4. PEOPLE

The people of the City of Canton are at overall lower relative risk than the rest of the District, primarily due to the City being outside of the 50-mile radius of the facility.

4.12.4.5. STRUCTURES AND SYSTEMS

Because Madison County, including the City of Canton, is outside of the 50-mile radius from the facility, the potential impacts to these structures and systems are minimal. In the event of a severe incident, facilities in Canton may experience increased usage, as individuals that have evacuated from areas closer to the Grand Gulf Nuclear Station travel to or through Canton.

4.12.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

While the City of Canton's population has declined since 2010, this is not considered to be a major factor impacting the City's vulnerability due to its location. Canton is outside of the 10-mile and 50-mile zones around the Grand Gulf Nuclear Station, and therefore it is assessed that Canton faces minimal impacts from any nuclear power plant incidents that could be reasonably anticipated.

4.13. CRITICAL FACILITIES VULNERABILITY SUMMARY

Table 21 below notes the individual critical facilities in City of Canton that were identified by the Mitigation Council and provides information on the relative risk these facilities face from various hazards.

TABLE 21: CITY OF CANTON CRITICAL FACILITIES VULNERABILITY SUMMARY

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Communications	WMGO 1370	City of Canton	OUT	OUT	OUT	Direct Exposure	Moderate	Non-Vegetated - Medium Density
Electrical Power Facility	Substation @ Hwy 43	City of Canton	OUT	OUT	OUT	Direct Exposure	Low	Non-Vegetated - Very Low Density
EOC	Madison County Emergency Operations Center	City of Canton	OUT	OUT	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Fire Station	Canton Fire Department Station 1	City of Canton	IN	OUT	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Fire Station	Canton Fire Department Station 2	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density
Fire Station	Canton Fire Department Station 3	City of Canton	IN	OUT	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Fire Station	Canton Fire Department Station 4	City of Canton	OUT	OUT	OUT	Direct Exposure	Low	Non-Vegetated - Uninhabited
Government	Canton - City Hall	City of Canton	OUT	OUT	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Medical Care Facility	MERIT HEALTH MADISON	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Natural Gas Facility	Gulf South Regulator Station	City of Canton	IN	OUT	OUT	Direct Exposure	N/A - WHP Undetermined	Non-Vegetated - Very Low Density
Natural Gas Facility	Nissan Gas Metering Station	City of Canton	OUT	OUT	OUT	Direct Exposure	Low	Non-Vegetated - Low Density
Police Station	CANTON POLICE DEPARTMENT	City of Canton	IN	OUT	OUT	Direct Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density
Police Station	MADISON COUNTY SHERIFFS DEPARTMENT / MADISON COUNTY DETENTION CENTER	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Very Low Density
Potable Water	Commerce Water Tank	City of Canton	OUT	OUT	OUT	Direct Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Potable Water	Jitney Jungle Water Tank	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density
Potable Water	Old Jackson Well and Tank	City of Canton	OUT	OUT	OUT	Direct Exposure	N/A - WHP Undetermined	Non-Vegetated - Low Density
Potable Water	Standpipe Water Tank	City of Canton	OUT	OUT	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - High Density

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Potable Water	Well 4	City of Canton	OUT	OUT	OUT	Direct Exposure	Low	Non-Vegetated - Uninhabited
Potable Water	Well 5	City of Canton	IN	OUT	OUT	Direct Exposure	Low	Non-Vegetated - Medium Density
Potable Water	Well 7	City of Canton	OUT	OUT	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density
Potable Water	Well 8	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Potable Water Facility	Sonat Regulation Station	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Potable Water Facility	Tip H. Allen Water Treatment Plant	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density
Potable Water Facility	Water Treatment Plant 2	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
School	CANTON CAREER CENTER	City of Canton	OUT	IN	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
School	CANTON EDUCATIONAL SERVICES CENTER	City of Canton	IN	OUT	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
School	CANTON ELEMENTARY SCHOOL	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
School	CANTON PUBLIC 9TH GRADE SCHOOL	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Very Low Density
School	CANTON PUBLIC HIGH SCHOOL	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Very Low Density
School	HUEY L. PORTER MIDDLE SCHOOL	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density
School	JIMMIE M. GOODLOE ELEMENTARY SCHOOL	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density
School	MC NEAL ELEMENTARY SCHOOL	City of Canton	OUT	OUT	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density
School	NICHOLS MIDDLE SCHOOL	City of Canton	OUT	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Medium Density
Transportation Facility	Highway 22 West Bridge	City of Canton	IN	OUT	OUT	Direct Exposure	N/A - WHP Undetermined	Non-Vegetated - Low Density
Transportation Facility	Highway 43 North Bridge	City of Canton	OUT	OUT	OUT	WTZ: Non-Vegetated	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Transportation Facility	Highway 43 South Bridge	City of Canton	OUT	OUT	OUT	WTZ: Non-Vegetated	N/A - WHP Undetermined	Vegetated - Very Low Density
Transportation Facility	Highway 51 South Bridge	City of Canton	IN	OUT	OUT	Direct Exposure	N/A - WHP Undetermined	Non-Vegetated - Very Low Density

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Cameron Lift Station	City of Canton	IN	OUT	OUT	Direct Exposure	Low	Non-Vegetated - Very Low Density
Waste Water Facility	Cathy Circle Lift Station	City of Canton	OUT	OUT	OUT	Direct Exposure	N/A - WHP Undetermined	Non-Vegetated - Low Density
Waste Water Facility	CAV Center Station	City of Canton	IN	OUT	OUT	Direct Exposure	Low	Non-Vegetated - Uninhabited
Waste Water Facility	C	City of Canton	OUT	IN	OUT	Direct Exposure	N/A - WHP Undetermined	Non-Vegetated - High Density
Waste Water Facility	Madison County Lift Station	City of Canton	IN	OUT	OUT	Direct Exposure	Low	Non-Vegetated - Very Low Density
Waste Water Facility	McCarty Lift Station	City of Canton	IN	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Waste Water Facility	Northeast Lift Station	City of Canton	IN	OUT	OUT	Direct Exposure	N/A - WHP Undetermined	Non-Vegetated - Uninhabited
Waste Water Facility	Papaws Lift Station	City of Canton	IN	OUT	OUT	Indirect Exposure	N/A - WHP Undetermined	Non-Vegetated - Very Low Density
Waste Water Facility	South Lagoon	City of Canton	OUT	OUT	OUT	Water	N/A - WHP Undetermined	Water
Waste Water Facility	Union Lift Station	City of Canton	IN	OUT	OUT	Minimal Exposure	N/A - WHP Undetermined	Non-Vegetated - Low Density

5. MITIGATION STRATEGY

The Mitigation Strategy section of the base plan provides an overall blueprint for all participating jurisdictions in MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Regional Hazard Mitigation Council (RHMC) and the findings and conclusions of the Capability and Risk Assessments. The goals of the MEMA District 5 can be found in **Section 6** of the base plan.

This section provides community-specific strategies for the participating jurisdictions within City of Canton, including the status of actions that were included in the previous plan and actions to be considered or pursued over the next five years. As noted in the base plan, the participants are not committing to undertaking every action suggested in this list but rather are proposing an extensive list of *potential* actions that they may wish to pursue, depending in the availability of funding.

The following information is provided in the table below, as well as in the mitigation action tables within each annex in this plan:

Project Number: Each action is assigned a project number for organizational purposes.

Action Description: This is the description of the mitigation action. Actions descriptions are intended to be actionable and specific.

Responsible Agency or Department: actions assign primary responsibility to agencies or departments for implementation. The responsible entities were determined by jurisdictional representatives on the Mitigation Council, and they reflect the representatives' assessment of the entity that would be most capable of facilitating successful implementation of the action. Other agencies, departments, organizations, etc. may assist the responsible agency or department, if necessary.

Hazards Addressed: For each mitigation action, the hazard(s) that are being addressed are listed. Some hazards are considered "multi-hazard" because the action, when implemented, is designed to mitigate impacts of all disasters profiled in this plan. Other mitigation actions are specific to individual hazards.

Estimated Cost: This is the estimate cost of the action; these costs were determined through general discussions of the resources, personnel, and time needed, and the estimates are not intended to stand in for a full, detailed benefit-cost analysis.

Action Status (D/R/N/C): FEMA's guidance for local mitigation plans requires a status update for existing mitigation actions. The statuses of previous actions were assessed throughout the planning process. The four categories used by the Mitigation Council are:

> Deleted (D): action is no longer appropriate or desired, and the community does not intend to pursue the action.
>
> Retained (R): action is still desired by the community, but implementation has not been completed. The community will continue to implement the action as time and resources allow.
>
> New (N): action is new for the 2026 District 5 plan.
>
> Completed (C): action has been completed by the community.

Status Notes: Includes any information that the community provided for additional context to the action status.

Expected Time Frame for Completion: Participating jurisdictions anticipated the amount of time it will take to carry out the action. The expected time frames for actions from the previous plan were updated to reflect the expected time frame for completion from when communities adopt this plan.

Corresponding Goals: The plan goals addressed by each action item are included to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. Each action is linked to one more of the Plan's goals:

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

Priority: The priority of each of the mitigation action items is ranked either Low, Medium, or High. This prioritization allows Mitigation Council members to quickly compare actions based on a qualitative assessment of the anticipated benefits of actions. The process utilized by the Mitigation Council to prioritize actions is described in Section 6.4 of the base plan.

Potential Funding Sources: Potential sources for funding are listed for each action and encompass a range of sources including operating budget/general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), State grants, private funding, Capital Improvement Plan, and others. It is important to acknowledge that the identified funding sources are not exhaustive or definitive. The current funding landscape is undergoing significant change, and existing funding sources may not be available in the future, while new sources may emerge. If/when a community has the opportunity to implement an action, available funding sources will be re-examined to determine which source is most appropriate.

TABLE 22: UPDATED 2026 CITY OF CANTON MITIGATION ACTIONS

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
1-Canton	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Police and Fire Departments	All hazards	$25,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Canton	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Mayor's Office, City Clerk	All hazards	$50,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Canton	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the city with advanced warning of approaching weather conditions.	Police and Fire Departments, with support from National Weather Service	Tornado, severe storms	$50,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Canton	Purchase and maintain emergency generators for use by key critical facilities throughout the city.	Public Works, Police and Fire Departments	All hazards	$100,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, State Homeland Security Program, HMGP, CDBG
5-Canton	As future updates are made to the city's existing policies and regulations, and as the city adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Board of Alderman, Planning Commission	All hazards	$50,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
6-Canton	Seek funding to assist with the construction of a community shelter.	Mayor's Office, City Clerk	All hazards	$3,000,000	R	No progress since last update	On-going annually	3	Medium	General Fund, HMGP, BRIC
7-Canton	Encourage residents to construct individual safe rooms	Police and Fire Departments	Tornado, severe storms	$1,000,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
8-Canton	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Floodplain Manager, Board of Alderman, Mayor's Office	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
9-Canton	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Floodplain Manager, Board of Alderman, Mayor's Office	Flooding	$6,000,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Canton	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties.	Floodplain Manager, City Clerk, Mayor's Office, Board of Alderman	Flooding	$5,000,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
11-Canton	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	City Clerk	All hazards	$1,000,000	R	No progress since last update	10 years	3, 5	High	General Fund, CDBG, USDA Rural Development

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
12-Canton	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan	Board of Alderman, City Clerk, Mayor's Office	All hazards	$1,500 annually / $100,000 every 5 years	R	Plan update in progress	On-going annually	1	High	General Fund
13-Canton	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards.	Emergency Management	All hazards	$6,000,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, BRIC
14-Canton	Construct a 60 acre retention pond to minimize flooding.	Public Works, Board of Alderman, Mayor's Office	Flooding	$36,000,000	R	No progress since last update	5 years	3	High	General Fund, HMGP, CDBG
15-Canton	Develop and implement a drainage improvement plan that increases the capacity of key drainage ditches located around the city.	Public Works, Board of Alderman, Mayor's Office	Flooding	$1,000,000	R	No progress since last update	5 years	2, 3	High	General Fund, CDBG
16-Canton	Seek funding assistance to retrofit community facilities to act as community shelters.	Mayor's Office, City Clerk	All hazards	$500,000	R	No progress since last update	5 years	3	High	General Fund, CDBG, HMGP, USDA Rural Development
17-Canton	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Mayor's Office, City Clerk, Police and Fire Departments	Public Health Emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
18-Canton	Improve cellular tower capability throughout the City to upgrade communication efficiency	Mayor's Office, City Clerk	All hazards	$100,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
19-Canton	seek funding assistance to improve high-speed internet capabilities throughout the City	Mayor's Office, City Clerk	All hazards	$1,000,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
20-Canton	Seek funding assistance to upgrade remote capabilities allowing employees to work-off site if required during hazard events	Mayor's Office, City Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund

1. INTRODUCTION

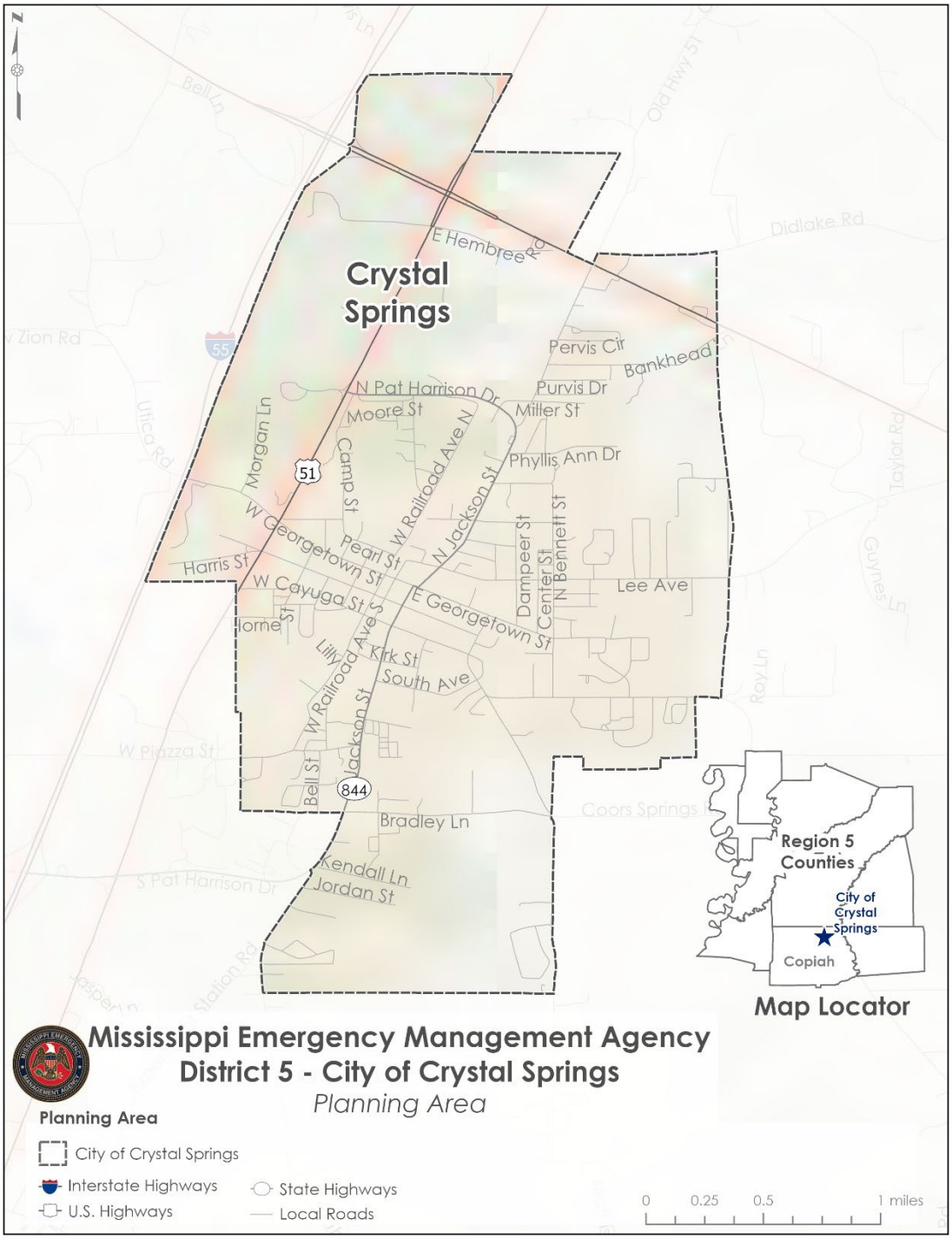
This annex provides more detailed information about City of Crystal Springs. It includes:

- A more localized community profile, including more detailed mapping, population and demographic information, and critical facilities information
- Local-level Hazard Identification and Risk Assessment (HIRA) information, including some more localized hazard maps and conclusions related to hazard risk and how it varies across the planning area
- A localized vulnerability assessment, including the likely impact of profiled hazards on critical facilities in City of Crystal Springs
- A detailed capability assessment, describing resource and tools available to the county and municipalities to participate in hazard mitigation and reduce hazard risk
- A mitigation strategy, describing a variety of actions the county and municipalities may opt to take to reduce the risk associated with profiled hazards over the useful life of this plan

2. COMMUNITY PROFILE

This section provides a more detailed profile of City of Crystal Springs. The City is in the Northeastern part of Copiah County, which is in the Southern part of the planning area and **Figure 1** below shows the planning area for the City of Crystal Springs. The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey—such as poverty, lack of transportation, crowded housing, and minority status—to quantify a community's relative vulnerability. This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). According to the 2022 CDC Social Vulnerability Index, Copiah County has an overall **low to medium** (0.4568) level of vulnerability. However, due to its urbanized location, assumptions could be made that the City of Crystal Springs's population might have a slightly higher score than the County as a whole.

FIGURE 1: CITY OF CRYSTAL SPRINGS



2.1. POPULATION AND DEMOGRAPHICS

Population information from the last three Census counts for the City of Crystal Springs is summarized below, showing trends since the year 2010. Since 2010, the population for the City has remained steady. A summary of population trends is summarized in **Table 1**. The race and ethnicity demographic data of the City of Crystal Springs are shown in **Table 2**. The majority of the population within the City is African American (62.2%).

TABLE 1: POPULATION TRENDS | SOURCE: 2024 U.S. CENSUS DATA

Jurisdiction	2010 Census	2020 Census	2024 Census (Estimate)	Percent Change 2020-2024
City of Crystal Springs	5,174	4,753	4,752	0%

TABLE 2: DEMOGRAPHICS IN PERCENT | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
City of Crystal Springs	24.9%	62.2%	12.4%	0%	4.9%	4.8%

Table 3 summarizes what percentage of the population of the City of Crystal Springs belongs to certain vulnerable population according to the U.S. Census. **Table 4** provides annual estimates of housing units in the City of Crystal Springs. Since 2020, housing units have increased from 1,677 to 1,903.

TABLE 3: VULNERABLE POPULATIONS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
City of Crystal Springs	17.5%	359	718	942

TABLE 4: ANNUAL ESTIMATES OF HOUSING UNITS IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023	2024
City of Crystal Springs	1,677	1,829	1,952	1,957	1,903

Employment in the City of Crystal Springs is largely focused on manufacturing, healthcare and educational services, several other large industries are located within Copiah County. **Table 5** below summarizes employment information in the City.

TABLE 5: EMPLOYMENT IN THE CITY OF CRYSTAL SPRINGS | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Management, business, science and arts occupations	Service occupations	Sales and office occupations	Natural resources, construction and maintenance occupations	Production, transportation and material moving occupations
City of Crystal Springs	752	274	93	265	573

2.2. INFRASTRUCTURE, CRITICAL FACILITIES AND ENERGY ASSETS

2.2.1. CRITICAL FACILITIES AND INFRASTRUCTURE

Certain assets and facilities are considered as being of importance for City of Crystal Springs. **Table 6** below is a list of the critical facilities within City of Crystal Springs. **Figure 2** details where the critical facilities are located in the City. The table below consists of facilities identified in the previous plan for each community as well as facilities identified by HAZUS. These facilities were sent to each community representative of the Mitigation Council for review and given a chance to provide changes.

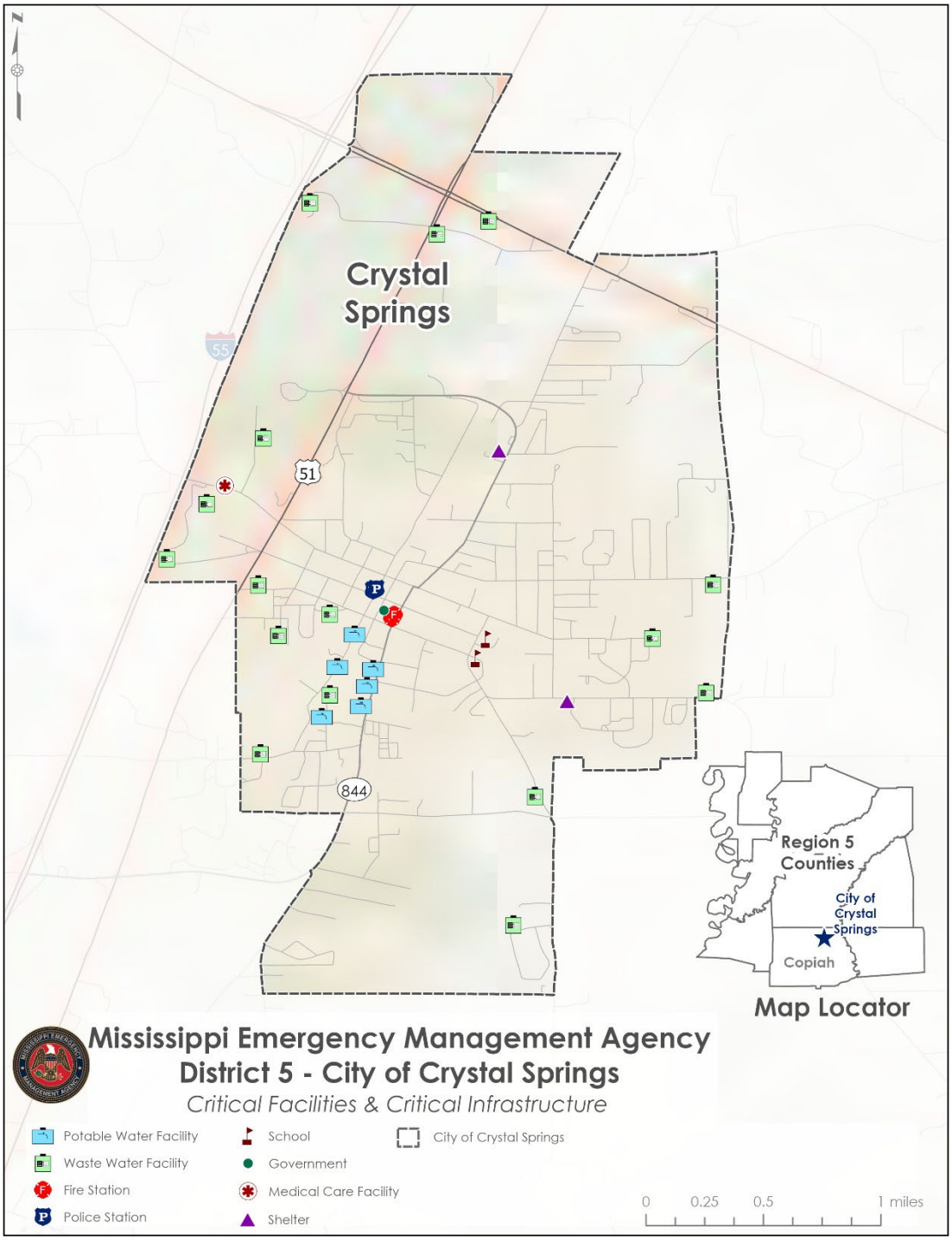
TABLE 6: CITY OF CRYSTAL SPRINGS CRITICAL FACILITIES AND INFRASTRUCTURE

Facility Type	Facility Name	Facility Location
Fire Station	Crystal Springs Fire Department	City of Crystal Springs
Fire Station	Fire Station	City of Crystal Springs
Government	Crystal Springs - City Hall	City of Crystal Springs
Medical Care Facility - Residential	Copiah Living Center	City of Crystal Springs
Police Station	Crystal Springs Police Department	City of Crystal Springs
Police Station	Police Station	City of Crystal Springs
Potable Water	Middle Gem Plant	City of Crystal Springs
Potable Water	North Gem plant	City of Crystal Springs
Potable Water	Osborne Street Water Well	City of Crystal Springs
Potable Water	South Gem Plant	City of Crystal Springs
Potable Water	West Railroad Ave Water Well	City of Crystal Springs
Potable Water Facility	Water Department	City of Crystal Springs
School	Crystal Springs Elementary	City of Crystal Springs
School	Crystal Springs High School	City of Crystal Springs
Shelter	National Guard Armory	City of Crystal Springs
Shelter	Sports Complex	City of Crystal Springs

Facility Type	Facility Name	Facility Location
Waste Water Facility	Copley Street Lift Station	City of Crystal Springs
Waste Water Facility	Crystal Springs POTW	City of Crystal Springs
Waste Water Facility	East Georgetown Street Lift Station	City of Crystal Springs
Waste Water Facility	Harmony Road Lift Station	City of Crystal Springs
Waste Water Facility	Hembree Road Lift Station	City of Crystal Springs
Waste Water Facility	Hwy 27 Lift Station	City of Crystal Springs
Waste Water Facility	Hwy 51 North Lift Station	City of Crystal Springs
Waste Water Facility	Lee Avenue Lift Station	City of Crystal Springs
Waste Water Facility	Mathis Road Lift Station	City of Crystal Springs
Waste Water Facility	Morgan Lane Lift Station	City of Crystal Springs
Waste Water Facility	Osborne Street Lift Station	City of Crystal Springs
Waste Water Facility	Piazza Street Lift Station	City of Crystal Springs
Waste Water Facility	Thrasher Street Lift Station	City of Crystal Springs
Waste Water Facility	West Cayuga Street Lift Station	City of Crystal Springs
Waste Water Facility	West Georgetown Street Lift Station	City of Crystal Springs
Waste Water Facility	Wet Marion Ave Lift Station	City of Crystal Springs

Figure 2 below displays a map showing the locations of these critical facilities and infrastructure located within the City.

FIGURE 2: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE



2.2.2. TRANSPORTATION

Transportation in the City of Crystal Springs includes the list below and **Figure 2** above displays them on a map.

- U.S. Highway 51

- State Highways 844

2.2.3. ENERGY ASSETS

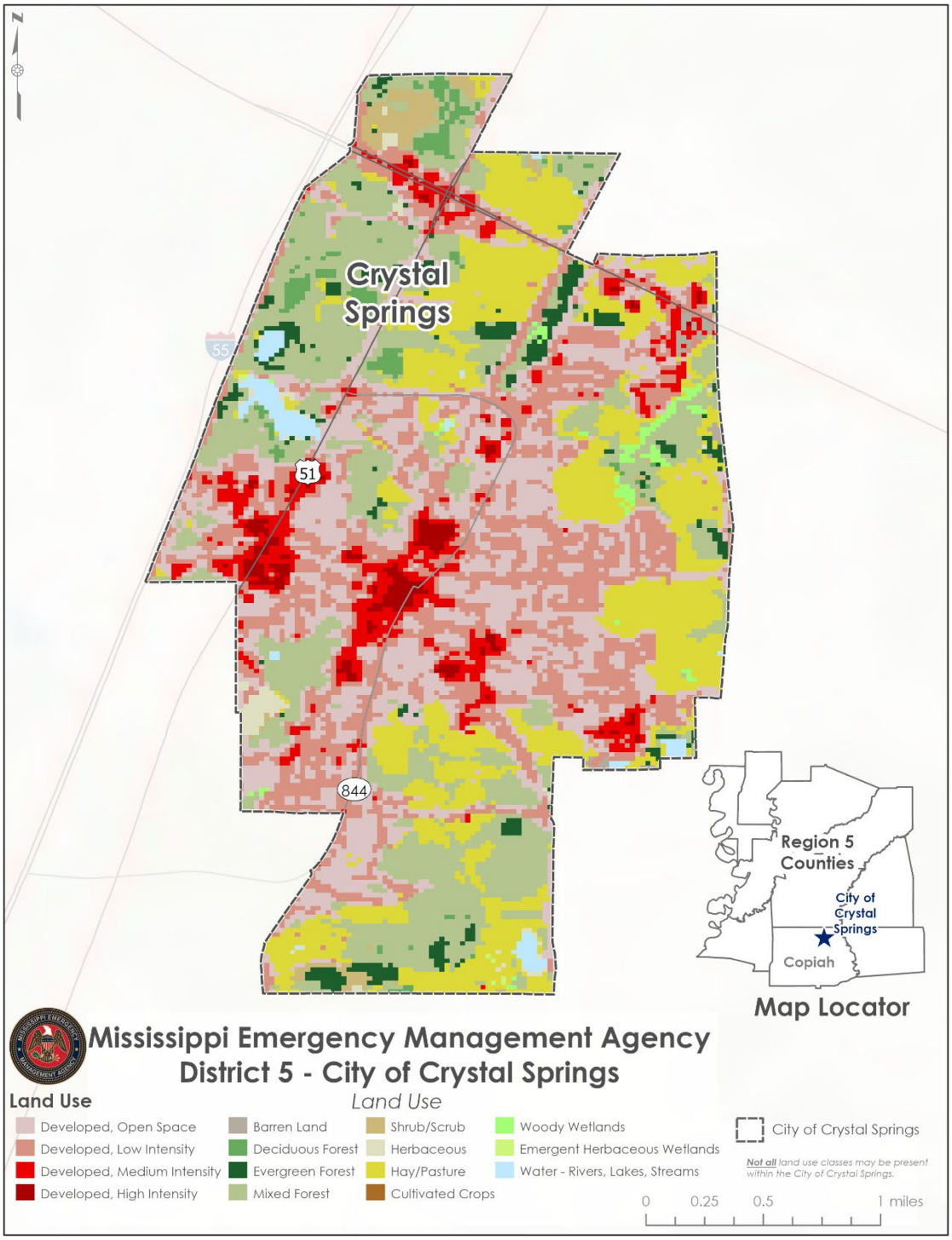
Oil, natural gas pipelines and electric transmission lines traverse throughout the City and the County. The list below breaks down the energy infrastructure within the City.

- **Power Plant:** There are no utility-scale power plants located inside the City of Crystal Springs
- **Substation:** The City of Crystal Springs hosts an electrical substation operated by Entergy Mississippi
- **Transmission:** Publicly available mapping sources confirm the presence of transmission and distribution lines connected to the Crystal Springs Substation, but no high-voltage transmission hubs or major corridors are specifically documented as originating or terminating in Crystal Springs
- **Pipelines:** No pipeline operators or specific pipeline segments are identified as running directly through Crystal Springs

2.3. LAND USE AND DEVELOPMENT

The City of Crystal Springs encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, and growing residential development in the central and Northern parts of the City. **Figure 3** below displays the land use and development throughout the City.

FIGURE 3: CITY OF CRYSTAL SPRINGS LAND USE AND DEVELOPMENT



2.4. HISTORIC AND CULTURAL RESOURCES

Cultural resources and historical assets are generally unique or irreplaceable in nature due to their age or unique properties or characteristics. **Table 7** below provides a list of known cultural resources and historic assets in the City of Crystal Springs.

TABLE 7: HISTORIC AND CULTURAL RESOURCES IN THE CITY OF CRYSTAL SPRINGS

Cultural Resource	Location	Resource Type
C.H. Parsons House	Crystal Springs	Building
Col. William James Willing House	Crystal Springs	Building
U.S. Post Office	Crystal Springs	Building
Charles Morris Huber House	Crystal Springs	Building
George Washington Copley House	Crystal Springs	Building

2.5. CHANGES IN DEVELOPMENT AND PRIORITIES

This section outlines recent and anticipated changes in development and priorities within the City of Crystal Springs. **Table 8** lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment. The City of Crystal Springs did not detail changes in development and priorities.

TABLE 8: CITY OF CRYSTAL SPRINGS CHANGES IN DEVELOPMENT AND PRIORITIES

Jurisdiction	Changes in Development in the Past Five Years	Changes in Development Anticipated in the Next Five Years	Changes in Community Priorities over the Past Five Years
City of Crystal Springs	N/A	N/A	N/A

3. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. More generalized information about the goals of the capability assessment, including the process and methodology, is presented in the Capability Assessment portion of the base plan.

This section articulates specific information about the capabilities of City of Crystal Springs.

3.1. CITY OF CRYSTAL SPRINGS CAPABILITIES AND RESOURCES

3.1.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to City of Crystal Springs to support hazard mitigation.

TABLE 9: CITY OF CRYSTAL SPRINGS STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y		Copiah County EMA
Engineering	Y	Brandon McKay	WGK Engineers
Procurement	N		
Floodplain Management	Y	David Herrington	
Land Use, Land Management, or Development Planning	N		
Grant-writing	N		
Geographic Information Systems (GIS)	N		
Other reported staff and technical capabilities:			

3.1.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in City of Crystal Springs that might support hazard mitigation efforts.

TABLE 10: CITY OF CRYSTAL SPRINGS PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)	X			
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan				
Continuity of Operations Plan (COOP)	X			
Disaster Recovery Plan	X			
Economic Development Plan	X			
Emergency Operations Plan (EOP)				
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan		X		
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)			X	4/30/26

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.1.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of City of Crystal Springs in the NFIP program, including how development in the floodplain is regulated.

TABLE 11: CITY OF CRYSTAL SPRINGS FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Fire Chief – David Herrington
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	No
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	

3.1.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support City of Crystal Springs's hazard mitigation efforts.

TABLE 12: CITY OF CRYSTAL SPRINGS FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes, 2021
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	Yes
Do you have a land use or development ordinance?	
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	

3.2. ABILITY TO EXPAND CAPABILTIES

As part of the capability assessment process, each jurisdiction was asked to discuss their ability to expand upon the capabilities discussed earlier in this section. Below is a summary of the information provided by each participant regarding how they can strengthen their ability to conduct hazard mitigation measures in the future. **Table 13** shows that the community did not detail how they plan to expand on their capabilities.

TABLE 13: CITY OF CRYSTAL SPRINGS'S ABILITY TO EXPAND CAPABILITIES

Jurisdiction	Self-Reported Information Regarding Ability to Expand Capabilities
City of Crystal Springs	N/A

4. HAZARD IDENTIFICATION & RISK ASSESSMENT

The Hazard Identification and Risk Assessment (HIRA) process, described in more detail in the HIRA section of the base plan, involves identifying potential hazards, evaluating their likelihood and potential consequences, and estimating and describing the level of risk these hazards present to a community.

Since 1969, Copiah County* has been included in 20 federal disaster declarations, of which seven occurred since this plan was last updated. **Table 14** describes these events.

TABLE 14: CITY OF CRYSTAL SPRINGS FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4626	Hurricane	Claiborne, Copiah, Simpson	10/22/2021
EM-3569	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
DR-4598	Severe Winter Storms	Claiborne, Copiah, Hinds, Rankin, Simpson, Warren, Yazoo	5/4/2021
EM-3548	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020
DR-4538	Severe Storm, Flooding and Mudslides	Claiborne, Copiah, Hinds, Issaquena, Sharkey, Warren, Yazoo	4/23/2020
DR-4528	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4081	Hurricane	Claiborne, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1794	Hurricane	Claiborne, Copiah, Issaquena	9/22/2008
DR-1604	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005
DR-1360	Severe Storm, Flooding, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Warren, Yazoo	2/23/2001
DR-1436	Tropical Storm	Copiah	10/1/2002
DR-968	Severe Storm, High Winds, Tornado, Hail	Copiah, Rankin, Simpson	11/25/1993
DR-895	Flooding, Severe Storm, Tornado	Copiah, Madison, Simpson	3/5/1991
DR-577	Severe Storm, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-499	Flooding, Severe Storm, Tornado	Copiah, Madison, Simpson	4/1/1976
DR-430	Heavy Rains, Flooding	Copiah, Rankin, Simpson	4/18/1974

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-318	Heavy Rains, Flooding	Copiah	1/19/1972
DR-271	Hurricane	Copiah, Hinds, Madison, Rankin, Simpson	8/18/1969

** Federal disaster areas are only tracked at the county level. The disasters above represent the statistics for Copiah County.*

As described in the "HIRA Methodology" section of the base plan, participants in this plan update reconsidered the relative risk posed by the profiled hazards by conducting a hazard ranking process. **Table 15** below provides a summary of how those hazards were ranked by the City of Crystal Springs.

TABLE 15: HAZARD RANKING FOR THE CITY OF CRYSTAL SPRINGS

Jurisdiction	Dam/Levee Failure	Drought	Earthquake	Expansive Soils	Flood	Severe Storms	Severe Winter Weather	Tornado	Tropical Storm / Hurricane	Wil/Urban Interface (WUI) Fire	Hazardous Material Incidents	Nuclear Power Plant Incidents
City of Crystal Springs	Low	Med	Low	Low	Med	High	Med	High	Med	Med	N/A	N/A

This section endeavors to provide more detailed, local-level information, mapping, and conclusions for these hazards wherever relevant. Each of the 12 natural and manmade hazards discussed in this section are described in more detail in the HIRA section of the base plan. **Table 16** below shows the hazard scores for the City of Crystal Springs. Since hazardous materials incidents and nuclear power plant incidents are not considered "natural hazards", jurisdictions are not required to evaluate them to the same extent as natural hazards. The City of Crystal Springs opted not to evaluate the area impacted, health and safety consequences, property damage, environmental damage, economic disruption, and probability of these two hazards.

TABLE 16: CITY OF CRYSTAL SPRINGS HAZARD RISK SCORES

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Dam/Levee Failure	1	1	2	1	1	1	**6**
Drought	4	1	1	2	2	3	**30**
Earthquake	4	1	1	1	1	1	**8**

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Expansive Soils	1	0	2	1	1	1	**5**
Flood	4	1	1	1	1	2	**16**
Severe Storms	4	1	2	2	2	5	**55**
Severe Winter Weather	4	1	1	1	2	3	**27**
Tornado	4	2	2	2	3	3	**39**
Tropical Storms	4	1	1	1	2	2	**18**
Wild/Urban Interface Fire	2	1	1	1	1	5	**30**
Hazardous Material Incidents	-	-	-	-	-	-	**-**
Nuclear Power Plant Incident	-	-	-	-	-	-	**-**

4.1. DAM/LEVEE FAILURE

4.1.1. LOCATION AND EXTENT

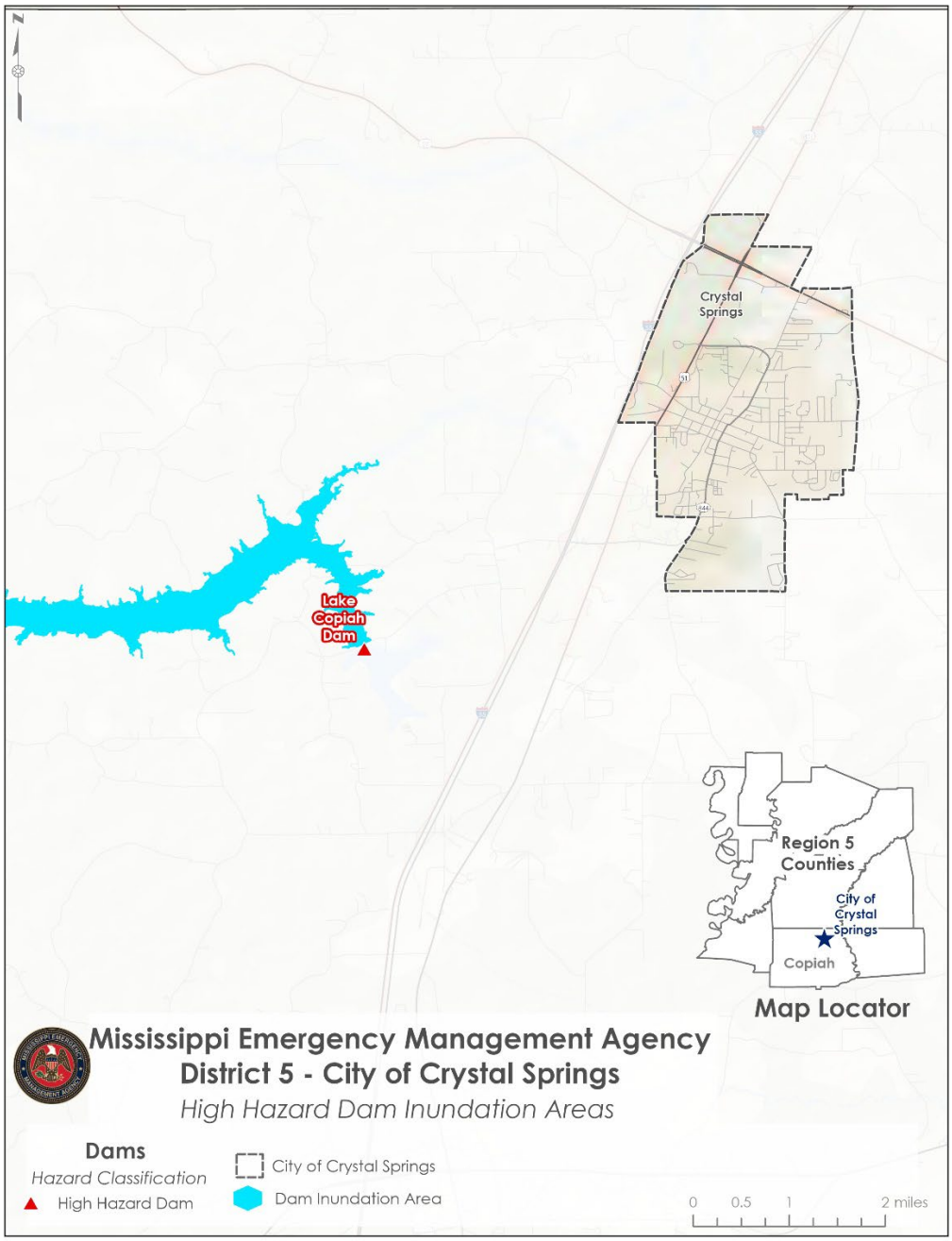
There are 83 dams in Copiah County, but there are zero dams located in the City of Crystal Springs planning area.

Dam classifications were designed based on the potential impacts of failure. The potential impacts from each dam classification are detailed below in the event of a dam failure.

- **Low Hazard Dam**: In the event of the failure of a high-hazard dam, loss of life is probable, as are economic, environmental, and lifeline impacts.
- **Significant Hazard Dam**: In the event of the failure of a significant hazard dam, loss of life is not expected, but economic, environmental, and lifeline impacts are expected.
- **High Hazard Dam**: In the event of the failure of a low-hazard dam, there is no anticipated loss of life, and economic, environmental, and lifeline impacts are expected to be minimal, with losses principally limited to the owner's property.

Figure 4 below shows the location and inundation areas of Lake Copiah Dam that is located West of the City of Crystal Springs. There are no levees located in or impacting the City of Crystal Springs. For more information on dams/levees across the District, refer to the base plan.

FIGURE 4: LOCATION AND INUNDATION AREAS OF UPSTREAM DAMS



4.1.2. PREVIOUS OCCURRENCES

Since the last plan update, MDEQ Dam Safety Division has recorded zero breaches in Copiah County. It is important to note that some failures may not have been detected and reported.

4.1.3. PROBABILITY OF FUTURE OCCURRENCES

Since there are no dams within the City of Crystal Springs, the probability of future occurrences is **Unlikely.**

4.1.4. LOCALIZED VULNERABILITY ASSESSMENT

4.1.4.1. OVERALL VULNERABILITY

There are no dams located in the City of Crystal Springs; therefore, the overall vulnerability is **Low**.

4.1.4.2. CRITICAL FACILITIES

Dam/levee failures do not pose a risk to the City of Crystal Springs; therefore, no critical facilities are impacted or vulnerable.

4.1.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Dam/levee failures do not pose a risk to the City of Crystal Springs, therefore no cultural, historic, or natural resources are impacted or vulnerable.

4.1.4.4. PEOPLE

Dam/levee failures do not pose a risk to the City of Crystal Springs, therefore no residents of the City are impacted or vulnerable.

4.1.4.5. STRUCTURES AND SYSTEMS

Because the geography of City of Crystal Springs puts it at lower relative risk of this hazard, the structures and systems (including critical facilities, community lifelines, and natural, historic, and cultural resources) in the City are at lower relative risk as well. The potential impacts to these structures and systems are described in more detail in the base plan.

4.1.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Dam/levee failures do not pose a risk to the City of Crystal Springs, therefore changes in development do not impact on the risk posed to the City and its residents.

4.2. DROUGHT

4.2.1. LOCATION AND EXTENT

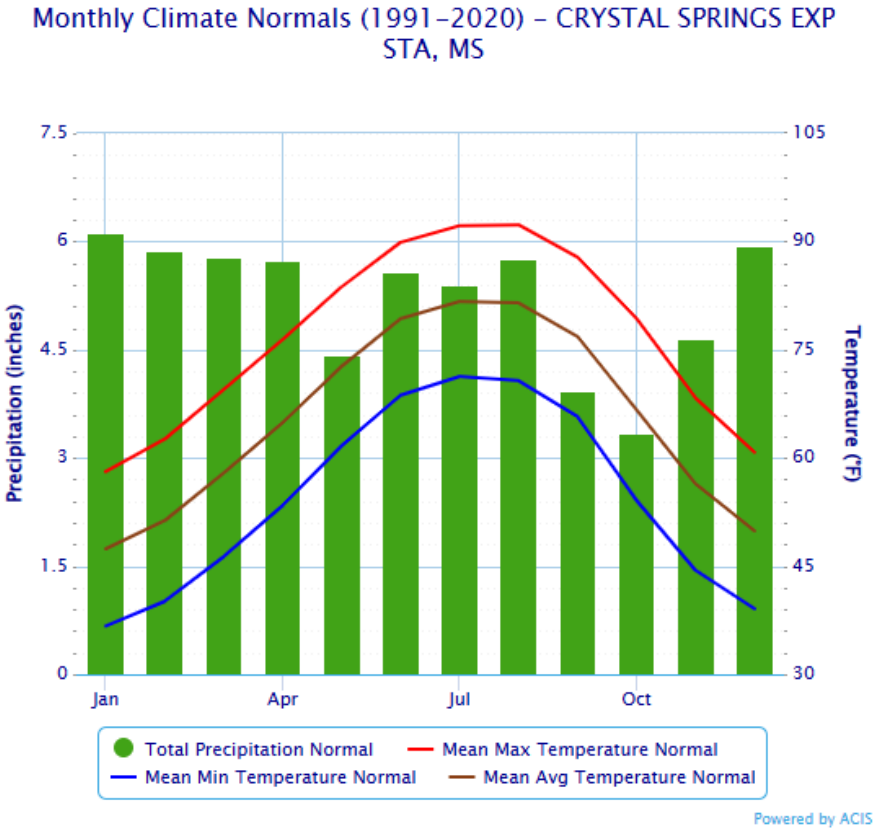
Drought events are only tracked at the county level and the numbers below represent the statistics for Copiah County. Drought affects the entire planning area equally; Copiah County and the City of Crystal Springs are not more or less susceptible to drought than other communities in District 5.

Figure 5 and **Figure 6** below display the monthly precipitation and temperature normals for the area surrounding the Crystal Springs EXP STA, MS National Weather Service (NWS) station. According to the data, the City experiences about 63 inches of precipitation annually with an average mean temperature of 66 degrees. The hottest months are June through September while the wettest months are January and April. Refer to the base plan for more detailed information on drought across the District.

FIGURE 5: MONTHLY NORMAL PRECIPITATION AND TEMPERATURE – CRYSTAL SPRINGS EXP STA, MS | SOURCE: NWS

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	6.12	58.1	36.7	47.4
February	5.87	62.6	40.1	51.3
March	5.79	69.5	46.3	57.9
April	5.73	76.4	53.4	64.9
May	4.42	83.7	61.7	72.7
June	5.57	89.9	68.7	79.3
July	5.39	92.2	71.3	81.7
August	5.76	92.3	70.7	81.5
September	3.93	87.8	65.7	76.8
October	3.35	79.3	54.1	66.7
November	4.65	68.3	44.4	56.4
December	5.93	60.8	39.1	49.9
Annual	62.51	76.7	54.4	65.5

FIGURE 6: MONTHLY CLIMATE NORMALS – CRYSTAL SPRINGS EXP STA, MS | SOURCE: NWS



4.2.2. PREVIOUS OCCURRENCES

Between the 2015 and 2020 plans, five droughts occurred in Copiah County, causing $50,000 in property damages and $481,200 in crop damage. Between the 2020 and 2025 plans, there were four droughts causing zero reported property damage and $1,060,000 in crop damage.

4.2.1. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, a drought event occurs almost annually in Copiah County and the City of Crystal Springs. Therefore, the probability of future drought conditions in Copiah County, to include the City of Crystal Springs, is **Likely**. This probability is consistent across District 5, even though any given drought will likely cause uneven impacts across the planning area.

4.2.2. LOCALIZED VULNERABILITY ASSESSMENT

4.2.2.1. OVERALL VULNERABILITY

The drought vulnerability assessment in the base plan highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Within Copiah County, including the City of Crystal Springs, drought poses a **Medium** risk due to potential impacts, largely to public health, agriculture, and the local economy. This section provides further contextualization for the anticipated vulnerability to drought.

4.2.2.2. CRITICAL FACILITIES

Drought poses a slow-onset but significant risk to critical facilities in the City of Crystal Springs by stressing water supply systems, increasing wildfire risk, and disrupting essential services. Prolonged dry conditions can reduce groundwater and surface water availability needed for drinking water, sanitation, medical care, and fire suppression, potentially affecting facilities such as hospitals, emergency services, schools, and government buildings. Drought conditions also elevate wildfire danger, which can strain fire response capabilities and threaten nearby infrastructure, while increased heat and energy demand may place additional stress on electrical systems supporting critical operations.

4.2.2.1. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Drought can damage cultural, historic, and natural resources in the City by reducing soil moisture and water levels needed for their preservation. Prolonged dry conditions may harm historic sites, stress forests and wetlands, increase wildfire risk, and degrade ecosystems and culturally important water resources, potentially leading to long-term loss.

4.2.2.2. PEOPLE

As noted in the base plan, drought poses a significant threat to public health and safety, particularly when it disrupts access to clean and sufficient water supplies, and particularly for vulnerable populations—such as low-income households, the elderly, and individuals with disabilities. In the City, individuals living below the poverty level are high at 23%. These populations can experience disproportionate impacts to drought and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.2.2.3. STRUCTURES AND SYSTEMS

Although drought doesn't typically cause direct physical damage to buildings or infrastructure, systems reliant on water (particularly those supporting agricultural operations) are the most vulnerable. Copiah County has a total approximate land area of 497,462 acres, of which 20.9% is farmland (444 farms totaling 103,863 acres of farmland). These portions of the county and their structures and systems are more vulnerable to impact than others.

Non-agricultural critical facilities such as transportation infrastructure, utility infrastructure, and public buildings are unlikely to be affected by drought across the planning area, including in City of Crystal Springs.

4.2.2.4. IMPACTS OF CHANGES IN DEVELOPMENT

Although there have been some increases in the housing stock in the City, the overall stabilization in development and population across the City of Crystal Springs may lead to lower strain on water systems during times of drought in the future.

4.3. EARTHQUAKE

4.3.1. LOCATION AND EXTENT

The earthquake seismic risk in MEMA District 5 varies from low to very high. The City of Crystal Springs is less susceptible to earthquakes than other communities in District 5. The City is within the low liquefaction zones which may decrease ground shaking compared to areas with high liquefaction zones. Additionally, the City has highly sensitive clay soils which can increase ground shaking. If a strong earthquake were to occur, the City may experiencing increased ground shaking due to their soils.

4.3.2. PREVIOUS OCCURRENCES

As noted in the base plan, Mississippi experiences relatively low seismic activity, although there have been some minor earthquakes producing light shaking felt in District 5 in recent history. Since 2000, there have been eight earthquakes in MEMA District 5. The strongest was a magnitude 3.2 that occurred in Madison County in 2015. Most of the earthquakes occur in Madison County and occurred in 2015.

4.3.3. PROBABILITY OF FUTURE OCCURRENCES

As noted in the base plan, Mississippi MEMA District 5 is Unlikely to experience damaging earthquakes, but it is not entirely free from seismic risk. While strong earthquakes are **Unlikely**, minor to moderate shaking could occur in City of Crystal Springs, especially from distant seismic sources like the New Madrid Seismic Zone (NMSZ).

4.3.4. LOCALIZED VULNERABILITY ASSESSMENT

4.3.4.1. OVERALL VULNERABILITY

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. City of Crystal Springs contains low liquefaction susceptibility zones. It also contains earthquake soil classification F (soils requiring site-specific evaluation, such as liquefiable soils, peats, or certain clays). While the City have factors that increase ground shaking the overall risk of strong earthquakes impacting the City is **Low**. This section provides further contextualization for the anticipated vulnerability of earthquakes.

Figure 7 shows the liquefaction susceptibility zones and **Figure 8** displays the earthquake soils near the City of Crystal Springs.

FIGURE 7: MEMA DISTRICT 5 LIQUEFACTION SUSCEPTIBILITY ZONES

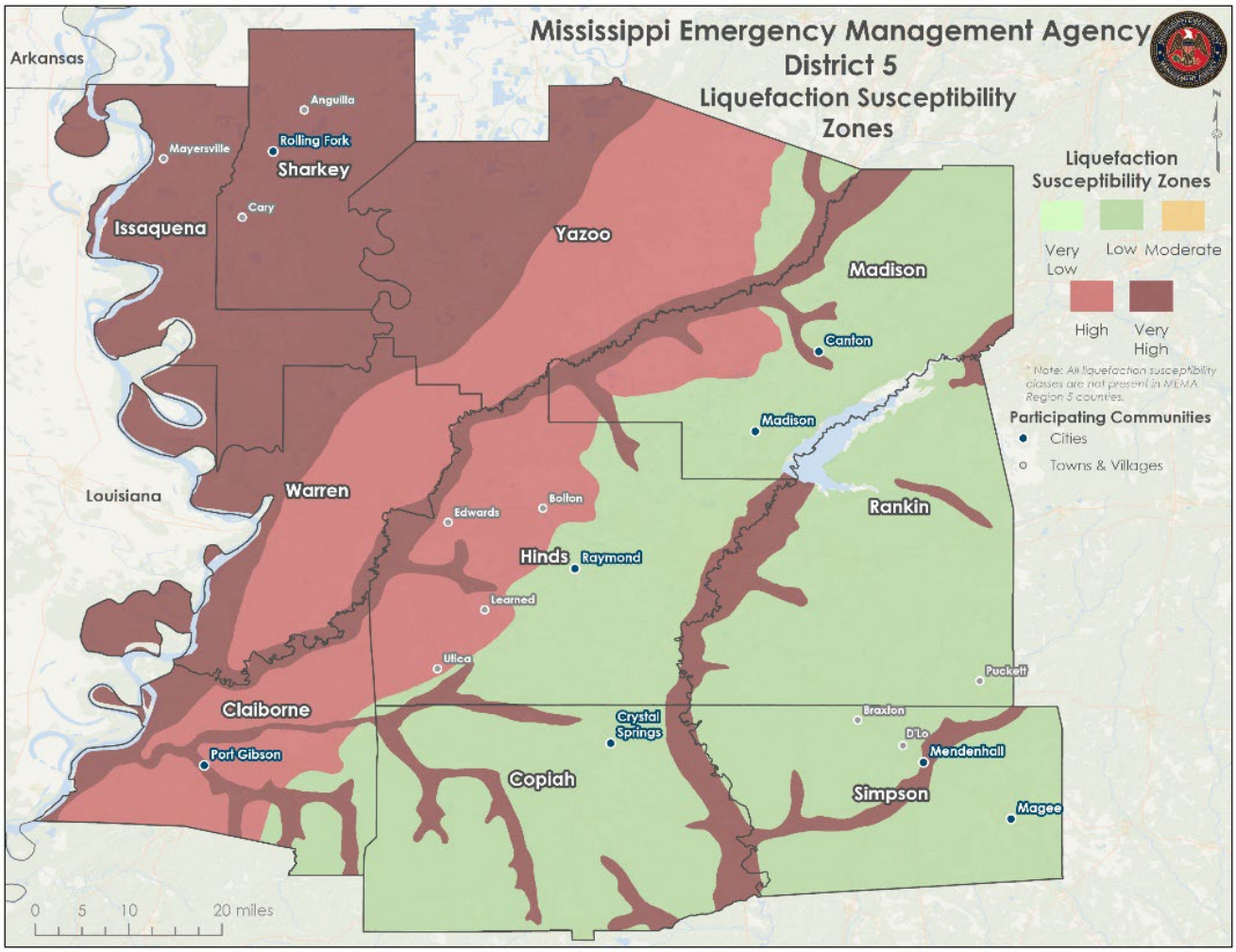
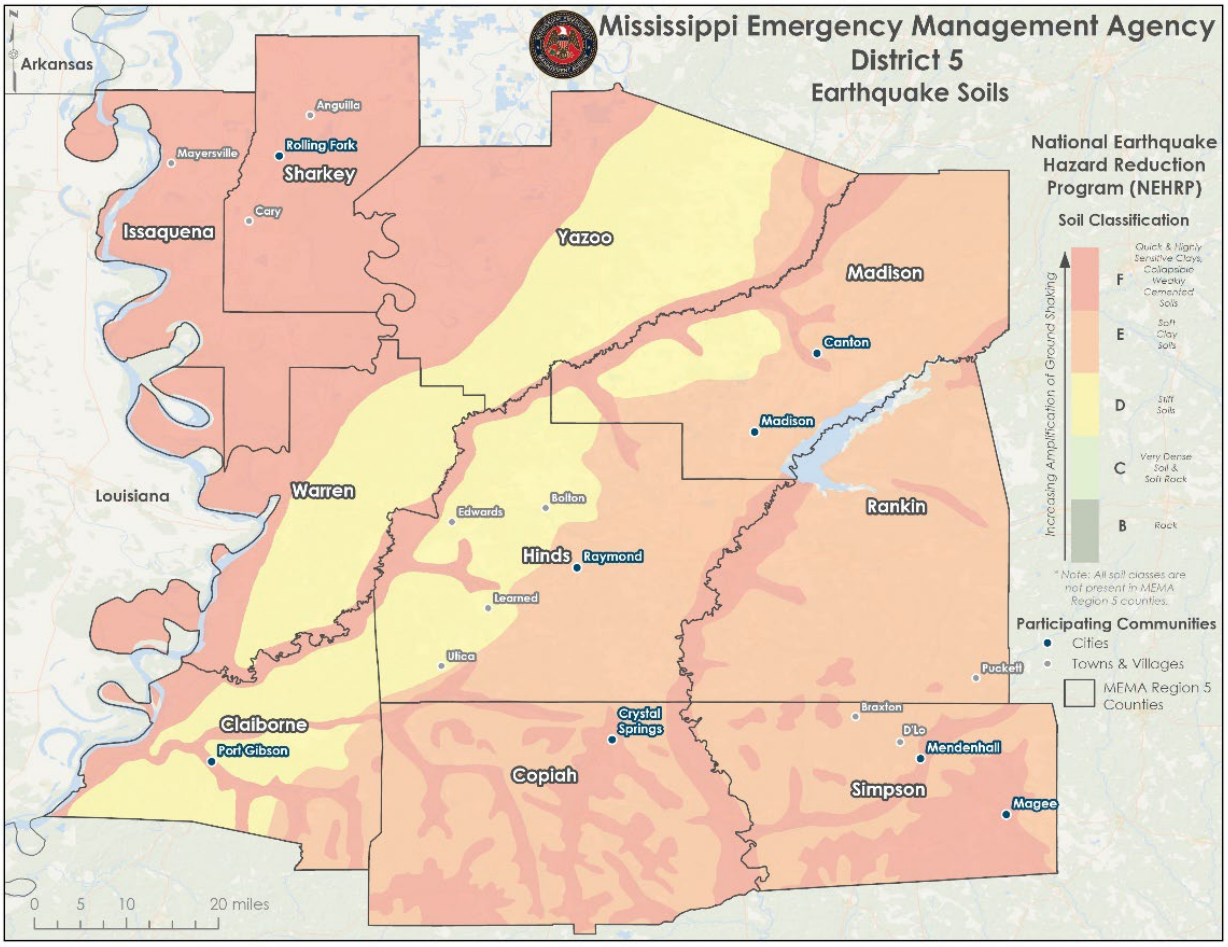


FIGURE 8: MEMA DISTRICT 5 EARTHQUAKE SOILS



4.3.4.2. CRITICAL FACILITIES

Although earthquakes occur infrequently in Copiah County, seismic activity associated with the New Madrid Seismic Zone could result in ground shaking that damages critical facilities and infrastructure. Because the City of Crystal Springs has soils and geography that put it at lower risk of earthquake impacts, the impacts of earthquake on critical facilities, community lifelines, natural and cultural resources, and infrastructure within the City are likely to be lower than the rest of the District.

4.3.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Earthquakes have the potential to damage cultural, historic, and natural resources through ground shaking and ground deformation associated with regional seismic activity such as the New Madrid Seismic Zone. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be particularly vulnerable due to age, unreinforced masonry construction, or shallow foundations that are susceptible to cracking or collapse during seismic events. Natural resources may be affected through soil instability, slope failure, altered drainage patterns, and damage to wetlands, streams, or wildlife habitats. In the event of a rare strong earthquake, resources within high liquefaction susceptibility zones and moderate seismic risk are the most at risk of earthquake impacts.

4.3.4.4. PEOPLE

Some populations may face greater risk to earthquakes--the relatively short warning time typically provided for earthquakes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

As noted in the base plan, although earthquakes are rare, rural communities with limited access to emergency services and infrastructure that may be disrupted by the impacts of an earthquake are at increased risk, as are vulnerable populations. These populations can experience disproportionate impacts to earthquakes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low to medium SVI score and therefore may recover faster than other residents of District 5.

4.3.4.5. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking. Because City of Crystal Springs has soils and geography that put it at lower risk of earthquake impacts, the impacts of earthquake on critical facilities, community lifelines, natural and cultural resources, and infrastructure within City of Crystal Springs and its jurisdictions are likely to be lower than the rest of the District.

4.3.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

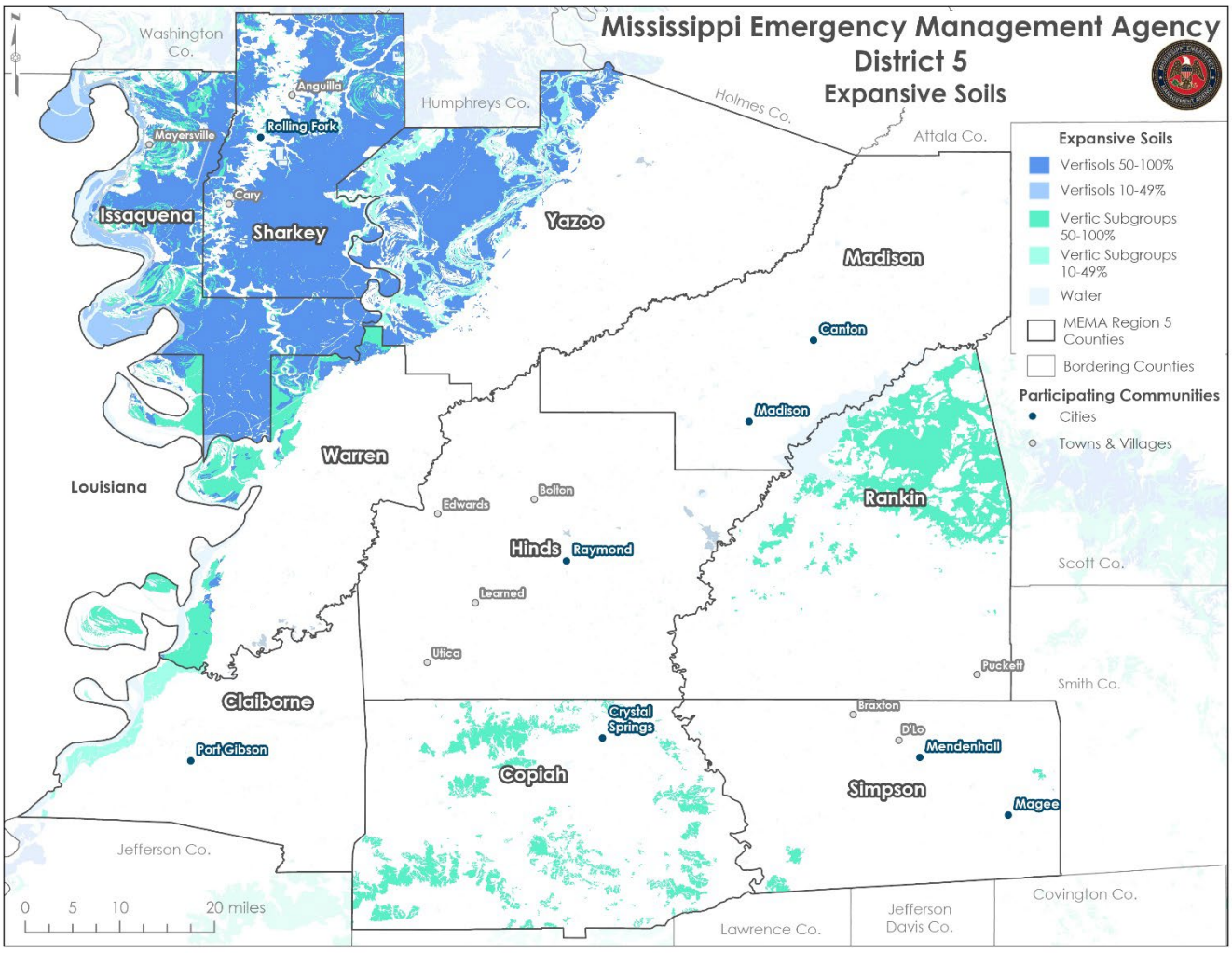
Although there have been some increases in the housing stock in the City, the overall stabilization in development and population across the City of Crystal Springs may lead to lower impacts of earthquakes on its residents in the future.

4.4. EXPANSIVE SOILS

4.4.1. LOCATION AND EXTENT

As noted in the base plan, expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. City of Crystal Springs does not have expansive soils and therefore is not at risk of its impact. More information about location and extent of expansive soils within the District is provided in the base plan. **Figure 9** displays where expansive soils are in the District and based on the map, there are no expansive soils within the Crystal Springs planning area. Refer to the base plan for more detailed information on expansive soils across the District.

FIGURE 9: MEMA DISTRICT 5 EXPANSIVE SOILS



4.4.2. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the D5 Region, including Copiah County and the City of Crystal Springs.

4.4.3. PROBABILITY OF FUTURE OCCURRENCES

Since there are no expansive soils within the City, the probability of future occurrences is **Unlikley.**

4.4.4. LOCALIZED VULNERABILITY ASSESSMENT

4.4.4.1. OVERALL VULNERABILITY

There are no expansive soils located in the City of Crystal Springs; therefore, the risk of expansive soils is **Low**.

4.4.4.2. CRITICAL FACILITIES

Expansive soil does not pose a risk to the City of Crystal Springs; therefore, no critical facilities are impacted or vulnerable.

4.4.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Expansive soil does not pose a risk to the City of Crystal Springs, therefore no cultural, historic, or natural resources are impacted or vulnerable.

4.4.4.4. PEOPLE

The risk factors for expansive soils are structural and not demographic in nature. The people of City of Crystal Springs are at overall lower relative risk than the rest of the District, due to no expansive soils in the planning area.

4.4.4.5. STRUCTURES AND SYSTEMS

Expansive soils do not pose a risk or impact on structures and system within the City of Crystal Springs due to the lack of expansive soils in the planning area.

4.4.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Expansive soil does not pose a risk to the City of Crystal Springs, therefore changes in development do not impact the risk posed to the City. However, if expansive soil were persistent in the City, the increase in the housing stock in the City, may lead to lower impacts of expansive soils on its residents in the future.

4.5. FLOOD

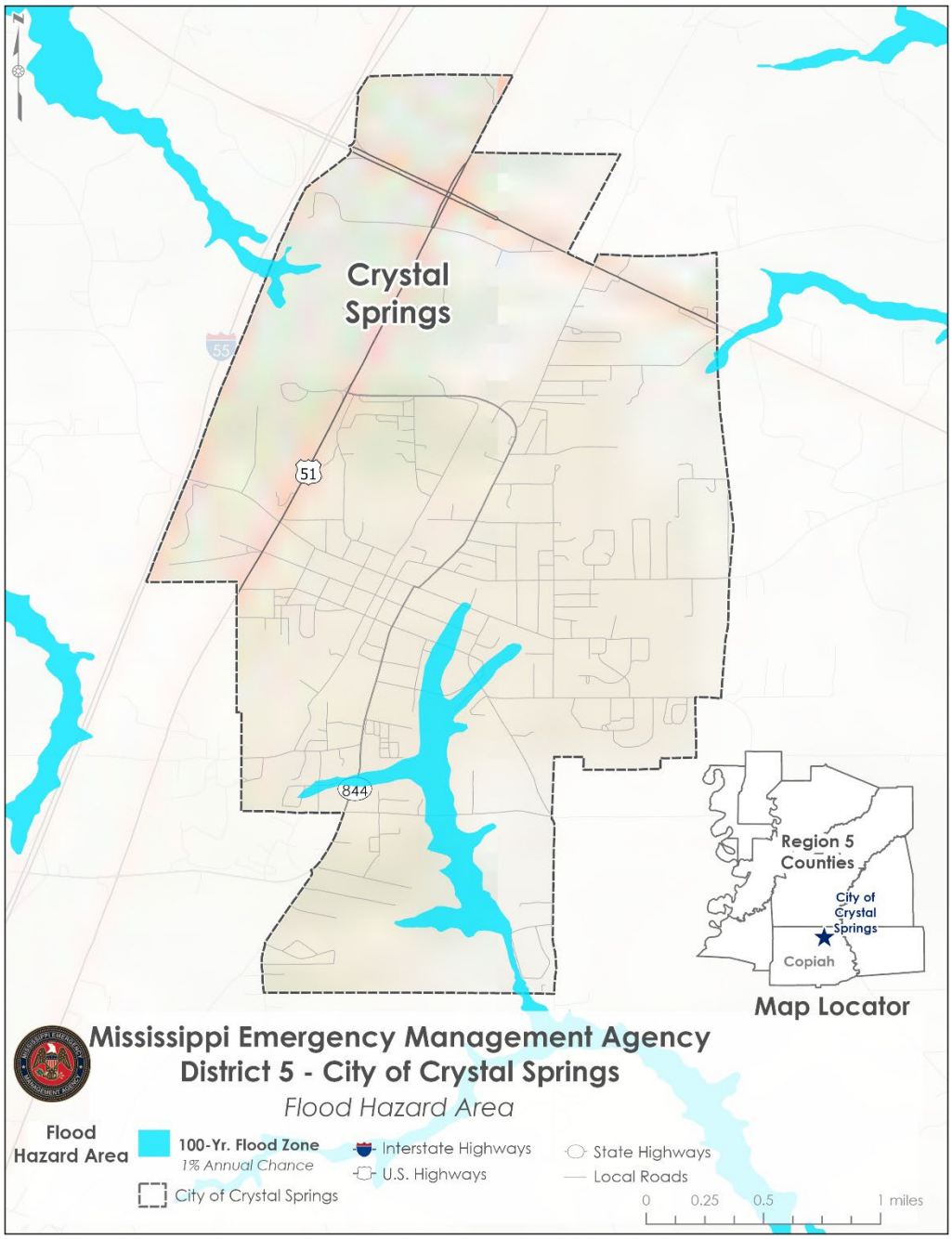
4.5.1. LOCATION

Flooding events are only tracked at the county level and the numbers below represent the statistics for Copiah County. Floods are the most common type of natural disaster, occurring when water overflows onto land that is typically dry after heavy rainfall, storm surges, or rapid snowmelt. Flooding often leads to significant impacts on both human life and the environment. This section provides detailed information about the location, extent, previous occurrences, and overall vulnerability of communities within City of Crystal Springs to flooding than is provided in the base plan.

For purposes of this hazard profile and vulnerability analysis, the geographic location/extent for river flooding will be primarily considered as those areas at risk to the 100-year flood (also known as the 1% annual chance flood). The 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. However, the accompanying maps also show the 500-year floodplains (also known as the 0.2% annual chance floodplains) for two major reasons. First, climate models suggest that the planning area should anticipate rain events with increasing intensity in the coming years and decades. Second, any future population growth may result in new development within or near 500-year floodplains. **Figure 10** below shows the location of flood hazard areas within City of Crystal Springs.

The City's main waterways include local creeks that feed into larger regional river systems. The principle creeks include the Little Copiah Creek, Whiteoak Creek, Clear Creek and Brushy Creek. Refer to the base plan for more detailed information on floods across the District.

FIGURE 10: CITY OF CRYSTAL SPRINGS FLOOD HAZARD AREAS



4.5.2. EXTENT

Riverine flooding is among the most significant hazards in the planning area due to its ability to impact large geographic areas, threatening a significant number of people and properties, the relatively small amount of flood water that it takes to cause significant injury or property damage, and the ability of flood water to linger for days, causing extensive damage. Because variations in geography, elevation, and building design mean that the same flood can cause a wide variety of extents of damage to different structures, the variation in extent across the County is most accurately captured by the flood zone mapping provided above under “location.”

The most significant recorded flooding event in the State's history, indicating the potential extent of the threat of the flood hazard, was in 1927, when persistent heavy rainfall and run-off inundated 27,000 square miles. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

4.5.3. PREVIOUS OCCURRENCES

Since 1972 there have been five federal disaster declarations pertaining to flooding in Copiah County*, details of which are provided below in **Table 17**. There have been a significant number of flooding events throughout Copiah County but zero have been recorded in the City.

TABLE 17: FLOODING-RELATED MAJOR DISASTER DECLARATIONS IN CITY OF CRYSTAL SPRINGS

Disaster Number	Description	(Declaration Date) and Incident Period	Individual Assistance	Public Assistance
DR-4538	Severe Storm, Flooding and Mudslides	(4/23/2020) 4/22/2020-4/23/2020	N	Y
DR-1436	Tropical Storm	(10/1/2002) 9/23/2002-10/6/2002	N	Y
DR-499	Flooding, Severe Storm, Tornado	(4/1/1976) 4/1/1976	Y	Y
DR-430	Heavy Rains, Flooding	(4/18/1974) 4/18/1974	Y	Y
DR-318	Heavy Rains, Flooding	(1/19/1972) 1/19/1972	N	Y

** Federal disaster areas are only tracked at the county level. The disasters above represent the statistics for Copiah County.*

Between the 2015 and 2020 plans, there were six flooding events in Copiah County, causing $130,000 in property damage. Since the 2020 plan, there have been 12 such events, causing $410,000 in damage, no fatalities, and no injuries according to information provided by the NCEI. Additional information on these events is provided in **Table 18.**

Table 18. Individual Flood Events 2020-2025

Date	Time (CST-6)	Event Description	Assessed Damages	Estimated Flood Depth
01/14/2020	17:00	A few roads in the western part of the county were flooded.	$5,000	4 inches
12/14/2022	08:30	Portions of Swilley Road were washed out.	$50,000	6 inches
12/14/2022	08:30	Portions of Sylvarena Road were washed out.	$50,000	6 inches
1/24/2024	09:10	Heavy rain led to flash flooding along the MS Highway 28 corridor. Dentville Road near South Raymond Road was flooded, and parts of MS Highway 28 were flooded.	$10,000	6 inches
1/24/2024	09:10	Sylvarena Road at Lott Smith Rd was flooded.	$1,000	4 inches
1/24/2024	09:50	Widespread flash flooding in and around town with 4 to 6 inches of depth in most areas.	$25,000	6 inches
1/24/2024	09:55	Parts of Hwy 28 were flooded.	$1,000	4 inches

1/24/2024	10:05	Widespread flooding occurred in the Georgetown area.	$15,000	6 inches
1/24/2024	12:09	Lake Hazle banks were overtopped on the south shore, putting water across Lake Hazle Drive.	$1,000	6 inches
2/11/2024	21:30	Portions of Old Highway 51 at the Hinds-Copiah county line were flooded with 6 inches of water.	$1,000	6 inches
5/17/2024	06:05	There was flooding on several roads around the Hazlehurst area including Monticello Street, Raymond Road, and Bethesda Road. Eight houses were flooded on Vardaman Street, and residents had to be rescued.	$250,000	10 inches
5/17/2024	06:05	A portion of Clegg Road was flooded.	$1,000	4 inches

4.5.4. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 18 flooding events in the past 10 years in Copiah County. However, data from the NCEI Storm Events Database does not provide enough granularity to accurately assess that all 17 events impacted the City of Crystal Springs. With this in mind, representatives of the community felt comfortable with the assessment that that probability of flooding occurring within the jurisdictional boundaries of Crystal Springs in the future is **low**. As climate change increases the intensity and unpredictability of rainfall, the likelihood of flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience.

4.5.5. LOCALIZED VULNERABILITY ASSESSMENT

4.5.5.1. OVERALL VULNERABILITY

As noted in the base plan, flooding can cause widespread damage to buildings, roads, utilities, and public infrastructure, and can significantly impact all eight community lifelines as well as natural, historical, and cultural resources. Moderate vulnerability areas including Copiah, Claiborne, Hinds, Madison, Rankin and Simpson Counties experience moderate flood risk due to mixed terrain and partial exposure to flood-prone zones. While not as frequently impacted as Delta counties, these areas still face risks from localized flooding and inadequate stormwater systems. The City is at a **Moderate** risk of impacts from flooding events. This section provides further contextualization for the anticipated vulnerability to flooding events.

4.5.5.2. CRITICAL FACILITIES

There are zero critical facilities in the floodplain areas in the City of Crystal Springs. Flooding poses a notable vulnerability to the community despite the absence of critical facilities within the 100-year or 500-year floodplains. Even localized or unmapped flooding can inundate utility systems, potentially contaminating drinking water, disrupting wastewater treatment, and causing power and communication outages that impede emergency response and continuity of government. Additionally, flooded roads and bridges may block access to critical facilities and essential services, delaying emergency response, evacuation operations, and overall recovery efforts.

4.5.5.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Flooding can significantly damage the City's cultural, historic, and natural resources by causing erosion, structural deterioration, and long-term degradation of sensitive sites. Historic buildings, cemeteries, archeological sites, and culturally significant structures are vulnerable to prolonged inundation, saturated soils, and repeated flood events, which can weaken foundations, shift grave markers, and

damage unreinforced masonry. Floodwater can also erode soils and displace or destroy archeological materials, leading to permanent loss of cultural assets. Natural areas face similar risks, as flooding can alter stream channels, degrade wetlands and water quality, damage vegetation, and disrupt wildlife habitats. While some ecosystems may recover, severe or frequent flooding can result in lasting changes to natural and cultural landscapes.

4.5.5.4. PEOPLE

Some populations may face greater risk to flooding--the relatively short warning time typically provided for flooding means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations most at risk of the impacts of flooding include older adults, low-income families, and individuals without access to flood insurance or reliable transportation, as these can make it more difficult to evacuate when flood warnings occur. These populations can experience disproportionate impacts to floods and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low to medium SVI score and therefore may recover faster than other residents of District 5.

4.5.5.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, flooding has caused over $540,000 in damages in the past 10 years within Copiah County and is expected to continue in the future. Flooding poses a significant risk to structures and critical systems in the City by causing physical damage, inundation, and operational disruptions. Floodwaters can damage building foundations, walls, and interiors, particularly in structures located in low-lying areas or flood-prone zones, leading to costly repairs and long-term structural degradation. Electrical, mechanical, and HVAC systems are especially vulnerable to water damage, which can result in power outages and prolonged service interruptions. Flooding may also impair transportation networks, water distribution, wastewater treatment, and drainage systems, reducing access to essential services and facilities. These impacts can disrupt emergency responses, government operations, and community recovery efforts, especially when flood events are recurrent or severe.

4.5.5.6. NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The National Flood Insurance Program (NFIP) is a federal program managed by FEMA that provides flood insurance to property owners, renters, and businesses in participating communities. It aims to reduce flood damage by restricting floodplain development and offering affordable insurance, as standard homeowners insurance typically does not cover flood damage. The City of Crystal Springs is a participating community in the NFIP. For more information about the NFIP, reference **Section 5.8.6.3** in the base plan.

According to current data from the NFIP, there are zero Repetitive Loss properties in City of Crystal Springs as of 2025.

4.5.5.7. IMPACTS OF CHANGES IN DEVELOPMENT

The static development and population across the City of Crystal Springs may lead to lower impacts of flooding. However, while the population has been stagnant over the years, there has been an increase in housing and increased development could increase risk to damage from flooding. An increase in the number of structures in the floodplain allows for more permeable surface to absorb floodwater, along with strain on stormwater management systems that can contribute to an overall increase in the severity of flood events.

Appendix B: City of Crystal Springs

4.6. SEVERE STORMS

4.6.1. LOCATION AND EXTENT

Severe storm events are largely tracked at the county level and the numbers below represent the statistics for Copiah County. Severe storms are a region-wide hazard in the Mississippi Delta and are not confined to specific locations. Severe storms affect the entire planning area equally; City of Crystal Springs and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. Refer to the base plan for more detailed information on severe storms across the District.

4.6.2. PREVIOUS OCCURRENCES

Recent events highlight the destructive potential of these storms. Since 2020, the following events have taken place in Copiah County:

- 45 thunderstorms, causing $1,971,000 in property damage
- One occurrence of severe lightning causing $10,000 in property damage
- Four high wind events, causing $14,000 in property damage
- 16 hailstorms, causing $3,621,000 in property damage

4.6.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 66 severe storm events in the past five years. Therefore, the probability of future occurrences of severe storms in Copiah County is **Extremely Likely**, especially during peak storm seasons. These storms are expected to occur multiple times per year.

4.6.4. LOCALIZED VULNERABILITY ASSESSMENT

4.6.4.1. OVERALL VULNERABILITY

As noted above, the risk of severe storms (due to the frequency and ubiquity of these events) is largely equal across the entire planning area, posing risks to natural and cultural resources and community lifelines, as discussed in the base plan. However, demographic and development factors can cause variation in vulnerability to this risk. Based on the frequency and the extent of damage that severe storms can cause the risk of severe storms is **High** for Copiah County and the City of Crystal Springs. This section provides further contextualization for the anticipated vulnerability of sever storm events.

4.6.4.2. CRITICAL FACILITIES

Since severe storms impact the planning area equally, all critical facilities are at risk of severe storm impacts. Severe storm events, including strong thunderstorms accompanied by high winds, heavy rainfall, hail, and lightning, present an ongoing risk to critical facilities in the City. These storms can cause damage to essential buildings such as hospitals, emergency response facilities, schools, government offices, roof failure, shattered windows, and impacts of debris.

4.6.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Severe storms pose significant risks to the City of Crystal Springs' cultural, historic, and natural resources. High winds, heavy rainfall, flooding, hail, and lightning can damage historic buildings, cemeteries, monuments, and archaeological sites, especially those that are older or lack structural reinforcement. Wind-driven debris, roof failures, falling trees, erosion, and prolonged moisture exposure can further threaten the stability and preservation of these assets. Intense rainfall may also erode soils and disturb archaeological materials, resulting in the loss of important historical context and integrity. Additionally, the City's natural resources are vulnerable to storm impacts that can damage forested

areas, alter stream channels, degrade wetlands, and reduce water quality due to increased sedimentation and stormwater runoff.

4.6.4.4. PEOPLE

The wind, hail, lightning, and flooding often produced by severe storms can lead to injury or death. Some populations may face greater risk to severe storms--the relatively short warning time typically provided for severe storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. These populations can experience disproportionate impacts to severe storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low to medium SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.6.4.5. STRUCTURES AND SYSTEMS

Aging infrastructure and limited emergency resources without redundancies increase the vulnerability of structures and systems in City of Crystal Springs to the impacts of severe storms. However, this vulnerability is not markedly higher or lower in the County than the rest of the District; the vulnerability of structures and systems across D5 is described in more detail in the base plan.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Copiah County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.6.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The static development and population across the City of Crystal Springs means fewer people impacted by severe storms. However, there has been an increase in the number of housing units within the City and could increase the number of structures for storms to damage.

4.7. SEVERE WINTER WEATHER

4.7.1. LOCATION AND EXTENT

Severe storm events are only tracked at the county level and the numbers below represent the statistics for Copiah County. Severe winter weather is a region-wide hazard in the Mississippi Delta and is not confined to specific locations. Winter storms affect the entire planning area equally; City of Crystal Springs and its jurisdictions are not more or less susceptible to their impact than other communities in District 5. More information on the extent of the threat posed by these storms is provided in the base plan. However, the extent of these storms is limited, with an average amount of annual snowfall in Copiah County of 0-1 inches. Refer to the base plan for more detailed information severe winter weather across the District.

4.7.2. PREVIOUS OCCURRENCES

Several impactful severe winter weather events have occurred in City of Crystal Springs over the past two decades. The most significant of these in recent years include:

- The January 2018 cold snap that led to challenges like burst pipes, increased heating demands, and risk to seniors and other vulnerable populations
- The February 2021 freezing rain, sleet, and snow event that led to widespread power outages due to ice accumulation
- The January 2014 snowstorm led to significant travel hazards

Between 2015 and 2020, there were two severe winter weather events in Copiah County, causing zero reported property damage. Since the 2020 plan update, there have been four such events, causing $185,000 in damage.

4.7.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been six events in the last 10 years. Therefore, the probability of future occurrences in the City, is **Highly Likely**.

4.7.4. LOCALIZED VULNERABILITY ASSESSMENT

4.7.4.1. OVERALL VULNERABILITY

All counties within District 5 are vulnerable to the impact of severe winter storms. Because it is closer to the Southern portion of the region, winter weather in City of Crystal Springs may be slightly less severe than across the region. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the City's natural, historic, and cultural assets, as discussed in the base plan. Severe winter storms can disrupt utility and critical infrastructure which can significantly disrupt the City. Based on the frequency and the severity of severe winter storms, the risk to the City of Crystal Springs is **Medium**. This section provides further contextualization for the anticipated vulnerability of severe winter storms.

4.7.4.2. CRITICAL FACILITIES

Severe winter weather, including freezing temperatures, ice, and occasional snow, can disrupt critical facilities in the City by causing power outages, damaging water and wastewater systems, and limiting transportation access. Freezing conditions may result in broken pipes, equipment failures, and interruptions to essential services at hospitals, emergency response facilities, schools, and government buildings.

4.7.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Although severe winter weather occurs infrequently, its effects can result in lasting damage to sensitive cultural, historic, and natural resources. Severe winter weather can adversely affect cultural, historic, and natural resources in the City by causing structural stress, moisture damage, and ecological disruption. Historic buildings, cemeteries, and monuments may experience cracking, spalling, or material deterioration due to freeze–thaw cycles, while ice accumulation and fallen trees can damage structures and cultural landscapes. Natural resources are also vulnerable, as winter weather can damage vegetation, alter wildlife habitats, and degrade water quality through increased runoff and erosion.

4.7.4.4. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations. As with other hazards, those who are elderly, disabled, or economically disadvantaged are at heightened risk due to limited access to reliable heating, transportation, and emergency services, and a reduced ability to physically withstand cold temperatures. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms. These populations can experience disproportionate impacts to severe winter weather and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low to medium SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.7.4.5. STRUCTURES AND SYSTEMS

Urban centers are more likely to experience infrastructure strain, including power outages, traffic disruptions, and increased demand for emergency services and shelters. While these areas may experience slightly milder winter conditions, the potential impacts are magnified due to the higher number of residents, aging utility systems, and limited access to alternate heating sources.

4.7.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Stagnant population growth in the City reduces the strain on electrical and other utility systems, reducing the likelihood that these systems experience failure during significant events. However, this may also contribute to slower emergency response times, increasing risk. Additionally, the number of housing units has increased which could increase the number of structures at risk of damage from severe winter storms.

4.8. TORNADO

4.8.1. LOCATION AND EXTENT

Tornado events are only tracked at the county level and the numbers below represent the statistics for Copiah County. Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments.

Due to the unpredictable nature of tornado formation and the ability for the entire planning area to be impacted by severe storms, the entirety of City of Crystal Springs is equally likely to experience a tornado of any magnitude. Tornados of any strength on the Enhanced Fujita (EF) scale are possible throughout the county. Refer to the base plan for more detailed information on tornadoes across the District.

4.8.2. PREVIOUS OCCURRENCES

Between 1950 and 2022, there were 54 tornadoes reported in Copiah County, causing a total of $10,812,000 in property damage.

4.8.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 54 tornadoes in the past 72 years. This equates to a tornado event occurs every 1-2 years. Historical data spanning 72 years indicates a consistent pattern of tornado activity across District 5, indicating that tornadoes are **Likely** if not certain to recur at some point in the future.

4.8.4. LOCALIZED VULNERABILITY ASSESSMENT

4.8.4.1. OVERALL VULNERABILITY

More populous and developed jurisdictions like the City of Crystal Springs face elevated risk from tornadoes due to greater exposure and potential for cascading impacts. These areas are more likely to experience significant property damage, disruption of services, and challenges in post-disaster recovery. Additionally, mobile homes are extremely susceptible to high winds and may sustain more damage or be flipped over during a strong tornado. Tornadoes cause flying debris which can be dangerous for people in the surrounding areas and other buildings, infrastructure, and critical facilities. Due to the severity tornadoes can cause, they pose a **High** risk to the City. This section provides further contextualization for the anticipated vulnerability to tornadoes.

4.8.4.2. CRITICAL FACILITIES

Tornadoes pose a serious risk to critical facilities in the City of Crystal Springs due to extreme winds and flying debris that can cause sudden and severe structural damage. Facilities such as hospitals, emergency response buildings, schools, and water or wastewater infrastructure may experience roof failure, wall collapse, or loss of utilities, leading to immediate service interruptions. Power and communications outages are common during tornado events, and debris-blocked roads can restrict access to critical facilities and delay emergency response.

4.8.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tornadoes can significantly impact cultural, historic, and natural resources in the City through extreme winds, flying debris, and associated storm damage. Historic structures, cemeteries, monuments, and archeological sites may sustain damage or complete loss due to building collapse, fallen trees, or debris impacts, particularly where resources are older or lack structural reinforcement. Cultural landscapes and historic settings can also be altered by the destruction of surrounding features such as fences, vegetation, and access paths. Natural resources may be affected through forest damage, habitat loss, soil erosion, and disruption of wildlife caused by wind and debris.

4.8.4.4. PEOPLE

Some populations may face greater risk to tornadoes--the relatively short warning time typically provided for tornadoes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. 2,487 (22.4%) of the residents of Copiah County reside in mobile or manufactured homes, placing them at increased risk. These populations can experience disproportionate impacts to tornadoes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low to medium SVI score and therefore may recover faster than other residents of District 5.

4.8.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that do not have safe rooms or have not been retrofitted for extreme winds are vulnerable to the impacts of tornados, including in City of Crystal Springs, as described in the base plan. City of Crystal Springs may be at slightly higher risk, compared to other areas in the District because it is more developed and there are more such structures to be impacted.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. Copiah County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.8.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The static development and population across the City of Crystal Springs mean fewer people and structures for tornadoes to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tornadoes. Additionally, the number of housing units in the City has increased which could increase the risk of damage from tornadoes.

4.9. TROPICAL STORM/HURRICANE

4.9.1. LOCATION AND EXTENT

Like the rest of District 5, City of Crystal Springs is inland but is still vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. This risk is not measurably varied across the County or planning area, except for low-lying and flood-prone areas that might be more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

The extent of the impacts of tropical storm typically includes sustained winds of 30-60 MPH with higher gusts, heavy rainfalls of six or more inches in a 24-hour period, and occasional tornadoes. Refer to the base plan for more detailed information on tropical storms and hurricanes across the District.

4.9.2. PREVIOUS OCCURRENCES

City of Crystal Springs is inland but has experienced the direct impacts of tropical storms in the past. The tracks of the following storms have passed directly through the county, producing damaging wind, heavy rainfall, power outages, and occasional tornadoes:

- Unnamed Tropical Depression (1987)
- Tropical Storm Andrew (1992)
- Tropical Depression Matthew (2004)
- Tropical Storm Ida (2021)

4.9.3. PROBABILITY OF FUTURE OCCURRENCES

Although the City of Crystal Springs is located inland, the probability of experiencing hurricane-related impacts remains **Low.** The County and the City of Crystal Springs can expect to experience the effects of a tropical storm or hurricane approximately every 5 to 10 years, although climate trends and increased storm intensity may elevate risk.

4.9.4. LOCALIZED VULNERABILITY ASSESSMENT

4.9.4.1. OVERALL VULNERABILITY

Due to the low frequency, geography, and potential damage from tropical storms and hurricanes, they pose a **Medium** risk to the City. This section provides further contextualization for the anticipated vulnerability of tropical storms and hurricanes.

4.9.4.2. CRITICAL FACILITIES

Although weakened inland, tropical storms and hurricanes can affect critical facilities in the City through heavy rainfall, strong winds, and localized flooding that strain infrastructure and disrupt essential operations. Hospitals, emergency response facilities, schools, government buildings, and water or wastewater systems may experience structural damage, power and communications outages, and flooding of mechanical or electrical components. Excessive rainfall can also overwhelm drainage systems and flood roadways, restricting access to critical facilities and delaying emergency response.

4.9.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tropical storms and hurricanes can adversely impact cultural, historic, and natural resources in the City through heavy rainfall, strong winds, localized flooding, and prolonged soil saturation. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, flooding, or erosion, particularly where structures and sites are older or not designed to withstand prolonged moisture exposure. Excessive rainfall can erode soils and displace archeological materials,

while flooding may degrade cultural landscapes and historic settings. Natural resources are also vulnerable, as tropical storm impacts can damage forested areas, alter stream channels, degrade wetlands, and reduce water quality due to increased runoff and sedimentation.

4.9.4.4. PEOPLE

Some populations may face greater risk to tropical storms--the relatively short warning time typically provided for tropical storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. These populations can experience disproportionate impacts to tropical storms and hurricanes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low to medium SVI score and therefore may recover faster than other residents of District 5.

4.9.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storms like high winds. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of these storms across the planning area, including in the City of Crystal Springs, as described in the base plan. The City may be at slightly higher risk of these impacts simply because it is more developed than other jurisdictions in the district, and there are more such facilities to be impacted. As noted above, low-lying and flood-prone areas are more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. Copiah County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.9.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The static development and population across the City of Crystal Springs mean fewer people and structures for these storms to damage. However, there has been an increase in housing units within the City which could increase the number of structures at risk of damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tropical storms.

4.10. WILD/URBAN INTERFACE (WUI) FIRE

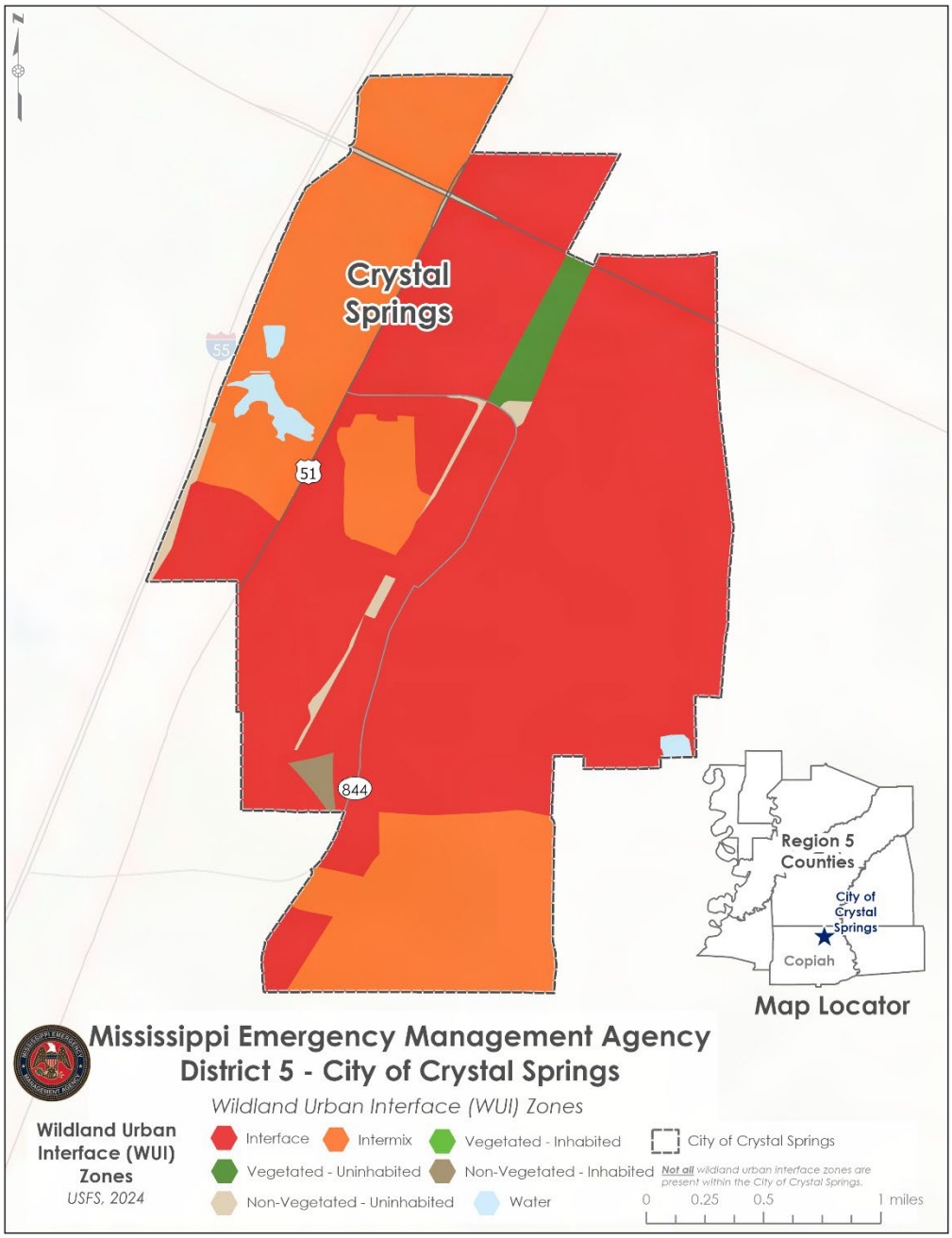
4.10.1. LOCATION AND EXTENT

Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas. There are two types of WUI Zones, and they are briefly described below.

- **Interface:** Development is bordered by wildlands on at least one side.
- **Intermix:** Development is surrounded on two or more sides by wildlands.

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. **Figure 11** below is a map showing the area where this hazard is most significant in City of Crystal Springs. The City has substantial WUI interface areas across the entire jurisdiction. Refer to the base plan for more detailed information on Wild/WUI fires across the District. The extent of a potential WUI fire impact in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development, but is not substantively different in City of Crystal Springs than in the District overall.

FIGURE 11: WILDLAND URBAN INTERFACE (WUI) AREA IN CITY OF CRYSTAL SPRINGS



4.10.2. PREVIOUS OCCURRENCES

The City of Crystal Springs faces risks from both structural fires and wildfires, as demonstrated by the 2023 I55 Wildfire. During that event, a series of fires stretched roughly eight- miles near Gallman and Crystal Springs, leading to traffic disruptions, damage to utilities, extensive vegetation loss, and threats to nearby homes amid severe drought conditions. This event was not reported in State level data. Based on data from the Mississippi State Forestry Commission, there have not been any fires reported in the City. However, it is also important to note that some District 3 participating communities provided

anecdotal information that not all previous fire events have been captured using state level data. Due to this data limitation, it is possible that the number of previous occurrences could be more than reported.

4.10.3. PROBABILITY OF FUTURE OCCURRENCES

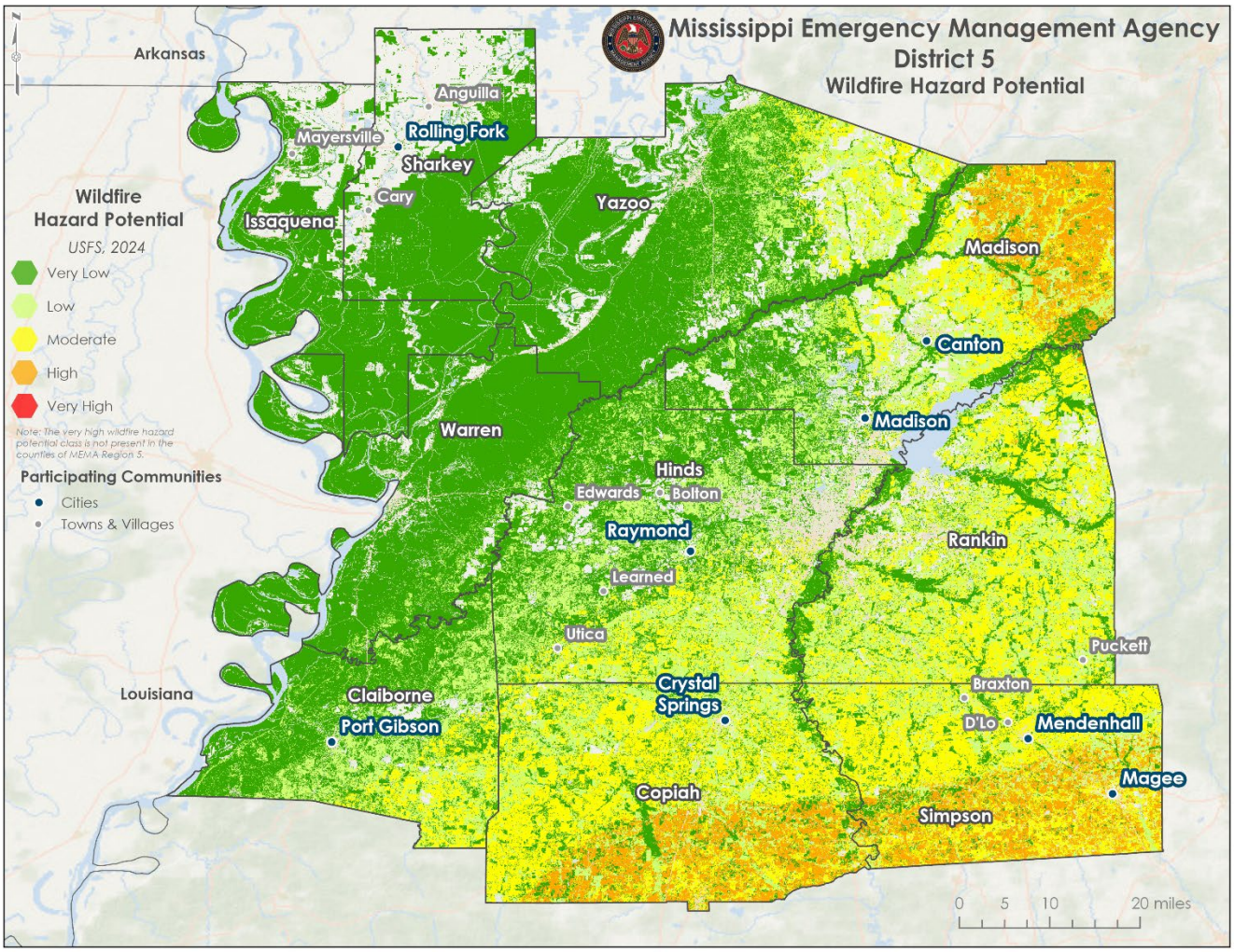
Wildland/Urban Interface (WUI) fires are expected to remain a recurring hazard in City of Crystal Springs. Hundreds of wildfires occur in Mississippi each year, indicating that such fires may occur in the City. Since the last plan update, no major urban or wildfire has occurred in City of Crystal Springs. Due to the prevalence of the WUI zones in the probability of the City responding to a severe fire is **Extremely Likely**.

4.10.4. LOCALIZED VULNERABILITY ASSESSMENT

4.10.4.1. OVERALL VULNERABILITY

Jurisdictions like the City of Crystal Springs, in the southern part of the district, due to a variety of geographic factors like drier climate and soils and trends in development, are more susceptible to both WUI and urban fire. As seen in **Figure 12** below, wildfire hazard potential is generally medium across the City. Based on the wildfire hazard potential areas, WUI zones, and previous occurrences and impacts posed by the fires, the overall risk to the City is **Medium**. This section provides further contextualization for the anticipated vulnerability to urban/wildfires.

FIGURE 12: MEMA DISTRICT 5 WILDFIRE HAZARD POTENTIAL



4.10.4.2. CRITICAL FACILITIES

Urban and wildland fires pose a significant risk to critical facilities in the City of Crystal Springs by threatening structural integrity, utility systems, and operational continuity. Hospitals, fire stations, schools, government buildings, and water or wastewater facilities may be damaged or rendered inoperable by direct flame contact, radiant heat, smoke infiltration, and wind-driven embers. Fire events can disrupt electrical power, communications, and water supplies needed for medical care, emergency response, and fire suppression, while evacuation orders and hazardous conditions may limit staff access to critical facilities. Wildfires occurring in or near the wildland-urban interface can also restrict transportation routes and delay response efforts. **Figure 13** displays the City's critical facilities and infrastructure in the WUI zones. All critical facilities are at risk of damage from WUI fires.

FIGURE 13: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE WUI ZONES

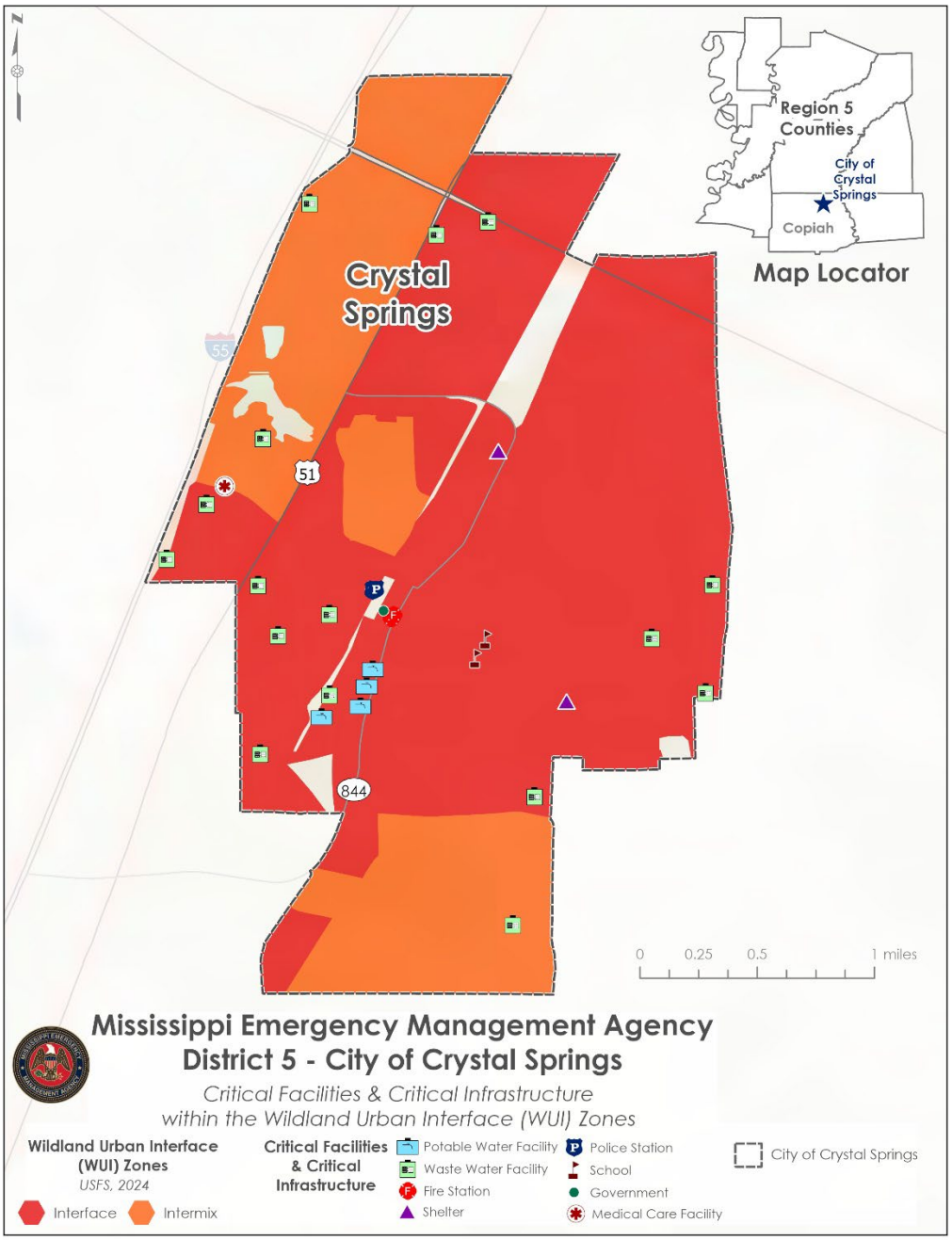


Table 19 lists the critical facilities in City of Crystal Springs lie within the WUI area and are thus at increased risk.

TABLE 19: CRITICAL FACILITIES IN THE WUI

Jurisdiction	Facility Type	Facility	WUI Zone
Crystal Springs	Fire Station	Crystal Springs Fire Department	Interface - Medium Density

Jurisdiction	Facility Type	Facility	WUI Zone
Crystal Springs	Fire Station	Fire Station	Interface - Medium Density
Crystal Springs	Government	Crystal Springs - City Hall	Interface - Medium Density
Crystal Springs	Medical Care Facility - Residential	Copiah Living Center	Intermix - Low Density
Crystal Springs	Police Station	Crystal Springs Police Department	Interface - Medium Density
Crystal Springs	Police Station	Police Station	Interface - Medium Density
Crystal Springs	Potable Water	Middle Gem Plant	Interface - Medium Density
Crystal Springs	Potable Water	North Gem plant	Interface - Medium Density
Crystal Springs	Potable Water	Osborne Street Water Well	Interface - Medium Density
Crystal Springs	Potable Water	South Gem Plant	Interface - Medium Density
Crystal Springs	School	Crystal Springs Elementary	Interface - Medium Density
Crystal Springs	School	Crystal Springs High School	Interface - Medium Density
Crystal Springs	Shelter	National Guard Armory	Interface - Medium Density
Crystal Springs	Shelter	Sports Complex	Interface - Medium Density
Crystal Springs	Waste Water Facility	Copley Street Lift Station	Interface - Medium Density
Crystal Springs	Waste Water Facility	Crystal Springs POTW	Intermix - Medium Density
Crystal Springs	Waste Water Facility	East Georgetown Street Lift Station	Interface - Medium Density
Crystal Springs	Waste Water Facility	Harmony Road Lift Station	Interface - Medium Density
Crystal Springs	Waste Water Facility	Hembree Road Lift Station	Intermix - Low Density
Crystal Springs	Waste Water Facility	Hwy 27 Lift Station	Interface - Low Density
Crystal Springs	Waste Water Facility	Hwy 51 North Lift Station	Interface - Low Density
Crystal Springs	Waste Water Facility	Lee Avenue Lift Station	Interface - Medium Density
Crystal Springs	Waste Water Facility	Mathis Road Lift Station	Interface - Medium Density
Crystal Springs	Waste Water Facility	Morgan Lane Lift Station	Intermix - Low Density
Crystal Springs	Waste Water Facility	Osborne Street Lift Station	Interface - Medium Density

Jurisdiction	Facility Type	Facility	WUI Zone
Crystal Springs	Waste Water Facility	Piazza Street Lift Station	Interface - Medium Density
Crystal Springs	Waste Water Facility	Thrasher Street Lift Station	Interface - Medium Density
Crystal Springs	Waste Water Facility	West Cayuga Street Lift Station	Interface - Medium Density
Crystal Springs	Waste Water Facility	West Georgetown Street Lift Station	Interface - Medium Density
Crystal Springs	Waste Water Facility	Wet Marion Ave Lift Station	Interface - Medium Density

4.10.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Urban and wildland fires can cause significant damage to cultural, historic, and natural resources in the City through flame exposure, extreme heat, smoke, and post-fire environmental degradation. Historic structures, cemeteries, monuments, and archeological sites may be damaged or lost because of direct fire contact, structural weakening from heat, falling trees, or fire-suppression activities. The destruction of surrounding vegetation can alter historic settings and cultural landscapes, reducing their integrity and context. Natural resources are particularly vulnerable, as fires can result in the loss of forested areas and wildlife habitat, degrade air and water quality, and increase erosion and sediment runoff following vegetation loss.

4.10.4.4. PEOPLE

For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Issaquena and Sharkey Counties and the City of Madison, thus putting those populations at a slightly lower risk than the rest of the District.

Populations most at risk of the impacts of fires include older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate when these fires occur. These populations can experience disproportionate impacts to urban and WUI fires and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low to medium SVI score and therefore may recover faster than other residents of District 5. Because it is more urban than the district, people in the City may be at slightly lower risk from wildfire, as the higher access to road infrastructure and warning systems may make evacuation easier. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.10.4.5. STRUCTURES AND SYSTEMS

City of Crystal Springs contains extensive areas of direct exposure to wildfire risk, as shown in the Wildfire Risk Reduction Zones map in the base plan. In these areas, homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk and complicating suppression efforts. The City does, through Copiah County have a Community Wildfire Protection Plan (CWPP) in place, which helps address and reduce risk.

4.10.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In urban areas like the City of Crystal Springs, the expansion of housing into fire-prone zones like forested and rural areas increases the number of people and structures exposed to wildfire hazards.

Development in these areas often leads to fragmented habitats and increased ignition sources, which heighten the potential for wildfires and complicate emergency response efforts.

4.11. HAZARDOUS MATERIAL INCIDENTS

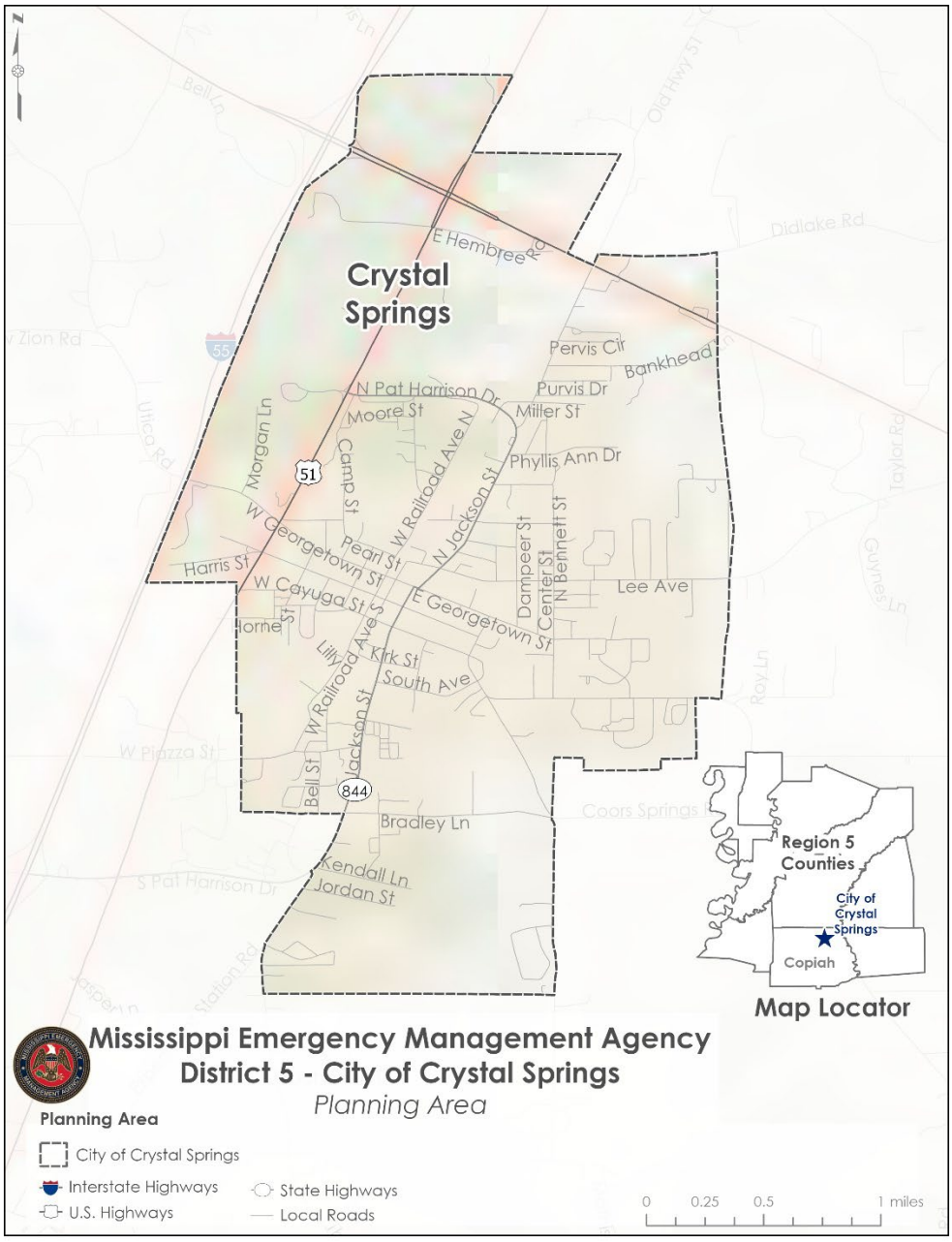
4.11.1. LOCATION AND EXTENT

Hazardous material releases and reports are only tracked at the county level and the numbers below represent the statistics for Copiah County. Hazardous materials incidents can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, agricultural operations, and facilities that store or use chemicals. In City of Crystal Springs, these include:

- U.S. Highway 51
- State Highway 844

As noted in the base plan, the severity of the impact from HazMat incidents depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures. Because City of Crystal Springs is more urban, impacts of a release on the surrounding population might be more significant due to population density, although shorter emergency crew response times may impact the severity of an incident. **Figure 14** below displays the ground transportation in the City.

FIGURE 14: GROUND TRANSPORTATION IN THE CITY OF CRYSTAL SPRINGS



4.11.2. PREVIOUS OCCURRENCES

In Copiah County, there has been a total of 93 hazardous materials releases reported to the EPA since 2014. There is no information about whether any of these releases occurred in the City of Crystal Springs. However, County data is being used to understand risk to the City.

- 2014: 7 reports at 5 facilities
- 2015: 8 reports at 5 facilities
- 2016: 9 reports at 5 facilities

- 2017: 8 reports at 4 facilities
- 2018: 9 reports at 5 facilities
- 2019: 9 reports at 5 facilities
- 2020: 10 reports at 5 facilities
- 2021: 8 reports at 3 facilities
- 2022: 8 reports at 3 facilities
- 2023: 9 reports at 4 facilities
- 2024: 8 reports at 5 facilities

4.11.3. PROBABILITY OF FUTURE OCCUURRENCES

There have been 93 HazMat incidents since 2014 which is about 8-9 incidents a year. The district's extensive transportation infrastructure and industrial activity, and the fact that a major spill in an adjacent county could impact City of Crystal Springs. With major highways, rail lines, and facilities regularly handling and transporting hazardous substances, the potential for accidental spills or releases remains ongoing. Since hazardous materials incidents are not considered "natural hazards", the jurisdictions are not required to evaluate the probability of future occurrences. Therefore, the probability is unrated.

4.11.4. LOCALIZED VULNERABILITY ASSESSMENT

4.11.4.1. OVERALL VULNERABILITY

More populous and developed jurisdictions like the City of Crystal Springs face elevated risk from HazMat incidents due to greater exposure and potential for cascading impacts. These areas are more likely to experience HazMat incidents, and to experience significant disruption of services when they do occur. Since hazardous materials incidents are not considered "natural hazards", the jurisdictions are not required to evaluate the overall risk**.** Therefore, the overall risk is unrated. This section provides further contextualization for the anticipated vulnerability to hazardous material incidents.

4.11.4.2. CRITICAL FACILITIES

Hazardous materials incidents can threaten critical facilities in the City by causing contamination, toxic exposure, or fire and explosion hazards that force evacuations or temporary closures. Facilities such as hospitals, schools, emergency response buildings, government offices, and water or wastewater systems may experience service disruptions due to safety concerns, restricted access, or impacts to supporting utilities. Emergency operations can also be strained as resources are diverted to containment and cleanup efforts.

4.11.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Hazardous materials incidents can negatively affect cultural, historic, and natural resources in the City through contamination of soil, water, vegetation, and sensitive sites. Historic buildings, cemeteries, and archeological resources may be damaged by chemical spills, airborne releases, or cleanup activities that disturb structures and surrounding landscapes. Natural resources are particularly vulnerable, as hazardous substances can pollute streams, wetlands, and groundwater, harm wildlife, and degrade ecosystems for extended periods.

4.11.4.4. PEOPLE

Populations most at risk of the impacts of hazardous materials incidents are those living near transportation corridors, industrial facilities, and storage sites, who are more likely to be lower income.

This population is also less likely to have reliable access to transportation, complicating evacuation efforts. Other vulnerable populations include older adults, children, and those with respiratory conditions, who may face challenges during shelter-in-place orders. These populations can experience disproportionate impacts to hazardous materials incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low to medium SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.11.4.5. STRUCTURES AND SYSTEMS

Because it is more urban than the rest of the district, structures and systems in City of Madison may be at slightly higher risk from HazMat incidents due to the relative number of facilities that might cause releases and structures within a condensed area. Higher access to road infrastructure and warning systems may make evacuation easier than in other areas, as would higher emergency response capability.

4.11.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In urban areas like the City of Crystal Springs, slowed population growth may not increase risk to the population, however there are more housing units being built which could increase risk to structures being damaged or impacted by an incident.

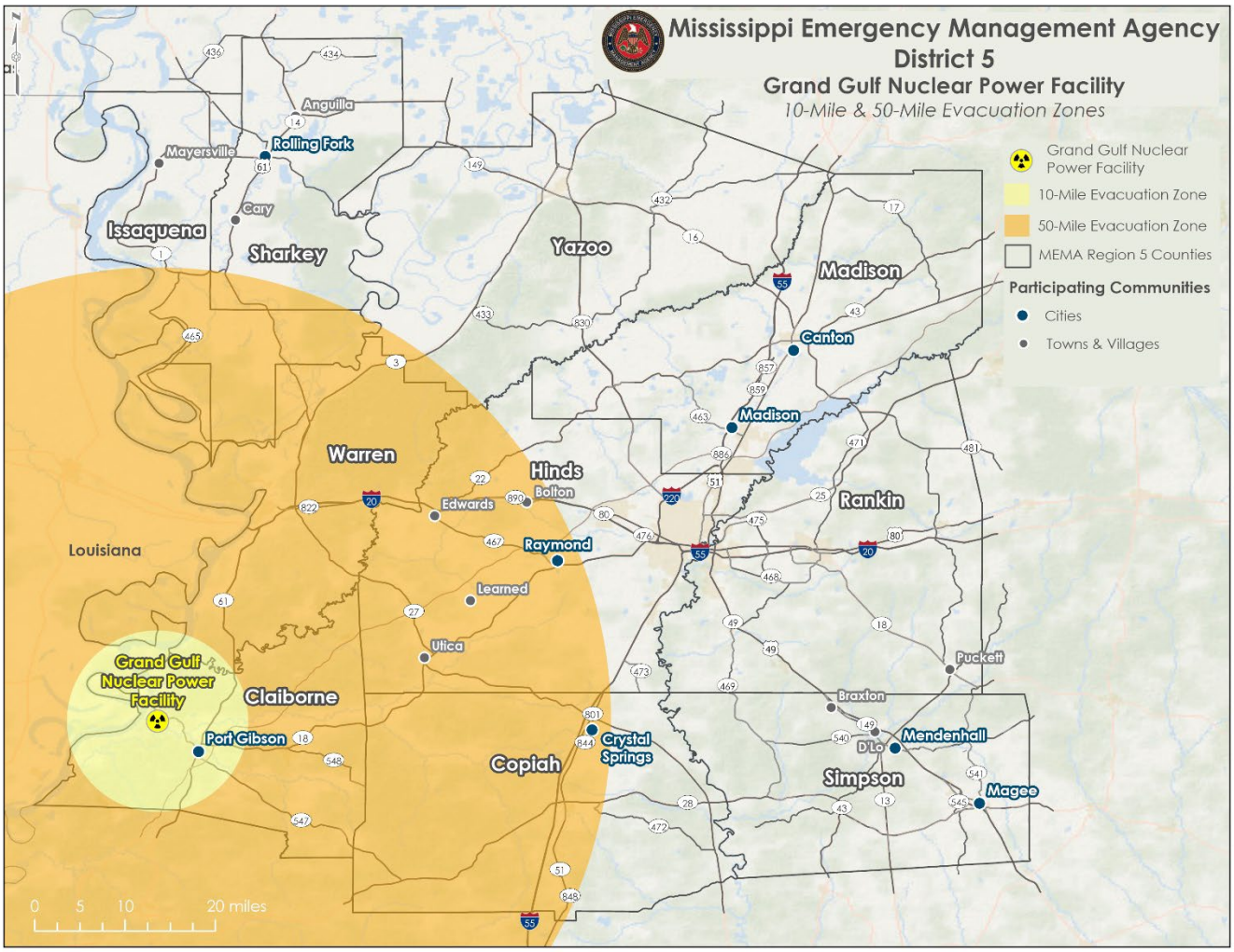
4.12. NUCLEAR POWER PLANT INCIDENTS

4.12.1. LOCATION AND EXTENT

A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies. Refer to the base plan for more detailed information on nuclear power plant incidents across the District.

Grand Gulf Nuclear Station is the only nuclear power plant in Mississippi. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP), includes a 50-mile radius from the facility, shown in **Figure 15**. The residents of the City of Crystal Springs are in the outer Eastern edge of the 50-mile IEP area. For more information on nuclear power plant incidents across the District, refer to the base plan.

FIGURE 15: GRAND GULF 10-MILE AND 50-MILE EVACUATION ZONES



4.12.2. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. However, historical examples such as Three Mile Island (1979), Chernobyl (1986), and Fukushima Daiichi (2011) demonstrate the potential severity of such events. Grand Gulf Nuclear Station has maintained a strong safety record, but minor operational alerts have occurred in the past without offsite consequences. More information about previous occurrences can be found in the base plan.

4.12.3. PROBABILITY OF FUTURE OCCURRENCES

The probability of a major nuclear incident is low given strict regulatory oversight and safety protocols. However, the potential consequences are high, making this a low-probability, high-impact hazard. Natural hazards such as severe storms, flooding, or seismic activity could increase risk factors. The Fukushima Daiichi nuclear accident in 2011 is the most recent major nuclear event, and it was primarily caused by a M_w 9.0-9.1 earthquake and subsequent tsunami causing extensive damage to nearly all the facility's backup power sources. According to an NRC report, the estimated risk each year of an earthquake is intense enough to cause damage to the reactor core at Grand Gulf Nuclear Station, 1 in 83,333. Since hazardous materials incidents are not considered "natural hazards", the jurisdictions are not required to evaluate the probability of future occurrences. Therefore, the probability is unrated.

4.12.4. LOCALIZED VULNERABILITY ASSESSMENT

4.12.4.1. OVERALL VULNERABILITY

To understand how vulnerable Crystal Springs is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The probability of a major nuclear incident is unlikely given strict regulatory oversight and safety protocols. However, the potential consequences are high, making this a low-probability, high-impact hazard. Natural hazards such as severe storms, flooding, or seismic activity could increase risk factors. Since nuclear power plant incidents incidents are not considered “natural hazards”, the jurisdictions are not required to evaluate the probability of the overall risk to the City. Therefore, the risk is **unrated**. This section provides further contextualization for the anticipated vulnerability of Crystal Springs to nuclear power plant incidents.

4.12.4.2. CRITICAL FACILITIES

Like other structures in the planning area, critical facilities are unlikely to experience direct physical damage from a nuclear power plant incident. However, such an event could still disrupt their operations. If radioactive materials are released and contaminate surrounding areas, affected facilities may need to temporarily close until safety inspections are completed and conditions are deemed safe. In addition, protective actions—such as evacuation orders, shelter-in-place directives, or restricted-access zones—may limit staff access and hinder normal facility operations. The risk of radioactive contamination is generally considered uniform across all critical facilities in Crystal Springs. Potential impacts are primarily influenced by the magnitude and extent of the radioactive release, rather than the specific function or operational role of individual facilities.

4.12.4.3. PEOPLE

As mentioned above, the entire City is in the designated 50-mile Ingestion Exposure Pathway Zone. Individuals in this zone will receive official notifications through sirens, tone-alert radios, and broadcast media, and may be instructed to take specific protective steps depending on the severity of the event. Vulnerability is especially high among populations with limited mobility, such as the elderly, individuals with disabilities, and residents of schools, hospitals, and correctional facilities. These groups may face challenges during evacuation or shelter-in-place orders. Additionally, low-income communities may struggle with access to protective equipment, transportation, and timely information, further increasing their vulnerability.

These populations can experience disproportionate impacts to nuclear incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Crystal Springs has a low to medium SVI score, suggesting that the community may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Due to the urban characteristics of Crystal Springs, residents of the city may have better connectivity and quicker warning times, allowing for faster response. Additionally, residents in Crystal Springs are closer to medical services than individuals living in remote/rural parts of District 5. At the same time, residents may face congested roadways if community members all attempt to leave at the same time. Tailored mitigation strategies and coordinated emergency planning are essential to reduce these risks and protect vulnerable populations across the community.

4.12.4.4. STRUCTURES AND SYSTEMS

The primary risk to surrounding structures and critical systems is the potential for an incident at the Grand Gulf Nuclear Station that forces the facility offline. Grand Gulf operates the most powerful single nuclear reactor in the United States, generating an average of 957,725 megawatt-hours per month in 2025—enough electricity to power more than one million homes. An outage at this facility would place

immediate pressure on the regional energy grid, increasing demand on other power producers. If the shutdown is prolonged, energy-intensive services such as water treatment, healthcare, education, and data centers could face operational disruptions. Crystal Springs has multiple critical facilities, including but not limited to medical facilities, schools, water wells, wastewater treatment facilities, and a national guard armory that all could face disruption in the event of a serious incident at Grand Gulf Nuclear Station.

4.12.4.5. IMPACTS OF CHANGES IN DEVELOPMENT

The population of Crystal Springs has declined since 2010, and recent development activity has been relatively modest in both scale and intensity, consisting primarily of small infill projects and limited new construction rather than large-scale residential, commercial, or industrial expansion. As a result, there have been no significant changes to population density, land use patterns, or the spatial distribution of residents that would meaningfully alter exposure levels or emergency planning considerations. Given these conditions, recent development and demographic shifts in Crystal Springs are not considered to have a measurable or appreciable impact on the community's overall vulnerability to potential nuclear power plant incidents.

4.13. CRITICAL FACILITIES VULNERABILITY SUMMARY

Table 20 below notes the individual critical facilities in City of Crystal Springs that were identified by the Mitigation Council and provides information on the relative risk these facilities face from various hazards.

TABLE 20: CITY OF CRYSTAL SPRINGS CRITICAL FACILITIES VULNERABILITY SUMMARY

Facility Type	Facility Name	Nuclear 50-Mile Radius	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Fire Station	Crystal Springs Fire Department	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Fire Station	Fire Station	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Government	Crystal Springs - City Hall	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility - Residential	Copiah Living Center	IN	OUT	OUT	OUT	Intermix - Low Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	CRYSTAL SPRINGS POLICE DEPARTMENT	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	Police Station	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Middle Gem Plant	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	North Gem plant	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Nuclear 50-Mile Radius	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Potable Water	Osborne Street Water Well	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	South Gem Plant	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	Low
Potable Water	West Railroad Ave Water Well	IN	OUT	OUT	OUT	Non-Vegetated - Uninhabited	Direct Exposure	N/A - WHP Undetermined
Potable Water Facility	Water Department	IN	OUT	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
School	CRYSTAL SPRINGS ELEMENTARY	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
School	CRYSTAL SPRINGS HIGH SCHOOL	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Shelter	National Guard Armory	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Shelter	Sports Complex	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Copley Street Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Moderate
Waste Water Facility	CRYSTAL SPRINGS POTW	IN	OUT	OUT	OUT	Intermix - Medium Density	Direct Exposure	Low
Waste Water Facility	East Georgetown Street Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Nuclear 50-Mile Radius	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Harmony Road Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Hembree Road Lift Station	IN	OUT	OUT	OUT	Intermix - Low Density	Direct Exposure	Very Low
Waste Water Facility	Hwy 27 Lift Station	IN	OUT	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Hwy 51 North Lift Station	IN	OUT	OUT	OUT	Interface - Low Density	Direct Exposure	Moderate
Waste Water Facility	Lee Avenue Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Low
Waste Water Facility	Mathis Road Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Morgan Lane Lift Station	IN	OUT	OUT	OUT	Intermix - Low Density	Direct Exposure	Very Low
Waste Water Facility	Osborne Street Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Piazza Street Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Thrasher Street Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Moderate
Waste Water Facility	West Cayuga Street Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	West Georgetown Street Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Low

Facility Type	Facility Name	Nuclear 50-Mile Radius	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Wet Marion Ave Lift Station	IN	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Moderate

5. MITIGATION STRATEGY

The Mitigation Strategy section of the base plan provides an overall blueprint for all participating jurisdictions in MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Regional Hazard Mitigation Council (RHMC) and the findings and conclusions of the Capability and Risk Assessments. The goals of the MEMA District 5 can be found in **Section 6** of the base plan.

This section provides community-specific strategies for the participating jurisdictions within City of Crystal Springs, including the status of actions that were included in the previous plan and actions to be considered or pursued over the next five years. As noted in the base plan, the participants are not committing to undertaking every action suggested in this list but rather are proposing an extensive list of *potential* actions that they may wish to pursue, depending in the availability of funding.

The following information is provided in the table below, as well as in the mitigation action tables within each annex in this plan:

Project Number: Each action is assigned a project number for organizational purposes.

Action Description: This is the description of the mitigation action. Actions descriptions are intended to be actionable and specific.

Responsible Agency or Department: actions assign primary responsibility to agencies or departments for implementation. The responsible entities were determined by jurisdictional representatives on the Mitigation Council, and they reflect the representatives' assessment of the entity that would be most capable of facilitating successful implementation of the action. Other agencies, departments, organizations, etc. may assist the responsible agency or department, if necessary.

Hazards Addressed: For each mitigation action, the hazard(s) that are being addressed are listed. Some hazards are considered "multi-hazard" because the action, when implemented, is designed to mitigate impacts of all disasters profiled in this plan. Other mitigation actions are specific to individual hazards.

Estimated Cost: This is the estimate cost of the action; these costs were determined through general discussions of the resources, personnel, and time needed, and the estimates are not intended to stand in for a full, detailed benefit-cost analysis.

Action Status (D/R/N/C): FEMA's guidance for local mitigation plans requires a status update for existing mitigation actions. The statuses of previous actions were assessed throughout the planning process. The four categories used by the Mitigation Council are:

> Deleted (D): action is no longer appropriate or desired, and the community does not intend to pursue the action.
>
> Retained (R): action is still desired by the community, but implementation has not been completed. The community will continue to implement the action as time and resources allow.
>
> New (N): action is new for the 2026 District 5 plan.
>
> Completed (C): action has been completed by the community.

Status Notes: Includes any information that the community provided for additional context to the action status.

Expected Time Frame for Completion: Participating jurisdictions anticipated the amount of time it will take to carry out the action. The expected time frames for actions from the previous plan were updated to reflect the expected time frame for completion from when communities adopt this plan.

Corresponding Goals: The plan goals addressed by each action item are included to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. Each action is linked to one more of the Plan's goals:

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

Priority: The priority of each of the mitigation action items is ranked either Low, Medium, or High. This prioritization allows Mitigation Council members to quickly compare actions based on a qualitative assessment of the anticipated benefits of actions. The process utilized by the Mitigation Council to prioritize actions is described in Section 6.4 of the base plan.

Potential Funding Sources: Potential sources for funding are listed for each action and encompass a range of sources including operating budget/general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), State grants, private funding, Capital Improvement Plan, and others. It is important to acknowledge that the identified funding sources are not exhaustive or definitive. The current funding landscape is undergoing significant change, and existing funding sources may not be available in the future, while new sources may emerge. If/when a community has the opportunity to implement an action, available funding sources will be re-examined to determine which source is most appropriate.

TABLE 21: UPDATED 2026 CITY OF CRYSTAL SPRINGS MITIGATION ACTIONS

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
1-Crystal Springs	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Crystal Springs Police and Fire Departments	All hazards	$25,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Crystal Springs	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Crystal Springs Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Crystal Springs	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the city with advanced warning of approaching weather conditions.	Crystal Springs Police and Fire Departments, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Crystal Springs	Purchase and maintain emergency generators for use by key critical facilities throughout the city.	Crystal Springs Public Works, Police and Fire Departments	All hazards	$500,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, State Homeland Security Program, HMGP, CDBG
5-Crystal Springs	As future updates are made to the city's existing policies and regulations, and as the city adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of	Crystal Springs Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
	natural hazards on new and existing infrastructure and buildings.									
6-Crystal Springs	Seek funding to assist with the construction of a community shelter.	Crystal Springs Mayor's Office, City Clerk	All hazards	$1,200,000	R	No progress since last update	On-going annually	3	High	General Fund
7-Crystal Springs	Encourage residents to construct individual safe rooms	Police and Fire Departments	Tornadoes, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
8-Crystal Springs	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Floodplain manager, Board of Alderman	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Funds, HMGP
9-Crystal Springs	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements.	Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
10- Crystal Springs	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties	Floodplain Manager, City Clerk	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
11-Crystal Springs	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	City Clerk	All hazards	$500,000	R	No progress since last update	10 years	3, 5	Medium	General Fund, CDBG, USDA Rural Development
12-Crystal Springs	Seek funding assistance to maintain District 5's Hazard Mitigation Plan	Board of Alderman, City Clerk	All hazards	$1,500 annually / $100,000 every 5 years	R	New Plan update in progress	On-going annually	1	High	General Fund
13-Crystal Springs	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	Emergency Management	All hazard	$5,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund
14-Crystal Springs	Develop and implement a drainage improvement plan that increases the capacity of key drainage ditches around the city.	Public Works, Board of Alderman	Flooding	$2,000,000	R	No progress since last update	5 years	2, 3	High	General Fund, CDBG
15-Crystal Springs	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Mayor's Office, City Clerk, Police and Fire Department	Public Health Emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
16-Crystal Springs	Improve cellular tower capability throughout the City to upgrade communication efficiency	Mayor's Office, City Clerk	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
17-Crystal Springs	Seek funding assistance to improve high-speed internet capabilities throughout the City	Mayor's Office, City Clerk	All hazards	$1,000,000	R	No progress since last update	On-going annually	3	High	General Fund
18-Crystal Springs	Seek assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Mayor's Office, City Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund

1. INTRODUCTION

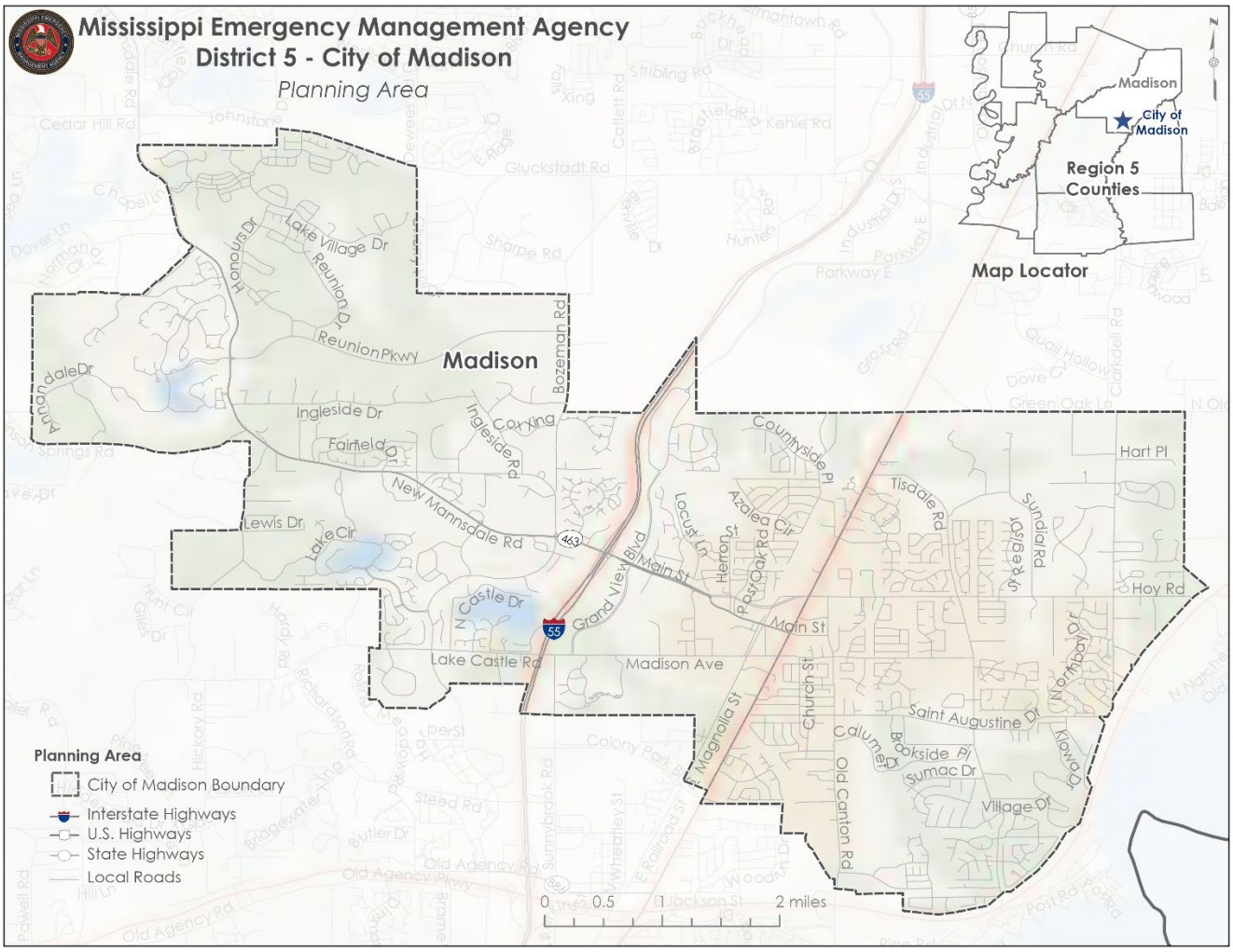
This annex provides more detailed information about City of Madison. It includes:

- A more localized community profile, including more detailed mapping, population and demographic information, and critical facilities information
- Local-level Hazard Identification and Risk Assessment (HIRA) information, including some more localized hazard maps and conclusions related to hazard risk and how it varies across the planning area
- A localized vulnerability assessment, including the likely impact of profiled hazards on critical facilities in City of Madison
- A detailed capability assessment, describing resource and tools available to the county and municipalities to participate in hazard mitigation and reduce hazard risk
- A mitigation strategy, describing a variety of actions the county and municipalities may opt to take to reduce the risk associated with profiled hazards over the useful life of this plan

2. COMMUNITY PROFILE

This section provides a more detailed profile of City of Madison. The City is in the Southern portion of Madison County, which is located in the Northeastern part of the planning area and **Figure 1** below shows the planning area for City of Madison. The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey—such as poverty, lack of transportation, crowded housing, and minority status—to quantify a community's relative vulnerability. This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). According to the 2022 CDC Social Vulnerability Index, Madison County has an overall low (0.0494) level of vulnerability. However, due to its urbanized location, assumptions could be made that the City of Madison's population might have a slightly higher score than the County as a whole.

FIGURE 1: CITY OF MADISON



2.1. POPULATION AND DEMOGRAPHICS

Population information from the last three Census counts for the City of Madison is summarized below, showing trends since the year 2010. A summary of population trends is summarized in **Table 1**. Since 2010, the population in the City has increased by 9%. The race and ethnicity demographic data of the City of Madison are shown in **Table 2**. Most of the population in the City of Madison is white (77.3%).

TABLE 1: POPULATION TRENDS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2010 Census	2020 Census	2024 Census (Estimate)	Percent Change 2020-2024
City of Madison	23,294	25,650	27,946	+9%

TABLE 2: DEMOGRAPHICS IN PERCENT | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
City of Madison	77.3%	12.7%	2.3%	6.1%	0.3%	3.2%

Table 3 summarizes what percentage of the population of the City of Madison belongs to certain vulnerable populations measured in the Census. A summary of information in **Table 4** below displays the trends over time for the City of Madison.

TABLE 3: VULNERABLE POPULATIONS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
City of Madison	4.8%	1,635	4,528	2,499

TABLE 4: ANNUAL ESTIMATES OF HOUSING UNITS IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023	2024
City of Madison	9,086	9,754	9,815	10,127	10,214

Employment in the City of Madison is largely focused on manufacturing, healthcare and professional services, there are several other large industries located within Madison County. **Table 5** below summarizes employment information in the City.

TABLE 5: EMPLOYMENT IN THE CITY OF MADISON | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Management, business, science and arts occupations	Service occupations	Sales and office occupations	Natural resources, construction and maintenance occupations	Production, transportation and material moving occupations
City of Madison	7,382	1,375	3,297	529	894

2.2. INFRASTRUCTURE, CRITICAL FACILITIES AND ENERGY ASSETS

2.2.1. CRITICAL FACILITIES AND INFRASTRUCTURE

Certain assets and facilities are considered as being of importance for City of Madison. **Table 6** below is a list of the critical facilities within City of Madison. **Figure 2** below displays a map showing the locations of these critical facilities and infrastructure located within the City. The table below consists of facilities identified in the previous plan for each community as well as facilities identified by HAZUS. These facilities were sent to each community representative of the Mitigation Council for review and given a chance to provide changes.

TABLE 6: CITY OF MADISON CRITICAL FACILITIES AND INFRASTRUCTURE

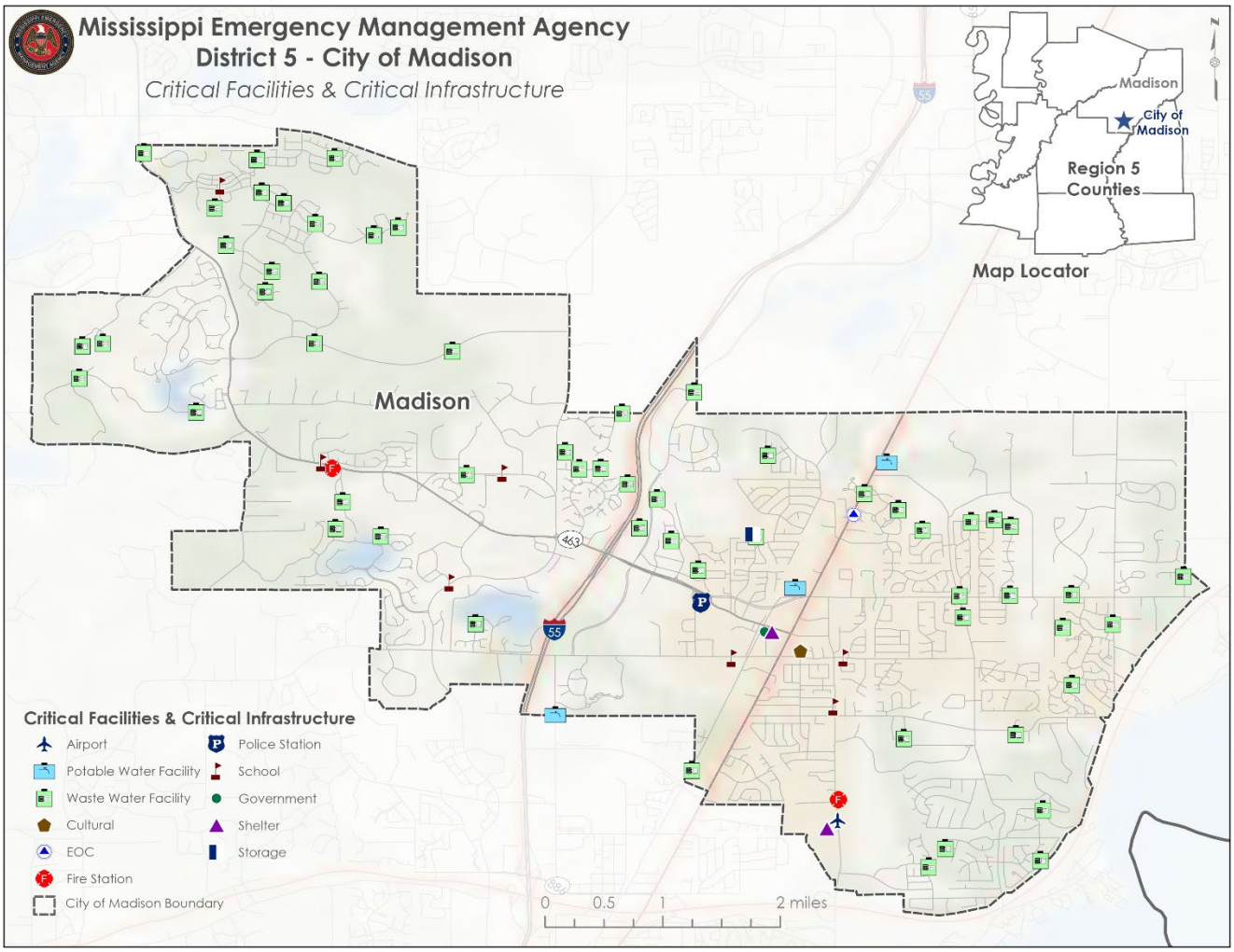
Facility Type	Facility Name	Facility Location
Airport	Bruce Campbell Field	City of Madison
Cultural - History	City of Madison Museum	City of Madison
EOC	Public Services Complex	City of Madison
Fire Station	Fire Station #2	City of Madison
Fire Station	Fire Station #3	City of Madison
Government	Madison - City Hall	City of Madison
Police Station	Madison Police Department	City of Madison
Police Station	Police/Justice Complex	City of Madison
Potable Water	Cotton Hill Road Water Plant	City of Madison
Potable Water	Cotton Hill Water Tower	City of Madison
Potable Water	Hoy Road Water Plant	City of Madison
Potable Water	Hoy Water Tower	City of Madison
Potable Water	Hwy 51 Water Plant	City of Madison
Potable Water	Hwy 51 Water Tower	City of Madison
School	Madison Ave Lower Elementary	City of Madison
School	Madison Ave Upper Elementary	City of Madison
School	Madison Central High School	City of Madison
School	Madison Middle School	City of Madison
School	Madison Ridgeland Academy	City of Madison
School	Madison Station Elementary School	City of Madison
School	St. Anthony Catholic School	City of Madison
Shelter	Community Center	City of Madison
Shelter	Cultural Center	City of Madison
Storage	Old Public Works Building	City of Madison
Waste Water Facility	Grinding Station	City of Madison
Waste Water Facility	Lift Station 10	City of Madison

Facility Type	Facility Name	Facility Location
Waste Water Facility	Lift Station 11	City of Madison
Waste Water Facility	Lift Station 12	City of Madison
Waste Water Facility	Lift Station 13	City of Madison
Waste Water Facility	Lift Station 14	City of Madison
Waste Water Facility	Lift Station 15	City of Madison
Waste Water Facility	Lift Station 16	City of Madison
Waste Water Facility	Lift Station 17	City of Madison
Waste Water Facility	Lift Station 18	City of Madison
Waste Water Facility	Lift Station 19	City of Madison
Waste Water Facility	Lift Station 2	City of Madison
Waste Water Facility	Lift Station 20	City of Madison
Waste Water Facility	Lift Station 21	City of Madison
Waste Water Facility	Lift Station 22	City of Madison
Waste Water Facility	Lift Station 23	City of Madison
Waste Water Facility	Lift Station 24	City of Madison
Waste Water Facility	Lift Station 25	City of Madison
Waste Water Facility	Lift Station 26	City of Madison
Waste Water Facility	Lift Station 27	City of Madison
Waste Water Facility	Lift Station 28	City of Madison
Waste Water Facility	Lift Station 29	City of Madison
Waste Water Facility	Lift Station 3	City of Madison
Waste Water Facility	Lift Station 30	City of Madison

Facility Type	Facility Name	Facility Location
Waste Water Facility	Lift Station 31	City of Madison
Waste Water Facility	Lift Station 32	City of Madison
Waste Water Facility	Lift Station 33	City of Madison
Waste Water Facility	Lift Station 34	City of Madison
Waste Water Facility	Lift Station 35	City of Madison
Waste Water Facility	Lift Station 36	City of Madison
Waste Water Facility	Lift Station 37	City of Madison
Waste Water Facility	Lift Station 38	City of Madison
Waste Water Facility	Lift Station 39	City of Madison
Waste Water Facility	Lift Station 4	City of Madison
Waste Water Facility	Lift Station 40	City of Madison
Waste Water Facility	Lift Station 41	City of Madison
Waste Water Facility	Lift Station 42	City of Madison
Waste Water Facility	Lift Station 43	City of Madison
Waste Water Facility	Lift Station 44	City of Madison
Waste Water Facility	Lift Station 45	City of Madison
Waste Water Facility	Lift Station 46	City of Madison
Waste Water Facility	Lift Station 47	City of Madison
Waste Water Facility	Lift Station 48	City of Madison
Waste Water Facility	Lift Station 49	City of Madison
Waste Water Facility	Lift Station 5	City of Madison
Waste Water Facility	Lift Station 50	City of Madison

Facility Type	Facility Name	Facility Location
Waste Water Facility	Lift Station 51	City of Madison
Waste Water Facility	Lift Station 52	City of Madison
Waste Water Facility	Lift Station 53	City of Madison
Waste Water Facility	Lift Station 54	City of Madison
Waste Water Facility	Lift Station 57	City of Madison
Waste Water Facility	Lift Station 58	City of Madison
Waste Water Facility	Lift Station 59	City of Madison
Waste Water Facility	Lift Station 6	City of Madison
Waste Water Facility	Lift Station 7	City of Madison
Waste Water Facility	Lift Station 8	City of Madison
Waste Water Facility	Lift Station 9	City of Madison

FIGURE 2: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE



2.2.2. TRANSPORTATION

Transportation in the City of Madison includes the list below and **Figure 2** above displays them on a map.

- Interstate 55
- U.S. Route 51
- State Highway 463
- Bruce Campbell Field

2.2.3. ENERGY ASSETS

Oil, natural gas pipelines and electric transmission lines traverse the City and the County. The list below breaks down the energy infrastructure within the City.

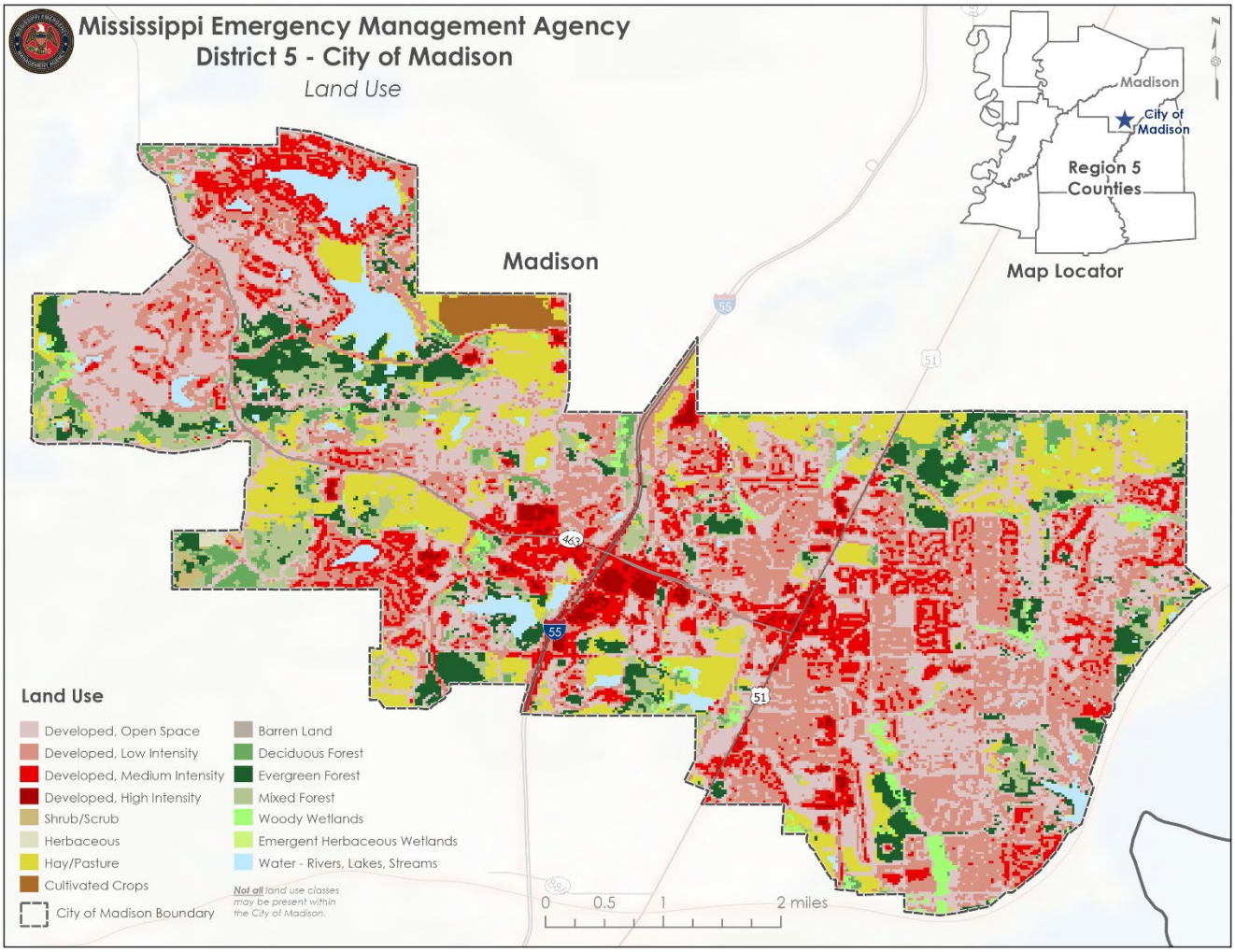
- **Power Plant:** There are no utility-scale power plants located inside the City of Madison
- **Substations:** Mannsdale 230 kV Substation, Virlilia 230 kV Substation, Cosmos 230 kV Substation, Andes 500/230 kV Substation

- **Transmission:** Pickens – South Canton Transmission Line
- **Pipelines:** Mississippi hosts extensive natural gas, crude oil, and refined product pipeline networks, and portions of these systems traverse Madison County

2.3. LAND USE AND DEVELOPMENT

The City of Madison encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, and growing residential development throughout the City. **Figure 3** displays the land use and development throughout the City.

FIGURE 3: CITY OF MADISON LAND USE AND DEVELOPMENT



2.4. HISTORIC AND CULTURAL RESOURCES

Cultural resources and historical assets are generally unique or irreplaceable in nature due to their age or unique properties or characteristics. **Table 7** below provides a list of known cultural resources and historic assets in the Cit of Madison.

TABLE 7: HISTORIC AND CULTURAL RESOURCES IN THE CITY OF MADISON

Cultural Resource	General Location	Resource Type
Montgomery House	City of Madison	Building
Strawberry Patch – McKay House	City of Madison	Building
John Curran House	City of Madison	Building
Madison-Ridgeland Public School	City of Madison	Building
Farr Mercantile Company	City of Madison	Building
MS Institute of Aeronautics Aircraft	City of Madison	Building

2.5. CHANGES IN DEVELOPMENT AND PRIORITIES

This section outlines recent and anticipated changes in development and priorities within the City of Madison. **Table 8** lists the City's responses to these questions in the Capability Assessment.

TABLE 8: CITY OF MADISON CHANGES IN DEVELOPMENT AND PRIORITIES

Jurisdiction	Changes in Development in the Past Five Years	Changes in Development Anticipated in the Next Five Years	Changes in Community Priorities over the Past Five Years
City of Madison	In the past five years Madison has seen commercial developments as well as residential developments.	Commercial and residential developments are anticipated over the next five years.	The City continues to evaluate the community priorities such meeting with developers on economic developments.

3. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. More generalized information about the goals of the capability assessment, including the process and methodology, is presented in the Capability Assessment portion of the base plan.

This section articulates specific information about the capabilities of City of Madison.

3.1. CITY OF MADISON CAPABILITIES AND RESOURCES

3.1.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to City of Madison to support hazard mitigation.

TABLE 9: CITY OF MADISON STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Police, Fire, Public Works	
Engineering	Y	Public Works	
Procurement	Y	Finance	
Floodplain Management	Y	Community Development	
Land Use, Land Management, or Development Planning	Y	Community Development	
Grant-writing	Y	Police, Finance	
Geographic Information Systems (GIS)	Y	Public Works	
Other reported staff and technical capabilities:			

3.1.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in City of Madison that might support hazard mitigation efforts.

TABLE 10: CITY OF MADISON PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	2027
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan		X		2020
Continuity of Operations Plan (COOP)		X		2020
Disaster Recovery Plan		X		2020
Economic Development Plan		X		2020
Emergency Operations Plan (EOP)		X		2004
Floodplain Management Plan / Flood Mitigation Plan		X		2024
Historic Preservation Plan	X			
Natural Resource Protection Plan (NRPP)			X	2028
Open Space Management Plan (Parks & Rec/Green Plan)		X		2012

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Threat Hazard Identification and Risk Assessment (THIRA)		X		2025
Other reported planning and regulatory mechanisms:				

3.1.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further details regarding the participation of City of Madison in the NFIP program, including how development in the floodplain is regulated.

TABLE 11: CITY OF MADISON FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Kianca Guyton
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	Yes
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	The city is in the process of implementation.
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	Yes, Rating 9
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes

3.1.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support City of Madison's hazard mitigation efforts.

TABLE 12: CITY OF MADISON FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes, 2018 International Family of Codes
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	Yes, 2018
Do you have a land use or development ordinance?	Yes
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	City General fund

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	Yes

3.2. ABILITY TO EXPAND CAPABILTIES

As part of the capability assessment process, each jurisdiction was asked to discuss their ability to expand upon the capabilities discussed earlier in this section. Below is a summary of the information provided by each participant regarding how they can strengthen their ability to conduct hazard mitigation measures in the future. **Table 13** below lists the City's responses to these questions in the Capability Assessment.

TABLE 13: CITY OF MADISON'S ABILITY TO EXPAND CAPABILITIES

Jurisdiction	Self-Reported Information Regarding Ability to Expand Capabilities
City of Madison	We continue to seek grant funding that will help with hazard mitigation efforts. We can reach out to local experts in a time of need.

4. HAZARD IDENTIFICATION & RISK ASSESSMENT

The Hazard Identification and Risk Assessment (HIRA) process, described in more detail in the HIRA section of the base plan, involves identifying potential hazards, evaluating their likelihood and potential consequences, and estimating and describing the level of risk these hazards present to a community.

Since 1969, Madison County* has been included in 20 federal disaster declarations, of which six occurred since this plan was last updated. **Table 14** describes these events.

TABLE 14: CITY OF MADISON FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4790	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Hinds, Madison	6/10/2024
DR-4727	Severe Storm, Straight-line Winds, Tornadoes	Madison, Rankin, Warren, Yazoo	8/12/2023
EM-3569	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
EM-3548	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020
DR-4528	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4081	Hurricane	Claiborne, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1604	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005
DR-1594	Hurricane	Madison, Rankin	7/10/2005
DR-1360	Severe Storm, Flooding, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Warren, Yazoo	2/23/2001
DR-1398	Severe Storm, Tornado	Hinds, Madison, Sharkey	12/7/2001
DR-1360	Severe Storm, Tornado	Madison, Yazoo	2/23/2001
DR-906	Severe Storm, Tornado	Claiborne, Issaquena, Madison, Sharkey, Warren, Yazoo	5/17/1991
DR-888	Flooding, Severe Storm, Tornado	Madison, Simpson	1/3/1991
DR-895	Flooding, Severe Storm, Tornado	Copiah, Simpson	3/5/1991
DR-683	Flooding, Severe Storm, Tornado	Claiborne, Hinds, Madison, Rankin, Warren, Yazoo	6/1/1983

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-577	Severe Storm, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-499	Flooding, Severe Storm, Tornado	Copiah, Madison, Simpson	4/1/1976
DR-271	Hurricane	Copiah, Hinds, Madison, Rankin, Simpson	8/18/1969

* Federal disaster areas are only tracked at the county level. The disasters above represent the statistics for Madison County.

As described in the "HIRA Methodology" section of the base plan, participants in this plan update reconsidered the relative risk posed by the profiled hazards by conducting a hazard ranking process. **Table 15** below provides a summary of how those hazards were ranked by the City of Madison.

TABLE 15: HAZARD RANKING FOR THE CITY OF MADISON

Jurisdiction	Dam/Levee Failure	Drought	Earthquake	Expansive Soils	Flood	Severe Storms	Severe Winter Weather	Tornado	Tropical Storm / Hurricane	Wil/Urban Interface (WUI) Fire	Hazardous Material Incidents	Nuclear Power Plant Incidents
City of Madison	Med	Med	Low	Med	Med	High	Med	High	Med	Low	Low	Low

Each of the 12 natural and manmade hazards discussed in this section are described in more detail in the HIRA section of the base plan. **Table 16** below shows the hazard scores for the City of Madison. This section endeavors to provide more detailed, local-level information, mapping, and conclusions for these hazards wherever relevant.

TABLE 16: CITY OF MADISON HAZARD RISK SCORES

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Dam/Levee Failure	2	1	2	1	3	2	**18**
Drought	4	1	1	1	3	2	**20**

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	2	0	2	1	1	5	**30**
Flood	3	1	1	1	1	4	**28**
Severe Storms	4	1	2	2	2	5	**55**
Severe Winter Weather	4	1	1	1	2	2	**18**
Tornado	4	2	2	2	3	3	**39**
Tropical Storms	4	1	1	1	3	2	**20**
Wild/Urban Interface Fire	2	1	1	1	2	2	**14**
Hazardous Material Incidents	2	1	1	2	1	2	**14**
Nuclear Power Plant Incident	1	1	1	1	1	1	**5**

4.1. DAM/LEVEE FAILURE

4.1.1. LOCATION AND EXTENT

There are 276 dams in Madison County and six of them are located within the City of Madison, and they are all classified as a high hazard dam. There are no levees located in or impacting the City of Madison. More information on dams/levee failure in the District can be found in the base plan.

Dam classifications were designed based on the potential impacts of failure. The potential impacts from each dam classification are detailed below in the event of a dam failure.

- **Low Hazard Dam**: In the event of the failure of a high-hazard dam, loss of life is probable, as are economic, environmental, and lifeline impacts.
- **Significant Hazard Dam**: In the event of the failure of a significant hazard dam, loss of life is not expected, but economic, environmental, and lifeline impacts are expected.
- **High Hazard Dam**: In the event of the failure of a low-hazard dam, there is no anticipated loss of life, and economic, environmental, and lifeline impacts are expected to be minimal, with losses principally limited to the owner's property.

Figure 4 below shows the location and inundation areas of upstream dams impacting the City of Madison.

There are six High Hazard Potential Dams (HHPD) in the City of Madison, and the majority are in the center of the City. These dams are rated high due to the catastrophic damage a dam breach or failure could cause. Due to the extent of impact, HHPDs are required to develop an Emergency Response Plan (ERP) that details how the dam will respond in the event of a breach or failure. Within the ERPs inundations maps are required to be developed to understand which areas would be impacted in the event of a breach or failure.

There are zero critical facilities located within the mapped inundation areas of the six high hazard dams, but there are several essential transportation roadways located in the inundation areas. **Figure 5** through **Figure 10** below shows the location and inundation areas of upstream dams impacting the City.

FIGURE 4: LOCATION AND INUNDATION AREAS OF UPSTREAM DAMS

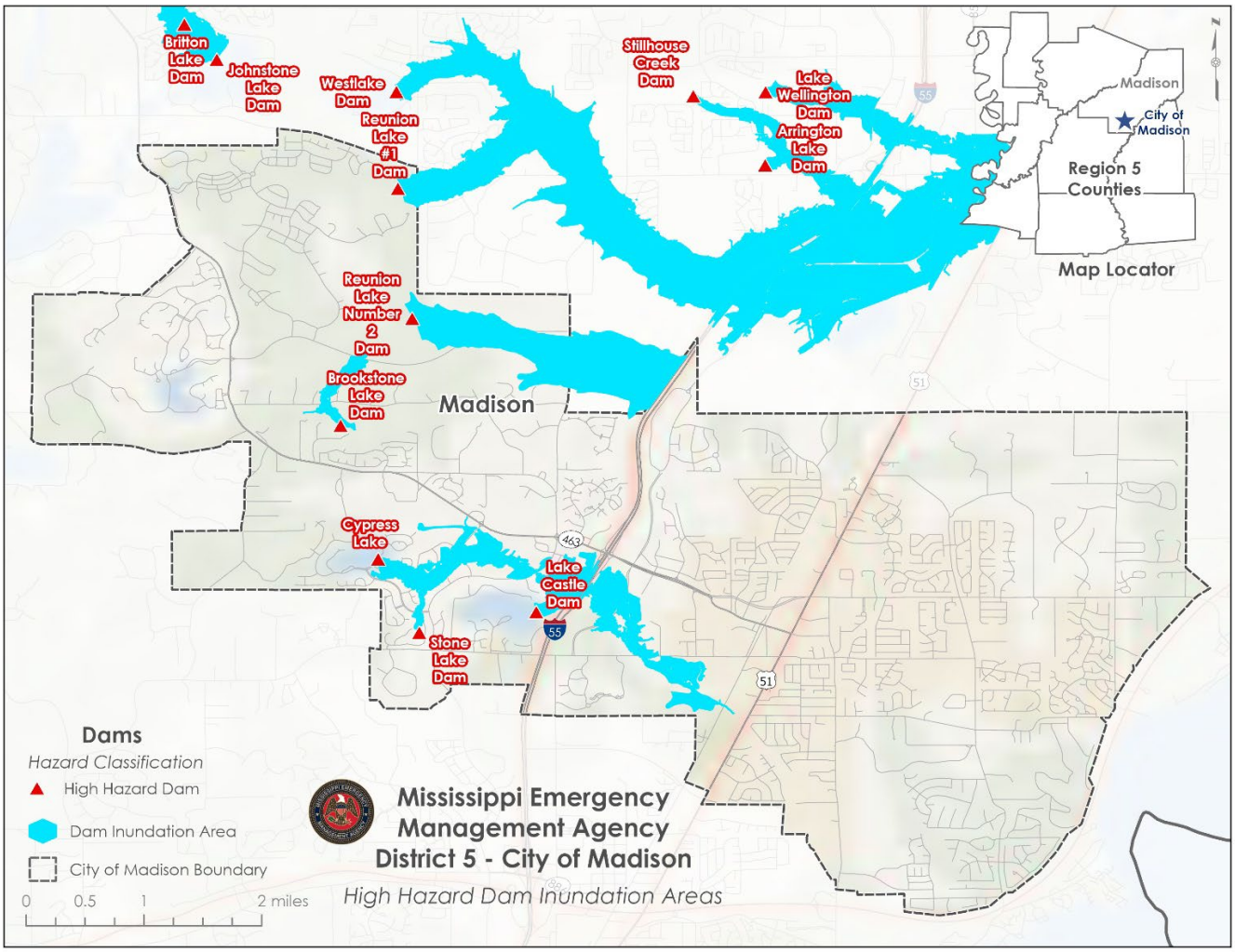


FIGURE 5: LOCATION AND INUNDATION AREAS OF BROOKSTONE LAKE DAM

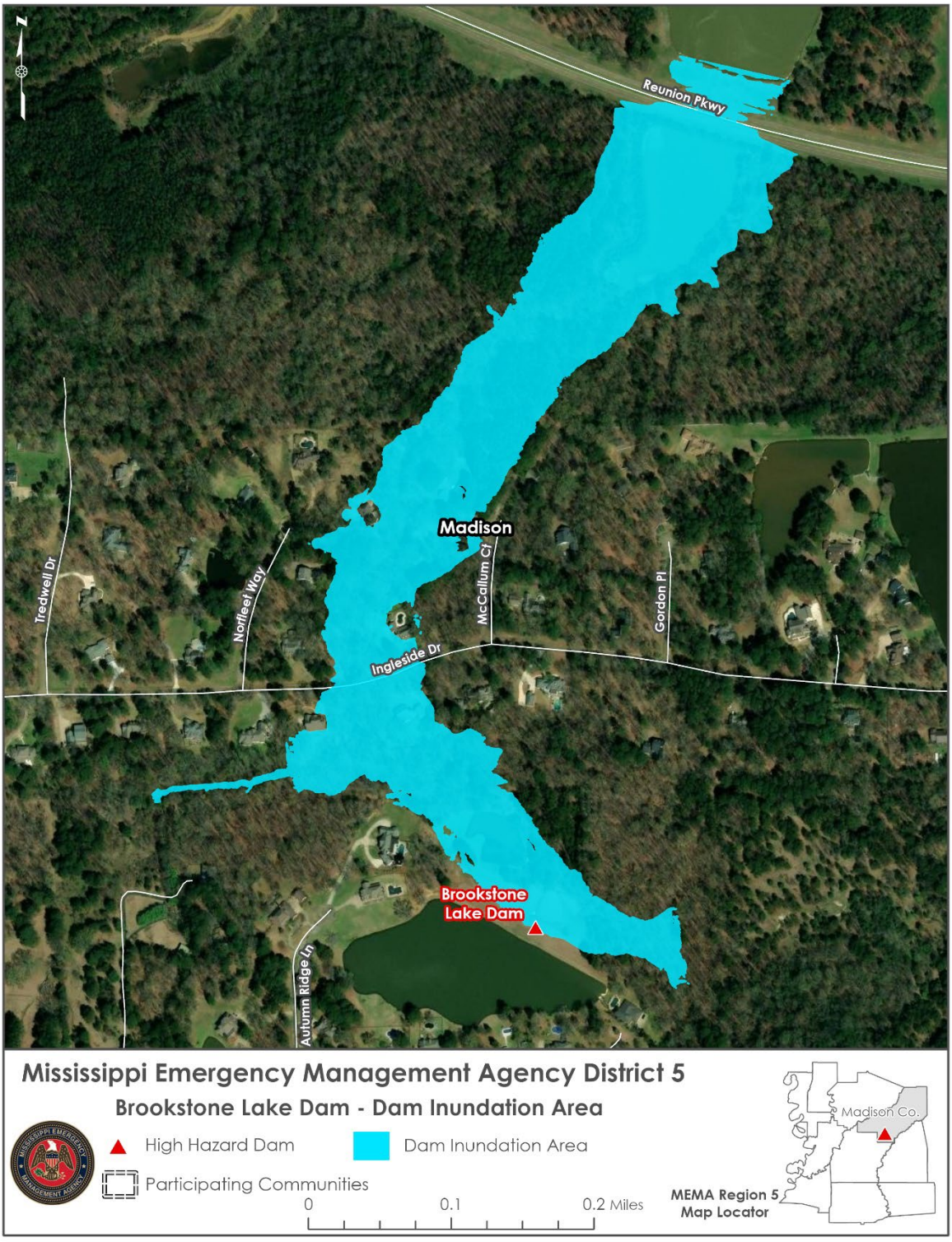


FIGURE 6: LOCATION AND INUNDATION AREAS OF CYPRESS LAKE DAM

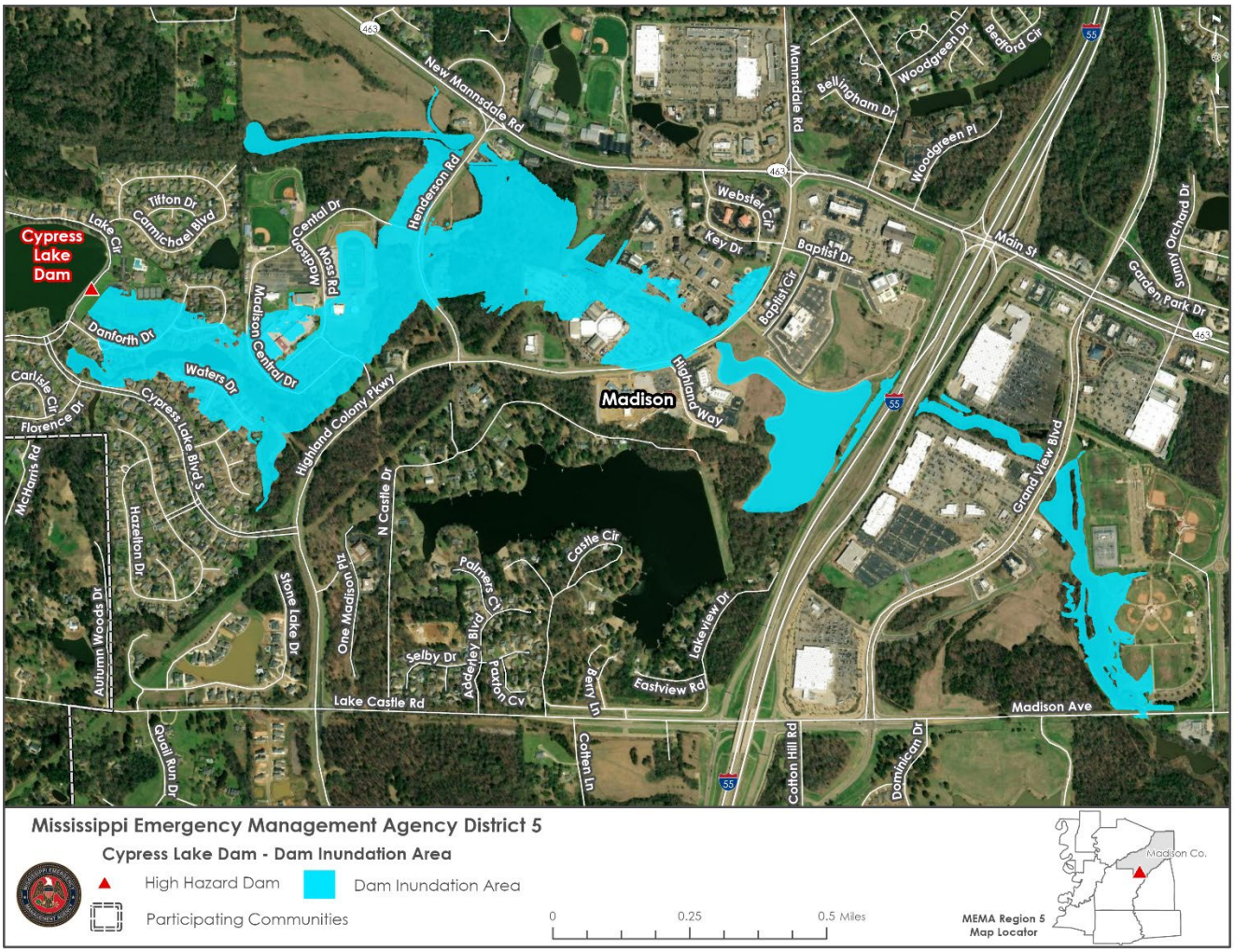


FIGURE 7: LOCATION AND INUNDATION AREAS OF LAKE CASTLE DAM

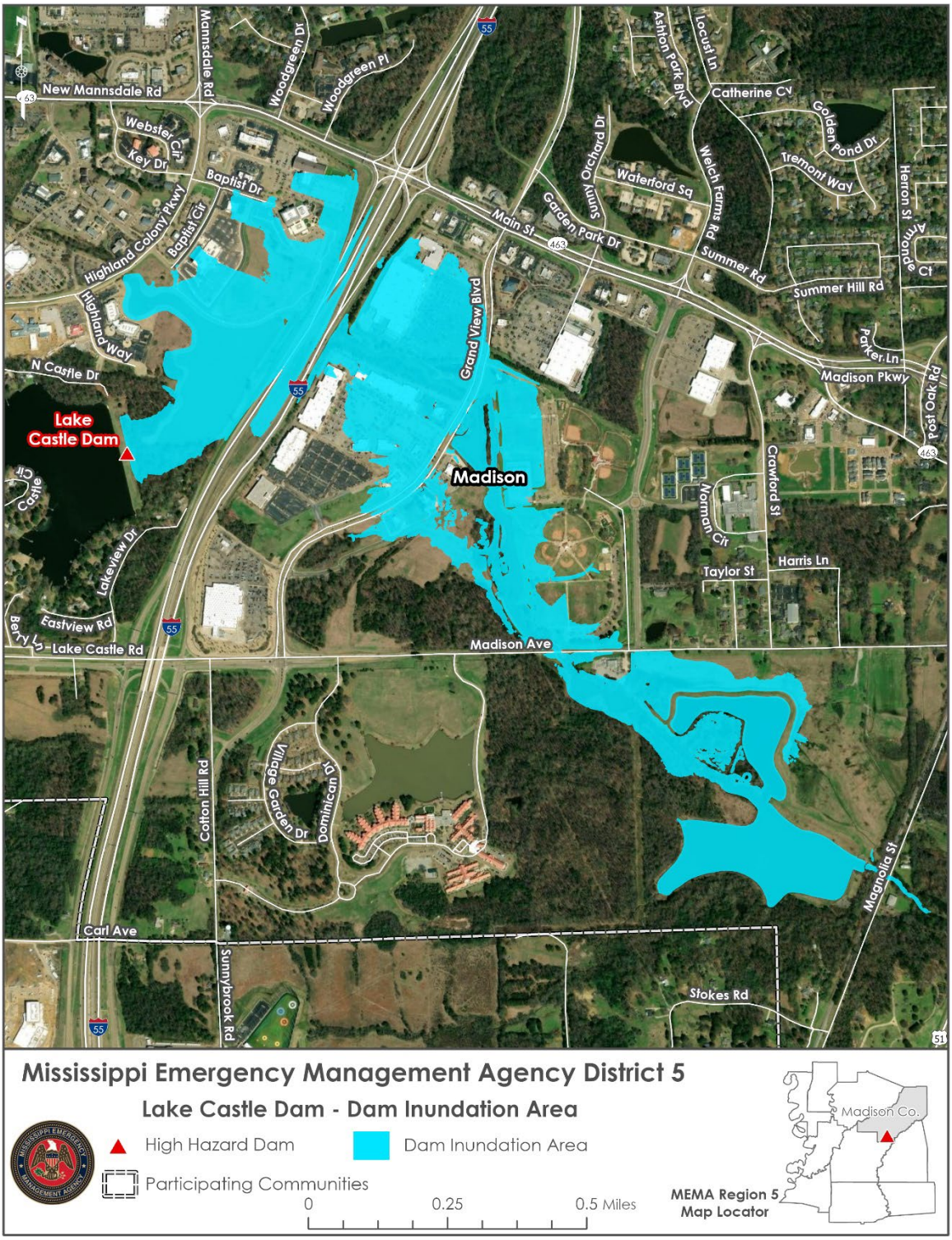


FIGURE 8: LOCATION AND INUNDATION AREAS OF REUNION LAKE #1 DAM

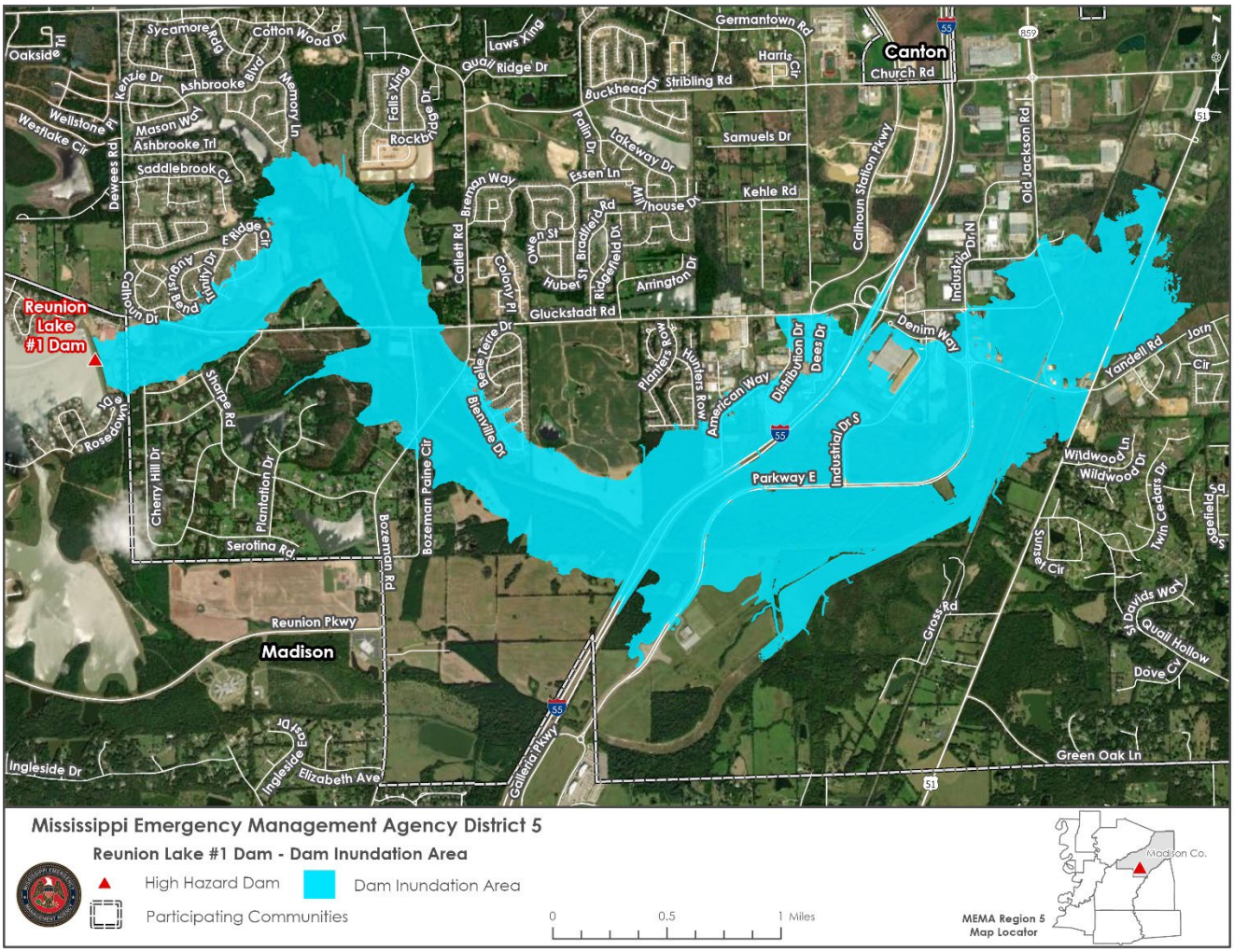


FIGURE 9: LOCATION AND INUNDATION AREAS OF REUNION LAKE #2 DAM

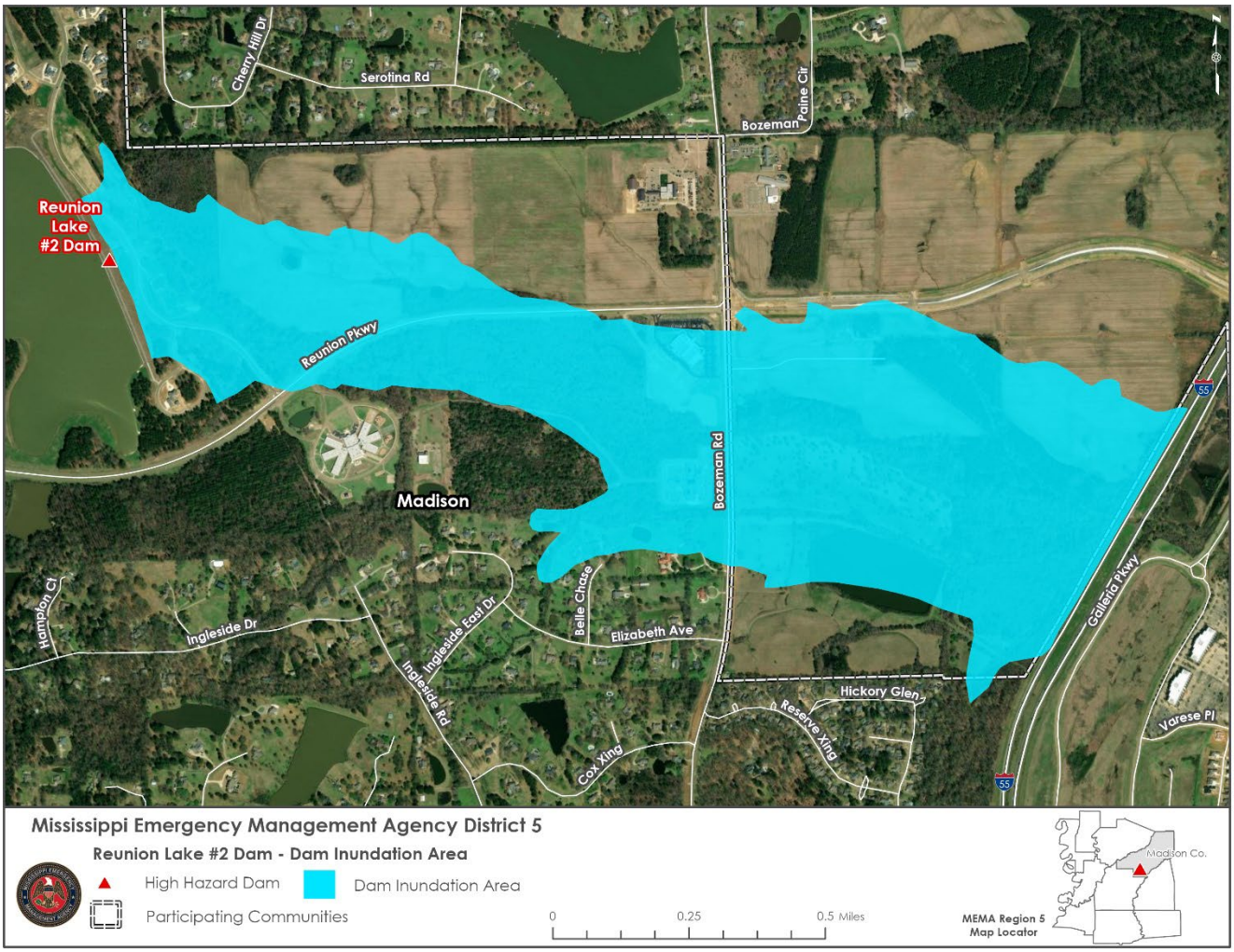
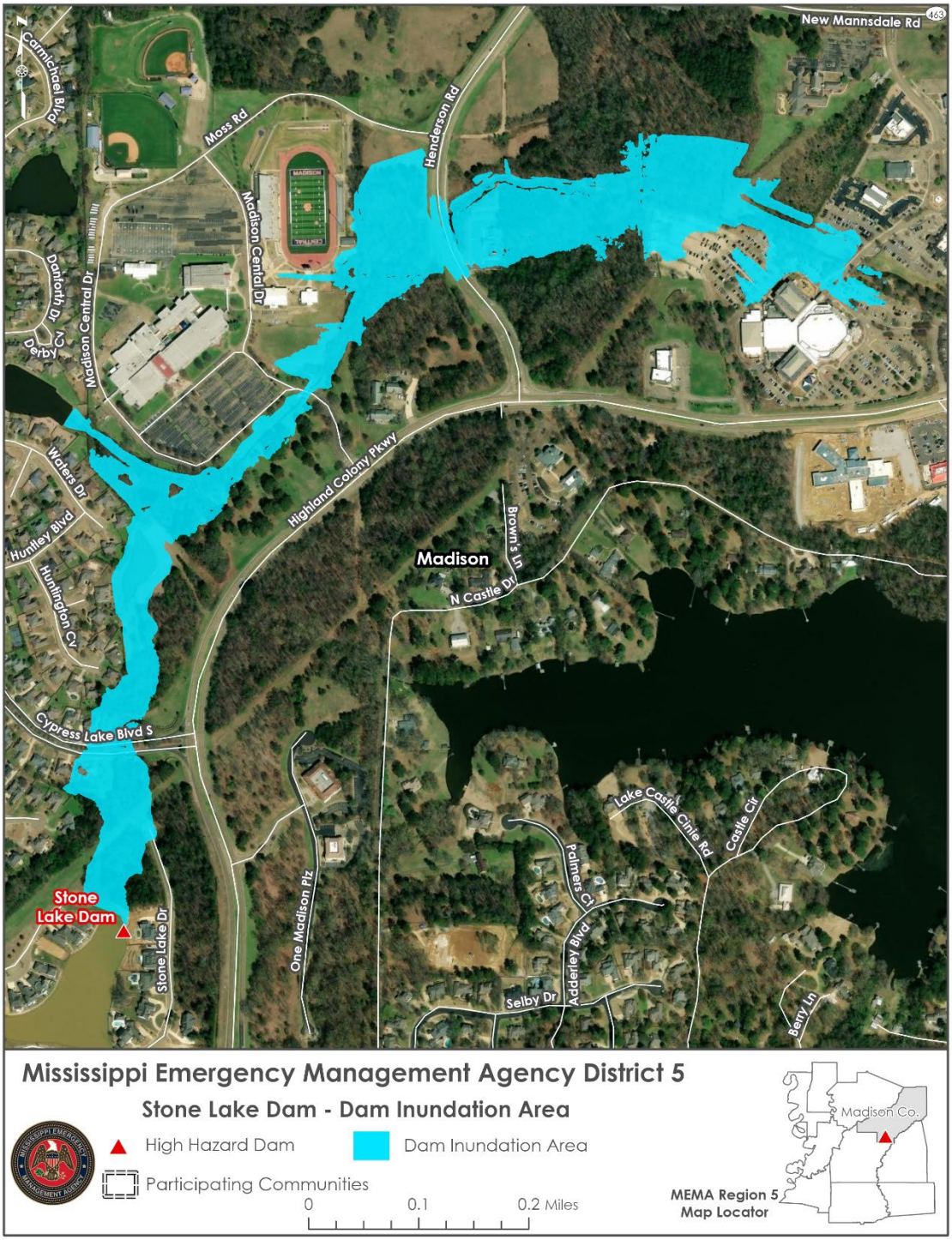


FIGURE 10: LOCATION AND INUNDATION AREAS OF STONE LAKE DAM



4.1.2. PREVIOUS OCCURRENCES

Since the last plan update, MDEQ Dam Safety Division has recorded three breaches in Madison County, but none in the City of Madison. It is important to note that some failures may not have been detected and reported.

4.1.3. PROBABILITY OF FUTURE OCCURRENCES

Structural vulnerabilities in dams may be observable through external inspection; however, failure can still occur unexpectedly, even during fair weather conditions. A sunny day breach, particularly in earthen dams, can result in sudden and severe flooding. While there are tools and methods available to assess the likelihood of imminent failure, these do not always provide sufficient foresight into future events. Consequently, all dams located within the City should be considered at risk of breach at any time. While dams are prevalent, the probability of future failure is classified as **Low**.

4.1.4. LOCALIZED VULNERABILITY ASSESSMENT

4.1.4.1. OVERALL VULNERABILITY

The six dams within City of Madison are considered prone to breach at any time, signifying that overall vulnerability is **Medium**. Breaches may lead to impacts significant impacts to the jurisdiction as described in the base plan, This section provides further contextualization for the anticipated vulnerability to dam failure.

4.1.4.2. CRITICAL FACILITIES

There are zero critical facilities in City of Madison within the mapped inundation area of an upstream dam. However, all structures located downstream of a dam are at some level of risk.

4.1.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Dam failure has the potential to cause severe and sudden impacts to cultural, historic, and natural resources in the County due to rapid downstream flooding, high-velocity flows, and extensive erosion. Historic structures, cemeteries, archeological sites, and culturally significant landscapes located downstream of dams or along rivers and creeks may be damaged or destroyed by inundation, scour, or debris impacts associated with a dam breach. Floodwaters can erode soils and displace archeological materials, resulting in irreversible loss of cultural resources and historic context. Natural resources may also experience significant impacts, including stream channel alteration, sediment deposition, destruction of wetlands and riparian habitats, reduced water quality, and displacement or loss of wildlife. All resources located within the mapped inundation area are vulnerable to impacts from dam failures.

4.1.4.4. PEOPLE

The primary impact of dam failure is flooding, which is more likely to impact older adults, low-income families, and individuals without access to reliable transportation. As with many other hazards, vulnerable populations—such as low-income households, the elderly, and individuals with disabilities—may face compounded risks due to limited mobility, lack of resources, or inadequate shelter options. In the City, individuals living in poverty are relatively low at 5%. These factors increase risk to the population in the City of Madison dam failure and may have difficulty in preparing for and recovering from these events. These populations can experience disproportionate impacts to dam failures and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Madison has a low SVI score and therefore may recover faster other than residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.1.4.5. STRUCTURES AND SYSTEMS

Dam failure can result in sudden and severe impacts to structures and systems in the County due to rapid flooding, high-velocity water flow, and debris transport downstream of a breached dam. Residential, commercial, and public structures located within dam-inundation areas may experience extensive structural damage or complete destruction as foundations, walls, and load-bearing

components are undermined by erosion and scour. Transportation systems, including roads, bridges, and culverts, are particularly vulnerable to washouts and structural failure, which can isolate communities and impede emergency response and recovery efforts. Transportation infrastructure in the mapped inundation areas of the six high hazard dams is listed in **Table 17**. All structures and systems located downstream of a dam are at some level of risk.

TABLE 17: TRANSPORTATION SYSTEMS IN INUNDATION AREAS

Dam Name	Roadways Impacted
Brookstone Lake Dam	Ingleside Road Reunion Parkway
Cypress Lake	Highland Colony Parkway Henderson Road Moss Road Madison Central Drive Waters Drive Danforth Drive
Lake Castle Dam	Interstate 55 Grand View Boulevard Madison Avenue Baptist Drive Baptist Circle
Reunion Lake #1 Dam	Interstate 55 Parkway East Industrial Drive South Old Jackson Road Denim Way American Way Distribution Drive Dees Drive Bienville Drive Bozeman Paine Circle Bozeman Road Gluckstadt Road East Ridge Circle Trinity Drive August Bend Calhoun Drive DeWees Road
Reunion Lake #2 Dam	Reunion Parkway Bozeman Road
Stone Lake Dam	Cypress Lake Boulevard South Madison Central Drive Henderson Road

4.1.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in City of Madison may lead to a rise in the populations in the inundation zone of each dam. A related increase in the number of impervious surfaces from urbanization can exacerbate runoff and strain on existing drainage systems, potentially increasing the likelihood of overtopping or erosion near dam and levee sites.

4.2. DROUGHT

4.2.1. LOCATION AND EXTENT

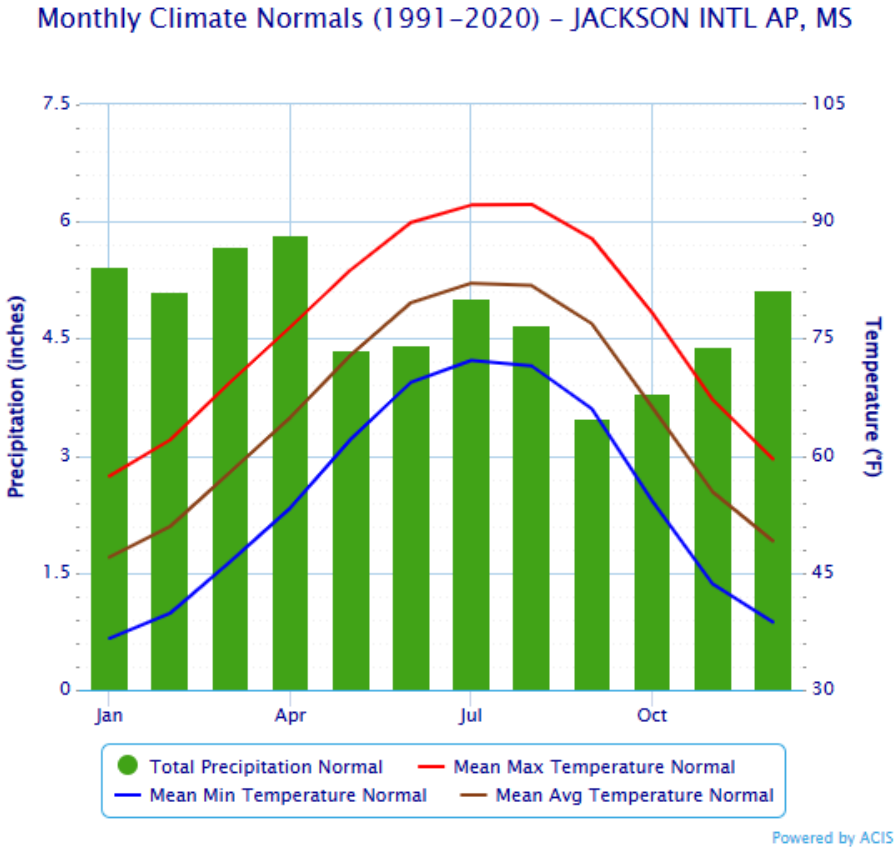
Drought events are largely tracked at the county level and the numbers below represent the statistics for Madison County. Drought affects the entire planning area equally; Madison County and the City of Madison are not more or less susceptible to drought than other communities in District 5. More information on drought in the District can be found in the base plan.

Figure 11 and **Figure 12** below display the monthly precipitation and temperature normals for the area surrounding the Jackson INTL AP, MS National Weather Service (NWS) station. According to the data, the City experiences about 57 inches of precipitation annually with an average mean temperature of 65 degrees. The hottest months are June through September while the wettest months are March and April.

FIGURE 11: MONTHLY NORMAL PRECIPITATION AND TEMPERATURE – JACKSON INTL AP, MS | SOURCE: NWS

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	5.42	57.4	36.6	47.0
February	5.10	62.0	39.8	50.9
March	5.68	69.4	46.4	57.9
April	5.84	76.5	53.3	64.9
May	4.36	83.8	62.1	72.9
June	4.43	89.9	69.4	79.6
July	5.02	92.1	72.2	82.1
August	4.69	92.2	71.5	81.8
September	3.48	87.8	66.0	76.9
October	3.80	78.3	54.2	66.2
November	4.40	67.2	43.6	55.4
December	5.13	59.6	38.7	49.1
Annual	57.35	76.4	54.5	65.4

FIGURE 12: MONTHLY CLIMATE NORMALS – JACKSON INTL AP, MS | SOURCE: NWS



4.2.2. PREVIOUS OCCURRENCES

Between the 2015 and 2020 plans, seven droughts occurred in Madison County, causing $80,000 in property damages and $521,000 in crop damages. Between the 2020 and 2025 plans, there were 3 droughts causing zero reported property damage and $7,520,000 in crop damage.

4.2.1. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 10 droughts in the past 10 years. The City of Madison can expect to see a drought event about once a year. While droughts are prevalent, the probability of the City of Madison experiencing severe drought conditions is **Low**. This probability is consistent across District 5, as any given drought will likely impact the entire planning area.

4.2.2. LOCALIZED VULNERABILITY ASSESSMENT

4.2.2.1. OVERALL VULNERABILITY

The drought vulnerability assessment in the base plan highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Within Madison County, including the City of Madison, drought poses a **Medium** risk due to potential impacts, largely to public health, agriculture, and the local economy. Potential impacts on Community Lifelines and historic and cultural resources are consistent across the District 5 planning area and are described in the base plan. This section provides further contextualization for the anticipated vulnerability to drought.

4.2.2.2. CRITICAL FACILITIES

Drought is a slow-developing yet significant hazard for critical facilities in the City of Madison as it can strain water supply systems, heighten wildfire risk, and disrupt essential operations. Extended dry periods may reduce groundwater and surface water needed for drinking water, sanitation, healthcare, and fire suppression, potentially affecting hospitals, emergency services, schools, and government buildings. Drought conditions also increase the likelihood of wildfires, which can challenge fire response resources and threaten nearby infrastructure, while elevated heat and higher energy demand may place additional pressure on electrical systems that support critical functions.

4.2.2.1. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Drought can damage cultural, historic, and natural resources in the City by reducing soil moisture and water levels needed for their preservation. Prolonged dry conditions may harm historic sites, stress forests and wetlands, increase wildfire risk, and degrade ecosystems and culturally important water resources, potentially leading to long-term loss.

4.2.2.2. PEOPLE

As noted in the base plan, drought poses a significant threat to public health and safety, particularly when it disrupts access to clean and sufficient water supplies, and particularly for vulnerable populations—such as low-income households, the elderly, and individuals with disabilities. These populations can experience disproportionate impacts to drought and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Madison has a low SVI score and therefore may recover faster other than residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.2.2.3. STRUCTURES AND SYSTEMS

Although drought doesn't typically cause direct physical damage to buildings or infrastructure, systems reliant on water (particularly those supporting agricultural operations) are the most vulnerable. Madison County has a total approximate land area of 457,093 acres, of which 43.3% is farmland (510 farms totaling 197,702 acres of farmland). These portions of the County and their structures and systems are more vulnerable to impact than others. Non-agricultural critical facilities such as transportation infrastructure, utility infrastructure, and public buildings are unlikely to be affected by drought across the planning area, including in City of Madison.

4.2.2.4. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in City of Madison may lead to larger strain on water systems during times of drought in the future.

4.3. EARTHQUAKE

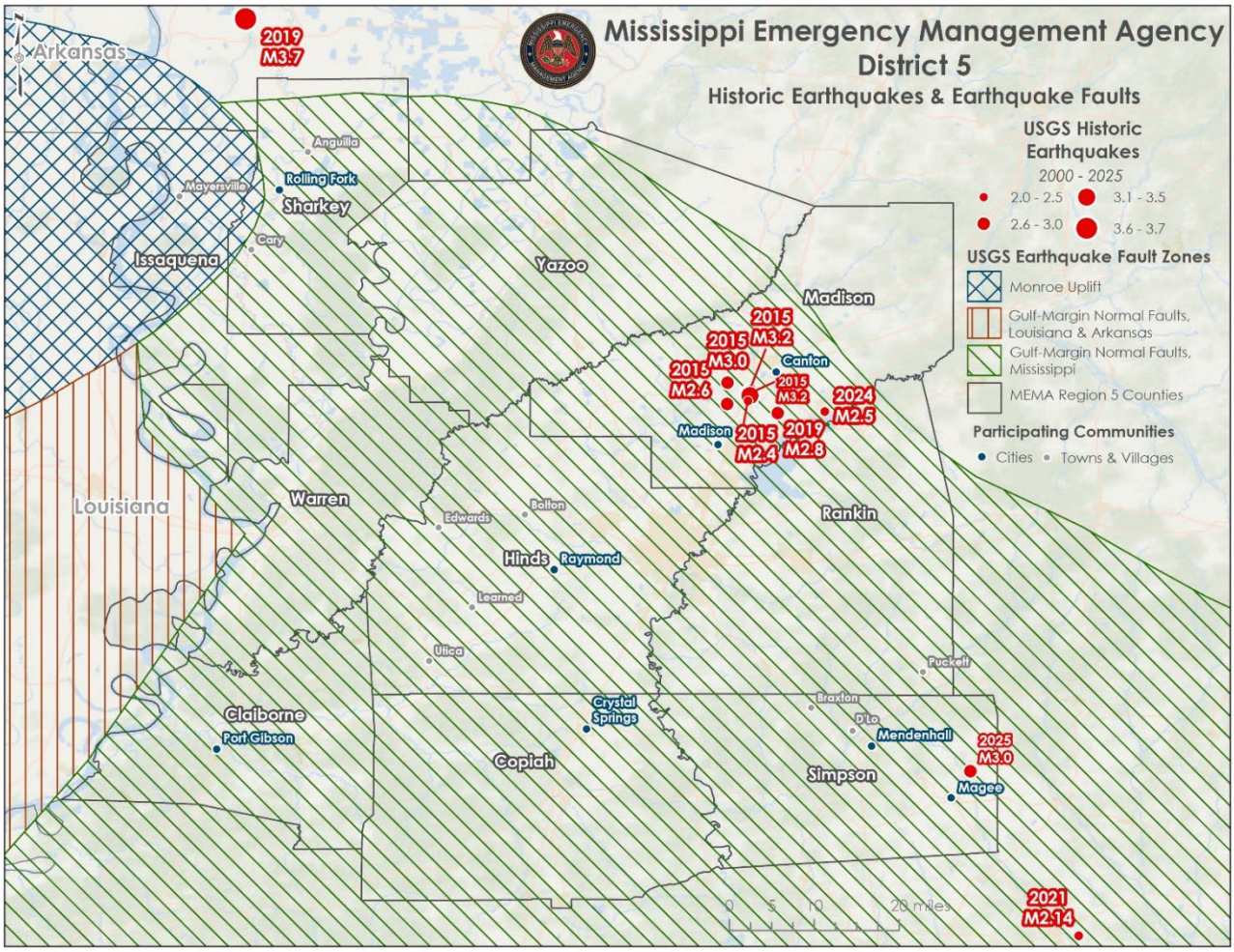
4.3.1. LOCATION AND EXTENT

The earthquake seismic risk in MEMA District 5 varies from low to very high. Madison County has areas where the earthquake seismic risk is low, high and very high. Ground shaking can be exacerbated by liquefaction zones. Within Madison County, areas in the center and Western portions of the County have high and very high liquefaction zones. The liquefaction zone severity decreases to very low zones towards the Northern and Southern parts of the County. The City of Madison lies within the low liquefaction zone. If a strong earthquake were to occur, the City may experience less shaking compared to the rest of the County. For more information on earthquakes within the Distirct, refer to the base plan.

4.3.2. PREVIOUS OCCURRENCES

As noted in the base plan, Mississippi experiences relatively low seismic activity, although there have been some minor earthquakes producing light shaking felt in District 5 in recent history. Since 2020, there have been two earthquakes in MEMA District 5. The strongest was a magnitude 3.2 earthquake in Madison County, in 2015. **Figure 13** below shows the historic earthquakes in the District since the last plan update. The image also shows the multiple earthquakes that have occurred in and near the City of Madison and the District since 2015. Based on historical data, most of the earthquakes that have occurred in the District are nearby the City of Madison.

FIGURE 13: MEMA DISTRICT 5 HISTORIC EARTHQUAKES 2000-2025



4.3.3. PROBABILITY OF FUTURE OCCURRENCES

As noted in the base plan, Mississippi MEMA District 5 is unlikely to experience damaging earthquakes, but it is not entirely free from seismic risk. While strong earthquakes are unlikely, minor to moderate shaking could occur in City of Madison, especially from distant seismic sources like the New Madrid Seismic Zone (NMSZ) is **Unlikely** to occur.

4.3.4. LOCALIZED VULNERABILITY ASSESSMENT

4.3.4.1. OVERALL VULNERABILITY

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. City of Madison contains low liquefaction susceptibility zones and earthquake soil classifications of E (soft soil). While these factors can increase ground shaking, strong earthquakes pose a **Low** risk to the City. This section provides further contextualization for the anticipated vulnerability of earthquakes.

Figure 14 shows the liquefaction susceptibility zones and **Figure 15** displays the earthquake soil near the City of Madison. The City of Madison has low liquefaction susceptibility zones compared to the rest of the County. However, the City does have soft clay soils which is more susceptible to ground shaking.

FIGURE 14: MEMA DISTRICT 5 LIQUEFACTION SUSCEPTIBILITY ZONES

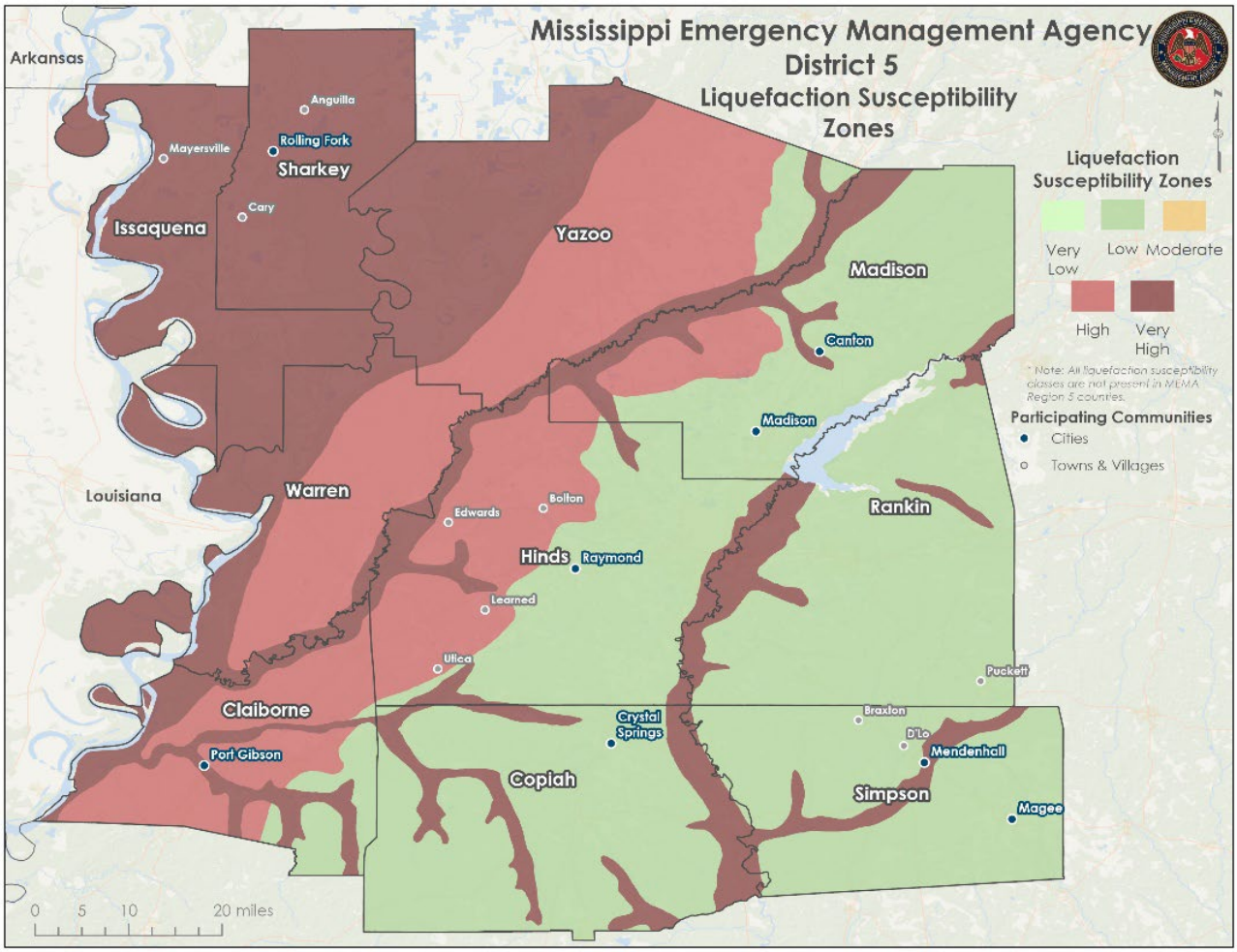
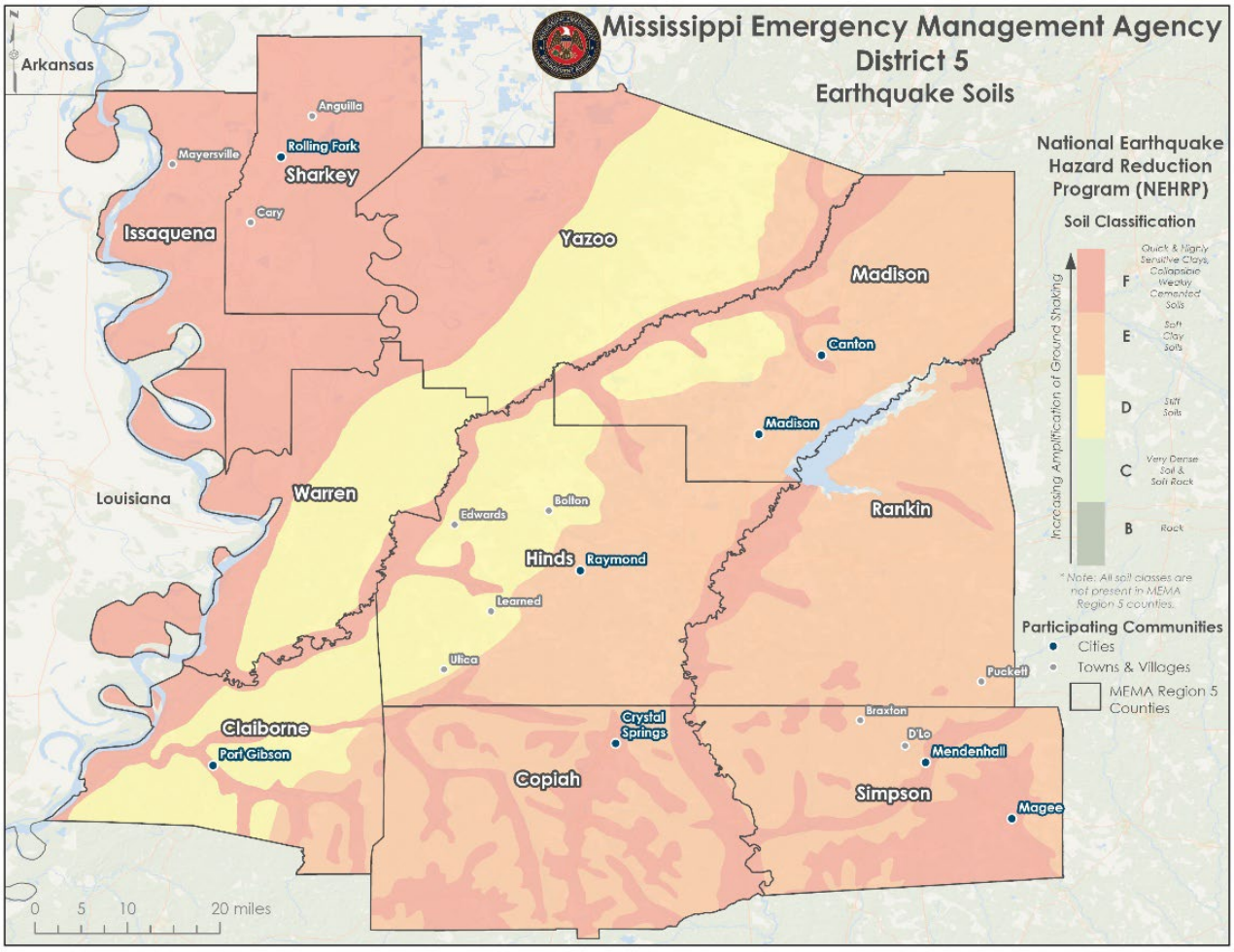


FIGURE 15: MEMA DISTRICT 5 EARTHQUAKE SOILS



4.3.4.2. CRITICAL FACILITIES

Based on data from the past ten years, earthquakes occur every couple of years in Madison County. Seismic activity associated with the New Madrid Seismic Zone could result in ground shaking that damages critical facilities and infrastructure. Earthquake impacts may disrupt essential services and utilities and damage transportation routes, potentially limiting access to critical facilities and hindering emergency response and recovery efforts. In the event of a rare strong earthquake, critical facilities within high liquefaction susceptibility zones and moderate seismic risk are most at risk of earthquake impacts.

4.3.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Earthquakes have the potential to damage cultural, historic, and natural resources through ground shaking and ground deformation associated with regional seismic activity such as the New Madrid Seismic Zone. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be particularly vulnerable due to age, unreinforced masonry construction, or shallow foundations that are susceptible to cracking or collapse during seismic events. Natural resources may be affected through soil instability, slope failure, altered drainage patterns, and damage to wetlands, streams, or wildlife habitats.

4.3.4.4. PEOPLE

Some populations may face greater risk to earthquakes--the relatively short warning time typically provided for earthquakes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

As noted in the base plan, although earthquakes are rare, rural communities with limited access to emergency services and infrastructure that may be disrupted by the impacts of an earthquake are at increased risk, as are vulnerable populations. Even though the City of Madison has a low SVI score than other areas in District 5, historical earthquakes in the District have occurred in Madison County, thus putting people in the County and its municipalities at slightly lower risk of impacts of earthquakes than the rest of the District.

4.3.4.5. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking. Because the City of Madison has soils and geography that put it at slightly higher risk of earthquake impacts, the impacts of earthquakes on critical facilities, community lifelines, natural and cultural resources, and infrastructure within City of Madison are likely to be higher than other areas in the District.

4.3.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

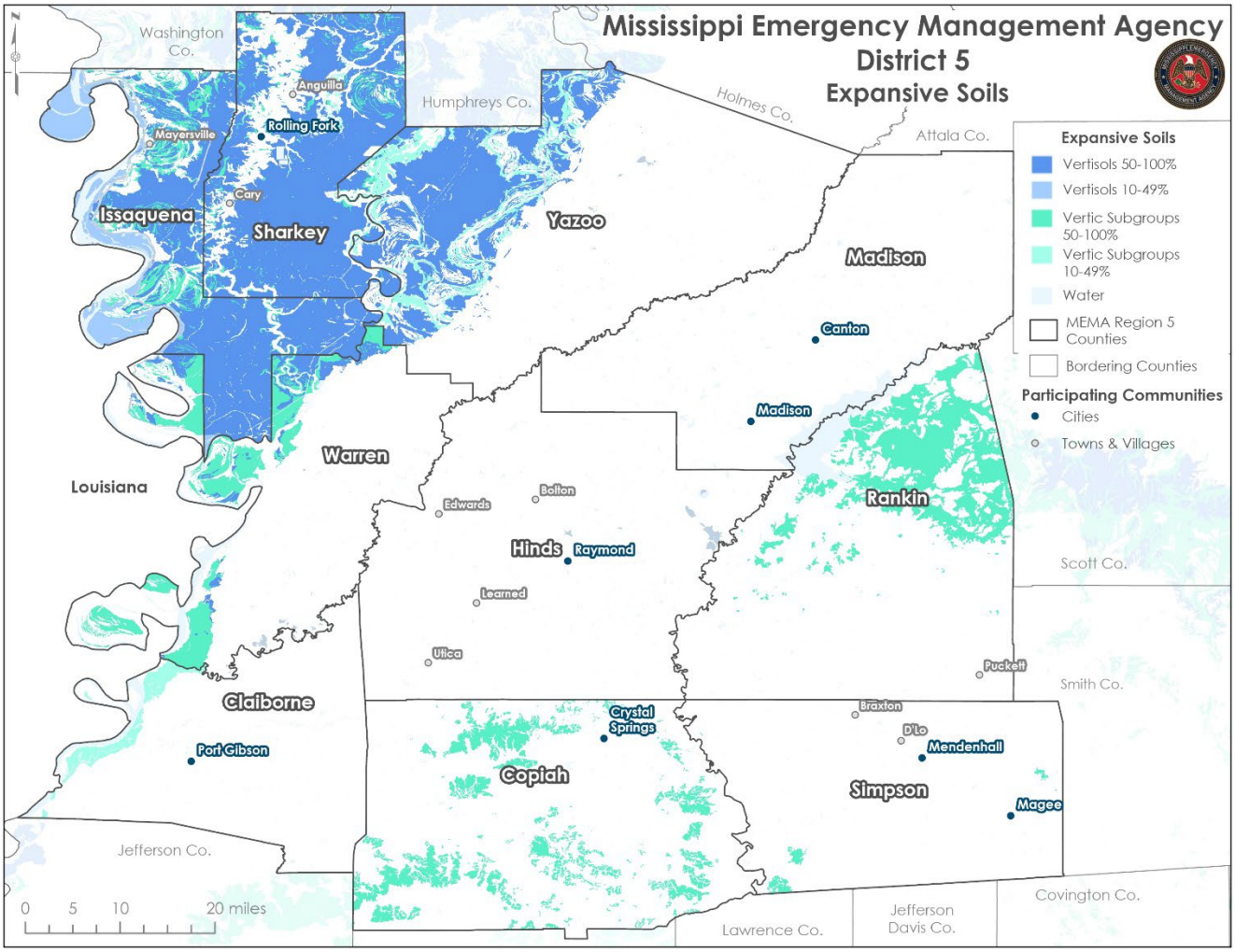
The growth in development and population in City of Madison may lead to higher impacts of earthquakes on its residents in the future. Increasing population and housing units can lead to higher risk of impact and damage to structures and people within the City.

4.4. EXPANSIVE SOILS

4.4.1. LOCATION AND EXTENT

As noted in the base plan, expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. City of Madison does not have expansive soils and therefore is not at risk of its impact. More information about location and extent of expansive soils within the District is provided in the base plan. **Figure 16** displays where expansive soils are in the District and based on the map, there are no expansive soils within the City of Madison. For more information on expansive soils within the District refer to the base plan.

FIGURE 16: MEMA DISTRICT 5 EXPANSIVE SOILS



4.4.2. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the D5 Region, including Madison County and the City of Madison.

4.4.3. PROBABILITY OF FUTURE OCCURRENCES

While there are no mapped expansive soils within the City, there are expansive soils within the County and could pose a risk to the City. Therefore, the City determined that the probability of future occurrences is **Extremely Likely.**

4.4.4. LOCALIZED VULNERABILITY ASSESSMENT

4.4.4.1. OVERALL VULNERABILITY

While there are no reported expansive soils incidents in the City, there are expansive soils within the County. Therefore, the risk of expansive soils is **Medium**.

4.4.4.2. CRITICAL FACILITIES

While expansive soils are not prevalent through the City of Madison, there are expansive soils within the County and therefore could pose a risk in the future. Currently there are no critical facilities within expansive soil areas.

4.4.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

While expansive soils are not prevalent through the City of Madison, there are expansive soils within the County and therefore could pose a risk in the future. Currently there are no cultural, historic, and natural resources within expansive soil areas.

4.4.4.4. PEOPLE

While expansive soils are not prevalent through the City of Madison, there are expansive soils within the County and therefore could pose a risk in the future. Currently there are reported impacts from expansive soils on people.

4.4.4.5. STRUCTURES AND SYSTEMS

While expansive soils are not prevalent through the City of Madison, there are expansive soils within the County and therefore could pose a risk in the future. Currently there are reported impacts from expansive soils on structures and systems.

4.4.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Expansive soils pose a Medium risk to the City of Madison, due to the proximity of expansive soils near the City. If expansive soils were more persistent in the City, the increase in development and population in the City of Madison may lead to higher impacts of expansive soils on its residents in the future. Although this risk can be significantly mitigated with smart planning and zoning decisions, including restricting or regulating development in high-risk areas.

4.5. FLOOD

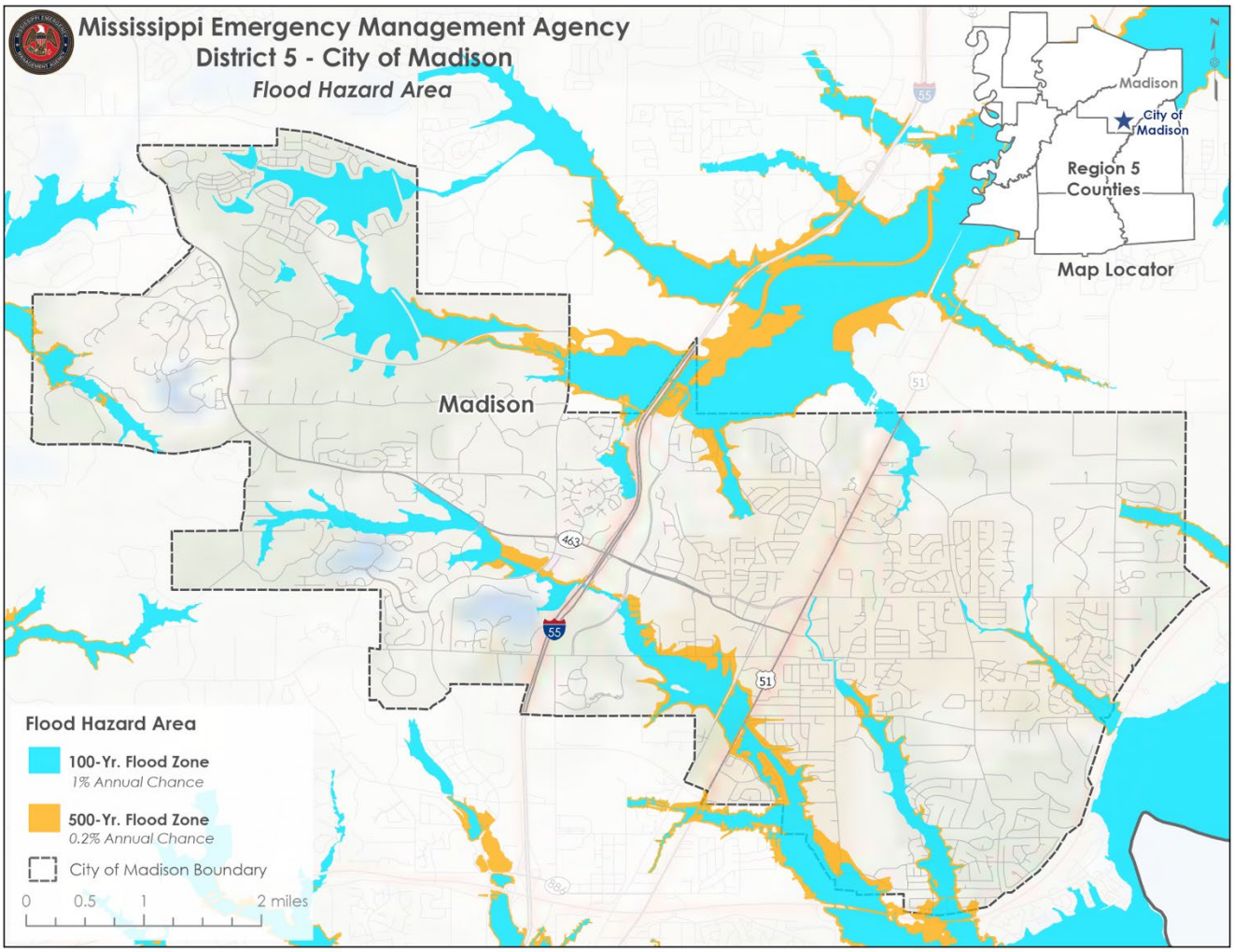
4.5.1. LOCATION

Flooding events are largely tracked at the county level and the numbers below represent the statistics for Madison County. Floods are the most common type of natural disaster, occurring when water overflows onto land that is typically dry after heavy rainfall, storm surges, or rapid snowmelt. Flooding often leads to significant impacts on both human life and the environment. This section provides detailed information about the location, extent, previous occurrences, and overall vulnerability of communities within City of Madison to flooding than is provided in the base plan. For more information on flooding on the District, refer to the base plan.

For purposes of this hazard profile and vulnerability analysis, the geographic location/extent for river flooding will be primarily considered as those areas at risk to the 100-year flood (also known as the 1% annual chance flood). The 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. However, the accompanying maps also show the 500-year floodplains (also known as the 0.2% annual chance floodplains) for two major reasons. First, climate models suggest that the planning area should anticipate rain events with increasing intensity in the coming years and decades. Second, any future population growth may result in new development within or near 500-year floodplains.

Figure 17 below shows the location of flood hazard areas within City of Madison. There are 100-year and 500-year floodplains throughout the City. The main waterways in the City of Madison is centered around multiple creeks within the planning area. These include Bear Creek, Culley Creek, Brashear Creek, Purple Creek, Hearn Creek and Haley Creek.

FIGURE 17: CITY OF MADISON FLOOD HAZARD AREAS



4.5.2. EXTENT

Riverine flooding is among the most significant hazards in the planning area due to its ability to impact large geographic areas, threatening a significant number of people and properties, the relatively small amount of flood water that it takes to cause significant injury or property damage, and the ability of flood water to linger for days, causing extensive damage. Because variations in geography, elevation, and building design mean that the same flood can cause a wide variety of extents of damage to different structures, the variation in extent across the County is most accurately captured by the flood zone mapping provided above under “location.”

The most significant recorded flooding event in the State’s history, indicating the potential extent of the threat of the flood hazard, was in 1927, when persistent heavy rainfall and run-off inundated 27,000 square miles. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

4.5.3. PREVIOUS OCCURRENCES

Since 1976 there have been five federal disaster declarations pertaining to flooding in Madison County*, details of which are provided below in **Table 18**. The most significant recorded flooding event

in City of Madison history, indicating the potential extent of the threat of the flood hazard, was in 2022, when The most significant recorded flooding event in City of Madison in the past five years, indicating the potential extent of the threat of the flood hazard, was in 2020. This event started when a low-pressure system spinning over northern Louisiana and southern Arkansas brought several rounds of showers and thunderstorms producing heavy rain. This resulted in widespread flooding of roads, homes, and businesses around the state. There was significant flooding across Madison. Many homes and numerous vehicles were flooded, and many roads and streets were under water.

However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

TABLE 18: FLOODING-RELATED MAJOR DISASTER DECLARATIONS IN CITY OF MADISON

Disaster Number	Description	(Declaration Date) and Incident Period	Individual Assistance	Public Assistance
DR-4790	Severe Storm, Tornadoes, Straight-line Winds, Flooding	(6/10/2024) 4/8/2024-4/11/2024	Y	N
DR-1360	Severe Storm, Flooding, Tornado	(2/23/2001) 2/16/2001-3/15/2001	Y	N
DR-888	Flooding, Severe Storm, Tornado	(1/3/1991) 12/19/1990-1/14/1991	Y	N
DR-683	Flooding, Severe Storm, Tornado	(6/1/1983) 6/1/1983	Y	N
DR-499	Flooding, Severe Storm, Tornado	(4/1/1976) 4/1/1976	Y	Y

** Federal disaster areas are only tracked at the county level. The disasters above represent the statistics for Madison County.*

Between the 2015 and 2020 plans, there were 22 flooding events in Madison County, causing $902,000 in property damage. Since the 2020 plan, there have been 21 such events, causing $3,354,000 in damages, no fatalities, and no injuries according to information provided by the NCEI. Additional information on these events is provided in **Table 19.**

Table 19. Individual Flood Events 2020-2025

Date	Time (CST-6)	Event Description	Assessed Damages	Estimated Flood Depth
01/02/2020	18:00	Flooding occurred on Yandell Road near Highway 51. Numerous roads were flooded in Canton. Flooding also occurred along the I-55 frontage road near Madison.	$50,000	6 inches
01/03/2020	08:00	Approximately 12 water rescues occurred in Canton due to lingering flood waters in homes.	$100,000	6 inches
01/03/2020	09:58	East Sowell Road was flooded.	$5,000	6 inches
01/03/2020	09:59	Old Yazoo Road near Patrick Farm Road was flooded.	$10,000	6 inches
02/10/2020	13:55	Rocky Hill Road was washed out due to flash flooding.	$10,000	4 inches

02/10/2020	14:20	Water approached homes on Wilson Street.	$5,000	4 inches
07/16/2021	15:46	Heavy rainfall from slow moving thunderstorms resulted in a few instances of flash flooding across far southern Madison County. Several roads were flooded, including Rice Road at Old Canton Road.	$10,000	6 inches
04/13/2022	18:35	Peace Street in downtown Canton was flooded with a foot deep of water in some places.	$5,000	12 inches
08/02/2022	07:20	Widespread flooding along with some significant flooding occurred across the Canton area due to heavy rainfall. Radar estimated rainfall of 5 to 8 inches fell in and to the north of Canton. Numerous streets were flooded with multiple cars stalled or partially submerged in flood waters. Water also entered several buildings and homes.	$1,000,000	8 inches
08/02/2022	07:40	Numerous streets flooded in Canton with some vehicles stalled or partially submerged in flood waters, along with water entering buildings and homes.	$50,000	6 inches
08/02/2022	08:35	Multiple streets were flooded across the County.	$20,000	6 inches
08/24/2022	07:00	There was significant flooding across Canton. Many homes and numerous vehicles were flooded, and many roads and streets were under water. Six homes experienced major flooding, and another 5 experienced minor flooding.	$1,000,000	10 inches
08/24/2022	07:00	Significant flooding across Canton. Many homes flooded along with numerous vehicles flooded as well. Many roads and streets were also underwater.	$1,000,000	10 inches
08/24/2022	07:00	Person was rescued from a vehicle in 2 feet of water at Highway 16 and Lottville Road.	$20,000	24 inches
08/24/2022	10:12	Widespread flooding on Ridgewood road has made the road impassable. Stalled cars were also reported.	$50,000	6 inches
01/08/2023	05:00	Flooding occurred along Stout Road Near Canton.	$5,000	4 inches
01/25/2024	10:13	Creeks and fields were flooded.	$1,000	4 inches
04/10/2024	11:45	There was flash flooding near the intersection of Stout Road and Lakeshire Circle.	$1,000	4 inches
04/10/2024	13:00	A portion of MS Highway 43 was flooded at Honeysucker Road.	$1,000	4 inches
04/10/2024	13:00	After earlier flash flooding, floodwaters remained pooled for several hours at the intersection of Stout Road and Lakeshire Circle.	$1,000	4 inches

4.5.4. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 43 floods in the past 10 years. However, data from NCEI's Storm Events Database does not provide enough granularity to know exactly how many of

these events impacted the City of Madison. Using the County level information and their own experiences with flooding in the community, representatives from the City of Madison assessed the future probability of future flooding in the community to be **Highly Likely**. As climate change increases the intensity and unpredictability of rainfall, the likelihood of flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience.

4.5.5. LOCALIZED VULNERABILITY ASSESSMENT

4.5.5.1. OVERALL VULNERABILITY

As noted in the base plan, flooding can cause widespread damage to buildings, roads, utilities, and public infrastructure, and can significantly impact all eight community lifelines as well as natural, historical, and cultural resources. Moderate vulnerability areas including Copiah, Claiborne, Hinds, Madison, Rankin and Simpson Counties experience moderate flood risk due to mixed terrain and partial exposure to flood-prone zones. While not as frequently impacted as Delta counties, these areas still face risks from localized flooding and inadequate stormwater systems. The City is at a **Medium** risk of impacts from flooding events. This section provides further contextualization for the anticipated vulnerability to flooding events.

4.5.5.2. CRITICAL FACILITIES

Flooding poses a significant risk to critical facilities in the City of Madison by causing structural damage, inundating mechanical and electrical systems, and disrupting essential services. Flood events can impact hospitals, fire stations, law enforcement facilities, schools, emergency operations centers, and water and wastewater infrastructure, particularly those located in low-lying areas or within Special Flood Hazard Areas. Inundation of utility systems may contaminate drinking water supplies, impair wastewater treatment, and result in power and communications outages that hinder emergency response and continuity of government. Flooded roads and bridges can also restrict access to critical facilities, delaying emergency services, evacuation, and recovery efforts. **Figure 18** displays the critical facilities and infrastructure in the flood hazard areas. There are about 11 critical facilities within the floodplain.

FIGURE 18: CRITICAL FACILITIES IN THE FLOOD HAZARD AREAS

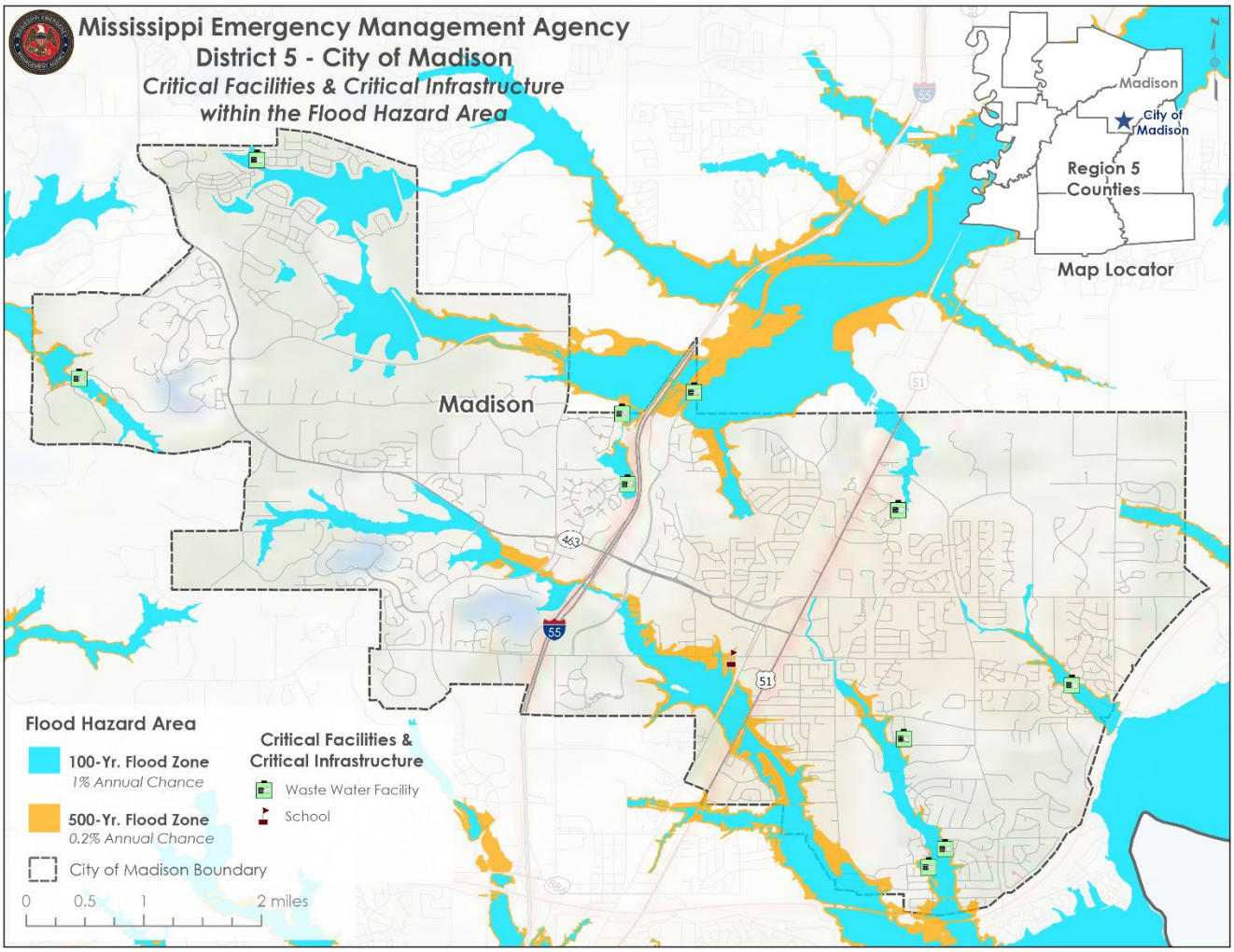


Table 19 below lists the critical facilities in the City of Madison that are in the 1% annual chance and 0.2% annual chance floodplains.

TABLE 20: CRITICAL FACILITIES IN THE FLOODPLAIN

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
City of Madison	School	Madison Ave Upper Elementary	Y	N
City of Madison	Waste Water Facility	Lift Station 12	N	Y
City of Madison	Waste Water Facility	Lift Station 20	N	Y
City of Madison	Waste Water Facility	Lift Station 27	N	Y
City of Madison	Waste Water Facility	Lift Station 3	N	Y
City of Madison	Waste Water Facility	Lift Station 31	N	Y
City of Madison	Waste Water Facility	Lift Station 41	N	Y

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
City of Madison	Waste Water Facility	Lift Station 42	N	Y
City of Madison	Waste Water Facility	Lift Station 43	N	Y
City of Madison	Waste Water Facility	Lift Station 44	N	Y
City of Madison	Waste Water Facility	Lift Station 8	Y	N

4.5.5.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Flooding can adversely impact cultural, historic, and natural resources in the City by causing erosion, structural damage, and long-term degradation of sensitive sites and landscapes. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be damaged by prolonged inundation, saturated soils, or repeated flood events, particularly where foundations, grave markers, or unreinforced masonry are exposed to water and shifting ground conditions. Floodwaters can erode soil and displace or destroy archeological materials, resulting in irreversible loss of cultural resources. Natural resources are also vulnerable, as flooding can alter stream channels, degrade wetlands, reduce water quality, damage vegetation, and disrupt wildlife habitats. While some ecosystems may recover over time, repeated or severe flooding can permanently alter natural and cultural landscapes.

4.5.5.4. PEOPLE

Some populations may face greater risk to flooding--the relatively short warning time typically provided for flooding means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations most at risk of the impacts of flooding include older adults, low-income families, and individuals without access to flood insurance or reliable transportation, as these can make it more difficult to evacuate when flood warnings occur, and it is harder to recover from the impacts of a flood. These populations can experience disproportionate impacts to floods and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Madison has a low SVI score and therefore may recover faster than other residents of District 5.

4.5.5.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, flooding has caused over $3,354,000 in damage in the past five years within Madison County and is expected to continue in the future. Flooding poses a significant risk to structures and critical systems in the City by causing physical damage, inundation, and operational disruptions. Floodwaters can damage building foundations, walls, and interiors, particularly in structures located in low-lying areas or flood-prone zones, leading to costly repairs and long-term structural degradation. Electrical, mechanical, and HVAC systems are especially vulnerable to water damage, which can result in power outages and prolonged service interruptions. Flooding may also impair transportation networks, water distribution, wastewater treatment, and drainage systems, reducing access to essential services and facilities. These impacts can disrupt emergency responses, government operations, and community recovery efforts, especially when flood events are recurrent or severe.

4.5.5.6. NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

The National Flood Insurance Program (NFIP) is a federal program managed by FEMA that provides flood insurance to property owners, renters, and businesses in participating communities. It aims to reduce flood damage by restricting floodplain development and offering affordable insurance, as standard homeowners insurance typically does not cover flood damage. The City of Crystal Springs is a participating community in the NFIP. For more information about the NFIP, reference **Section 5.8.6.3** in the base plan. Additionally, the City participates in the Community Rating System (CRS). The CRS is a voluntary program within the National Flood Insurance Program (NFIP) that reduces flood insurance premiums for policyholders in communities that exceed minimum floodplain management requirements

According to current data from the NFIP, there are zero Repetitive Loss properties in City of Madison as of 2025.

4.5.5.7. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in City of Madison may lead to higher impacts of flooding. An increase in the number of structures in the floodplain allows for less permeable surface to absorb floodwater, along with higher strain on stormwater management systems that can contribute to an overall increase in the severity of flood events.

4.6. SEVERE STORMS

4.6.1. LOCATION AND EXTENT

Severe storm events are only tracked at the county level and the numbers below represent the statistics for Madison County. Severe storms are a region-wide hazard in the Mississippi Delta and are not confined to specific locations. Severe storms affect the entire planning area equally; City of Madison are not more or less susceptible to their impacts than other communities in District 5. For more information on severe storms on the district, refer to the base plan.

4.6.2. PREVIOUS OCCURRENCES

Recent events highlight the destructive potential of these storms. Since 2020, the following events have taken place in Madison County:

- 49 thunderstorms, causing $3,216,000 in property damage
- Three occurrences of severe lightning, causing $216,000 in property damage
- Three high wind events, causing $12,000 in property damage
- 12 hailstorms, causing $1,590,000 in property damage

4.6.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 67 events in the past 5 years which is about 13 severe storm events per year. Therefore, the probability of severe storms occurring in the future is **Extremely Likely**, especially during peak storm seasons. These storms are expected to occur multiple times per year.

4.6.4. LOCALIZED VULNERABILITY ASSESSMENT

4.6.4.1. OVERALL VULNERABILITY

As noted above, the risk of severe storms (due to the frequency and ubiquity of these events) is largely equal across the entire planning area, posing risks to natural and cultural resources and community lifelines, as discussed in the base plan. However, demographic and development factors can cause variation in vulnerability to this risk. Based on the frequency and the extent of damage that severe storms can cause the risk of severe storms is **High** for Madison County and the City of Madison. This section provides further contextualization for the anticipated vulnerability of sever storm events.

4.6.4.2. CRITICAL FACILITIES

Since severe storms impact the planning area equally, all critical facilities are at risk of severe storm impacts. Severe storm events, including strong thunderstorms accompanied by high winds, heavy rainfall, hail, and lightning, present an ongoing risk to critical facilities in the City. These storms can cause damage to essential buildings such as hospitals, emergency response facilities, schools, government offices, roof failure, shattered windows, and impacts of debris.

4.6.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Severe storm events can adversely affect cultural, historic, and natural resources in the City through high winds, heavy rainfall, flooding, hail, and lightning. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, falling trees, erosion, or prolonged moisture exposure, particularly where resources are older or lack protective reinforcement. Intense rainfall can erode soils and displace archeological materials, leading to the loss of historic context and integrity. Natural resources may also be impacted by severe storms that could damage

forests, alter stream channels, degrade wetlands, and reduce water quality through increased sedimentation and runoff.

4.6.4.4. PEOPLE

The wind, hail, lightning, and flooding often produced by severe storms can lead to injury or death. Some populations may face greater risk to severe storms--the relatively short warning time typically provided for severe storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. These populations can experience disproportionate impacts to severe storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Madison has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.6.4.5. STRUCTURES AND SYSTEMS

Aging infrastructure and limited emergency resources without redundancies increase the vulnerability of structures and systems in City of Madison to the impacts of severe storms. However, this vulnerability is not markedly higher or lower in the County than the rest of the District; the vulnerability of structures and systems across D5 is described in more detail in the base plan. Based on previous occurrences, severe storms have caused over $4,000,000 in damage within the past five years. It is expected that in the next several years, similar damage from severe storms will continue to occur.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Madison County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.6.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in City of Madison means more people and structures for storms to damage. Additionally, higher strain on stormwater management systems can contribute to an overall increase in the likelihood of severe storms to lead to flooding.

4.7. SEVERE WINTER WEATHER

4.7.1. LOCATION AND EXTENT

Severe storm events are only tracked at the county level and the numbers below represent the statistics for Madison County. Severe winter weather is a region-wide hazard in the Mississippi Delta and is not confined to specific locations. Winter storms affect the entire planning area equally; City of Madison are not more or less susceptible to their impacts than other communities in District 5. More information on the extent of the threat posed by these storms is provided in the base plan. However, the extent of these storms is limited, with an average amount of annual snowfall in Madison County of 0-1 inches. For more information on severe winter weather on the district, refer to the base plan.

4.7.2. PREVIOUS OCCURRENCES

Several impactful severe winter weather events have occurred in City of Madison over the past two decades. The most significant of these in recent years include:

- The January 2018 cold snap that led to challenges like burst pipes, increased heating demands, and risk to seniors and other vulnerable populations
- The February 2021 freezing rain, sleet, and snow event that led to widespread power outages due to ice accumulation
- The January 2014 snowstorm led to significant travel hazards

Between 2015 and 2020, there were three severe winter weather events in Madison County, causing $4,000 in property damage. Since the 2020 plan update, there have been six such events, causing $153,000 in damage.

4.7.3. PROBABILITY OF FUTURE OCCURRENCES

As with the rest of District 5, severe winter weather events in Madison County are considered occasional but increasing in frequency and severity. Based on previous occurrences, there have been nine winter weather events in the past 10 years which is about one event per year. According to the City of Madison, the probability of a severe winter storm occurring in the City is **Low**.

4.7.4. LOCALIZED VULNERABILITY ASSESSMENT

4.7.4.1. OVERALL VULNERABILITY

All counties within District 5 are vulnerable to the impact of severe winter storms. Because it is closer to the Northern portion of the region, winter weather in City of Madison may be slightly more severe than across the region. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the County's natural, historic, and cultural assets, as discussed in the base plan. Based on the frequency and the severity of severe winter storms, the risk to the City of Madison is **Medium**. Severe winter storms can disrupt utility and critical infrastructure which can significantly disrupt the City. This section provides further contextualization for the anticipated vulnerability of severe winter storms.

4.7.4.2. CRITICAL FACILITIES

Severe winter weather, including freezing temperatures, ice, and occasional snow, can disrupt critical facilities in the City by causing power outages, damaging water and wastewater systems, and limiting transportation access. Freezing conditions may result in broken pipes, equipment failures, and interruptions to essential services at hospitals, emergency response facilities, schools, and government buildings.

4.7.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Although severe winter weather occurs infrequently, its effects can result in lasting damage to sensitive cultural, historic, and natural resources. Severe winter weather can adversely affect cultural, historic, and natural resources in the City by causing structural stress, moisture damage, and ecological disruption. Historic buildings, cemeteries, and monuments may experience cracking, spalling, or material deterioration due to freeze–thaw cycles, while ice accumulation and fallen trees can damage structures and cultural landscapes. Natural resources are also vulnerable, as winter weather can damage vegetation, alter wildlife habitats, and degrade water quality through increased runoff and erosion.

4.7.4.4. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations. As with other hazards, those who are elderly, disabled, or economically disadvantaged are at heightened risk due to limited access to reliable heating, transportation, and emergency services, and a reduced ability to physically withstand cold temperatures. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms. These populations can experience disproportionate impacts to severe winter storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Madison has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.7.4.5. STRUCTURES AND SYSTEMS

Urban centers are more likely to experience infrastructure strain, including power outages, traffic disruptions, and increased demand for emergency services and shelters. While these areas may experience slightly milder winter conditions, the potential impacts are magnified due to the higher number of residents, aging utility systems, and limited access to alternate heating sources.

4.7.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Population growth and related residential expansion in the City of Madison may lead to more energy efficient buildings, modern infrastructure, and general structural readiness for the impact of winter weather. However, this population growth can also strain electrical and other utility systems, increasing the likelihood that these systems experience failure during significant events.

4.8. TORNADO

4.8.1. LOCATION AND EXTENT

Tornado events are largely tracked at the county level and the numbers below represent the statistics for Madison County. Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments. Due to the unpredictable nature of tornado formation and the ability for the entire planning area to be impacted by severe storms, the entirety of City of Madison is equally likely to experience a tornado of any magnitude. Tornados of any strength on the Enhanced Fujita (EF) scale are possible throughout the county. For more information on tornadoes across the district, refer to the base plan.

4.8.2. PREVIOUS OCCURRENCES

Between 1950 and 2022, there were 70 tornadoes reported in Madison County, causing a total of $46,583,000 in property damage. Madison County ranks third in most tornado events and forth in reported property damage across District 5.

4.8.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 70 tornadoes in the past 72 years. The County experiences almost one tornado event each year. Historical data spanning 72 years indicates a consistent pattern of tornado activity across District 5, indicating that tornadoes are **Likely** to recur at some point in the future.

4.8.4. LOCALIZED VULNERABILITY ASSESSMENT

4.8.4.1. OVERALL VULNERABILITY

More populous and developed jurisdictions like the City of Madison face elevated risk from tornadoes due to greater exposure and potential for cascading impacts. These areas are more likely to experience significant property damage, disruption of services, and challenges in post-disaster recovery. Additionally, mobile homes are extremely susceptible to high winds and may sustain more damage or be flipped over during a strong tornado. Tornadoes cause flying debris which can be dangerous for people in the surrounding areas and other buildings, infrastructure, and critical facilities. Due to the severity tornadoes can cause, they pose a **High** risk to the City. This section provides further contextualization for the anticipated vulnerability to tornadoes.

4.8.4.2. CRITICAL FACILITIES

Tornadoes pose a serious risk to critical facilities in the City of Madison due to extreme winds and flying debris that can cause sudden and severe structural damage. Facilities such as hospitals, emergency response buildings, schools, and water or wastewater infrastructure may experience roof failure, wall collapse, or loss of utilities, leading to immediate service interruptions. Power and communications outages are common during tornado events, and debris-blocked roads can restrict access to critical facilities and delay emergency response.

4.8.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tornadoes can significantly impact cultural, historic, and natural resources in the City through extreme winds, flying debris, and associated storm damage. Historic structures, cemeteries, monuments, and archeological sites may sustain damage or complete loss due to building collapse, fallen trees, or debris impacts, particularly where resources are older or lack structural reinforcement. Cultural landscapes and historic settings can also be altered by the destruction of surrounding features such as fences, vegetation, and access paths. Natural resources may be affected through forest damage, habitat loss, soil erosion, and disruption of wildlife caused by wind and debris.

4.8.4.4. PEOPLE

Some populations may face greater risk to tornadoes--the relatively short warning time typically provided for tornadoes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Population data for mobile or manufactured homes are only tracked at the county level and the numbers below represent the statistics for Madison County. Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. 2,140 (7.4%) of the residents of Madison County reside in mobile or manufactured homes, placing them at increased risk. These populations can experience disproportionate impacts to tornados and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Madison has a low SVI score and therefore may recover faster than other residents of District 5.

4.8.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that do not have safe rooms or have not been retrofitted for extreme winds are vulnerable to the impacts of tornados, including in City of Madison, as described in the base plan. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of tornadoes. City of Madison may be at slightly higher risk of these impacts simply since it is more developed than other jurisdictions in the district, and there are more such facilities to be impacted.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. Madison County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.8.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in City of Madison means more people and structures for tornados to damage. This trend also leads to a housing and building stock that is newer, increasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tornadoes.

4.9. TROPICAL STORM/HURRICANE

4.9.1. LOCATION AND EXTENT

Like the rest of District 5, City of Madison is inland but is still vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. This risk is not measurably varied across the County or planning area, except for low-lying and flood-prone areas that might be more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section. The extent of the impacts of tropical storm typically includes sustained winds of 30-60 MPH with higher gusts, heavy rainfalls of six or more inches in a 24-hour period, and occasional tornadoes. For more information on tropical storms and hurricanes across the district, refer to the base plan.

4.9.2. PREVIOUS OCCURRENCES

City of Madison is inland but has experienced the direct impacts of tropical storms in the past. The tracks of the following storms have passed directly through the county, producing damaging wind, heavy rainfall, power outages, and occasional tornadoes:

- Tropical Depression Francine (2024)
- Tropical Storm Ida (2021)
- Beta (2020)
- Tropical Depression Andrew (1992)

4.9.3. PROBABILITY OF FUTURE OCCURRENCES

Although the City of Madison is located inland, the probability of experiencing strong hurricane-related impacts remains **Low**. The City of Madison can expect to experience the effects of a tropical storm or hurricane approximately every 5 to 10 years, although climate trends and increased storm intensity may elevate risk.

4.9.4. LOCALIZED VULNERABILITY ASSESSMENT

4.9.4.1. OVERALL VULNERABILITY

Being in the Northern half of the district, Madison County and the City of Madison are likely to experience slightly less frequent and intense tropical storm impacts than the district overall. Due to the low frequency, geography, and potential damage from tropical storms and hurricanes, they pose a **Medium** risk to the City as they have the potential to cause significant damage. This section provides further contextualization for the anticipated vulnerability of tropical storms and hurricanes.

4.9.4.2. CRITICAL FACILITIES

Although weakened inland, tropical storms and hurricanes can affect critical facilities in the City through heavy rainfall, strong winds, and localized flooding that strain infrastructure and disrupt essential operations. Hospitals, emergency response facilities, schools, government buildings, and water or wastewater systems may experience structural damage, power and communications outages, and flooding of mechanical or electrical components. Excessive rainfall can also overwhelm drainage systems and flood roadways, restricting access to critical facilities and delaying emergency response.

4.9.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tropical storms and hurricanes can adversely impact cultural, historic, and natural resources in the City through heavy rainfall, strong winds, localized flooding, and prolonged soil saturation. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, flooding, or erosion, particularly where structures and sites are older or not designed to withstand

prolonged moisture exposure. Excessive rainfall can erode soils and displace archeological materials, while flooding may degrade cultural landscapes and historic settings. Natural resources are also vulnerable, as tropical storm impacts can damage forested areas, alter stream channels, degrade wetlands, and reduce water quality due to increased runoff and sedimentation.

4.9.4.4. PEOPLE

Some populations may face greater risk to tropical storms --the relatively short warning time typically provided for tropical storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. These populations can experience disproportionate impacts to tropical storms and hurricanes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Madison has a low SVI score and therefore may recover faster than other residents of District 5.

4.9.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storms like high winds. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of these storms across the planning area, including in City of Madison, as described in the base plan. The City may be at slightly higher risk of these impacts simply because it is more developed than other jurisdictions in the district, and there are more such facilities to be impacted. As noted above, low-lying and flood-prone areas are more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. Madison County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.9.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in City of Madison means more people and structures for these storms to damage. This trend also leads to a housing and building stock that is newer, increasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tropical storms.

4.10. WILD/URBAN INTERFACE (WUI) FIRE

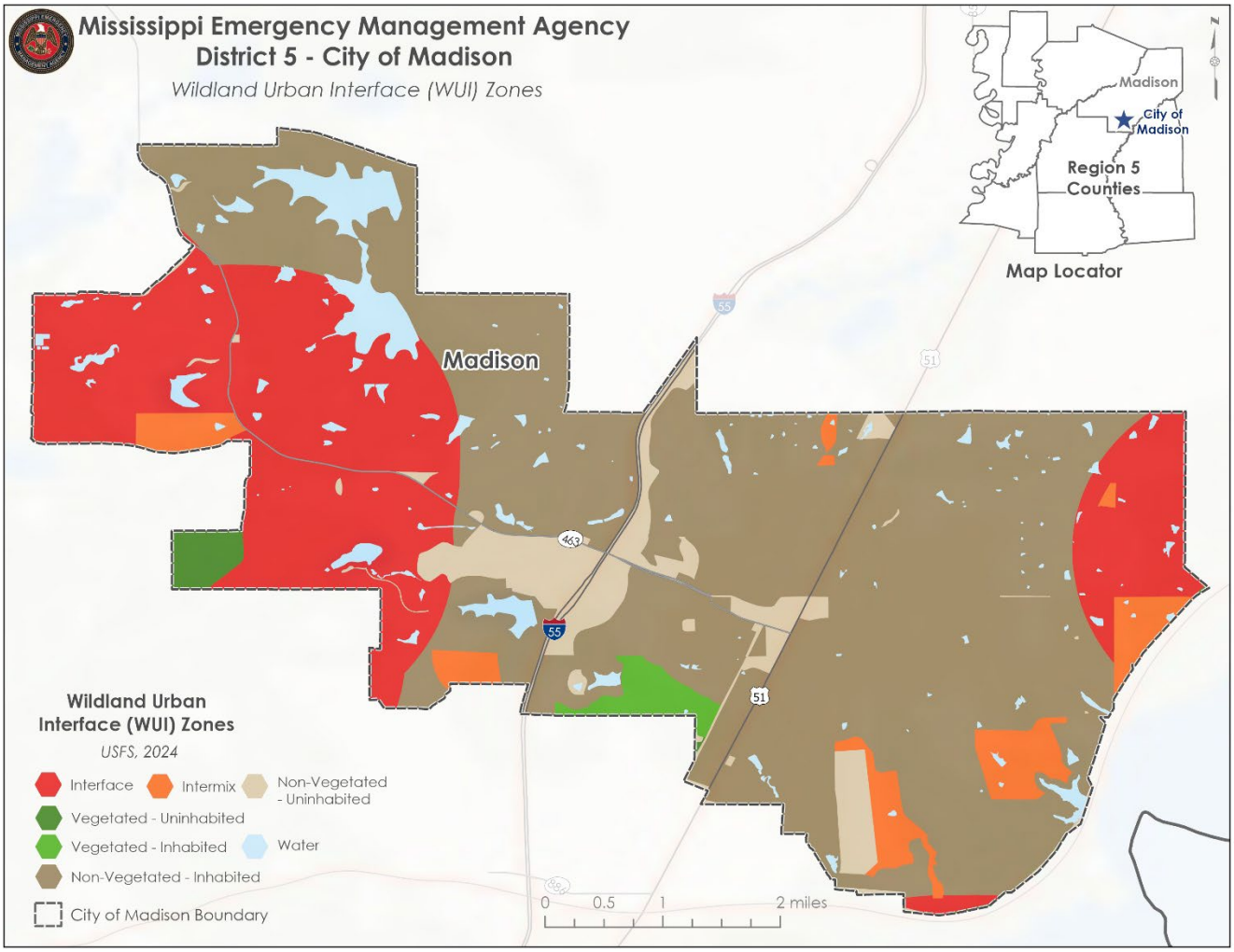
4.10.1. LOCATION AND EXTENT

Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas. There are two types of WUI Zones, and they are briefly described below.

- **Interface:** Development is bordered by wildlands on at least one side.
- **Intermix:** Development is surrounded on two or more sides by wildlands.

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. **Figure 19** below is a map showing the area where this hazard is most significant in City of Madison. The City has substantial WUI interface areas in the Eastern and Western parts of the City and some minimal areas in the intermix WUI areas. For more information on urban and WUI fires across the district, refer to the base plan.

FIGURE 19: WILDLAND URBAN INTERFACE (WUI) AREA IN CITY OF MADISON



The extent of a potential WUI fire impact in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development, but is not substantively different in City of Madison than in the District overall. This extent is described further in the base plan.

4.10.2. PREVIOUS OCCURRENCES

The City of Madison experiences both structural fire incidents and periodic wildfire-related hazards. Urban fire events have included residential structure fires, such as the 2025 house fire on Spring Hill Drive that resulted in one fatality, underscoring the continued risk to homes and residents. Madison and surrounding Madison County have also seen vegetation and roadside fire activity, including grass fires along Interstate 55 that temporarily blocked traffic and required multi-unit fire response. In Madison County, there have been 38 urban fires. Using Madison County as a proxy to understand the number of urban fires that have occurred, the City of Madison has experienced several fires from 1992-2020. It is also important to note that some District 3 participating communities provided anecdotal information that previous fire events have not been captured using state level data. Due to this data limitation, it is possible that the number of previous occurrences could be more than reported.

4.10.3. PROBABILITY OF FUTURE OCCURRENCES

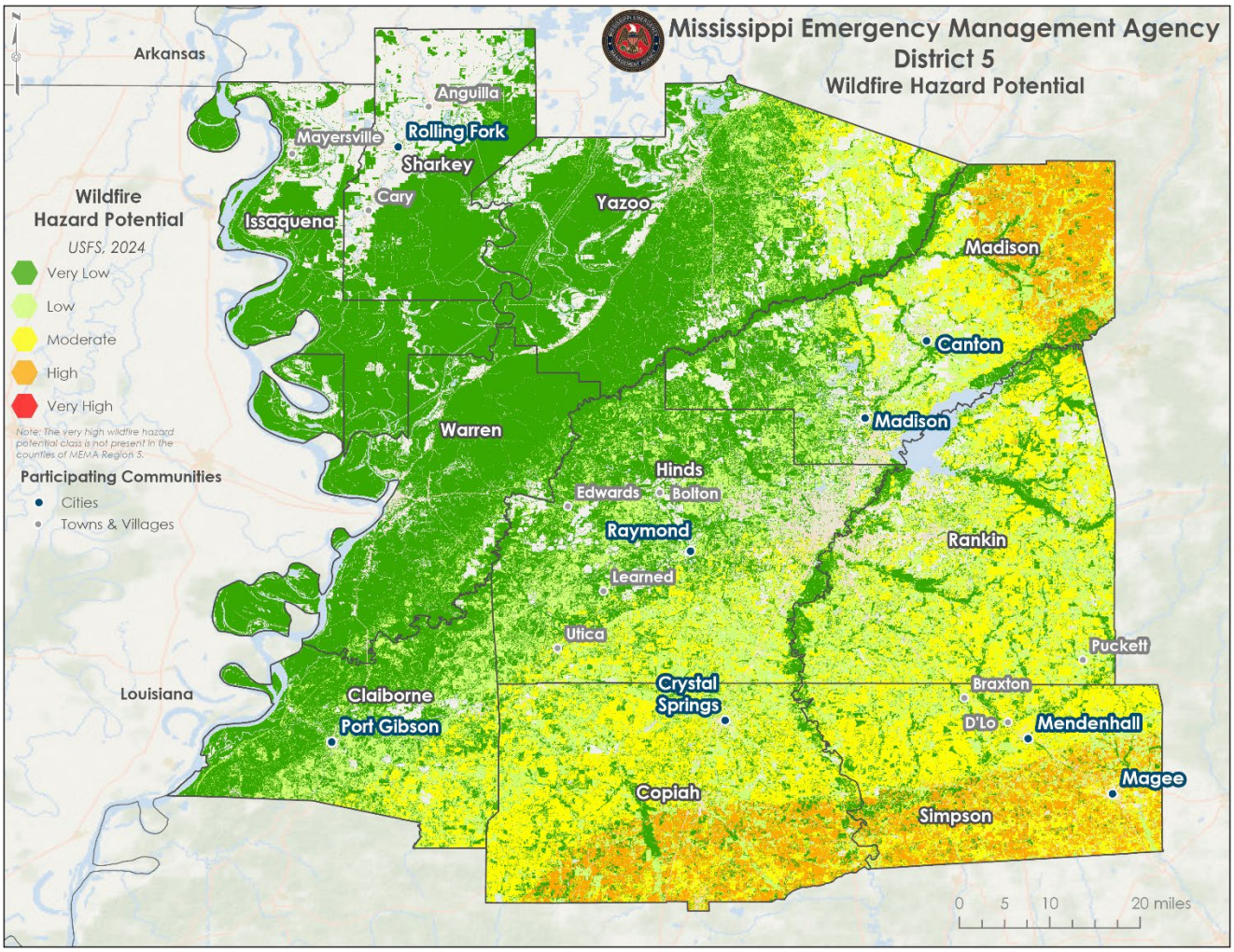
Wildland/Urban Interface (WUI) fires are expected to remain a recurring hazard in City of Madison. Hundreds of wildfires occur in Mississippi each year, indicating that such fires are likely to occur in the City. However, based on local capacity to respond to such fires, the impact on the City is relatively low. The probability of the City responding to a severe fire is **Low**.

4.10.4. LOCALIZED VULNERABILITY ASSESSMENT

4.10.4.1. OVERALL VULNERABILITY

Cities like Madison in the eastern part of the district, due to a variety of geographic factors like drier climate and soils and trends in development, are more susceptible to both WUI and urban fire. As seen in **Figure 20** below, wildfire hazard potential is generally low across the City. Considering both the WUI zones and the wildfire hazard potential areas, fires pose a **Low** risk to the City. This section provides further contextualization for the anticipated vulnerability to urban/wildfires.

FIGURE 20: MEMA DISTRICT 5 WILDFIRE HAZARD POTENTIAL



4.10.4.2. CRITICAL FACILITIES

Urban and wildland fires pose a significant risk to critical facilities in the City of Madison by threatening structural integrity, utility systems, and operational continuity. Hospitals, fire stations, schools, government buildings, and water or wastewater facilities may be damaged or rendered inoperable by direct flame contact, radiant heat, smoke infiltration, and wind-driven embers. Fire events can disrupt electrical power, communications, and water supplies needed for medical care, emergency response, and fire suppression, while evacuation orders and hazardous conditions may limit staff access to critical facilities. Wildfires occurring in or near the wildland-urban interface can also restrict transportation routes and delay response efforts. **Table 20** lists the critical facilities in City of Madison lie within the WUI area and are thus at increased risk.

FIGURE 21: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE WUI ZONES

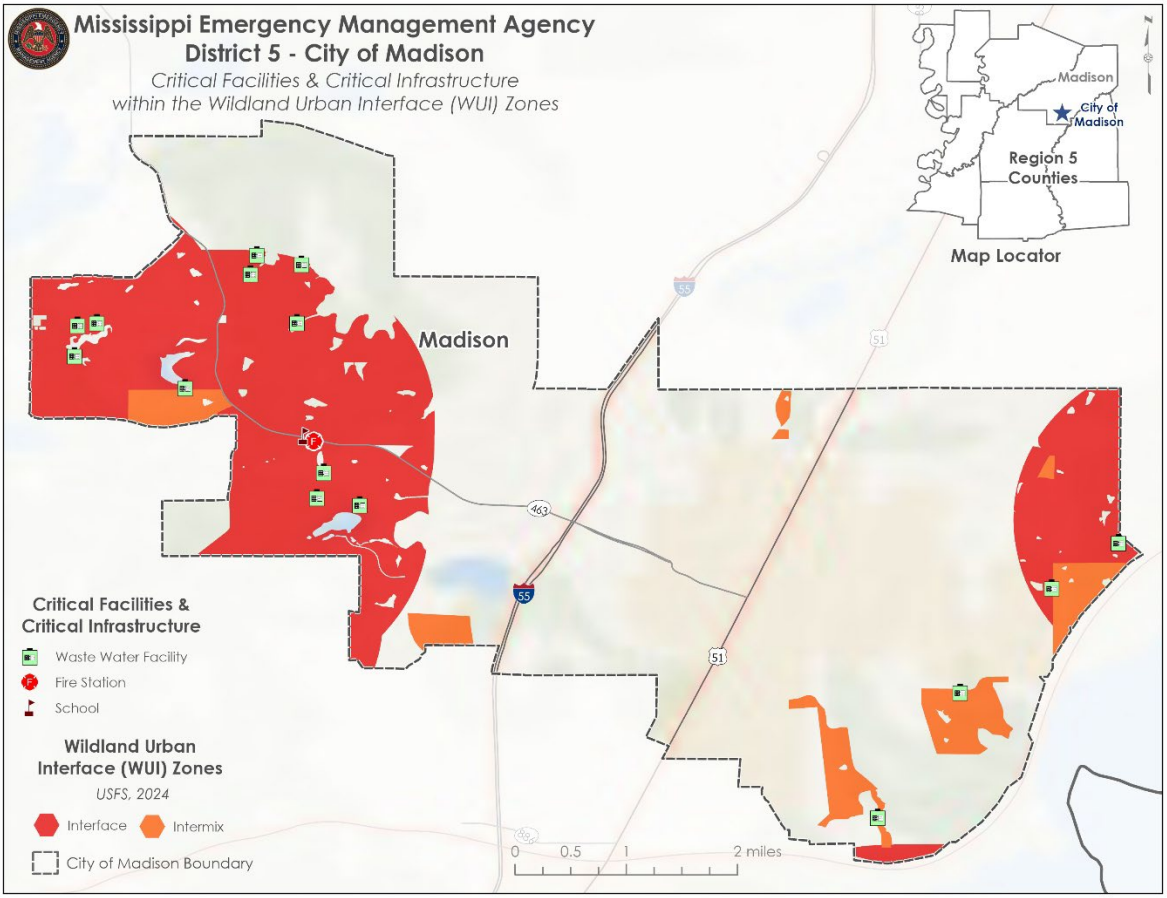


TABLE 21: CRITICAL FACILITIES IN THE WUI

Jurisdiction	Facility Type	Facility	WUI Zone
City of Madison	Fire Station	Fire Station #3	Interface - Medium Density
City of Madison	School	Madison Middle School	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 17	Intermix - Medium Density
City of Madison	Waste Water Facility	Lift Station 2	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 25	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 29	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 3	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 37	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 39	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 4	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 40	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 43	Intermix - Medium Density
City of Madison	Waste Water Facility	Lift Station 49	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 5	Interface - Medium Density

Jurisdiction	Facility Type	Facility	WUI Zone
City of Madison	Waste Water Facility	Lift Station 50	Interface - Low Density
City of Madison	Waste Water Facility	Lift Station 51	Interface - Medium Density
City of Madison	Waste Water Facility	Lift Station 57	Interface - Medium Density

4.10.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Urban and wildland fires can cause significant damage to cultural, historic, and natural resources in the City through flame exposure, extreme heat, smoke, and post-fire environmental degradation. Historic structures, cemeteries, monuments, and archeological sites may be damaged or lost because of direct fire contact, structural weakening from heat, falling trees, or fire-suppression activities. The destruction of surrounding vegetation can alter historic settings and cultural landscapes, reducing their integrity and context. Natural resources are particularly vulnerable, as fires can result in the loss of forested areas and wildlife habitat, degrade air and water quality, and increase erosion and sediment runoff following vegetation loss.

4.10.4.4. PEOPLE

For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Issaquena and Sharkey Counties and the City of Madison, thus putting those populations at a slightly lower risk than the rest of the District.

Populations most at risk of the impacts of fires include older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate when these fires occur, and harder to recover from their impacts. These populations can experience disproportionate impacts to urban and WUI fires and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Madison has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. Because it is more urban, people in the City may be at slightly lower risk from wildfire, as the higher access to road infrastructure and warning systems may make evacuation easier.

4.10.4.5. STRUCTURES AND SYSTEMS

City of Madison contains extensive areas of direct exposure to wildfire risk, as shown in the Wildfire Risk Reduction Zones map in the base plan. In these areas, homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk and complicating suppression efforts. The City, does not have a Community Wildfire Protection Plan (CWPP) in place, which could help address and reduce risk in the future.

4.10.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In urban areas like the City of Madison, the expansion of housing into fire-prone zones like forested and rural areas increases the number of people and structures exposed to wildfire hazards. Development in these areas often leads to fragmented habitats and increased ignition sources, which heighten the potential for wildfires and complicate emergency response efforts.

4.11. HAZARDOUS MATERIAL INCIDENTS

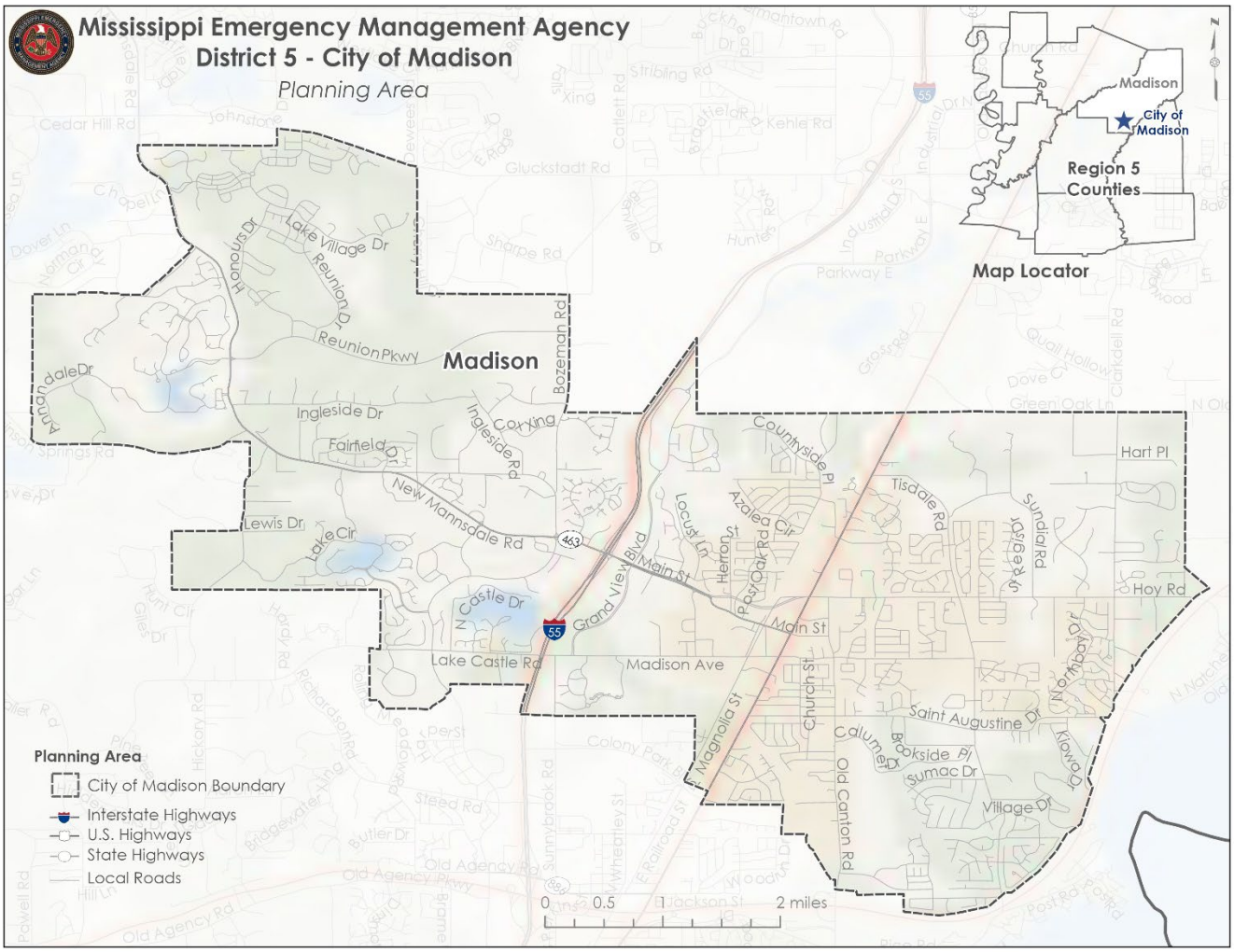
4.11.1. LOCATION AND EXTENT

Hazardous materials incidents are only tracked at the county level and the numbers below represent the statistics for Madison County. Hazardous materials incidents can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, agricultural operations, and facilities that store or use chemicals. In City of Madison, these include:

- Interstate 55
- U.S. Route 51
- State Highway 463

As noted in the base plan, the severity of the impact from HazMat incidents depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures. Because City of Madison is more urban, impacts of a release on the surrounding population might be more significant due to population density. **Figure 22** below displays the ground transportation in the City. For more information on hazardous materials incidents across the District, refer to the base plan.

FIGURE 22: GROUND TRANSPORTATION IN THE CITY OF MADISON



4.11.2. PREVIOUS OCCURRENCES

In Madison County, there has been a total of 317 hazardous materials releases reported to the EPA since 2014. There is no information about whether any of these releases occurred in the City of Madison. However, County data is being used to understand risk to the City.

- 2014: 26 reports at 8 facilities
- 2015: 28 reports at 9 facilities
- 2016: 30 reports at 9 facilities
- 2017: 32 reports at 9 facilities
- 2018: 31 reports at 8 facilities
- 2019: 31 reports at 9 facilities
- 2020: 27 reports at 9 facilities
- 2021: 27 reports at 8 facilities

- 2022: 28 reports at 9 facilities
- 2023: 28 reports at 9 facilities
- 2024: 29 reports at 9 facilities

4.11.3. PROBABILITY OF FUTURE OCCURRENCES

As with the rest of District 5, the likelihood of future hazardous materials incidents in City of Madison is considered **Low**, primarily due to the district's extensive transportation infrastructure and industrial activity, and the fact that a major spill in an adjacent county could impact City of Madison. With major highways, rail lines, and facilities regularly handling and transporting hazardous substances, the potential for accidental spills or releases remains ongoing.

4.11.4. LOCALIZED VULNERABILITY ASSESSMENT

4.11.4.1. OVERALL VULNERABILITY

More populous and developed jurisdictions like Madison County and the City of Madison face elevated risk from HazMat incidents due to greater exposure and potential for cascading impacts. These areas are more likely to experience HazMat incidents, and to experience significant disruption of services when they do occur. The overall risk of a hazardous material incident in the City is **Low.** This section provides further contextualization for the anticipated vulnerability to hazardous material incidents.

4.11.4.2. CRITICAL FACILITIES

Hazardous materials incidents can threaten critical facilities in the City by causing contamination, toxic exposure, or fire and explosion hazards that force evacuations or temporary closures. Facilities such as hospitals, schools, emergency response buildings, government offices, and water or wastewater systems may experience service disruptions due to safety concerns, restricted access, or impacts to supporting utilities. Emergency operations can also be strained as resources are diverted to containment and cleanup efforts.

4.11.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Hazardous materials incidents can negatively affect cultural, historic, and natural resources in the City through contamination of soil, water, vegetation, and sensitive sites. Historic buildings, cemeteries, and archeological resources may be damaged by chemical spills, airborne releases, or cleanup activities that disturb structures and surrounding landscapes. Natural resources are particularly vulnerable, as hazardous substances can pollute streams, wetlands, and groundwater, harm wildlife, and degrade ecosystems for extended periods.

4.11.4.4. PEOPLE

Populations most at risk of the impacts of hazardous materials incidents are those living near transportation corridors, industrial facilities, and storage sites, who are more likely to be lower income. This population is also less likely to have reliable access to transportation, complicating evacuation efforts. Other vulnerable populations include older adults, children, and those with respiratory conditions, who may face challenges during shelter-in-place orders. These populations can experience disproportionate impacts to hazardous materials incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the City of Madison has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.11.4.5. STRUCTURES AND SYSTEMS

Because it is more urban than the rest of the district, people in City of Madison may be at slightly higher risk from HazMat incidents due to the relative number of facilities that might cause releases. However, higher access to road infrastructure and warning systems may make evacuation easier than in other areas, as would higher emergency response capability. Impacts on lifelines and to natural, cultural, and historic resources are generally consistent across the planning area and are described in the base plan.

4.11.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In urban areas like City of Madison, population growth can lead to increased access to emergency services and faster response times, which can reduce risk from hazardous materials incidents. However, with a population increase and overall development in the City, there are more people and assets at risk of damage.

4.12. NUCLEAR POWER PLANT

4.12.1. LOCATION AND EXTENT

A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies.

Grand Gulf Nuclear Station (GGNS) is the only nuclear power plant in Mississippi. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP), includes a 50-mile radius from the facility. Madison County, including the City of Madison, is outside of the 50-mile radius of the facility. For more information on nuclear power plants across the District, refer to the base plan.

4.12.2. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. Madison County, including the City of Madison, is outside of the 50-mile radius from the facility.

4.12.3. PROBABILITY OF FUTURE OCCURRENCES

With no documented instances of nuclear power plant incidents impacting Madison, the probability of future occurrences is considered **unlikely.** However, it is important to acknowledge that the probability of manmade hazards can shift as regulations are tightened or loosened, infrastructure ages, and security conditions change.

4.12.4. LOCALIZED VULNERABILITY ASSESSMENT

4.12.4.1. OVERALL VULNERABILITY

Nuclear incidents are not considered “natural hazards” by FEMA, and jurisdictions are not required to evaluate the overall risk of non-natural hazards in hazard mitigation plans. Additionally, site security and other sensitive information is not factored into this plan because it is intended to be a public document. Therefore, the overall vulnerability of Madison to this hazard is **Unrated**. Although the overall vulnerability is unrated, emergency management and planning personnel should still evaluate the full range of potential community impacts in the event of a nuclear power plant incident.

4.12.4.2. CRITICAL FACILITIES

Since the City of Madison is outside of the 50-mile radius from the Grand Gulf Nuclear Station, no critical facilities are expected to be significantly impacted by any nuclear power plant incidents that can be reasonably anticipated.

4.12.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Since the City of Madison is outside of the 50-mile radius from the Grand Gulf Nuclear Station, no direct impacts to the City’s cultural, historic, or natural resources are expected to result from any nuclear incident that can be reasonably anticipated.

4.12.4.4. PEOPLE

The people of the City of Madison are at overall lower relative risk for direct impacts on health and safety than the rest of the District due to its location outside of the 50-mile radius from the Grand Gulf Nuclear Station. However, all individuals in the District may experience stress and disruption to daily activities due to economic uncertainty, transportation interruptions, and strain on public services in the event of an incident. Additionally, regional response measures, including emergency communications, resource allocation, and potential population movements, could affect residents regardless of their proximity to the facility.

4.12.4.5. STRUCTURES AND SYSTEMS

Because the City of Madison is outside of the 50-mile radius from the facility, the expected potential impacts to structures and systems are minimal. In the event of a severe incident, facilities in Madison may experience increased usage, as individuals that have evacuated from areas closer to the Grand Gulf Nuclear Station travel to or through Madison.

4.12.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Overall, while Madison's location limits its direct exposure risk, its population growth and development patterns modestly increase its potential vulnerability to indirect impacts such as evacuation traffic, service disruptions, and broader regional effects. The City has experienced significant growth in recent years, and expanded housing, commercial activity, and supporting infrastructure may increase demand on transportation networks, public services, and emergency response systems, potentially complicating regional coordination during an incident.

4.13. CRITICAL FACILITIES VULNERABILITY SUMMARY

Table 21 below notes the individual critical facilities in City of Madison that were identified by the Mitigation Council and provides information on the relative risk these facilities face from various hazards.

TABLE 22: CITY OF MADISON CRITICAL FACILITIES VULNERABILITY SUMMARY

Facility Type	Facility Name	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Airport	Bruce Campbell Field	OUT	OUT	OUT	Non-Vegetated - Very Low Density	Minimal Exposure	N/A - WHP Undetermined
Cultural - History	City of Madison Museum	OUT	OUT	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
EOC	Public Services Complex	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Fire Station	Fire Station #2	OUT	OUT	OUT	Non-Vegetated - Uninhabited	Minimal Exposure	N/A - WHP Undetermined
Fire Station	Fire Station #3	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Government	Madison - City Hall	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	MADISON POLICE DEPARTMENT	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	Police/Justice Complex	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Cotton Hill Road Water Plant	OUT	OUT	OUT	Vegetated - Very Low Density	Direct Exposure	Very Low

Facility Type	Facility Name	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Potable Water	Cotton Hill Water Tower	OUT	OUT	OUT	Vegetated - Very Low Density	Direct Exposure	Very Low
Potable Water	Hoy Road Water Plant	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Hoy Water Tower	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Hwy 51 Water Plant	OUT	OUT	OUT	Non-Vegetated - Low Density	Direct Exposure	N/A - WHP Undetermined
Potable Water	Hwy 51 Water Tower	OUT	OUT	OUT	Non-Vegetated - Low Density	Direct Exposure	N/A - WHP Undetermined
School	Madison Ave Lower Elementary	OUT	OUT	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
School	Madison Ave Upper Elementary	OUT	IN	OUT	Non-Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
School	Madison Central High School	OUT	OUT	OUT	Non-Vegetated - Uninhabited	Direct Exposure	N/A - WHP Undetermined
School	Madison Middle School	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
School	Madison Ridgeland Academy	OUT	OUT	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
School	Madison Station Elementary School	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
School	St. Anthony Catholic School	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Shelter	Community Center	OUT	OUT	OUT	Non-Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
Shelter	Cultural Center	OUT	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Storage	Old Public Works Building	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Grinding Station	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 10	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 11	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Low
Waste Water Facility	Lift Station 12	IN	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Very Low
Waste Water Facility	Lift Station 13	OUT	OUT	OUT	Non-Vegetated - Uninhabited	WTZ: Tree	Low
Waste Water Facility	Lift Station 14	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 15	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	Low
Waste Water Facility	Lift Station 16	OUT	OUT	OUT	Non-Vegetated - Very Low Density	Direct Exposure	Very Low

Facility Type	Facility Name	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Lift Station 17	OUT	OUT	OUT	Intermix - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Lift Station 18	OUT	OUT	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 19	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 2	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 20	IN	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 21	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 22	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Lift Station 23	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 24	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Lift Station 25	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 26	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Moderate

Facility Type	Facility Name	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Lift Station 27	IN	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 28	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 29	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Lift Station 3	IN	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 30	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 31	IN	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 32	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 33	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	Very Low
Waste Water Facility	Lift Station 34	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 35	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Lift Station 36	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Very Low
Waste Water Facility	Lift Station 37	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 38	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 39	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Very Low
Waste Water Facility	Lift Station 4	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	Very Low
Waste Water Facility	Lift Station 40	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 41	IN	OUT	OUT	Non-Vegetated - Medium Density	WTZ: Non-Vegetated	N/A - WHP Undetermined
Waste Water Facility	Lift Station 42	IN	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 43	IN	OUT	OUT	Intermix - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 44	IN	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Lift Station 45	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Low
Waste Water Facility	Lift Station 46	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 47	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 48	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 49	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 5	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 50	OUT	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 51	OUT	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 52	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 53	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Low
Waste Water Facility	Lift Station 54	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Moderate

Facility Type	Facility Name	100-Year Floodplain	500 Year Floodplain	Leveed Area	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Lift Station 57	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 58	OUT	OUT	OUT	Non-Vegetated - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 59	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Lift Station 6	OUT	OUT	OUT	Non-Vegetated - Low Density	Minimal Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 7	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 8	OUT	IN	OUT	Non-Vegetated - Medium Density	Direct Exposure	Low
Waste Water Facility	Lift Station 9	OUT	OUT	OUT	Non-Vegetated - Medium Density	Direct Exposure	N/A - WHP Undetermined

5. MITIGATION STRATEGY

The Mitigation Strategy section of the base plan provides an overall blueprint for all participating jurisdictions in MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Regional Hazard Mitigation Council (RHMC) and the findings and conclusions of the Capability and Risk Assessments. The goals of the MEMA District 5 can be found in **Section 6** of the base plan.

This section provides community-specific strategies for the City of Madison, including the status of actions that were included in the previous plan and actions to be considered or pursued over the next five years. As noted in the base plan, the participants are not committing to undertaking every action suggested in this list but rather are proposing an extensive list of *potential* actions that they may wish to pursue, depending in the availability of funding.

The following information is provided in the table below, as well as in the mitigation action tables within each annex in this plan:

Project Number: Each action is assigned a project number for organizational purposes.

Action Description: This is the description of the mitigation action. Actions descriptions are intended to be actionable and specific.

Responsible Agency or Department: actions assign primary responsibility to agencies or departments for implementation. The responsible entities were determined by jurisdictional representatives on the Mitigation Council, and they reflect the representatives' assessment of the entity that would be most capable of facilitating successful implementation of the action. Other agencies, departments, organizations, etc. may assist the responsible agency or department, if necessary.

Hazards Addressed: For each mitigation action, the hazard(s) that are being addressed are listed. Some hazards are considered "multi-hazard" because the action, when implemented, is designed to mitigate impacts of all disasters profiled in this plan. Other mitigation actions are specific to individual hazards.

Estimated Cost: This is the estimate cost of the action; these costs were determined through general discussions of the resources, personnel, and time needed, and the estimates are not intended to stand in for a full, detailed benefit-cost analysis.

Action Status (D/R/N/C): FEMA's guidance for local mitigation plans requires a status update for existing mitigation actions. The statuses of previous actions were assessed throughout the planning process. The four categories used by the Mitigation Council are:

> Deleted (D): action is no longer appropriate or desired, and the community does not intend to pursue the action.
>
> Retained (R): action is still desired by the community, but implementation has not been completed. The community will continue to implement the action as time and resources allow.
>
> New (N): action is new for the 2026 District 5 plan.
>
> Completed (C): action has been completed by the community.

Status Notes: Includes any information that the community provided for additional context to the action status.

Expected Time Frame for Completion: Participating jurisdictions anticipated the amount of time it will take to carry out the action. The expected time frames for actions from the previous plan were updated to reflect the expected time frame for completion from when communities adopt this plan.

Corresponding Goals: The plan goals addressed by each action item are included to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. Each action is linked to one more of the Plan's goals:

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

Priority: The priority of each of the mitigation action items is ranked either Low, Medium, or High. This prioritization allows Mitigation Council members to quickly compare actions based on a qualitative assessment of the anticipated benefits of actions. The process utilized by the Mitigation Council to prioritize actions is described in Section 6.4 of the base plan.

Potential Funding Sources: Potential sources for funding are listed for each action and encompass a range of sources including operating budget/general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), State grants, private funding, Capital Improvement Plan, and others. It is important to acknowledge that the identified funding sources are not exhaustive or definitive. The current funding landscape is undergoing significant change, and existing funding sources may not be available in the future, while new sources may emerge. If/when a community has the opportunity to implement an action, available funding sources will be re-examined to determine which source is most appropriate.

TABLE 23: UPDATED 2026 CITY OF MADISON MITIGATION ACTIONS

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
1-Madison	Maintain a public outreach strategy designed to educate citizens of the risk posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Police and Fire Departments	All hazards	$25,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Madison	Maintain the city's StormReady designation from the National Weather Service	Police and Fire Departments	All hazards	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
3-Madison	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. Tv stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
4-Madison	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the city with advanced warning of approaching weather conditions	Police and Fire Departments, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	on-going annually in May and November	2	High	General Fund
5-Madison	Purchase and maintain emergency generators for use by key critical facilities throughout the city.	Public Works, Police and Fire Departments	All hazards	-	C	Completed	Completed	3, 5	Medium	General Fund, State Homeland Security Program, HMGP, CDBG
6-Madison	As future updates are made to the City's existing policies and regulations, and as the city adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect	Board of Alderman, Planning Commission	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
	of natural hazards on existing infrastructure and buildings.									
7-Madison	Seek funding to assist with the construction of a community shelter	Mayor's Office, City Clerk	All hazards	$2,000,000	R	No progress since last update	On-going annually	3	Medium	General Fund, HMGP, BRIC
8-Madison	Encourage residents to construct individual safe rooms	Police and Fire Departments	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, MEMA Statewide Grants
9-Madison	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Floodplain manager, Board of Alderman	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
10-Madison	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Floodplain Manager, Board of Alderman, Planning Commission	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
11-Madison	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties	Floodplain Manager, City Clerk	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
12-Madison	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	City Clerk	All hazards	$1,000,000	R	No progress since last update	10 years	3, 5	Low	General Fund, CDBG, USDA Rural Development
13-Madison	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan	Board of Alderman, City Clerk	All hazards	$1,500 annually / $100,000 every 5 years	R	No progress since last update	On-going annually	1	High	General Fund
14-Madison	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
15-Madison	Improve cellular tower capability throughout the City to upgrade communication efficiency	Mayor's Office, City Clerk	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC
16-Madison	Seek funding assistance to improve high-speed internet capabilities throughout the City	Mayor's Office, City Clerk	All hazards	$1,000,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
17-Madison	Seek funding assistance to upgrade remove capabilities allowing employees to work off-site if required during hazard events	Mayor's Office, City Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund

1. INTRODUCTION

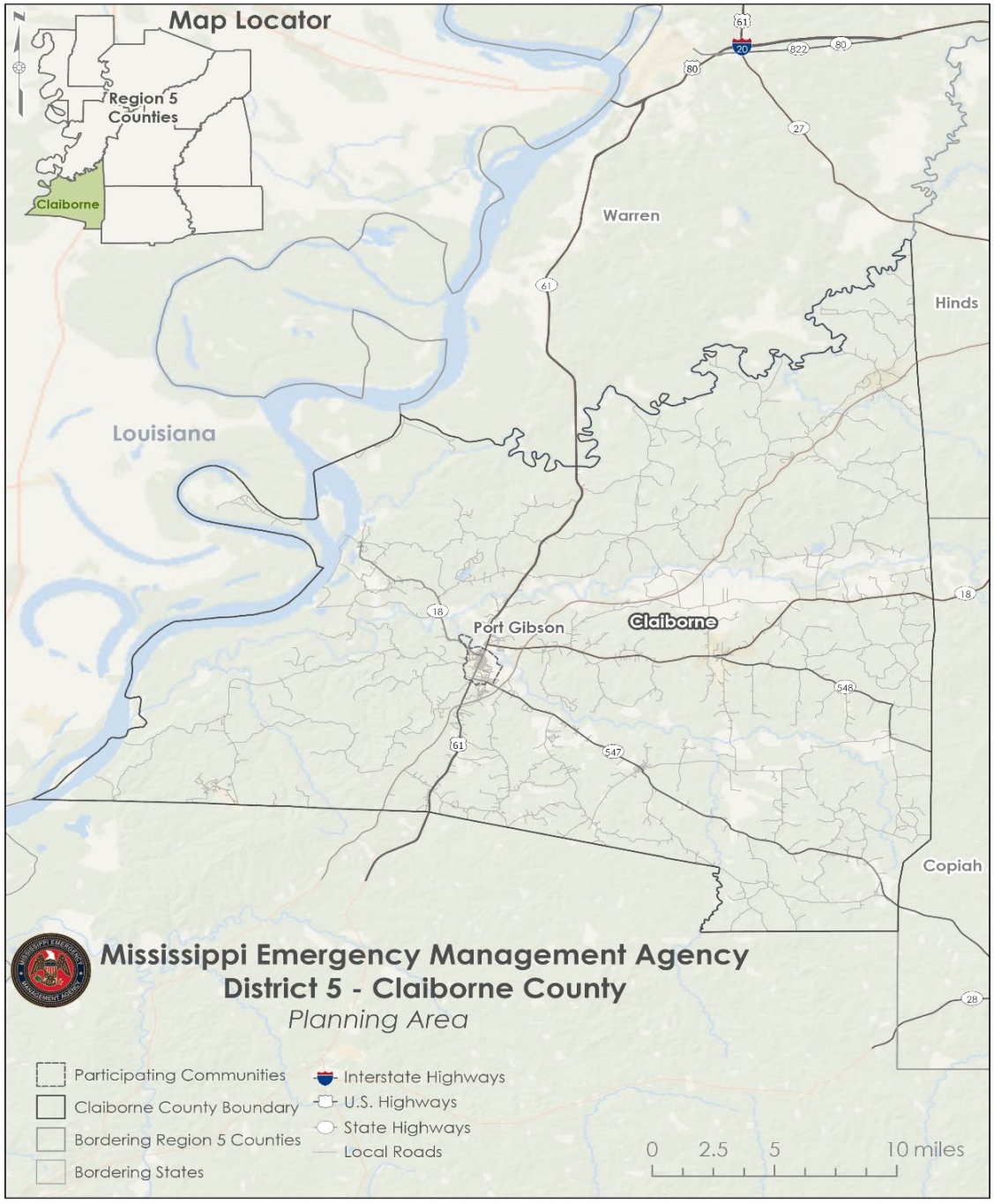
This annex provides more detailed information about Claiborne County and the participants within it. It includes:

- A more localized community profile, including more detailed mapping, population and demographic information, and critical facilities information
- County-level Hazard Identification and Risk Assessment (HIRA) information, including some more localized hazard maps and conclusions related to hazard risk and how it varies across the planning area
- A localized vulnerability assessment, including the likely impact of profiled hazards on critical facilities in Claiborne County
- A detailed capability assessment, describing resource and tools available to the county and municipalities to participate in hazard mitigation and reduce hazard risk
- A mitigation strategy, describing a variety of actions the county and municipalities may opt to take to reduce the risk associated with profiled hazards over the useful life of this plan

2. COMMUNITY PROFILE

This section provides a more detailed profile of Claiborne County and the jurisdictions within it. The County is in the Southwestern part of the planning area and **Figure 1** shows the planning area for Claiborne County. The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey—such as poverty, lack of transportation, crowded housing, and minority status—to quantify a community's relative vulnerability. This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). According to the 2022 CDC Social Vulnerability Index, Claiborne County has an overall **medium to high** (0.7284) level of vulnerability.

FIGURE 1: CLAIBORNE COUNTY



2.1. POPULATION AND DEMOGRAPHICS

Population information from the last three Census counts for each participant in Claiborne County is summarized below, showing trends since the year 2010. A summary of population trends is summarized in **Table 1**. Since 2010, the population has decreased across the County (-1.5%) and significantly within the City of Port Gibson (31.1%). The race and ethnicity demographic data of these within Claiborne County are shown in **Table 2**.

TABLE 1: POPULATION TRENDS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2010 Census	2020 Census	2023 Census Estimates	Percent Change 2020-2023
Claiborne County	9,928	9,042	8,908	-1.5%
City of Port Gibson	2,185	1,616	1,114	-31.1%

TABLE 2: DEMOGRAPHICS IN PERCENT | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
Claiborne County	11%	86%	0.2%	0.1%	0%	3%
City of Port Gibson	10%	86%	0%	0%	4%	5%

Table 3 below summarizes what percentage of the population of the jurisdictions within Claiborne County belong to certain vulnerable populations measured in the Census. **Table 4** provides annual estimates of housing units in Claiborne County and its jurisdictions.

TABLE 3: VULNERABLE POPULATIONS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
Claiborne County	27.2%	533	1,633	1,025
City of Port Gibson	31.4%	34	268	218

TABLE 4: ANNUAL ESTIMATES OF HOUSING UNITS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023
Claiborne County	4,344	3,950	3,948	3,949
City of Port Gibson	838	683	682	736

While there is a large agricultural economic segment in Claiborne County, several other large industries are located within the County. Employment information from the 2023 Census counts for each participant in the County is summarized below in **Table 5.**

TABLE 5: EMPLOYMENT IN CLAIBORNE COUNTY | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Claiborne County	City of Port Gibson
Management, business, science and arts occupations	782	78
Service occupations	477	60
Sales and office occupations	560	152
Natural resources, construction and maintenance occupations	223	35
Production, transportation and material moving occupations	424	52

2.2. CRITICAL FACILITIES, INFRASTRUCTURE AND ENERGY ASSETS

2.2.1. CRITICAL FACILITIES AND INFRASTRUCTURE

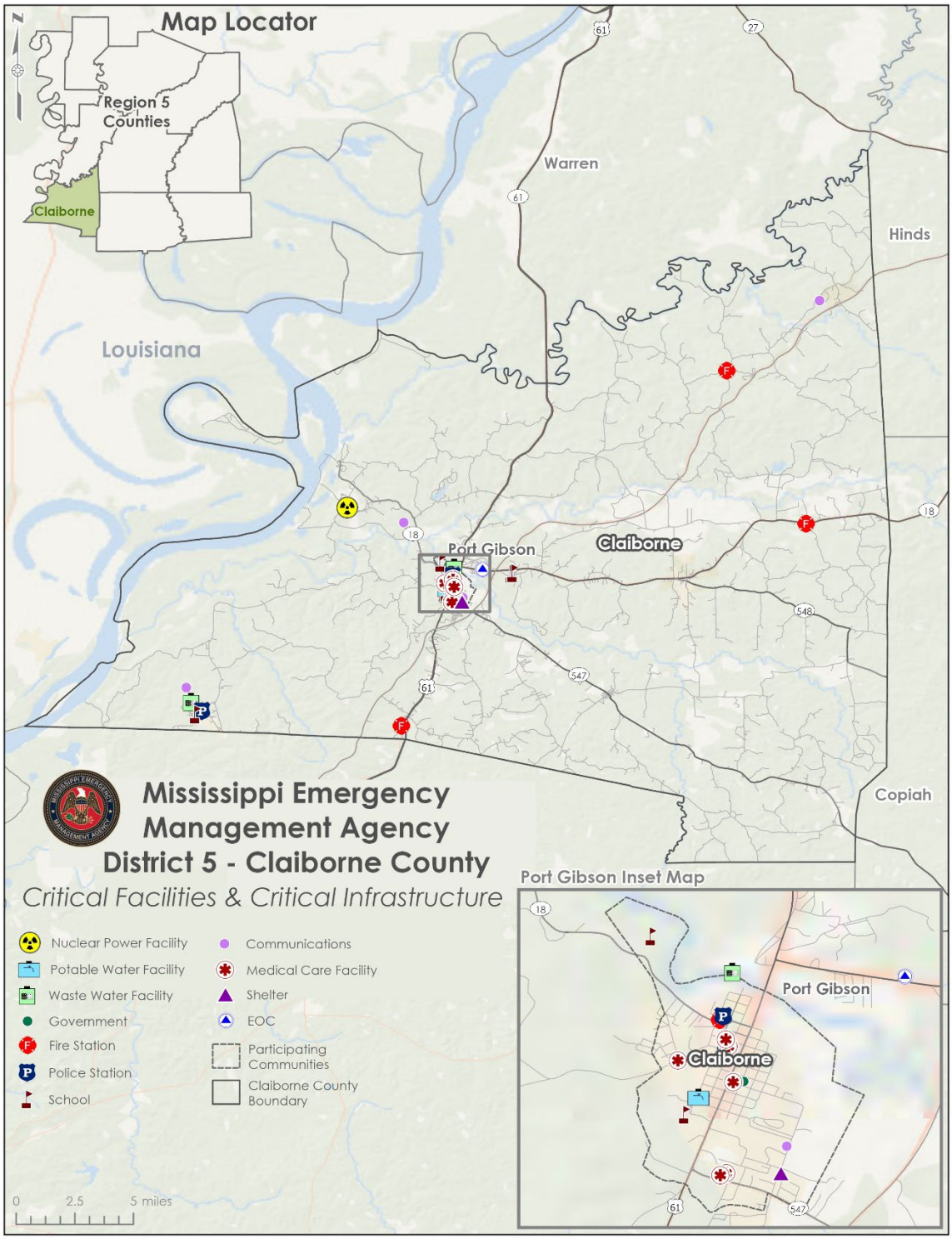
Certain assets and facilities are considered as being of importance for Claiborne County and the jurisdictions. **Table 6** below is a list of the critical facilities within Claiborne County and its jurisdictions. **Figure 2** below displays a map showing the locations of these critical facilities and infrastructure located within the County. The majority of the facilities are located within Port Gibson. The table below consists of facilities identified in the previous plan for each community as well as facilities identified by HAZUS. These facilities were sent to each community representative of the Mitigation Council for review and given a chance to provide changes.

TABLE 6: CLAIBORNE COUNTY CRITICAL FACILITIES AND INFRASTRUCTURE

Facility Type	Facility Name	Facility Location
Communications	Claiborne County E-911	Port Gibson
Communications	WATU CH 207	Port Gibson
Communications	WKPG 1320	Port Gibson
Communications	WPRL CH 219	Lorman
Communications	WTSY 97.1	Port Gibson
EOC	Claiborne County Emergency Operations Center	Port Gibson
Fire Station	Claiborne County Fire Department Station 1	Lorman
Fire Station	Claiborne County Fire Department Station 2	Port Gibson
Fire Station	Claiborne County Fire Department Station 3	Port Gibson
Fire Station	Claiborne County Fire Department Station 4	Hermanville
Fire Station	County Fire Department	Port Gibson
Government	Port Gibson City Hall	Port Gibson
Medical Care Facility	AMR Ambulance Service	Port Gibson
Medical Care Facility	Claiborne County Hospital	Port Gibson
Medical Care Facility	Glenwood Funeral Home	Port Gibson
Medical Care Facility	Port Gibson Lumber	Port Gibson
Medical Care Facility	Rollins Funeral Home	Port Gibson
Medical Care Facility	Thompson Funeral Home	Port Gibson
Nuclear Facility	Grand Gulf Nuclear Facility - Reactor Tower Location	Port Gibson
Police Station	Alcorn State University Campus Police Department	Lorman
Police Station	Claiborne County Sheriff Dept.	Port Gibson
Police Station	Claiborne County Sheriff's Department / Clairborne County Detention Center	Port Gibson

Facility Type	Facility Name	Facility Location
Police Station	Port Gibson Police Department	Port Gibson
Potable Water	Port Gibson Water Treatment Plant	Port Gibson
School	A. W. Watson Upper Elementary	Port Gibson
School	Alcorn State University	Alcorn State
School	Claiborne County Voc Complex	Port Gibson
School	Port Gibson High School	Port Gibson
School	Port Gibson Middle School	Port Gibson
Shelter	Claiborne County Multi-Purpose Building	Port Gibson
Waste Water Facility	Alcorn State University - WWTF	Alcorn State
Waste Water Facility	Port Gibson POTW	Port Gibson

FIGURE 2: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE



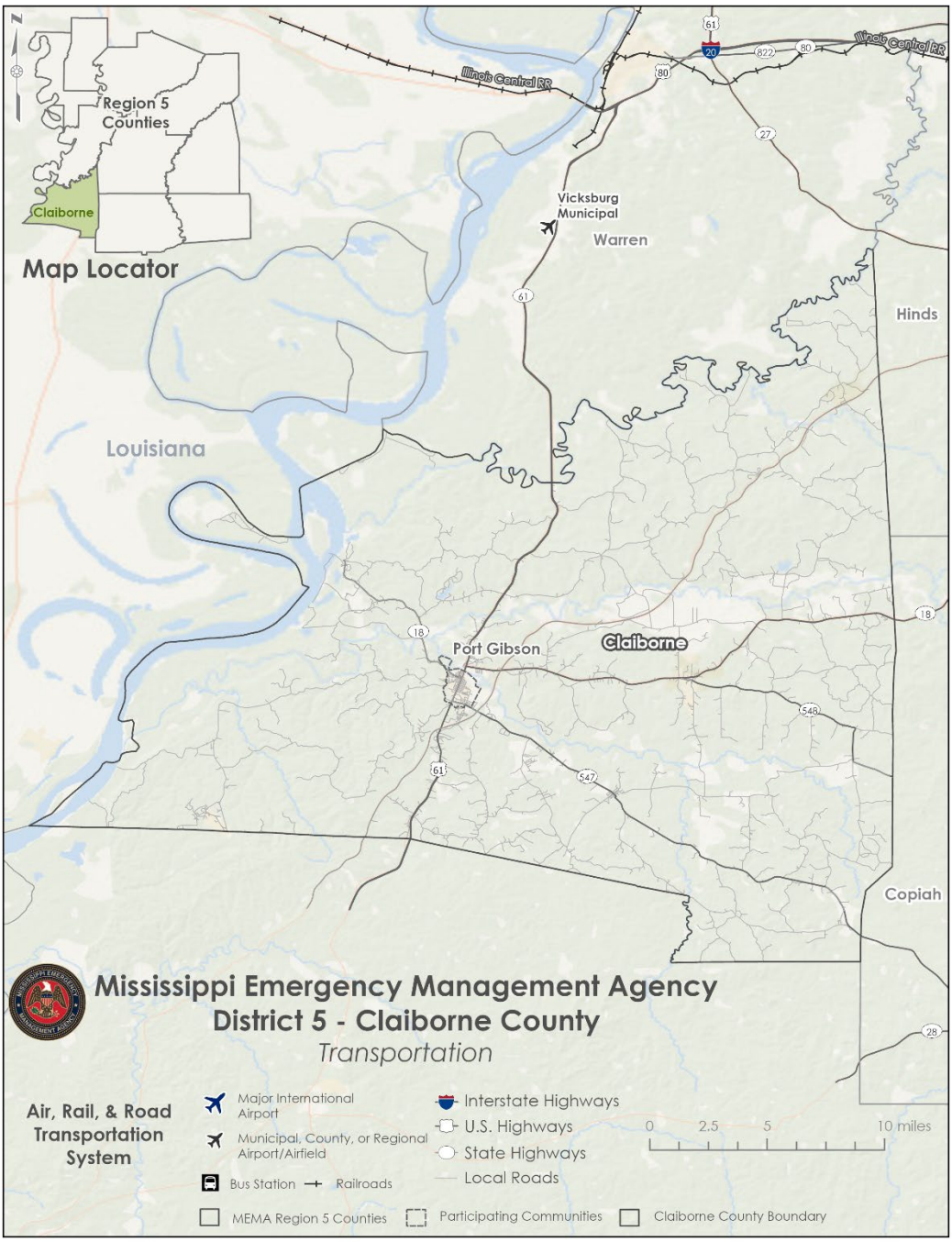
2.2.2. TRANSPORTATION

Transportation in Claiborne County includes the list below and **Figure 3** displays them on a map.

- U.S. Highway 61

- State Highways 18, 547, 548 and 552
- Natchez Trace Parkway

FIGURE 3: TRANSPORTATION IN CLAIBORNE COUNTY



2.2.3. ENERGY ASSETS

Claiborne County is home to the only Nuclear Power Facility operating in Mississippi. The Grand Gulf Nuclear Station is near the City of Port Gibson in the western part of the county. Oil, natural gas

pipelines and electric transmission lines traverse the County. The list below breaks down the energy infrastructure within the county.

- **Power Plant:** Grand Gulf Nuclear Station (Boiling Water Reactor, Capacity: ~1,443 MW electric, Operator: Entergy Nuclear & Cooperative Energy)
- **Substation:** Several substations in the county tied to the Grand Gulf plant and regional grid, part of Entergy's 500 kV transmission backbone
- **Transmission:** High-Voltage Lines (500 kV extra-high-voltage transmission lines radiating from Grand Gulf, Connects to Entergy's regional network and MISO grid)
- **Pipelines:** No major interstate pipelines reported in Claiborne County

2.3. LAND USE AND DEVELOPMENT

Claiborne County encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, and growing residential development near population centers such as the City of Port Gibson. **Figure 4** displays the land use and development throughout the County while

Figure 5 shows the topography of the County.

FIGURE 4: CLAIBORNE COUNTY LAND USE AND DEVELOPMENT

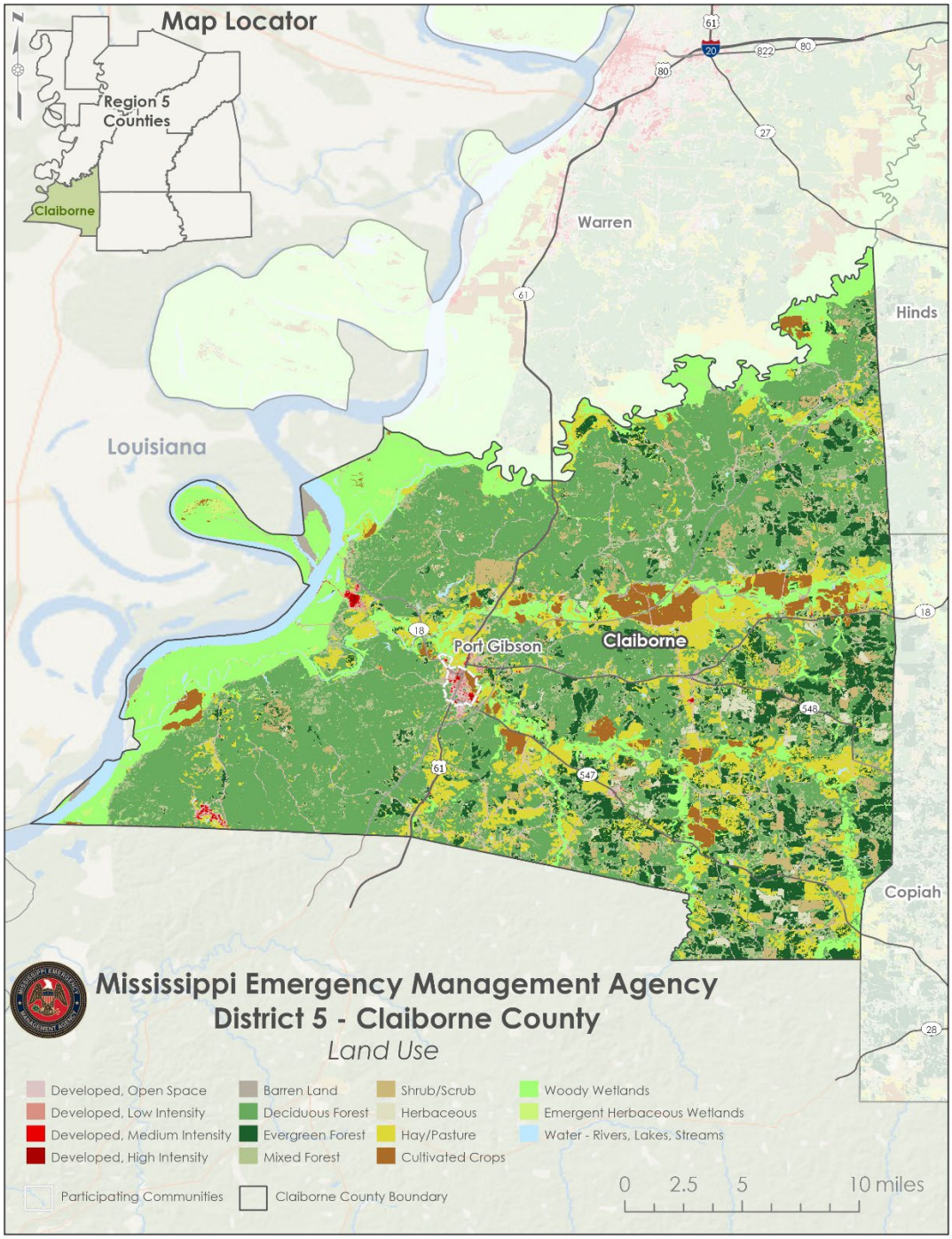
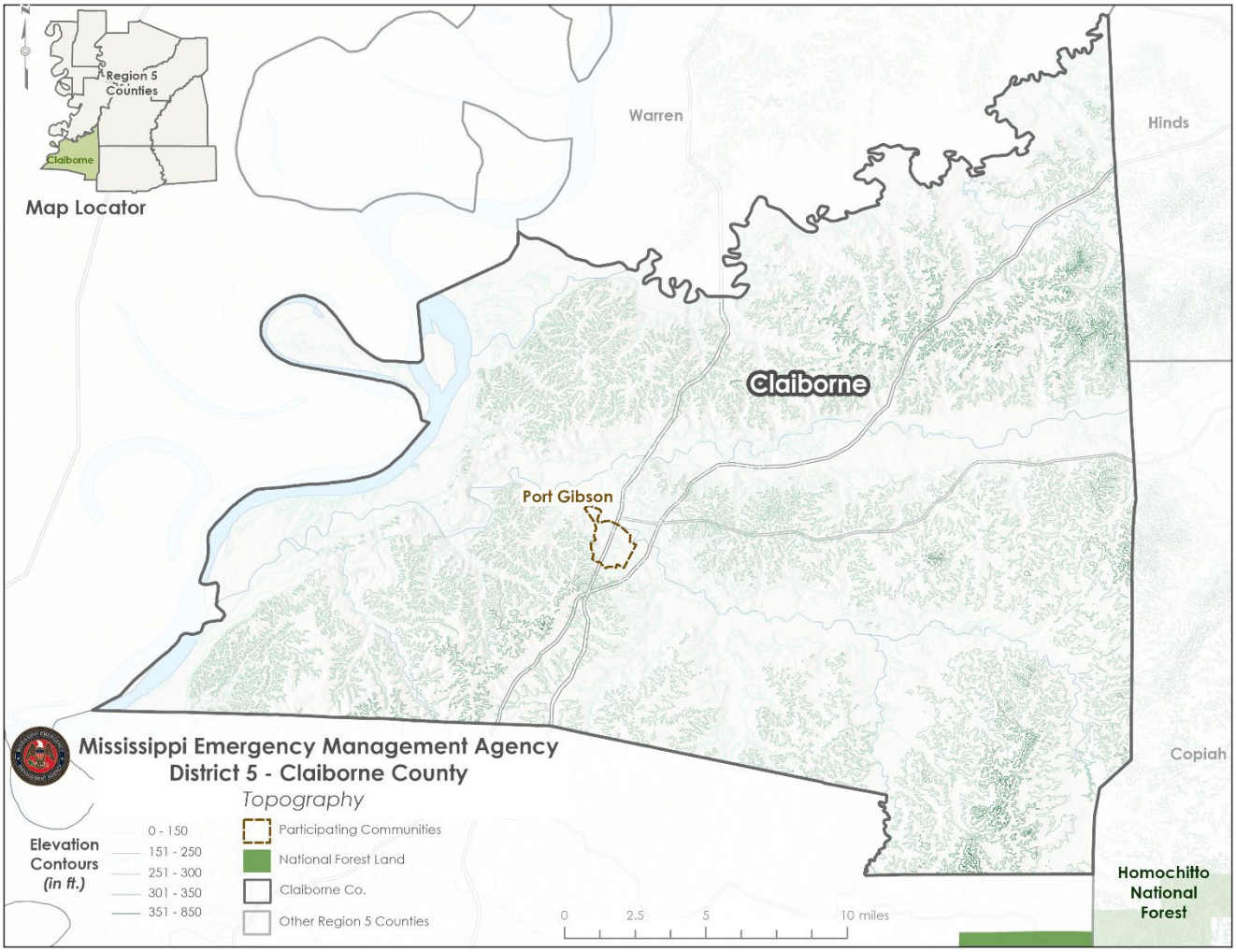


FIGURE 5: CLAIBORNE COUNTY TOPOGRAPHY



2.4. HISTORIC AND CULTURAL RESOURCES

Cultural resources and historical assets are generally unique or irreplaceable in nature due to their age or unique properties or characteristics. **Table 7** below provides a list of known cultural resources and historic assets in Claiborne County.

TABLE 7: HISTORIC AND CULTURAL RESOURCES IN CLAIBORNE COUNTY

Cultural Resource	General Location	Resource Type
Oakland Chapel	Alcorn State University	Building
Canemont	County	Building
Claremont	County	Building
McGregor	County	Building
Bethel Presbyterian Church	County	Building
Van Dorn House	County	Building
Yazoo and MS Valley Depot	County	Building
Sacred Heart Roman Catholic Church	County	Building
Holyrood	County	Building
Golden West Cemetery	County	Site
Windsor Ruins	County	Site
Port Gibson Battle Site	County	Site
Buena Vista Cotton Gin	County	Site
Old Natchez Trace	County	Structure
Owens Creek Bridge	County	Structure
Widow's Creek Bridge	County	Structure
Valley of the Moon Bridge	County	Structure
801 Chinquepin Street	Port Gibson	Building
Old Deport Restaurant and Lounge	Port Gibson	Building
Port Gibson Oil Works Mill	Port Gibson	Building
Old Brickyard Place	Port Gibson	Building
Idlewood	Port Gibson	Building
Jewish Cemetery	Port Gibson	Site
Wintergreen Cemetery	Port Gibson	Site
Catholic Cemetery	Port Gibson	Site
Collina	Port Gibson	Building

2.5. CHANGES IN DEVELOPMENT AND PRIORITIES

This section outlines recent and anticipated changes in development and priorities within Claiborne County and the City of Port Gibson. **Table 8** lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment. Both jurisdictions did not indicate changes since the last plan update.

TABLE 8: CLAIBORNE COUNTY CHANGES IN DEVELOPMENT AND PRIORITIES

Jurisdiction	Changes in Development in the Past Five Years	Changes in Development Anticipated in the Next Five Years	Changes in Community Priorities over the Past Five Years
Claiborne County	No	No	No
City of Port Gibson	No	N/A	No

3. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. More generalized information about the goals of the capability assessment, including the process and methodology, is presented in the Capability Assessment portion of the base plan.

This section articulates specific information about the capabilities of Claiborne County and the City of Port Gibson.

3.1. CLAIBORNE COUNTY CAPABILITIES AND RESOURCES

3.1.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Claiborne County to support hazard mitigation.

TABLE 9: CLAIBORNE COUNTY STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Emergency	
Engineering	Y		The County has an engineer through a contractor
Procurement	N	Purchasing	
Floodplain Management	Y	County Administrator	
Land Use, Land Management, or Development Planning	N		
Grant-writing	N		
Geographic Information Systems (GIS)	N		
Other reported staff and technical capabilities:			

3.1.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Claiborne County that might support hazard mitigation efforts.

TABLE 10: CLAIBORNE COUNTY PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)	X			
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan	X			
Continuity of Operations Plan (COOP)		X		
Disaster Recovery Plan	X			
Economic Development Plan		X		
Emergency Operations Plan (EOP)		X		
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan	X			
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)		X		

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.1.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Claiborne County in the NFIP program, including how development in the floodplain is regulated.

TABLE 11: CLAIBORNE COUNTY FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	YES
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	YES
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	County Administrator
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	N/A
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	N/A
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	N/A
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	N/A

3.1.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Claiborne County's hazard mitigation efforts.

TABLE 12: CLAIBORNE COUNTY FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	No
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	No
Do you have a land use or development ordinance?	No
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	N/A

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	N/A

3.2. PORT GIBSON CAPABILITIES AND RESOURCES

3.2.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Port Gibson to support hazard mitigation.

TABLE 13: PORT GIBSON STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	County	
Engineering	Y	Contract	
Procurement	Y	City Clerk	
Floodplain Management	Y	Floodplain Manager	
Land Use, Land Management, or Development Planning			
Grant-writing	Y	Southwest MS Planning and Development	
Geographic Information Systems (GIS)	N		
Other reported staff and technical capabilities:			

3.2.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Port Gibson that might support hazard mitigation efforts.

TABLE 14: PORT GIBSON PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)	X			
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan			X	
Continuity of Operations Plan (COOP)		X		
Disaster Recovery Plan		X		
Economic Development Plan		X		
Emergency Operations Plan (EOP)	X			
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan		X		
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)				

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.2.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Port Gibson in the NFIP program, including how development in the floodplain is regulated.

TABLE 15: PORT GIBSON FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Floodplain Manager
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	Through ordinances
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	Through the permitting process
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	No
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes

3.2.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Port Gibson's hazard mitigation efforts.

TABLE 16: PORT GIBSON FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	N/A
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	
Do you have a land use or development ordinance?	
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	

3.3. ABILITY TO EXPAND CAPABILTIES

As part of the capability assessment process, each jurisdiction was asked to discuss their ability to expand upon the capabilities discussed earlier in this section. Below is a summary of the information provided by each participant regarding how they can strengthen their ability to conduct hazard mitigation measures in the future. **Table 17** below lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment.

TABLE 17: CLAIBORNE COUNTY'S ABILITY TO EXPAND CAPABILITIES

Jurisdiction	Self-Reported Information Regarding Ability to Expand Capabilities
Claiborne County	Claiborne County can improve its capability to participate in hazard mitigation in several ways: • **Identifying funding opportunities**: Pursuing federal, state, or private grants to support mitigation projects and infrastructure improvements. • **Accessing technical expertise**: Partnering with state agencies, universities, or consultants to gain guidance on risk assessment, planning, and best practices. • **Implementing new planning mechanisms**: Integrating hazard mitigation considerations into county plans such as the Comprehensive Plan, Capital Improvement Plan, and Emergency Operations Plan. • **Updating or enforcing ordinances**: Reviewing and updating development, building, and floodplain ordinances to ensure they reflect current hazard data and mitigation priorities. • **Enhancing coordination**: Improving communication and collaboration among county departments to ensure hazard mitigation is considered in decision-making and project planning.
City of Port Gibson	N/A

4. HAZARD IDENTIFICATION & RISK ASSESSMENT

The Hazard Identification and Risk Assessment (HIRA) process, described in more detail in the HIRA section of the base plan, involves identifying potential hazards, evaluating their likelihood and potential consequences, and estimating and describing the level of risk these hazards present to a community.

Since 1973, Claiborne County has been included in 21 federal disaster declarations, of which eight occurred since this plan was last updated. **Table 18** describes these events.

TABLE 18: CLAIBORNE COUNTY FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4626	Hurricane	Claiborne, Copiah, Simpson	10/22/2021
EM-3569	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
DR-4598	Severe Winter Storms	Claiborne, Copiah, Hinds, Rankin, Simpson, Warren, Yazoo	5/4/2021
EM-3548	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020
DR-4551	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Claiborne, Simpson	7/9/2020
DR-4538	Severe Storm, Flooding and Mudslides	Claiborne, Copiah, Hinds, Issaquena, Sharkey, Warren, Yazoo	4/23/2020
DR-4528	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4314	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Claiborne, Yazoo	5/22/2017
DR-4268	Severe Storm, Flooding	Claiborne, Issaquena	3/25/2016
DR-4081	Hurricane	Claiborne, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1983	Flooding	Claiborne, Issaquena, Sharkey, Warren, Yazoo	5/11/2011
EM-3320	Flooding	Claiborne, Issaquena, Sharkey, Warren, Yazoo	5/4/2011
DR-1794	Hurricane	Claiborne, Copiah, Issaquena	9/22/2008
DR-1604	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005
DR-1360	Severe Storm, Flooding, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Warren, Yazoo	2/23/2001
DR-906	Severe Storm, Tornado	Claiborne, Issaquena, Madison, Sharkey, Warren, Yazoo	5/17/1991

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-683	Flooding, Severe Storm, Tornado	Claiborne, Hinds, Madison, Rankin, Warren, Yazoo	6/1/1983
DR-577	Severe Storm, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-368	Severe Storm, Tornado	Claiborne, Issaquena, Sharkey, Simpson, Warren, Yazoo	3/27/1973

As described in the "HIRA Methodology" section of the base plan, participants in this plan update reconsidered the relative risk posed by the profiled hazards by conducting a hazard ranking process. **Table 19** below provides a summary of how those hazards were ranked in Claiborne County and the City of Port Gibson.

TABLE 19: HAZARD RANKING BY JURISDICTION IN CLAIBORNE COUNTY

Jurisdiction	Dam/ Levee Failure	Drought	Earthquake	Expansive Soils	Flood	Severe Storms	Severe Winter Weather	Tornado	Tropical Storm / Hurricane	Wild/Urban Interface (WUI) Fire	Hazardous Material Incidents	Nuclear Power Plant Incidents
Claiborne County	Low	Med	Low	Low	High	High	Med	High	Med	High	Low	Low
City of Port Gibson	Low	Med	Low	Low	Low	High	Med	High	Med	Low	N/A	N/A

Each of the 12 natural and manmade hazards discussed in this section are described in more detail in the HIRA section of the base plan. **Table 20** below shows the hazard scores for Claiborne County and the City of Port Gibson. This section endeavors to provide more detailed, local-level information, mapping, and conclusions for these hazards wherever relevant.

TABLE 20: HAZARD RISK SCORES

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Claiborne County							

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Dam/Levee Failure	1	1	2	3	1	1	**8**
Drought	4	1	1	2	2	3	**30**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	1	1	**4**
Flood	4	3	3	3	3	3	**48**
Severe Storms	4	3	3	1	1	5	**60**
Severe Winter Weather	4	2	2	1	2	2	**22**
Tornado	4	3	3	2	3	5	**75**
Tropical Storms	4	1	1	1	1	2	**16**
Wild/Urban Interface Fire	4	2	2	2	2	5	**60**
Hazardous Material Incidents	4	4	1	1	1	1	**11**
Nuclear Power Plant Incident	2	2	3	3	4	1	**14**
City of Port Gibson							
Dam/Levee Failure	0	0	0	0	0	1	**0**
Drought	4	1	1	2	2	3	**30**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	1	1	**4**
Flood	1	1	2	1	1	1	**6**
Severe Storms	4	1	2	1	2	5	**50**
Severe Winter Weather	4	1	2	1	2	5	**50**
Tornado	4	1	4	2	2	3	**39**
Tropical Storms	4	1	1	1	1	2	**16**
Wild/Urban Interface Fire	1	1	1	2	2	2	**14**
Hazardous Material Incidents	-	-	-	-	-	-	**-**
Nuclear Power Plant Incident	-	-	-	-	-	-	**-**

4.1. DAM/LEVEE FAILURE

4.1.1. LOCATION AND EXTENT

There are 50 dams in Claiborne County, of which one is High Hazard, 44 are Low Hazard, and five are of Undetermined Hazard level. There are no levees located in or impacting Clairborne County. For more information on the dam/levee failure within the District, refer to the base plan.

Dam classifications were designed based on the potential impacts of failure. The potential impacts from each dam classification are detailed below in the event of a dam failure.

- **Low Hazard Dam**: In the event of the failure of a high-hazard dam, loss of life is probable, as are economic, environmental, and lifeline impacts.
- **Significant Hazard Dam**: In the event of the failure of a significant hazard dam, loss of life is not expected, but economic, environmental, and lifeline impacts are expected.
- **High Hazard Dam**: In the event of the failure of a low-hazard dam, there is no anticipated loss of life, and economic, environmental, and lifeline impacts are expected to be minimal, with losses principally limited to the owner's property.

Figure 6 below shows the location of these dams within Claiborne County. Most of these dams are located East of U.S. Highway 61 in the Eastern part of the County.

Figure 7 shows the inundation area of Lake Claiborne Dam, the only high hazard dam in the County.

FIGURE 6: MAP OF DAMS IN CLAIBORNE COUNTY

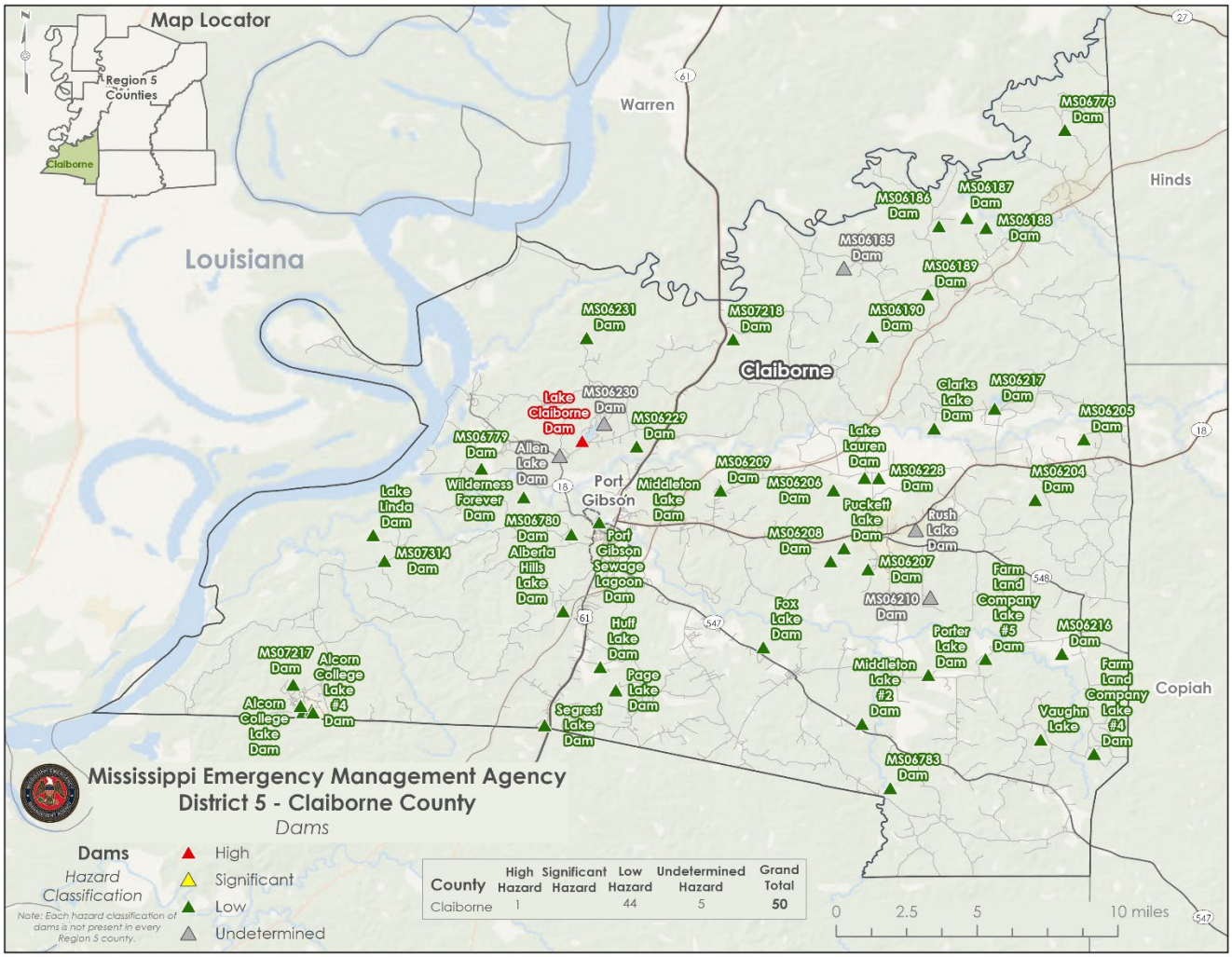
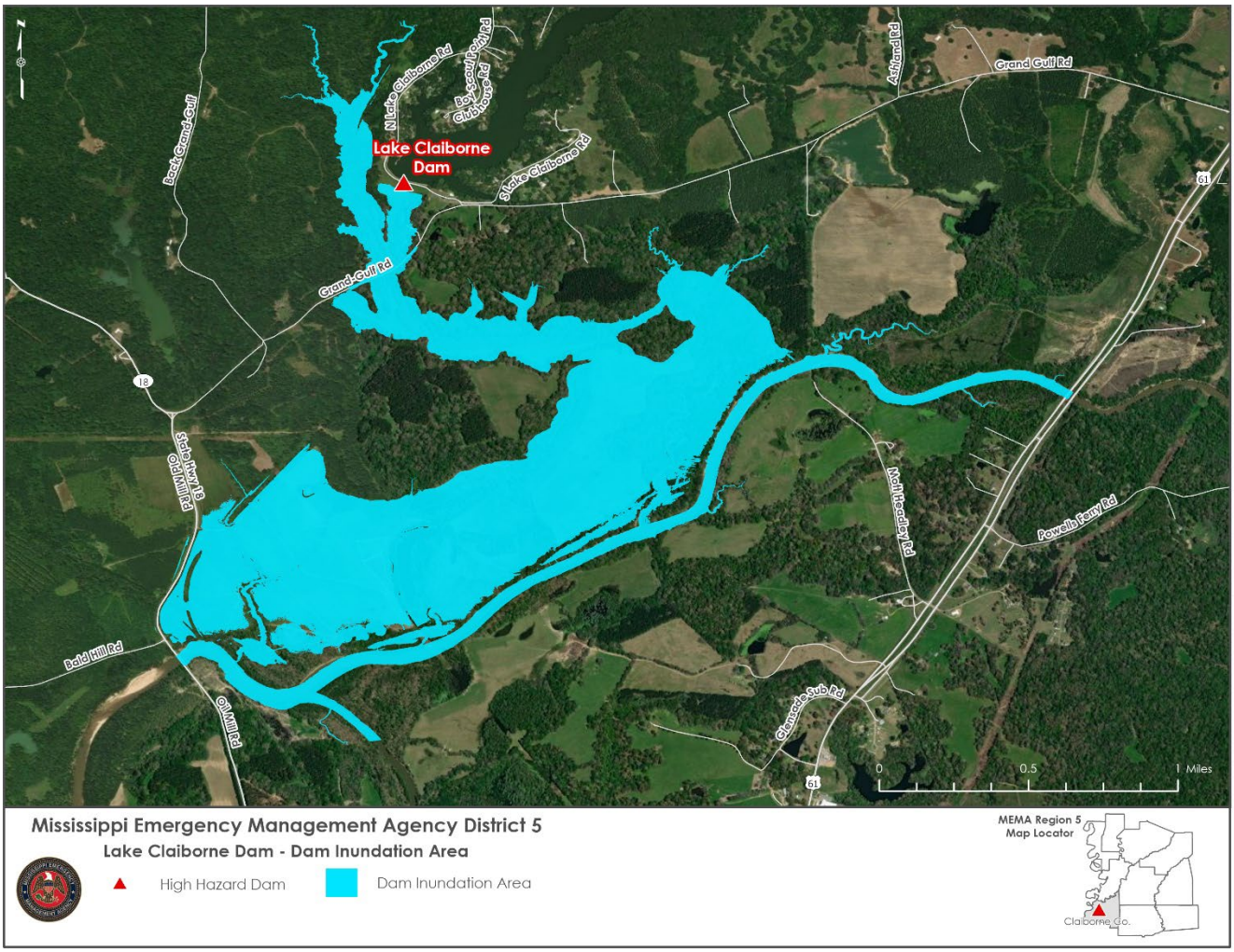


FIGURE 7: LOCATION AND INUNDATION AREAS OF LAKE CLAIBORNE DAM



Based on the information above, the residents of Claiborne County are vulnerable to the potential failure of Lake Claiborne Dam. This dam is rated high due to the catastrophic damage a dam breach or failure could cause. Due to the extent of impact, HHPDs are required to develop an Emergency Response Plan (ERP) that details how the dam will respond in the event of a breach or failure. Within the ERPs inundations maps are required to be developed to understand which areas would be impacted in the event of a breach or failure.

4.1.2. PREVIOUS OCCURRENCES

Since 1982, MDEQ Dam Safety Division has recorded zero breaches in Claiborne County. It is important to note that some failures may not have been detected and reported.

4.1.3. PROBABILITY OF FUTURE OCCURRENCES

Structural vulnerabilities in dams may be observable through external inspection; however, failure can still occur unexpectedly, even during fair weather conditions. A sunny day breach, particularly in earthen dams, can result in sudden and severe flooding. While there are tools and methods available to assess the likelihood of imminent failure, these do not always provide sufficient foresight into future events. Consequently, all dams located within the County should be considered at risk of breach at any

time. The probability of future failure is classified as **Unlikely** for both the County and Port Gibson, indicating a persistent potential for occurrence and the extent of inundation areas within the County.

4.1.4. LOCALIZED VULNERABILITY ASSESSMENT

4.1.4.1. OVERALL VULNERABILITY

All dams and levees within Claiborne County are considered susceptible to breach at any time. Breaches may lead to impacts across community lifelines, as described in the base plan. In the event of the high hazard dam failing in Claiborne County, all people, systems, structures, and the environment would be vulnerable to significant and catastrophic impacts. The risk of a dam failure occurring in Claiborne County and Port Gibson is **Low** due to the lack of previous occurrences and low number of dams and high hazard potential dams. However, dam failures at any class could cause damage. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to dam failures.

4.1.4.2. CRITICAL FACILITIES

No critical facilities in Claiborne County fall within the mapped inundation area of an upstream dam. However, dam failure remains a high-consequence, low-probability hazard due to the potential for sudden, fast-moving floodwaters downstream. A rapid breach could impact hospitals, fire stations, law enforcement centers, emergency operations centers, schools, water and wastewater treatment facilities, and government buildings located within the inundation zone, leading to structural damage and loss of function. Flooding may also damage electrical and mechanical systems, contaminate drinking-water supplies, overload wastewater infrastructure, and cause widespread power and communications disruptions.

4.1.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Dam failure has the potential to cause severe and sudden impacts to cultural, historic, and natural resources in the County due to rapid downstream flooding, high-velocity flows, and extensive erosion. Historic structures, cemeteries, archeological sites, and culturally significant landscapes located downstream of dams or along rivers and creeks may be damaged or destroyed by inundation, scour, or debris impacts associated with a dam breach. Floodwaters can erode soils and displace archeological materials, resulting in irreversible loss of cultural resources and historic context. Natural resources may also experience significant impacts, including stream channel alteration, sediment deposition, destruction of wetlands and riparian habitats, reduced water quality, and displacement or loss of wildlife. All structures located downstream of a dam are at some level of risk.

4.1.4.4. PEOPLE

The primary impact of dam failure is flooding, which is more likely to impact older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate and harder to recover. In the County, individuals living below the poverty level are very high at 33%. These populations can experience disproportionate impacts to dam failures and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.1.4.5. STRUCTURES AND SYSTEMS

Dam failure can result in sudden and severe impacts to structures and systems in the County due to rapid flooding, high-velocity water flow, and debris transport downstream of a breached dam. Residential, commercial, and public structures located within dam-inundation areas may experience extensive structural damage or complete destruction as foundations, walls, and load-bearing

components are undermined by erosion and scour. Transportation systems, including roads, bridges, and culverts, are particularly vulnerable to washouts and structural failure, which can isolate communities and impede emergency response and recovery efforts. Utility systems such as water, wastewater, electrical, and communications infrastructure may also be damaged or disabled by floodwaters, resulting in service interruptions, contamination risks, and prolonged outages. All structures within dam inundation areas would be at risk of flooding and damage. Transportation infrastructure in the mapped inundation areas of Lake Claiborne Dam include U.S. Highway 61, Grand Gulf Road and Old Mill Road. All structures and systems located downstream of a dam are considered at some level of risk.

4.1.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Claiborne County may lead to a decrease in the populations in the inundation zone of each dam. A related decrease in the number of impervious surfaces from urbanization can reduce runoff and strain on existing drainage systems, potentially decreasing the likelihood of overtopping or erosion near dam and levee sites.

4.2. DROUGHT

4.2.1. LOCATION AND EXTENT

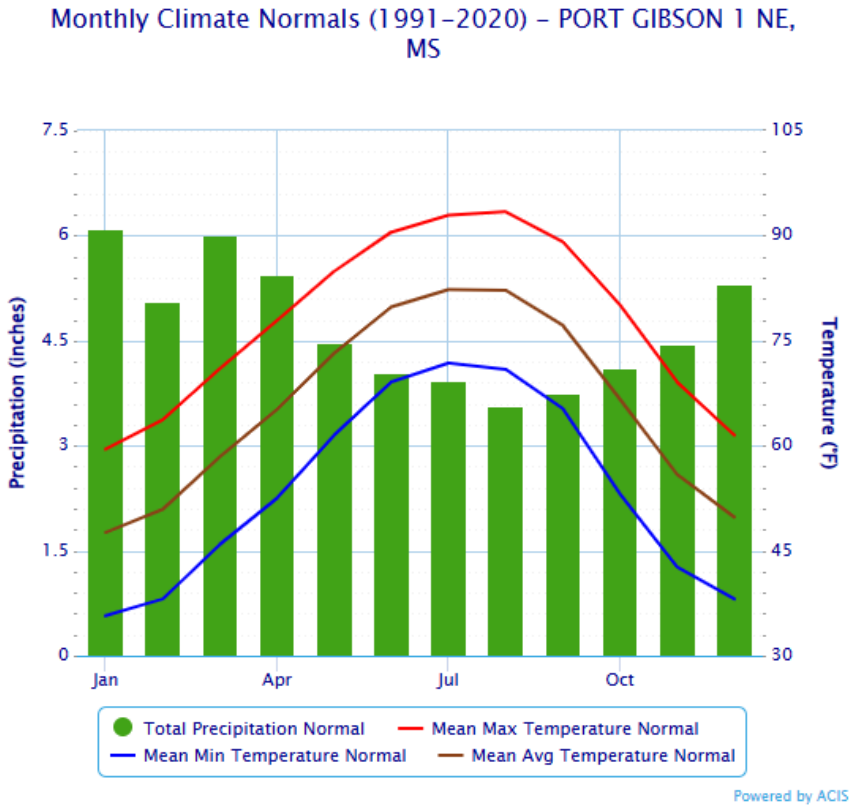
Drought affects the entire planning area equally; Claiborne County and its jurisdictions are not more or less susceptible to drought than other communities in District 5. For more information on the drought within the District, refer to the base plan.

Figure 8 and **Figure 9** below displays the monthly precipitation and temperature normals for the area surrounding the Port Gibson 1 NE, MS National Weather Service (NWS) station. According to the data, the County experiences about 56 inches of precipitation annually with an average mean temperature of 66 degrees. The hottest months are June through September while the wettest months are January through April.

FIGURE 8: MONTHLY NORMAL PRECIPITATION AND TEMPERATURE – PORT GIBSON 1 NE, MS | SOURCE: NWS

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	6.10	59.5	35.7	47.6
February	5.06	63.7	38.1	50.9
March	6.01	71.0	45.9	58.4
April	5.45	77.9	52.5	65.2
May	4.47	84.9	61.5	73.2
June	4.05	90.5	69.1	79.8
July	3.94	92.9	71.8	82.3
August	3.56	93.4	70.9	82.2
September	3.75	89.1	65.3	77.2
October	4.11	80.1	53.1	66.6
November	4.44	69.1	42.7	55.9
December	5.32	61.5	38.1	49.8
Annual	56.26	77.8	53.7	65.8

FIGURE 9: MONTHLY CLIMATE NORMALS – PORT GIBSON 1 NE, MS | SOURCE: NWS



4.2.2. PREVIOUS OCCURRENCES

Drought has significantly affected agricultural areas in Claiborne County in the past ten years. Between the 2015 and 2020 plans, five droughts occurred in Claiborne County, causing $50,000 in property damage and $481,000 in crop damage. Between the 2020 and 2025 plans, there were four droughts causing zero property damage, yet $2,080,000 in crop damages were reported.

4.2.1. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been nine drought events over the past 10 years. Therefore the probability of a drought event occurring in the future for the County and the City of Port Gibson is **Likely**.

4.2.2. LOCALIZED VULNERABILITY ASSESSMENT

4.2.2.1. OVERALL VULNERABILITY

The drought vulnerability assessment in the base plan highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Within Claiborne County and the Port Gibson, drought poses a **Medium** risk due to potential impacts, largely to public health, agriculture, and the local economy. Potential impacts on Community Lifelines and historic and cultural resources are consistent across the District 5 planning area and are described in the base plan. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to drought.

4.2.4.2 CRITICAL FACILITIES

Drought poses a slow-onset but significant risk to critical facilities in Claiborne County by stressing water supply systems, increasing wildfire risk, and disrupting essential services. Prolonged dry conditions can reduce groundwater and surface water availability needed for drinking water, sanitation, medical care, and fire suppression, potentially affecting facilities such as hospitals, emergency services, schools, and government buildings. Drought conditions also elevate wildfire danger, which can strain fire response capabilities and threaten nearby infrastructure, while increased heat and energy demand may place additional stress on electrical systems supporting critical operations.

4.2.2.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Drought can damage cultural, historic, and natural resources in Claiborne County by reducing soil moisture and water levels needed for their preservation. Prolonged dry conditions may harm historic sites, stress forests and wetlands, increase wildfire risk, and degrade ecosystems and culturally important water resources, potentially leading to long-term loss.

4.2.2.4. PEOPLE

As noted in the base plan, drought poses a significant threat to public health and safety, particularly when it disrupts access to clean and sufficient water supplies, and particularly for vulnerable populations—such as low-income households, the elderly, and individuals with disabilities. These populations can experience disproportionate impacts to droughts and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.2.2.5. STRUCTURES AND SYSTEMS

Although drought doesn't typically cause direct physical damage to buildings or infrastructure, systems reliant on water (particularly those supporting agricultural operations) are the most vulnerable. Claiborne County has a total approximate land area of 311,946 acres, of which 21.6% is farmland (127 farms totaling 67,446 acres of farmland). These portions of the county and their structures and systems are more vulnerable to impact than others. Based on previous occurrences, since 2015, drought has caused over $2,500,000 in property damage. Most of the damage is from crop damage.

Non-agricultural critical facilities such as transportation infrastructure, utility infrastructure, and public buildings are unlikely to be affected by drought across the planning area, including in Claiborne County.

4.2.2.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Claiborne County may lead to lower strain on water systems during times of drought in the future.

4.3. EARTHQUAKE

4.3.1. LOCATION AND EXTENT

The earthquake seismic risk in MEMA District 5 varies from low to very high. Claiborne County has areas where the earthquake seismic risk is low, high and very high. Claiborne County is more susceptible to earthquakes than other communities in District 5. Ground shaking can be exacerbated by liquefaction zones. Within Claiborne County, areas in the Western portion of the County, including Port Gibson, have very high liquefaction zones. The liquefaction zone severity decreases very low towards the Southeastern side of the County. If a strong earthquake were to occur, Claiborne County may experience greater shaking and damage compared to other counties such as Rankin and Simpson County. For more information on drought within the District, refer to the base plan.

4.3.2. PREVIOUS OCCURRENCES

As noted in the base plan, Mississippi experiences relatively low seismic activity, although there have been some minor earthquakes producing light shaking felt in District 5 in recent history. Based on data from the past ten years, there have been nine earthquakes in District The strongest was a magnitude 3.2 that occurred in Madison County in 2015. Most of the earthquakes occurred in Madison County and occurred in 2015.

4.3.3. PROBABILITY OF FUTURE OCCURRENCES

As noted in the base plan, Mississippi MEMA District 5 is unlikely to experience damaging earthquakes, but it is not entirely free from seismic risk. While strong earthquakes are **Unlikely**, minor to moderate shaking could occur in Claiborne County, especially from distant seismic sources like the New Madrid Seismic Zone (NMSZ).

4.3.4. LOCALIZED VULNERABILITY ASSESSMENT

4.3.4.1. OVERALL VULNERABILITY

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. Claiborne County contains a mixture of low, high and very high liquefaction susceptibility zones. The County also contains earthquake soil classifications of D (stiff soil), E (soft soil) and F (soils requiring site-specific evaluation, such as liquefiable soils, peats, or certain clays). While these factors increase ground shaking, the County and Port Gibson is at a relatively **Low** risk of strong earthquake impacts. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to earthquakes.

Figure 10 and **Figure 11** show both the liquefaction susceptibility zones and the earthquake soils throughout the County. Most of the County has high liquefaction susceptibility zones and stiff to quick and highly susceptible soils. If a strong earthquake were to occur, the County may be more at risk to ground shaking compared to other areas in the District.

FIGURE 10: CLAIBORNE COUNTY LIQUEFACTION SUSCEPTIBILITY ZONES

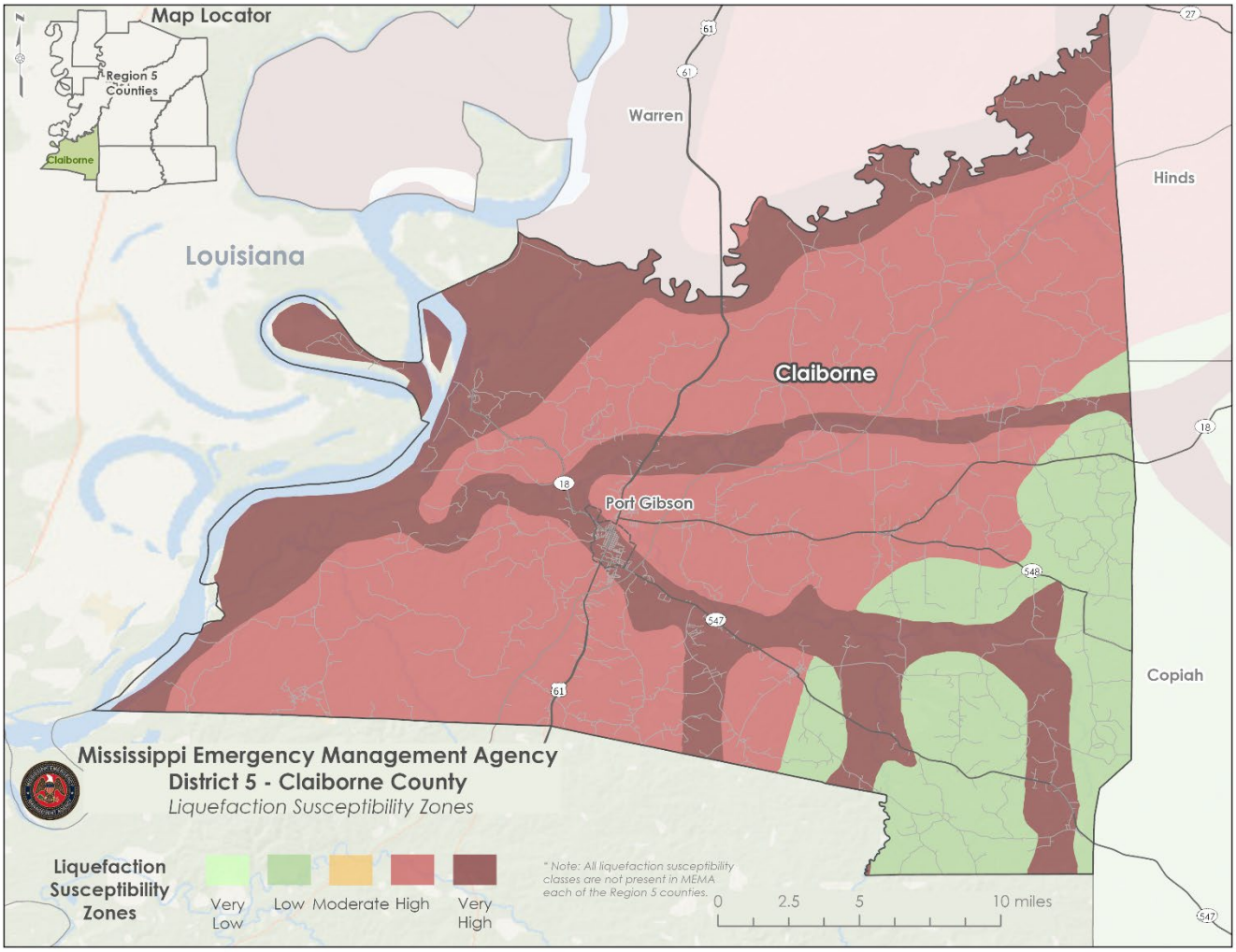
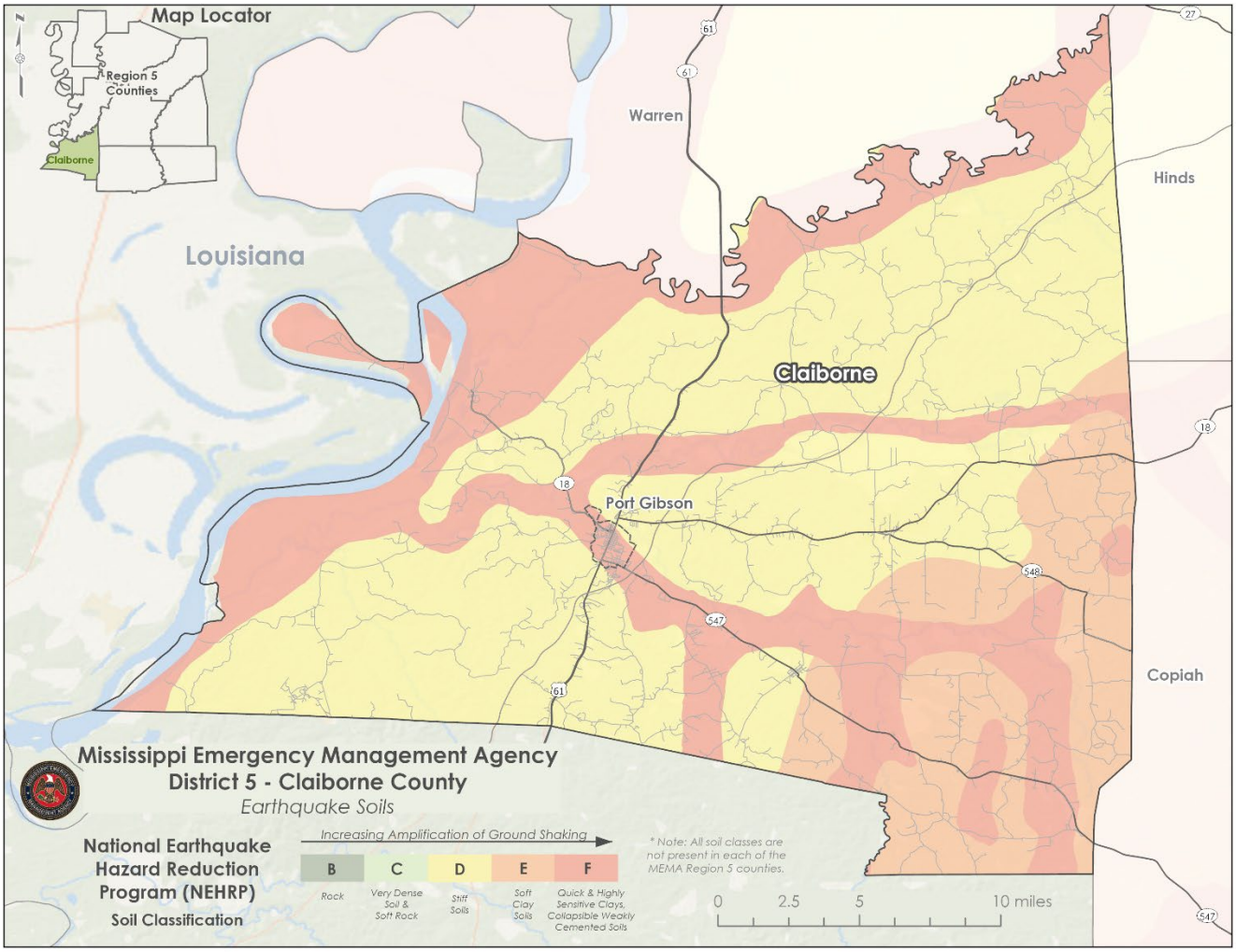


FIGURE 11: CLAIBORNE COUNTY EARTHQAUKE SOILS



4.3.4.2. CRITICAL FACILITIES

Although earthquakes occur infrequently in Claiborne County, seismic activity associated with the New Madrid Seismic Zone could result in ground shaking that damages critical facilities and infrastructure. Earthquake impacts may disrupt essential services and utilities and damage transportation routes, potentially limiting access to critical facilities and hindering emergency response and recovery efforts. In the event of a rare strong earthquake, critical facilities within high liquefaction susceptibility zones and moderate seismic risk are most at risk of earthquake impacts.

4.3.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Earthquakes have the potential to damage cultural, historic, and natural resources through ground shaking and ground deformation associated with regional seismic activity such as the New Madrid Seismic Zone. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be particularly vulnerable due to age, unreinforced masonry construction, or shallow foundations that are susceptible to cracking or collapse during seismic events. Natural resources may be affected through soil instability, slope failure, altered drainage patterns, and damage to wetlands, streams, or wildlife habitats. In the event of a rare strong earthquake, resources within high liquefaction susceptibility zones and moderate seismic risk are the most at risk of earthquake impacts.

4.3.4.4. PEOPLE

Some populations may face greater risk to earthquakes--the relatively short warning time typically provided for earthquakes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

As noted in the base plan, although earthquakes are rare, rural communities with limited access to emergency services and infrastructure that may be disrupted by the impacts of an earthquake are at increased risk, as are vulnerable populations. These populations can experience disproportionate impacts to earthquakes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.3.4.5. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking. Because Claiborne County has soils and geography that put it at higher risk of earthquake impacts, the impacts of earthquake on critical facilities, community lifelines, natural and cultural resources, and infrastructure within Claiborne County and its jurisdictions are likely to be higher than the rest of the District.

4.3.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

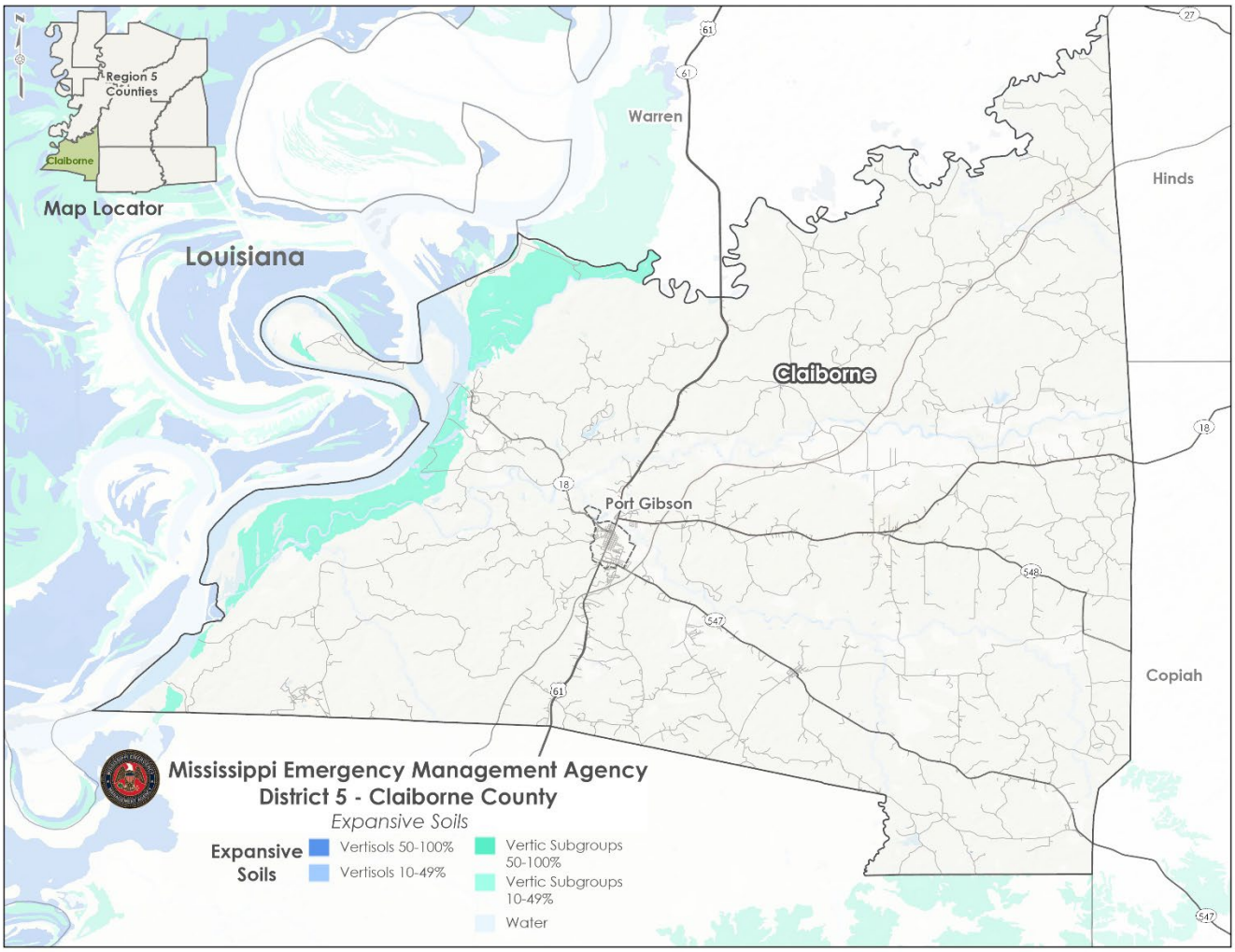
The overall decrease in development and population in Claiborne County may lead to lower impacts of earthquakes on its residents in the future.

4.4. EXPANSIVE SOILS

4.4.1. LOCATION AND EXTENT

As noted in the base plan, expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. Claiborne County has limited areas in the Vertisols (10-49%) and Vertic Subgroups (50-100%) in the western part of the County which puts these communities at lower risk than the district overall. More information about location and extent is provided in the base plan. **Figure 12** below shows these areas. For more information on expansive soils within the District, refer to the base plan.

FIGURE 12: CLAIBORNE COUNTY EXPANSIVE SOILS



4.4.2. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the D5 Region, including in Claiborne County.

4.4.3. PROBABILITY OF FUTURE OCCURRENCES

In MEMA District 5, the probability of future damage from expansive soils is considered **Unlikely** due to the District's limited geologic makeup and the lack of previous occurrences. Because Claiborne County

and Port Gibson do not contain large areas with high vertisols or vertic subgroups, they are at an lower risk of future occurrences than the district overall.

4.4.4. LOCALIZED VULNERABILITY ASSESSMENT

4.4.4.1. OVERALL VULNERABILITY

Expansive soils pose a **Low** risk to Claiborne County. Assets vulnerable to the impacts of expansive soils include residential housing, schools, emergency services facilities, and aging infrastructure, especially those constructed without geotechnical assessments or soil stabilization measures. Because of the lower probability of future occurrences of this hazard relative to the rest of the district, Claiborne County has an overall lower vulnerability to expansive soils than the rest of the district. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to expansive soils.

4.4.4.2. CRITICAL FACILITIES

Expansive soil does not pose a risk to Claiborne County; therefore, no critical facilities are impacted or vulnerable.

4.4.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Expansive soil does not pose a risk to Claiborne County, therefore no cultural, historic, or natural resources are impacted or vulnerable.

4.4.4.4. PEOPLE

The risk factors for expansive soils are structural and not demographic in nature. The people of Claiborne County are at overall lower relative risk than the rest of the District, due to the soil and geographic factors described above. If expansive soils were to cause significant structural damage, individuals may be impacted by needing to pay for repairing damages of their homes or needing to relocate from their current residences.

4.4.4.5. STRUCTURES AND SYSTEMS

Because the geography of Claiborne County puts it at lower relative risk of this hazard, the structures and systems in the County and its municipalities are at a lower relative risk as well. The potential impacts to these structures and systems are described in more detail in the base plan.

4.4.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Claiborne County may lead to lower impact of expansive soils on its residents in the future, although this risk can be significantly mitigated with smart planning and zoning decisions, including restricting or regulating development in high-risk areas. Careful management of the two inactive surface mines in the County can also impact this risk.

4.5. FLOOD

4.5.1. LOCATION

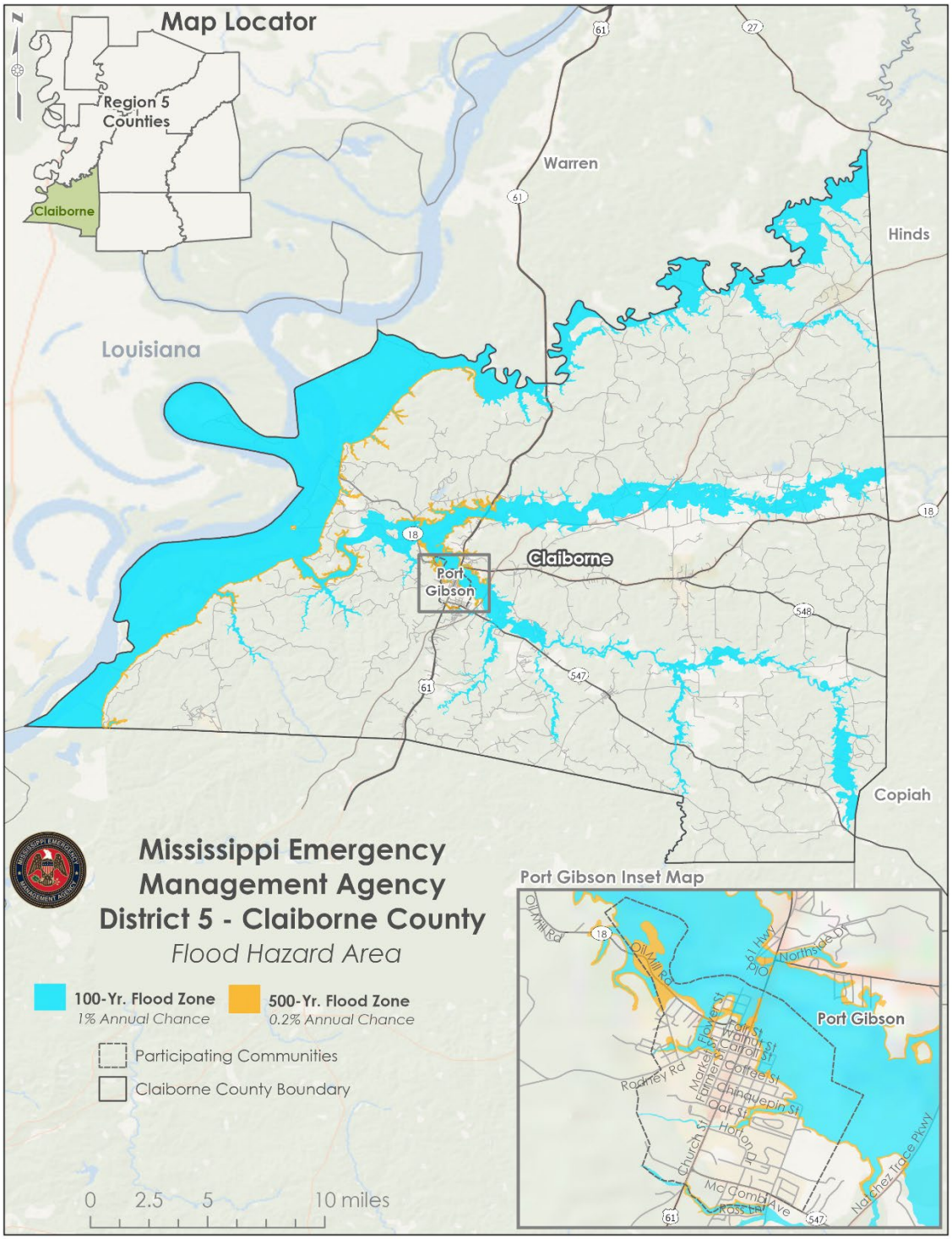
Floods are the most common type of natural disaster, occurring when water overflows onto land that is typically dry after heavy rainfall, storm surges, or rapid snowmelt. Flooding often leads to significant impacts on both human life and the environment. This section provides detailed information about the location, extent, previous occurrences, and overall vulnerability of communities within Claiborne County to flooding than is provided in the base plan. For more information on flooding within the District, refer to the base plan.

For purposes of this hazard profile and vulnerability analysis, the geographic location/extent for river flooding will be primarily considered as those areas at risk to the 100-year flood (also known as the 1% annual chance flood). The 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. However, the accompanying maps also show the 500-year floodplains (also known as the 0.2% annual chance floodplains) for two major reasons. First, climate models suggest that the planning area should anticipate rain events with increasing intensity in the coming years and decades. Second, any future population growth may result in new development within or near 500-year floodplains.

Figure 13 below shows the location of flood hazard areas within Claiborne County. The 100-year floodplain is located along the Western and Northern areas of the County. The 500-year floodplain covers a small area within the City of Port Gibson.

The main waterway in Claiborne County is centered around the Mississippi River, which defines the region's Western geography and agricultural landscape. Other key water features include the Big Black River, which defines the Northern border with Warren County, along with tributaries like Barland Creek and Barnes Creek. The County also features smaller, localized lakes and dams used for flood control and recreation.

FIGURE 13: CLAIBORNE COUNTY FLOOD HAZARD AREAS



4.5.2. EXTENT

Riverine flooding is among the most significant hazards in the planning area due to its ability to impact large geographic areas, threatening a significant number of people and properties, the relatively small amount of flood water that it takes to cause significant injury or property damage, and the ability of flood

water to linger for days, causing extensive damage. Because variations in geography, elevation, and building design mean that the same flood can cause a wide variety of extents of damage to different structures, the variation in extent across the County is most accurately captured by the flood zone mapping provided above under “location.”

The most significant recorded flooding event in the State’s history, indicating the potential extent of the threat of the flood hazard, was in 1927, when persistent heavy rainfall and run-off inundated 27,000 square miles. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

4.5.3. PREVIOUS OCCURRENCES

Since 1983 there have been eight federal disaster declarations pertaining to flooding in Claiborne County, details of which are provided below in **Table 21**. The most significant recorded flooding event in Claiborne County during this planning cycle was in 2020, when numerous thunderstorms and heavy rainfall that produced widespread rainfall between two and six inches with the heavy corridor right across the central portion of the forecast area. This resulted in widespread flash flooding across the region as this additional rain fell on very saturated conditions.

TABLE 21: FLOODING-RELATED MAJOR DISASTER DECLARATIONS IN CLAIBORNE COUNTY

Disaster Number	Description	(Declaration Date) and Incident Period	Individual Assistance	Public Assistance
DR-4551	Severe Storm, Tornadoes, Straight-line Winds, Flooding	(7/9/2020) 4/22/2020-4/23/2020	N	Y
DR-4538	Severe Storm, Flooding and Mudslides	(4/23/2020) 2/10/2020-2/18/2020	N	Y
DR-4314	Severe Storm, Tornadoes, Straight-line Winds, Flooding	(5/22/2017) 4/30/2017	--	--
DR-4268	Severe Storm, Flooding	(3/25/2016) 3/9/2016-3/29/2016	N	Y
DR-1983	Flooding	(5/11/2011) 5/3/2011-6/17/2011	Y	Y
EM-3320	Flooding	(5/4/2011) 4/27/2011-6/17/2011	N	Y
DR-683	Flooding, Severe Storm, Tornado	(6/1/1983) 6/1/1983	Y	Y

Between the 2015 and 2020 plans, there were four flooding events in Claiborne County, causing $35,000 in property damage. Since the 2020 plan, there have been five such events, causing $12,000 in damages, no fatalities, and no injuries according to information provided by the NCEI. Additional information on these events is provided in **Table 22.**

Table 22. Individual Flood Events 2020-2025

Date	Time (CST-6)	Event Description	Assessed Damages	Estimated Flood Depth
1/14/2020	18:10	A warm front was situated across southern Mississippi during the evening of January 13th. This, combined with a passing disturbance and anomalous moisture, supported numerous thunderstorms and heavy rainfall that produced widespread rainfall between 2 and 6 inches with the heaviest corridor right across the central portion of the forecast area. This resulted in widespread flash flooding across the region as this additional rain fell on very saturated conditions.	$2,000	6 inches
4/23/2020	01:30	Several roads in and around Port Gibson were inundated with water.	$3,000	6 inches
1/24/2024	13:00	Portions of Pattison Tillman Road were flooded and closed.	$1,000	4 inches
1/24/2024	20:00	Portions of Pattison-Tillman Road were flooded and closed due to runoff from earlier heavy rainfall.	$5,000	6 inches
03/08/2024	12:00	A portion of Pattison-Tillman Road flooded.	$1,000	4 inches

4.5.4. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been eight events in the past 10 years. With a flooding event occurring every 1-2 years. Therefore, the probability is **Likely** for future flood events occurring in Claiborne County. However, information from the NCEI's Storm Events Database does not provide enough granularity to conclude how many of these events impacted Port Gibson, and only one event in the last five years mentions Port Gibson in the description from NCEI. Using county-level events and their own experience, representatives from Port Gibson determined that their future probability of flooding events is **Unlikely**. As climate change increases the intensity and unpredictability of rainfall, the likelihood of flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience.

4.5.5. LOCALIZED VULNERABILITY ASSESSMENT

4.5.5.1. OVERALL VULNERABILITY

As noted in the base plan, flooding can cause widespread damage to buildings, roads, utilities, and public infrastructure, and can significantly impact all eight community lifelines as well as natural, historical, and cultural resources. Moderate vulnerability areas including Copiah, Claiborne, Hinds, Madison, Rankin and Simpson Counties experience moderate flood risk due to mixed terrain and partial exposure to flood-prone zones. While not as frequently impacted as Delta counties, these areas still face risks from localized flooding and inadequate stormwater systems. Claiborne County are at a **High** risk of impacts from flooding events based on the severity of previous events, while Port Gibson is at a **Low** risk. This section provides further contextualization for the anticipated vulnerability to flooding events.

4.5.5.2. CRITICAL FACILITIES

Flooding poses a significant risk to critical facilities in Claiborne County by causing structural damage, inundating mechanical and electrical systems, and disrupting essential services. Flood events can

impact hospitals, fire stations, law enforcement facilities, schools, emergency operations centers, and water and wastewater infrastructure, particularly those located in low-lying areas or within Special Flood Hazard Areas. Inundation of utility systems may contaminate drinking water supplies, impair wastewater treatment, and result in power and communications outages that hinder emergency response and continuity of government. Flooded roads and bridges can also restrict access to critical facilities, delaying emergency services, evacuation, and recovery efforts.

Figure 14 displays the critical facilities and infrastructure in the flood hazard areas. **Table 23** below lists the critical facilities in the City of Port Gibson that are in the 1% annual chance and 0.2% annual chance floodplains.

FIGURE 14: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE FLOOD HAZARD AREAS

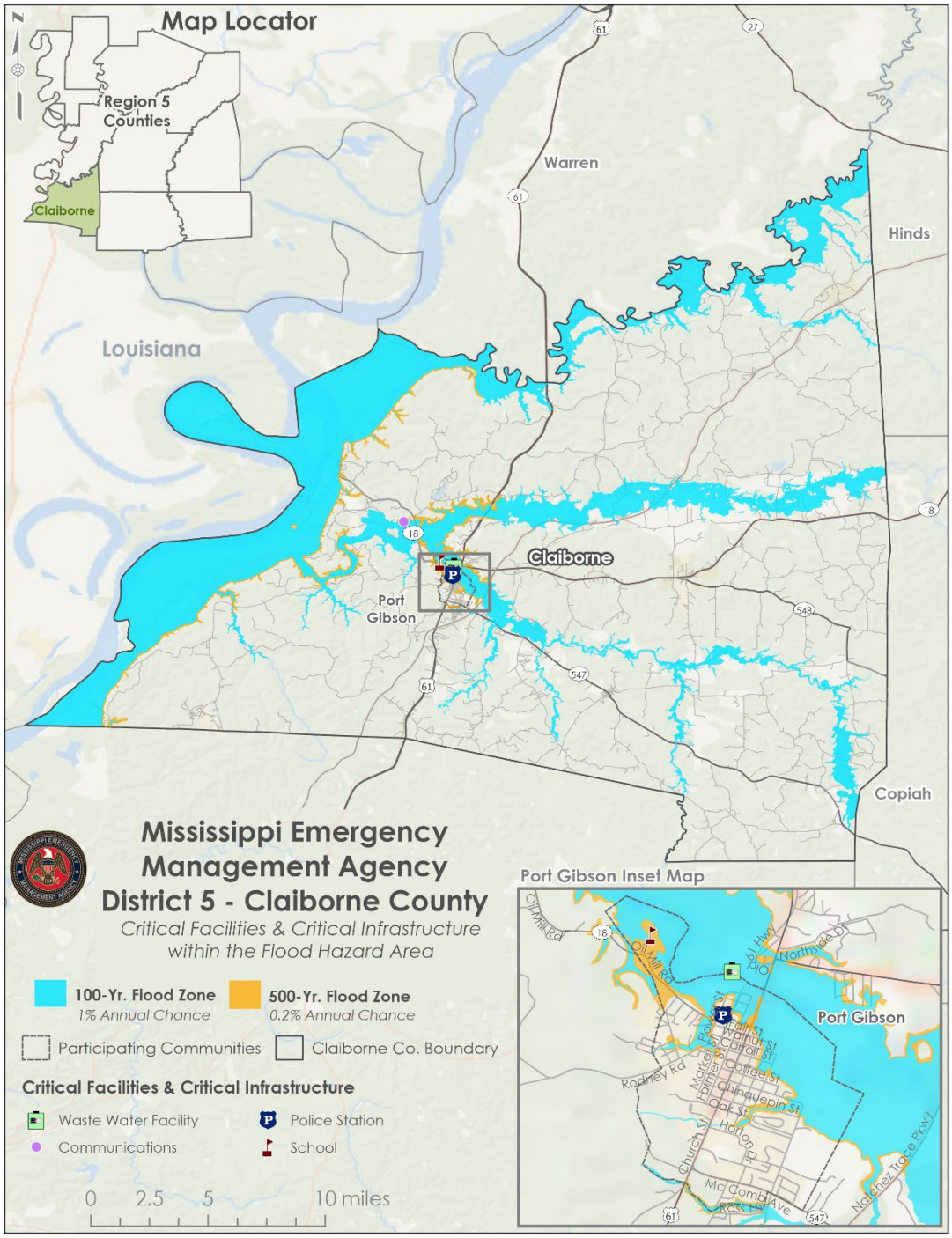


TABLE 23: CRITICAL FACILITIES IN THE FLOODPLAINS

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
City of Port Gibson	Communications	WKPG 1320	N	Y
City of Port Gibson	Police Station	Claiborne County Sheriff Dept.	Y	N
City of Port Gibson	Police Station	Claiborne County Sheriff's Department / Clairborne County Detention Center	Y	N
City of Port Gibson	School	A. W. Watson Upper Elementary	Y	N
City of Port Gibson	Waste Water Facility	Port Gibson POTW	N	Y

4.5.5.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Flooding can adversely impact cultural, historic, and natural resources in Claiborne County by causing erosion, structural damage, and long-term degradation of sensitive sites and landscapes. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be damaged by prolonged inundation, saturated soils, or repeated flood events, particularly where foundations, grave markers, or unreinforced masonry are exposed to water and shifting ground conditions. Floodwaters can erode soil and displace or destroy archeological materials, resulting in irreversible loss of cultural resources. Natural resources are also vulnerable, as flooding can alter stream channels, degrade wetlands, reduce water quality, damage vegetation, and disrupt wildlife habitats. While some ecosystems may recover over time, repeated or severe flooding can permanently alter natural and cultural landscapes.

4.5.5.4. PEOPLE

Some populations may face greater risk to flooding--the relatively short warning time typically provided for flooding means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations most at risk of the impacts of flooding include older adults, low-income families, and individuals without access to flood insurance or reliable transportation, as these can make it more difficult to evacuate when flood warnings occur, and it is harder to recover from the impacts of a flood. These populations can experience disproportionate impacts to floods and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.5.5.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, flooding has caused over $47,000 in damage in the past 10 years within the County and is expected to continue in the future. Flooding poses a significant risk to structures and critical systems in Claiborne County by causing physical damage, inundation, and operational disruptions. Floodwaters can damage building foundations, walls, and interiors, particularly in structures located in low-lying areas or flood-prone zones, leading to costly repairs and long-term

structural degradation. Electrical, mechanical, and HVAC systems are especially vulnerable to water damage, which can result in power outages and prolonged service interruptions. Flooding may also impair transportation networks, water distribution, wastewater treatment, and drainage systems, reducing access to essential services and facilities. These impacts can disrupt emergency responses, government operations, and community recovery efforts, especially when flood events are recurrent or severe.

4.5.5.6. NFIP INSURED STRUCTURES

The National Flood Insurance Program (NFIP) is a federal program managed by FEMA that provides flood insurance to property owners, renters, and businesses in participating communities. It aims to reduce flood damage by restricting floodplain development and offering affordable insurance, as standard homeowners insurance typically does not cover flood damage. Clairborne County and its jurisdictions are participating in the NFIP. For more information about the NFIP, reference **Section 5.8.6.3** in the base plan.

According to current data from the NFIP, there are 10 Repetitive Loss properties in Claiborne County as of 2025. Of these, seven are single-family residences, two are non-residential commercial businesses and one is non-business non-residential structure. Due to the repetitive nature of these losses, structures meeting the NFIP definitions of repetitive loss and severe repetitive loss should be prioritized for mitigation measures, as these measures are likely to be relatively cost effective. **Table 24** lists the properties that are repetitive loss or severe repetitive loss in Claiborne County.

TABLE 24: REPETITIVE LOSS AND SEVERE REPETITIVE LOSS PROPERTIES IN CLAIBORNE COUNTY

Jurisdiction	Number of Repetitive Loss Properties (2025)	Number of Severe Repetitive Loss Properties (2025)	Total Number of Flood Claims	Total Amount ($) of Flood Claims
Claiborne County	10	--	--	--
City of Port Gibson	--	--	--	--

4.5.5.7. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Claiborne County may lead to lower impacts of flooding. A decrease in the number of structures in the floodplain allows for more permeable surface to absorb floodwater, along with lower strain on stormwater management systems that can contribute to an overall reduction in the severity of flood events.

4.6. SEVERE STORMS

4.6.1. LOCATION AND EXTENT

Severe storms are a region-wide hazard in the Mississippi Delta and are not confined to specific locations. Severe storms affect the entire planning area equally; Claiborne County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. For more information on severe storms across the District, refer to the base plan.

4.6.2. PREVIOUS OCCURRENCES

Recent events highlight the destructive potential of these storms. Since 2020, the following events have taken place in Claiborne County:

- 26 thunderstorms, causing $745,000 in property damage
- Zero reported occurrences of severe lightning
- Two high wind events, causing $15,000 in property damage
- Two hailstorms, causing $550,000 in property damage

Figure 15 and **Figure 16** below show the historic wind and hail events in Claiborne County since 1955.

FIGURE 15: CLAIBORNE COUNTY HISTORIC WIND EVENTS 1955-2024

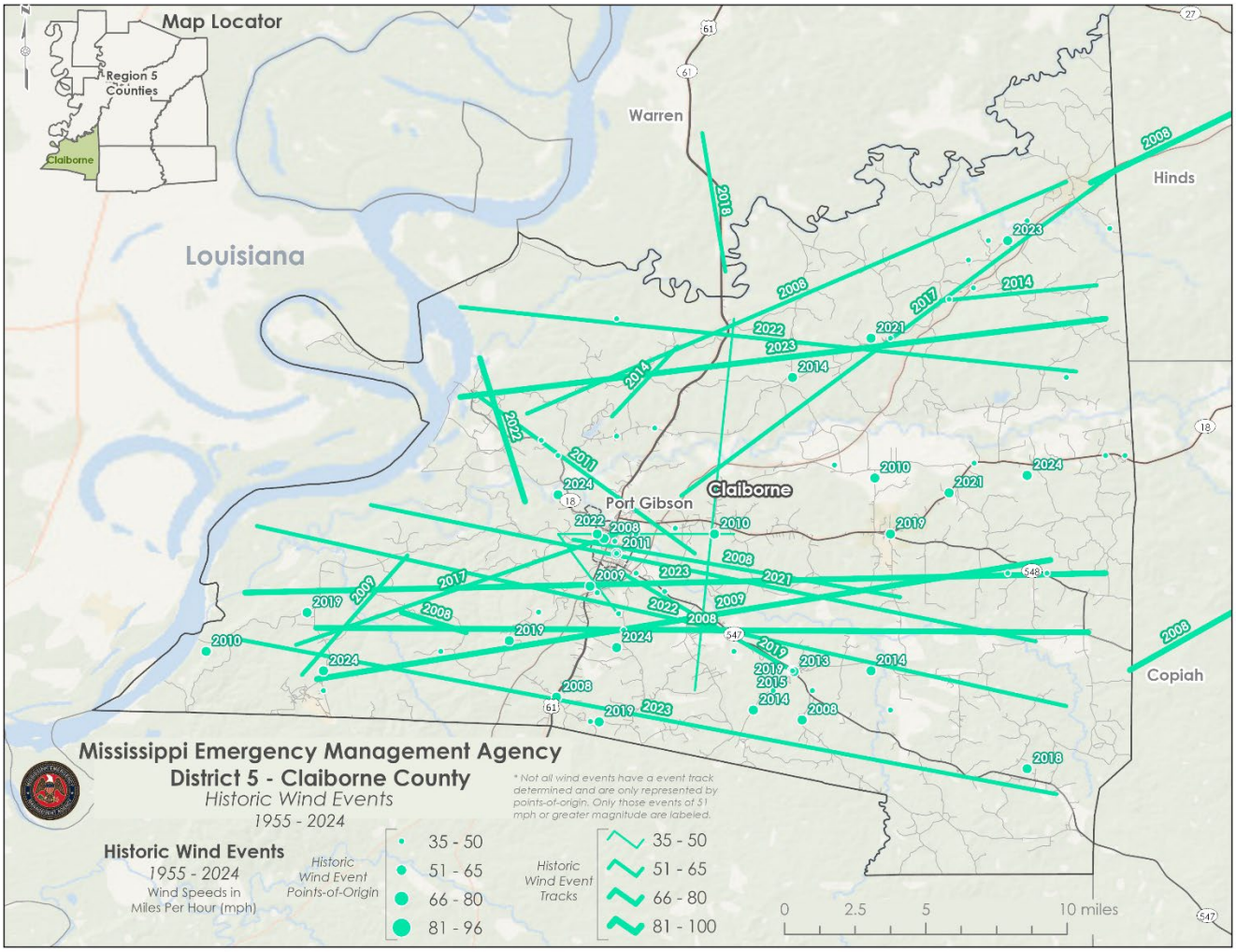
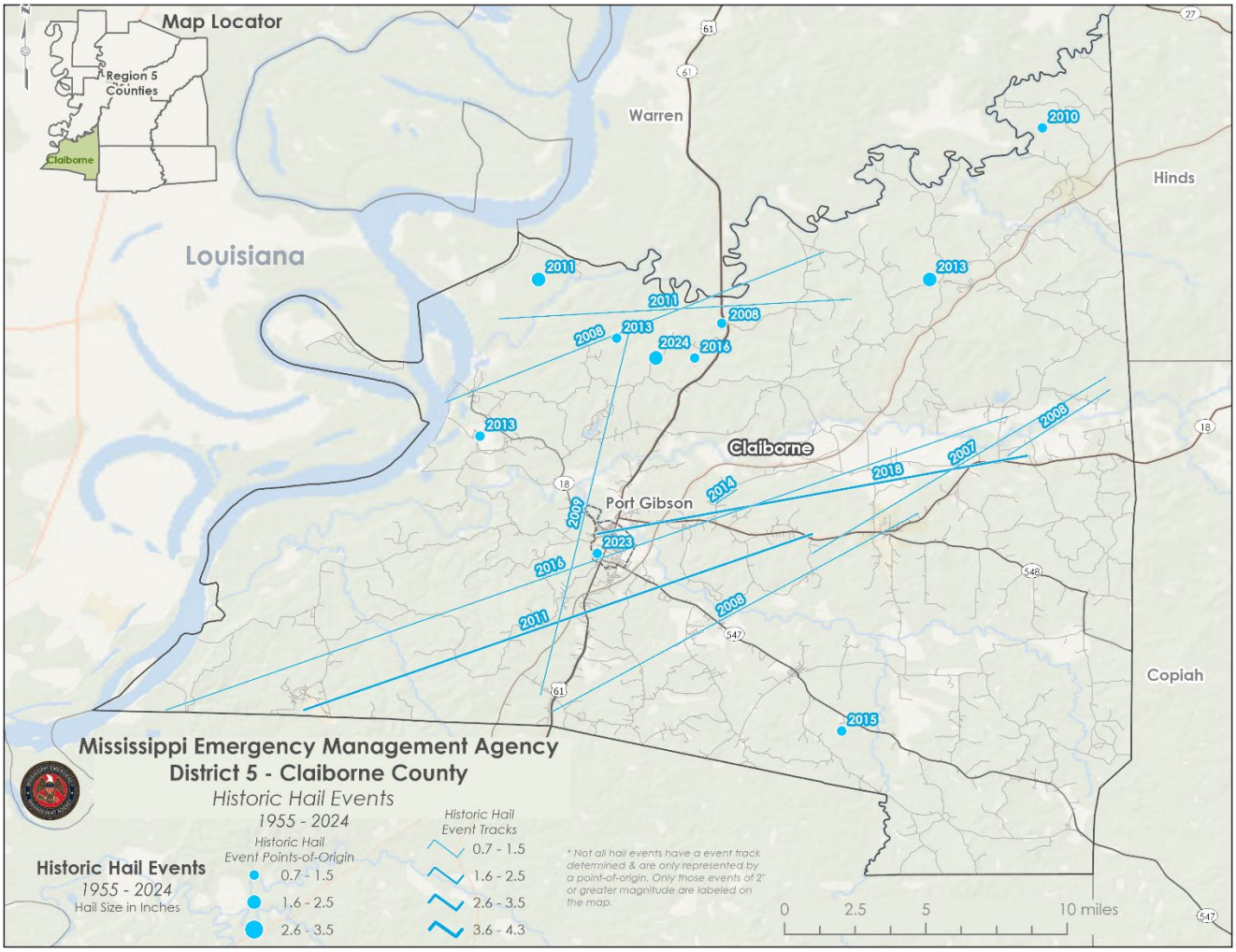


FIGURE 16: CLAIBORNE COUNTY HISTORIC HAIL EVENTS 1955-2024



4.6.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 30 events in the past five years. The probability of future occurrences of severe storms in Claiborne County is **Extremely Likely**, especially during peak storm seasons. These storms are expected to occur multiple times per year.

4.6.4. LOCALIZED VULNERABILITY ASSESSMENT

4.6.4.1. OVERALL VULNERABILITY

As noted above, the risk of severe storms (due to the frequency and ubiquity of these events) is largely equal across the entire planning area, posing risks to natural and cultural resources and community lifelines, as discussed in the base plan. However, demographic and development factors can cause variation in vulnerability to this risk. However, demographic and development factors can cause variation in vulnerability to this risk. Based on the frequency and the extent of damage that severe storms can cause the risk of severe storms is **High** for Claiborne County. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to severe storms.

4.6.4.2. CRITICAL FACILITIES

Since severe storms impact the planning area equally, all critical facilities are at risk of severe storm impacts. Severe storm events, including strong thunderstorms accompanied by high winds, heavy rainfall, hail, and lightning, present an ongoing risk to critical facilities in Claiborne County. These storms can cause damage to essential buildings such as hospitals, emergency response facilities, schools, government offices, roof failure, shattered windows, and impacts of debris.

4.6.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Severe storm events can adversely affect cultural, historic, and natural resources in the County through high winds, heavy rainfall, flooding, hail, and lightning. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, falling trees, erosion, or prolonged moisture exposure, particularly where resources are older or lack protective reinforcement. Intense rainfall can erode soils and displace archeological materials, leading to the loss of historic context and integrity. Natural resources may also be impacted by severe storms that could damage forests, alter stream channels, degrade wetlands, and reduce water quality through increased sedimentation and runoff.

4.6.4.4. PEOPLE

The wind, hail, lightning, and flooding often produced by severe storms can lead to injury or death. Some populations may face greater risk to severe storms--the relatively short warning time typically provided for severe storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.6.4.5. STRUCTURES AND SYSTEMS

Aging infrastructure and limited emergency resources without redundancies increase the vulnerability of structures and systems in Claiborne County to the impacts of severe storms. However, this vulnerability is not markedly higher or lower in the County than the rest of the District; the vulnerability of structures and systems across D5 is described in more detail in the base plan. Based on previous occurrences, severe storms have caused $1,000,000 in damages. It is expected that in the next several years, similar damage from severe storms will continue to occur.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Claiborne County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.6.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Claiborne County means fewer people and structures for storms to damage. Additionally, lower strain on stormwater management systems can contribute to an overall reduction in the likelihood of severe storms to lead to flooding.

4.7. SEVERE WINTER WEATHER

4.7.1. LOCATION AND EXTENT

Severe winter weather is a region-wide hazard in the Mississippi Delta and is not confined to specific locations. Winter storms affect the entire planning area equally; Claiborne County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. More information on the extent of the threat posed by these storms is provided in the base plan. However, the extent of these storms is limited, with an average amount of annual snowfall in the County of .25 inches. For more information on severe winter weather across the District, refer to the base plan.

4.7.2. PREVIOUS OCCURRENCES

Several impactful severe winter weather events have occurred in Claiborne County over the past two decades. The most significant of these in recent years include:

- The January 2018 cold snap that led to challenges like burst pipes, increased heating demands, and risk to seniors and other vulnerable populations
- The February 2021 freezing rain, sleet, and snow event that led to widespread power outages due to ice accumulation
- The January 2014 snowstorm led to significant travel hazards

Between 2015 and 2020, there were one severe winter weather events in Claiborne County, causing zero reported property damage. Since the 2020 plan update, there have been four such events, causing $203,000 in damage.

4.7.3. PROBABILITY OF FUTURE OCCURRENCES

As with the rest of District 5, severe winter weather events in Claiborne County are considered occasional but increasing in frequency and severity. The probability of a severe winter storm occurring in the County is **Low** while the probability is **Extremely Likely** for Port Gibson.

4.7.4. LOCALIZED VULNERABILITY ASSESSMENT

4.7.4.1. OVERALL VULNERABILITY

All counties within District 5 are vulnerable to the impact of severe winter storms. Because it is closer to the Southern portion of the region, winter weather in Claiborne County may be slightly less severe than across the region. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the County's natural, historic, and cultural assets. Based on the frequency and the severity of severe winter storms, the risk to the County and Port Gibson is **Medium**. Severe winter storms can disrupt utility and critical infrastructure which can significantly disrupt the communities of Claiborne County. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to severe winter storms.

4.7.4.2. CRITICAL FACILITIES

Severe winter weather, including freezing temperatures, ice, and occasional snow, can disrupt critical facilities in Claiborne County by causing power outages, damaging water and wastewater systems, and limiting transportation access. Freezing conditions may result in broken pipes, equipment failures, and interruptions to essential services at hospitals, emergency response facilities, schools, and government buildings.

4.7.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Although severe winter weather occurs infrequently, its effects can result in lasting damage to sensitive cultural, historic, and natural resources. Severe winter weather can adversely affect cultural, historic, and natural resources in the County by causing structural stress, moisture damage, and ecological disruption. Historic buildings, cemeteries, and monuments may experience cracking, spalling, or material deterioration due to freeze–thaw cycles, while ice accumulation and fallen trees can damage structures and cultural landscapes. Natural resources are also vulnerable, as winter weather can damage vegetation, alter wildlife habitats, and degrade water quality through increased runoff and erosion.

4.7.4.4. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations. As with other hazards, those who are elderly, disabled, or economically disadvantaged are at heightened risk due to limited access to reliable heating, transportation, and emergency services, and a reduced ability to physically withstand cold temperatures. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe winter weather and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.7.4.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, severe winter weather has caused about $203,000 damage in the past five years and is likely to continue in the future. Rural communities may be more vulnerable to isolation during winter storms, especially if roads become impassable. These areas often face greater challenges in road treatment and utility restoration due to limited access to resources and longer emergency response times.

4.7.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Stagnant population growth and population reduction in Claiborne County reduce the strain on electrical and other utility systems, reducing the likelihood that these systems experience failure during significant events. However, this may also contribute to slower emergency response times, increasing risk.

4.8. TORNADO

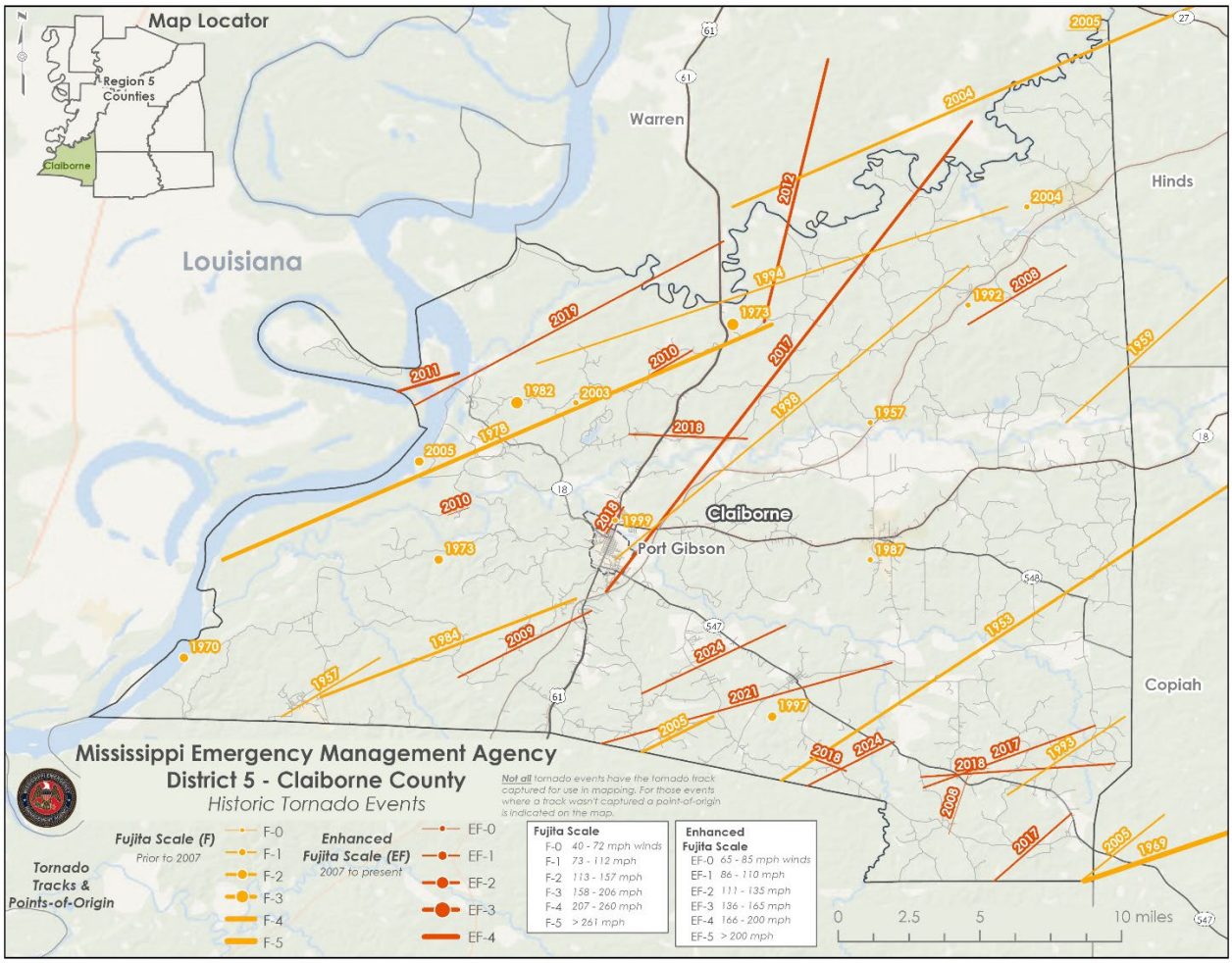
4.8.1. LOCATION AND EXTENT

Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments. Due to the unpredictable nature of tornado formation and the ability for the entire planning area to be impacted by severe storms, the entirety of Claiborne County is equally likely to experience a tornado of any magnitude. Tornados of any strength on the Enhanced Fujita (EF) scale are possible throughout the county. For more information on tornadoes across the District, refer to the base plan.

4.8.2. PREVIOUS OCCURRENCES

Between 1950 and 2023, there were 39 tornadoes reported in Claiborne County, causing a total of $27,225,000 in property damage. **Figure 17** below shows the historic tornado events throughout the County.

FIGURE 17: CLAIBORNE COUNTY HISTORIC TORNADO EVENTS



4.8.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 39 tornado events in the past 72 years, which is an event occurring every 1-2 years. Historical data spanning 72 years indicates a consistent pattern of tornado activity across the County, indicating that tornadoes are **Extremely Likely** if not certain to recur

at some point in the future. Based on previous occurrences, the probability of a tornado occurring in Port Gibson is **Likely**.

4.8.4. LOCALIZED VULNERABILITY ASSESSMENT

4.8.4.1. OVERALL VULNERABILITY

More rural and less densely populated counties like Claiborne County may have older housing stock, limited access to safe shelters, and fewer emergency response resources. These factors can increase the severity of tornado impacts despite lower exposure levels. Additionally, mobile homes are extremely susceptible to high winds and may sustain more damage or be flipped over during a strong tornado. Tornadoes cause flying debris which can be dangerous for people in the surrounding areas and other buildings, infrastructure, and critical facilities. Due to the severity tornadoes can cause, they pose a **High** risk to Claiborne County and Port Gibson. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to tornadoes.

4.8.4.2. CRITICAL FACILITIES

Tornadoes pose a serious risk to critical facilities in Claiborne County due to extreme winds and flying debris that can cause sudden and severe structural damage. Facilities such as hospitals, emergency response buildings, schools, and water or wastewater infrastructure may experience roof failure, wall collapse, or loss of utilities, leading to immediate service interruptions. Power and communications outages are common during tornado events, and debris-blocked roads can restrict access to critical facilities and delay emergency response.

4.8.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tornadoes can significantly impact cultural, historic, and natural resources in the County through extreme winds, flying debris, and associated storm damage. Historic structures, cemeteries, monuments, and archeological sites may sustain damage or complete loss due to building collapse, fallen trees, or debris impacts, particularly where resources are older or lack structural reinforcement. Cultural landscapes and historic settings can also be altered by the destruction of surrounding features such as fences, vegetation, and access paths. Natural resources may be affected through forest damage, habitat loss, soil erosion, and disruption of wildlife caused by wind and debris.

4.8.4.4. PEOPLE

Some populations may face greater risk to tornadoes--the relatively short warning time typically provided for tornadoes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. 1,272 (29.9%) of the residents of Claiborne County reside in mobile or manufactured homes, placing them at increased risk. These populations can experience disproportionate impacts to tornadoes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.8.4.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, there have been over $25,000,000 in damage since reporting began in 1950 and is likely to continue causing similar damage to the County in the future. Structures across the

planning area that do not have safe rooms or have not been retrofitted for extreme winds are vulnerable to the impacts of tornados, including in Claiborne County, as described in the base plan. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of tornadoes. Claiborne County may be at slightly lower risk of these impacts simply because it is less developed than other counties in the district, and there are more such facilities to be impacted.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. Claiborne County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.8.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Claiborne County means fewer people and structures for tornados to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tornadoes.

4.9. TROPICAL STORM/HURRICANE

4.9.1. LOCATION AND EXTENT

Like the rest of District 5, Claiborne County is inland but is still vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. This risk is not measurably varied across the County or planning area, except for low-lying and flood-prone areas that might be more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

The extent of the impacts of tropical storm typically includes sustained winds of 30-60 MPH with higher gusts, heavy rainfalls of six or more inches in a 24-hour period, and occasional tornadoes. For more information on tropical storm and hurricanes across the District, refer to the base plan.

4.9.2. PREVIOUS OCCURRENCES

Claiborne County is inland but has experienced the direct impacts of tropical storms in the past. The tracks of the following storms have passed directly through the county, producing damaging wind, heavy rainfall, power outages, and occasional tornadoes:

- Unnamed Tropical Storm (1987)
- Hurricane Andrew (1992)
- Tropical Storm Matthew (2004)

4.9.3. PROBABILITY OF FUTURE OCCURRENCES

Although Claiborne County and Port Gibson is located inland, the probability of experiencing hurricane-related impacts remains **Low** due to the district's proximity to the Gulf Coast and historical storm tracks. The County can expect to experience the effects of a tropical storm or hurricane approximately every 5 to 10 years, although climate trends and increased storm intensity may elevate risk.

4.9.4. LOCALIZED VULNERABILITY ASSESSMENT

4.9.4.1. OVERALL VULNERABILITY

Being in the Southern half of the district, Claiborne County is likely to experience slightly more frequent and intense tropical storm impacts than the district overall. Due to the low frequency, geography, and potential damage from tropical storms and hurricanes, they pose a **Medium** risk to Claiborne County and Port Gibson. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to tropical storms and hurricanes.

4.9.4.2. CRITICAL FACILITIES

Although weakened inland, tropical storms and hurricanes can affect critical facilities in Claiborne County through heavy rainfall, strong winds, and localized flooding that strain infrastructure and disrupt essential operations. Hospitals, emergency response facilities, schools, government buildings, and water or wastewater systems may experience structural damage, power and communications outages, and flooding of mechanical or electrical components. Excessive rainfall can also overwhelm drainage systems and flood roadways, restricting access to critical facilities and delaying emergency response.

4.9.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tropical storms and hurricanes can adversely impact cultural, historic, and natural resources in the County through heavy rainfall, strong winds, localized flooding, and prolonged soil saturation. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, flooding, or erosion, particularly where structures and sites are older or not designed to

withstand prolonged moisture exposure. Excessive rainfall can erode soils and displace archeological materials, while flooding may degrade cultural landscapes and historic settings. Natural resources are also vulnerable, as tropical storm impacts can damage forested areas, alter stream channels, degrade wetlands, and reduce water quality due to increased runoff and sedimentation.

4.9.4.4. PEOPLE

Some populations may face greater risk to tropical storms--the relatively short warning time typically provided for tropical storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. These factors increase risk to the population in the County to tropical storms and may have difficulty in preparing and recovering from them. These populations can experience disproportionate impacts to tropical storms and hurricanes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.9.4.1. STRUCTURES AND SYSTEMS

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of these storms across the planning area, including in Claiborne County, as described in the base plan. The County may be at slightly lower risk of these impacts simply because it is less developed than other counties in the district, and there are more such facilities to be impacted. As noted above, low-lying and flood-prone areas are more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. Claiborne County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.9.4.2. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Claiborne County means fewer people and structures for these storms to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tropical storms.

4.10. WILD/URBAN INTERFACE (WUI) FIRE

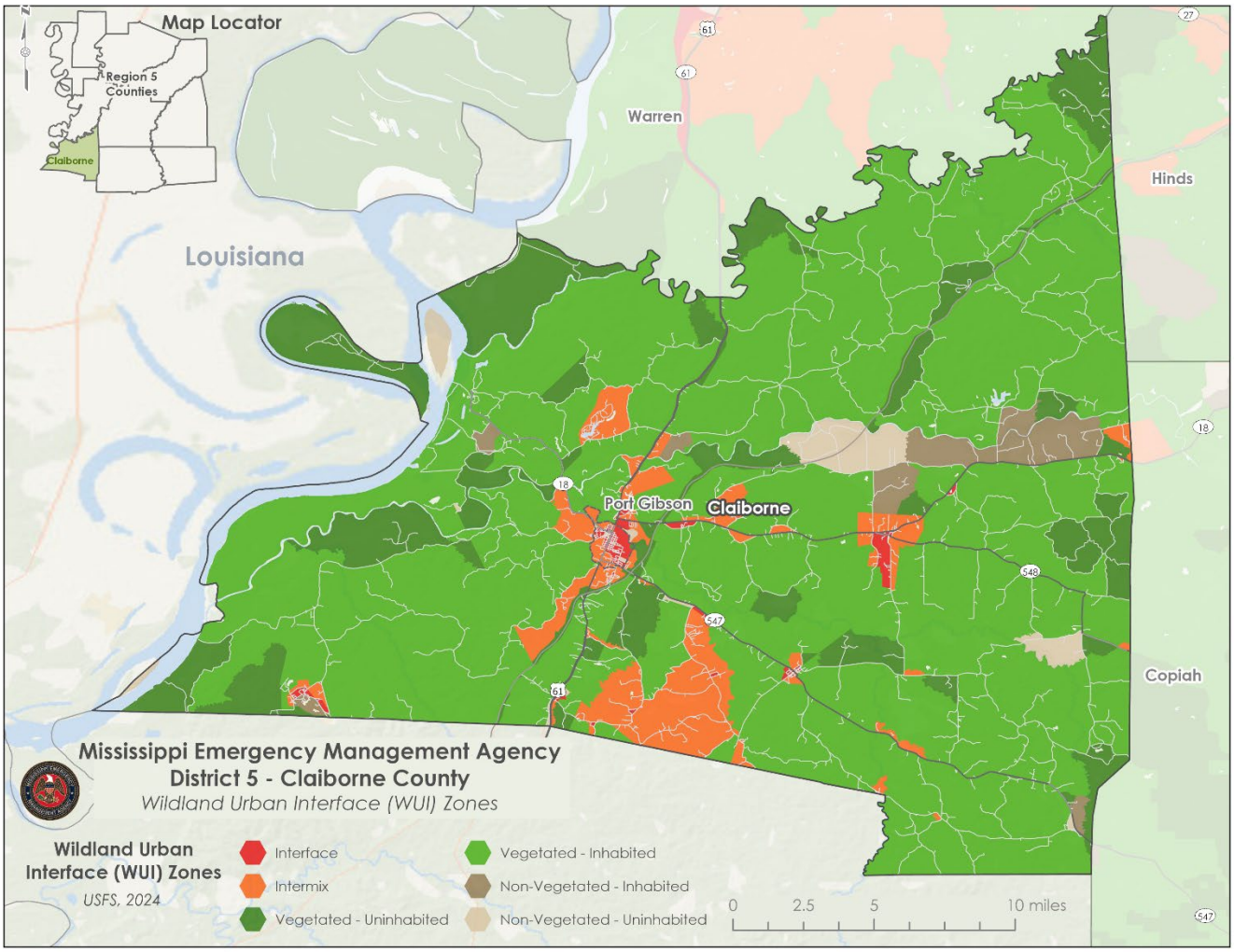
4.10.1. LOCATION AND EXTENT

Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas. There are two types of WUI Zones, and they are briefly described below.

- **Interface:** Development is bordered by wildlands on at least one side.
- **Intermix:** Development is surrounded on two or more sides by wildlands.

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. **Figure 18** is a map showing the area where this hazard is most significant in Claiborne County. The area susceptible to WUI fires are within and surrounding the City of Port Gibson, as well as other areas across the County. For more information on urban and WUI fires across the District, refer to the base plan.

FIGURE 18: WILDLAND URBAN INTERFACE (WUI) AREA IN CLAIBORNE COUNTY

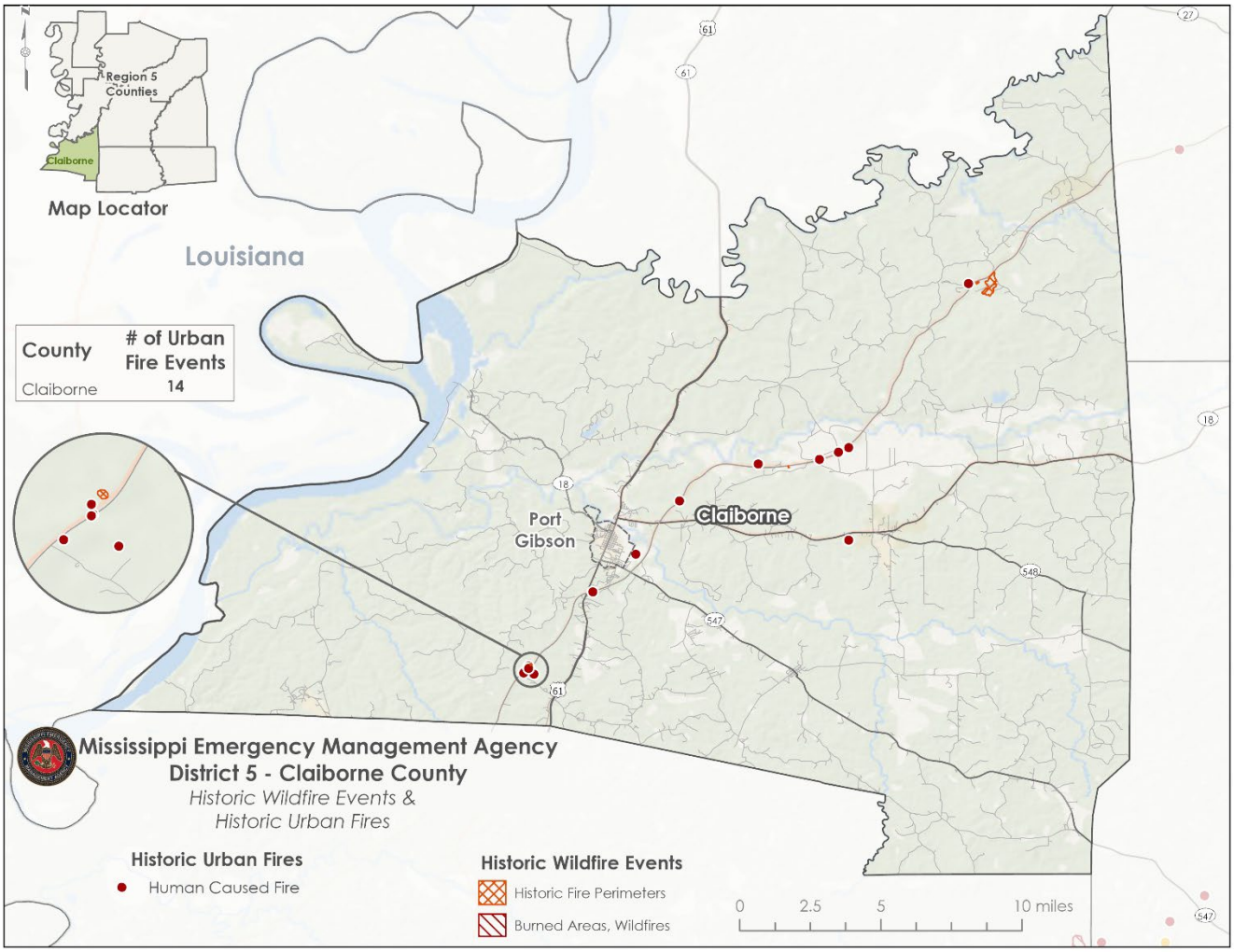


The extent of a potential WUI fire impact in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development, but is not substantively different in Claiborne County than in the District overall. This extent is described further in the base plan.

4.10.2. PREVIOUS OCCURRENCES

There has been 14 fire events in Claiborne County from 1992-2020. See **Figure 19** below for the map of historical fire events in the County. It is also important to note that some District 3 participating communities provided anecdotal information that previous fire events have not been captured using state level data. Due to this data limitation, it is possible that the number of previous occurrences could be more than reported.

FIGURE 19: CLAIBORNE COUNTY HISTORIC FIRE EVENTS



4.10.3. PROBABILITY OF FUTURE OCCURRENCES

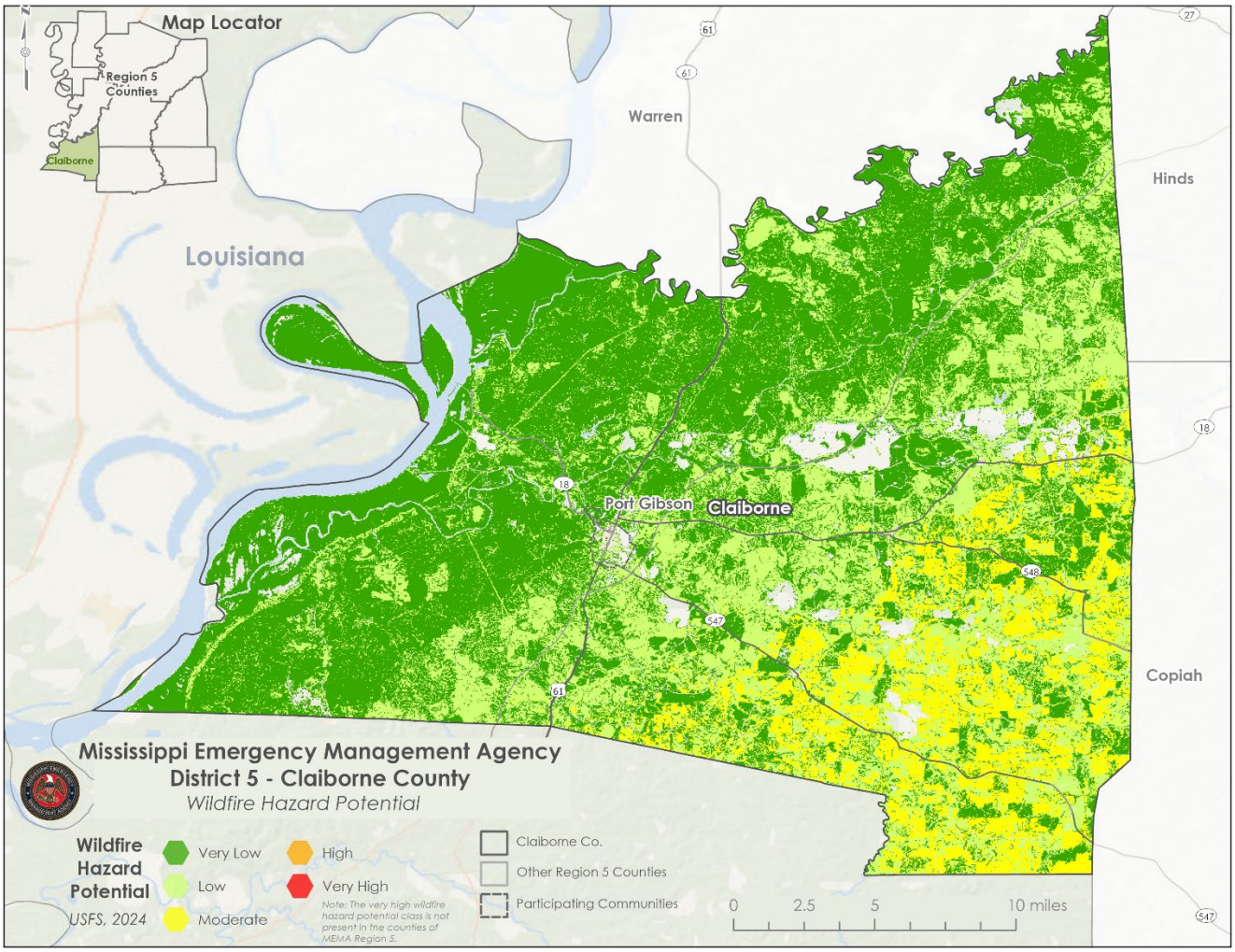
Wildland/Urban Interface (WUI) fires are expected to remain a recurring hazard in Claiborne County. Hundreds of wildfires occur in Mississippi each year, indicating that such fires may occur in the County. However, based on local capacity to respond to such fires, the impact on the County is low. The probability of the County responding to a severe fire is **Extremely Likely** while the probability is **Low** for Port Gibson.

4.10.4. LOCALIZED VULNERABILITY ASSESSMENT

4.10.4.1. OVERALL VULNERABILITY

Counties like Claiborne located in the western part of the district, due to a variety of geographic factors like wetter climate and soils and trends in development, are less susceptible to both WUI and urban fire. Wildfire hazard potential is generally very low to low across the County with some moderate areas in the Eastern part of the County. See **Figure 20** below for a visual of the wildfire hazard potential throughout the County. While the frequency of fires occurring in the County is low, the impact is low since the County has the capacity to respond effectively to most incidents. Therefore, the risk of wildfires is **High** for Claiborne County. The risk of wildfires for Port Gibson is **Low** due to low wildfire hazard potential and the City's capacity to respond to events. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to wildfires.

FIGURE 20: CLAIBORNE COUNTY WILDFIRE HAZARD POTENTIAL



4.10.4.2. CRITICAL FACILITIES

Urban and wildland fires pose a significant risk to critical facilities in Claiborne County by threatening structural integrity, utility systems, and operational continuity. Hospitals, fire stations, schools,

government buildings, and water or wastewater facilities may be damaged or rendered inoperable by direct flame contact, radiant heat, smoke infiltration, and wind-driven embers. Fire events can disrupt electrical power, communications, and water supplies needed for medical care, emergency response, and fire suppression, while evacuation orders and hazardous conditions may limit staff access to critical facilities. Wildfires occurring in or near the wildland-urban interface can also restrict transportation routes and delay response efforts. **Figure 21** displays the critical facilities and infrastructure in the WUI zones and **Table 25** provides a list of these facilities at increased risk.

FIGURE 21: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE WUI ZONES

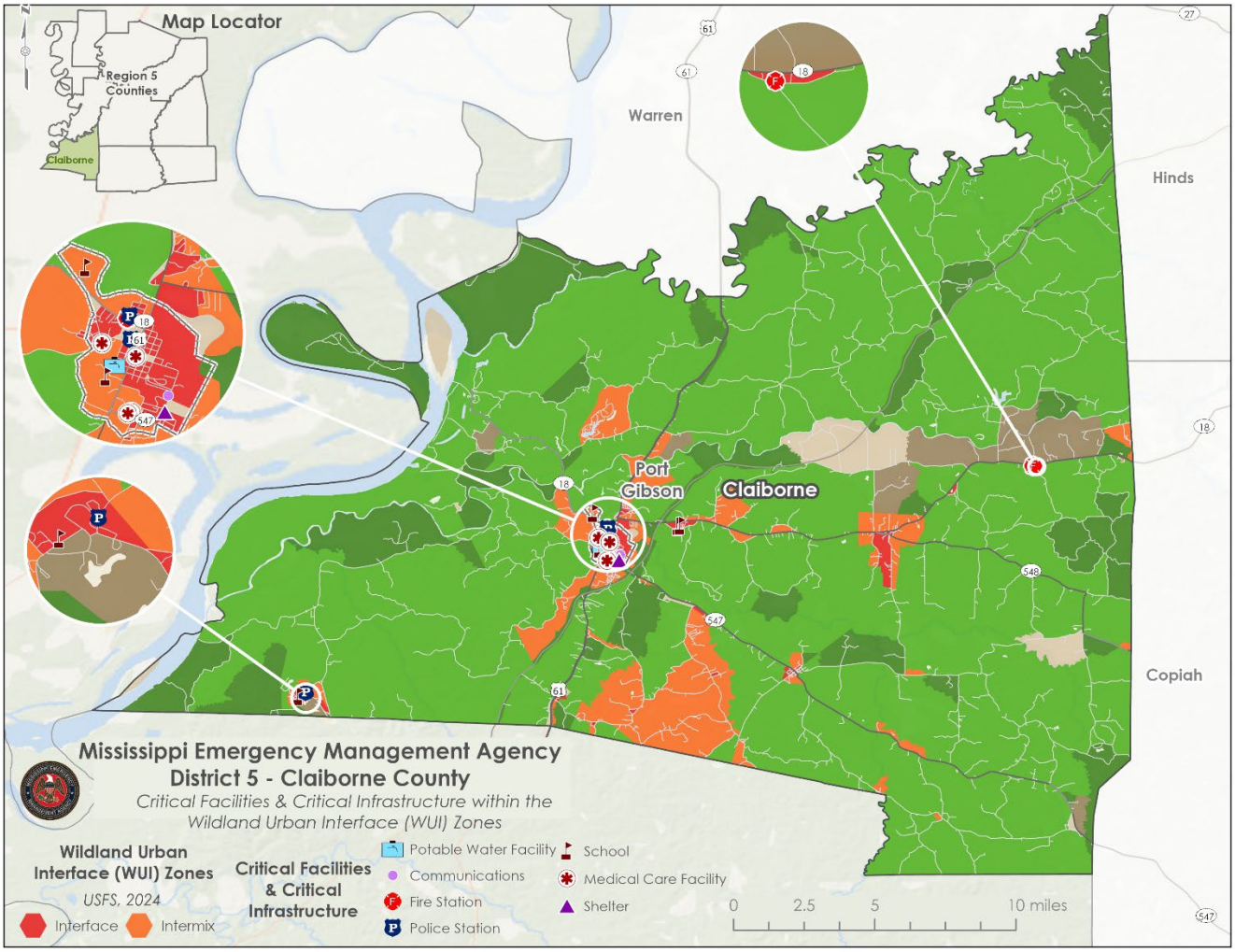


TABLE 25: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE WUI ZONES

Jurisdiction	Facility Type	Facility	WUI Zone
City of Port Gibson	Communications	WTSY 97.1	Interface - Medium Density
City of Port Gibson	Fire Station	Claiborne County Fire Department Station 2	Interface - Medium Density
Hermanville	Fire Station	Claiborne County Fire Department Station 4	Interface - Medium Density
City of Port Gibson	Fire Station	County Fire Department	Interface - Medium Density

Jurisdiction	Facility Type	Facility	WUI Zone
City of Port Gibson	Medical Care Facility	AMR Ambulance Service	Intermix - Low Density
City of Port Gibson	Medical Care Facility	Claiborne County Hospital	Intermix - Low Density
City of Port Gibson	Medical Care Facility	Port Gibson Lumber	Intermix - Low Density
City of Port Gibson	Medical Care Facility	Thompson Funeral Home	Interface - Medium Density
Lorman	Police Station	Alcorn State University Campus Police Department	Interface - Low Density
City of Port Gibson	Police Station	Claiborne County Sheriff Dept.	Interface - Medium Density
City Of Port Gibson	Police Station	Claiborne County Sheriff's Department / Clairborne County Detention Center	Interface - Medium Density
City of Port Gibson	Police Station	Port Gibson Police Department	Interface - Medium Density
City of Port Gibson	Potable Water	Port Gibson Water Treatment Plant	Intermix - Low Density
City of Port Gibson	School	A. W. Watson Upper Elementary	Intermix - Medium Density
Alcorn State University	School	Alcorn State University	Interface - Low Density
City of Port Gibson	School	Claiborne County Voc Complex	Interface - Low Density
City of Port Gibson	School	Port Gibson High School	Interface - Low Density
City of Port Gibson	School	Port Gibson Middle School	Intermix - Low Density
City of Port Gibson	Shelter	Claiborne County Multi-Purpose Building	Interface - Medium Density

4.10.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Urban and wildland fires can cause significant damage to cultural, historic, and natural resources in the County through flame exposure, extreme heat, smoke, and post-fire environmental degradation. Historic structures, cemeteries, monuments, and archeological sites may be damaged or lost because of direct fire contact, structural weakening from heat, falling trees, or fire-suppression activities. The destruction of surrounding vegetation can alter historic settings and cultural landscapes, reducing their integrity and context. Natural resources are particularly vulnerable, as fires can result in the loss of forested areas and wildlife habitat, degrade air and water quality, and increase erosion and sediment runoff following vegetation loss.

4.10.4.4. PEOPLE

For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Issaquena and Sharkey Counties and the City of Madison, thus putting those populations at a slightly lower risk than the rest of the District.

Populations most at risk of the impacts of fires include older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate when these

fires occur. These populations can experience disproportionate impacts to urban and WUI fires and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5. Because it is more rural than the district, people in Claiborne County and its municipalities may be at slightly higher risk from wildfire, as the lower access to road infrastructure and warning systems may make evacuation more difficult.

4.10.4.5. STRUCTURES AND SYSTEMS

Claiborne County contains limited areas of direct exposure to wildfire risk, as shown in the Wildfire Risk Reduction Zones map in the base plan. In these areas, homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk and complicating suppression efforts. The County does not have a Community Wildfire Protection Plan (CWPP) in place, which could help address and reduce risk in the future.

4.10.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like Claiborne County, the decrease in population can lead to reduced access to emergency services and increased response times, which can increase risk even though additional structures are not being placed in harm's way.

4.11. HAZARDOUS MATERIAL INCIDENTS

4.11.1. LOCATION AND EXTENT

Hazardous materials incidents can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, pipelines, agricultural operations and facilities that store or use chemicals. In Claiborne County, these transportation corridors include:

- U.S. Highway 61
- State Highways 18, 547, 548 and 552
- Natchez Trace Parkway

As noted in the base plan, the severity of the impact from HazMat incidents depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures. Because Claiborne County and its municipalities are more rural, impacts of a release on the surrounding population might be less significant due to population density, although longer emergency response times may impact the severity of an incident.

Figure 22 below shows the gas transmission pipelines in the Northern part of the County while **Figure 23** below displays the ground transportation throughout the County. For more information on hazardous material incidents across the District, refer to the base plan.

FIGURE 22: PIPELINES IN CLAIBORNE COUNTY

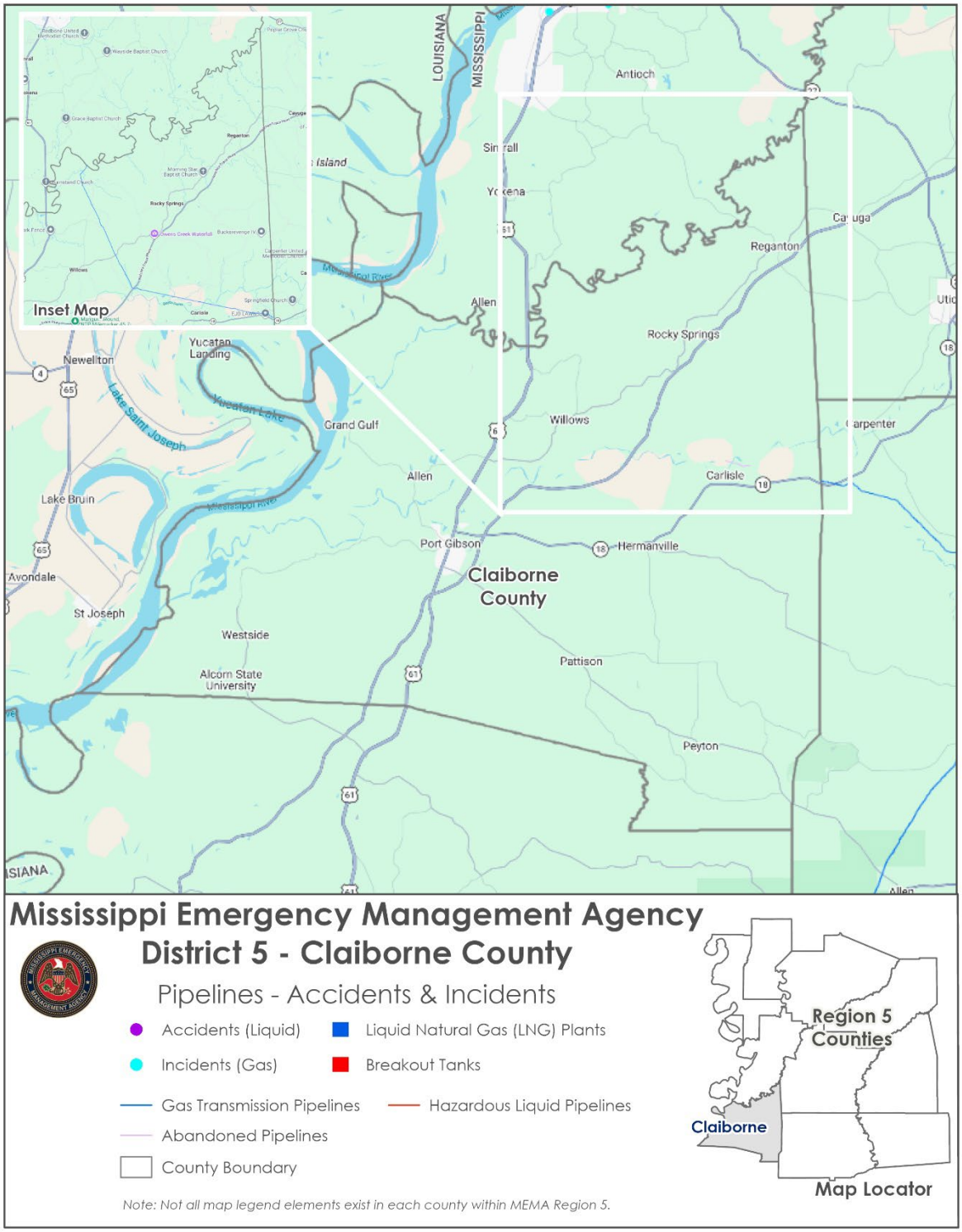
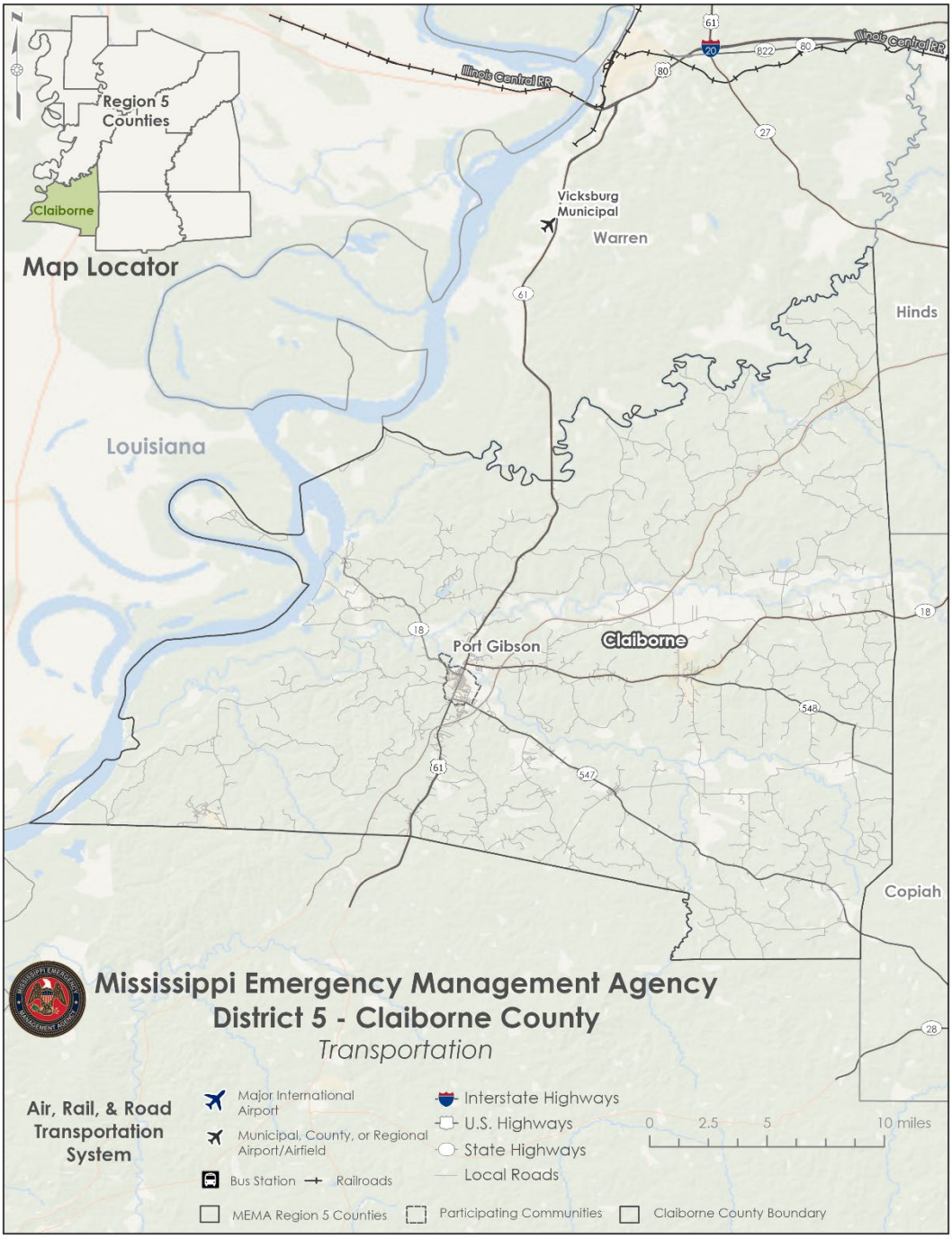


FIGURE 23: GROUND TRANSPORTATION IN CLAIBORNE COUNTY



4.11.2. PREVIOUS OCCURRENCES

In Claiborne County, there have been a total of 11 hazardous materials releases reported to the EPA since 2014.

- 2014: 1 report at 1 facility
- 2015: 1 report at 1 facility

- 2016: 1 report at 1 facility
- 2017: 1 report at 1 facility
- 2018: 1 report at 1 facility
- 2019: 1 report at 1 facility
- 2020: 1 report at 1 facility
- 2021: 1 report at 1 facility
- 2022: 1 report at 1 facility
- 2023: 1 report at 1 facility
- 2024: 1 report at 1 facility

4.11.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 11 incidents in the past 10 years, which is an event occurring about once a year. The likelihood of future hazardous materials incidents in Claiborne County is **Unlikely**, primarily due to the district's limited transportation infrastructure and industrial activity. Port Gibson did not rank the probability of future occurrences.

4.11.4. LOCALIZED VULNERABILITY ASSESSMENT

4.11.4.1. OVERALL VULNERABILITY

More rural and less densely populated counties like Claiborne County may have limited access to safe shelters, and fewer emergency response resources. These factors can increase the severity of HazMat impacts despite lower exposure levels. However, a hazard materials incident can occur anywhere in the County at any time and can cause significant damage to the County. The overall risk of a hazardous material incidents in Claiborne County is **Low**. Port Gibson did not rank the overall risk of hazardous material incidents. This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to hazardous materials incidents.

4.11.4.2. CRITICAL FACILITIES

Hazardous materials incidents can threaten critical facilities in Claiborne County by causing contamination, toxic exposure, or fire and explosion hazards that force evacuations or temporary closures. Facilities such as hospitals, schools, emergency response buildings, government offices, and water or wastewater systems may experience service disruptions due to safety concerns, restricted access, or impacts to supporting utilities. Emergency operations can also be strained as resources are diverted to containment and cleanup efforts.

4.11.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Hazardous materials incidents can negatively affect cultural, historic, and natural resources in the County through contamination of soil, water, vegetation, and sensitive sites. Historic buildings, cemeteries, and archeological resources may be damaged by chemical spills, airborne releases, or cleanup activities that disturb structures and surrounding landscapes. Natural resources are particularly vulnerable, as hazardous substances can pollute streams, wetlands, and groundwater, harm wildlife, and degrade ecosystems for extended periods.

4.11.4.4. PEOPLE

Populations most at risk of the impacts of hazardous materials incidents are those living near transportation corridors, industrial facilities, and storage sites, who are more likely to be lower income.

This population is also less likely to have reliable access to transportation, complicating evacuation efforts. Other vulnerable populations include older adults, children, and those with respiratory conditions, who may face challenges during shelter-in-place orders. These populations can experience disproportionate impacts to hazardous materials incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Clairborne County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.11.4.5. STRUCTURES AND SYSTEMS

Because it is more rural than the rest of the district, people in Claiborne County may be at slightly lower risk from HazMat incidents due to the relative number of facilities that might cause releases. However, lower access to road infrastructure and warning systems may make evacuation more difficult than in other areas, as would lower emergency response capability. Impacts on lifelines and to natural, cultural, and historic resources are generally consistent across the planning area and are described in the base plan.

4.11.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like Claiborne County, population decline can lead to reduced access to emergency services and decreased response times, which can increase risk from hazardous materials incidents.

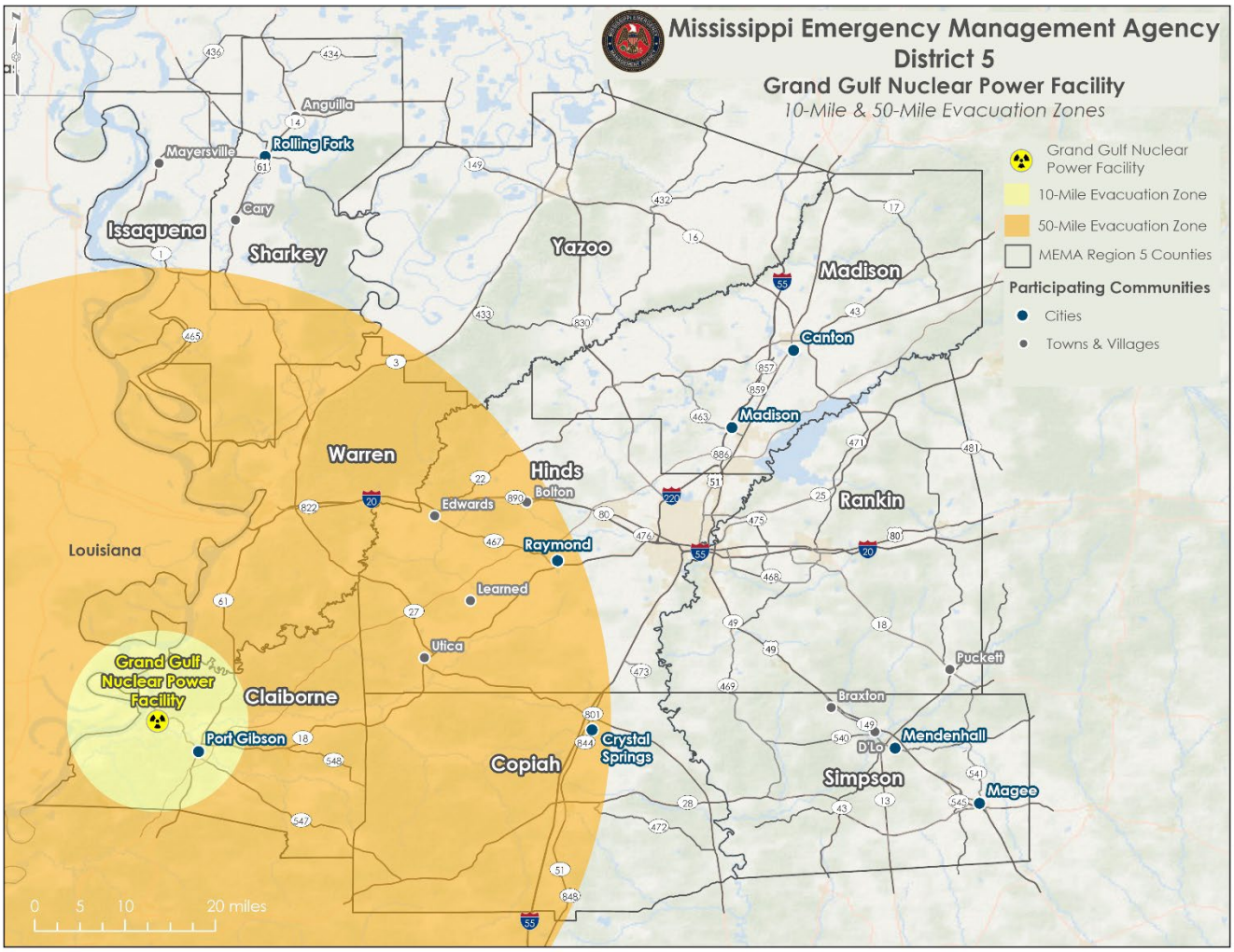
4.12. NUCLEAR POWER PLANT INCIDENTS

4.12.1. LOCATION AND EXTENT

A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies.

Grand Gulf Nuclear Station (GGNS) is the only nuclear power plant in Mississippi. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP), includes a 50-mile radius from the facility, shown in **Figure 24**. The residents of Claiborne County are either in the 10-mile EPZ or in the 50-mile IEP areas. For more information on nuclear power plant incidents across the District, refer to the base plan.

FIGURE 24: GRAND GULF 10-MILE AND 50-MILE EVACUATION ZONES



The Grand Gulf Nuclear Station (GGNS) has 12 numbered Protective Action Areas. In MEMA District 5, this includes areas 1-7, with the remaining areas 8-12 located to the West of GGNS in the State of Louisiana. Even though the areas in MEMA District 5 are numbered 1-7, there are actually 11 Protective Action Areas in the District (1, 2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 6 & 7). **Figure 25** below displays the 11 Grand Gulf Nuclear Station's Protective Action Areas within the County. A map of the Protective Action Areas and Reception Centers can be found in **Figure 26**.

FIGURE 25: COUNTY LEVEL PROTECTIVE ACTION AREAS

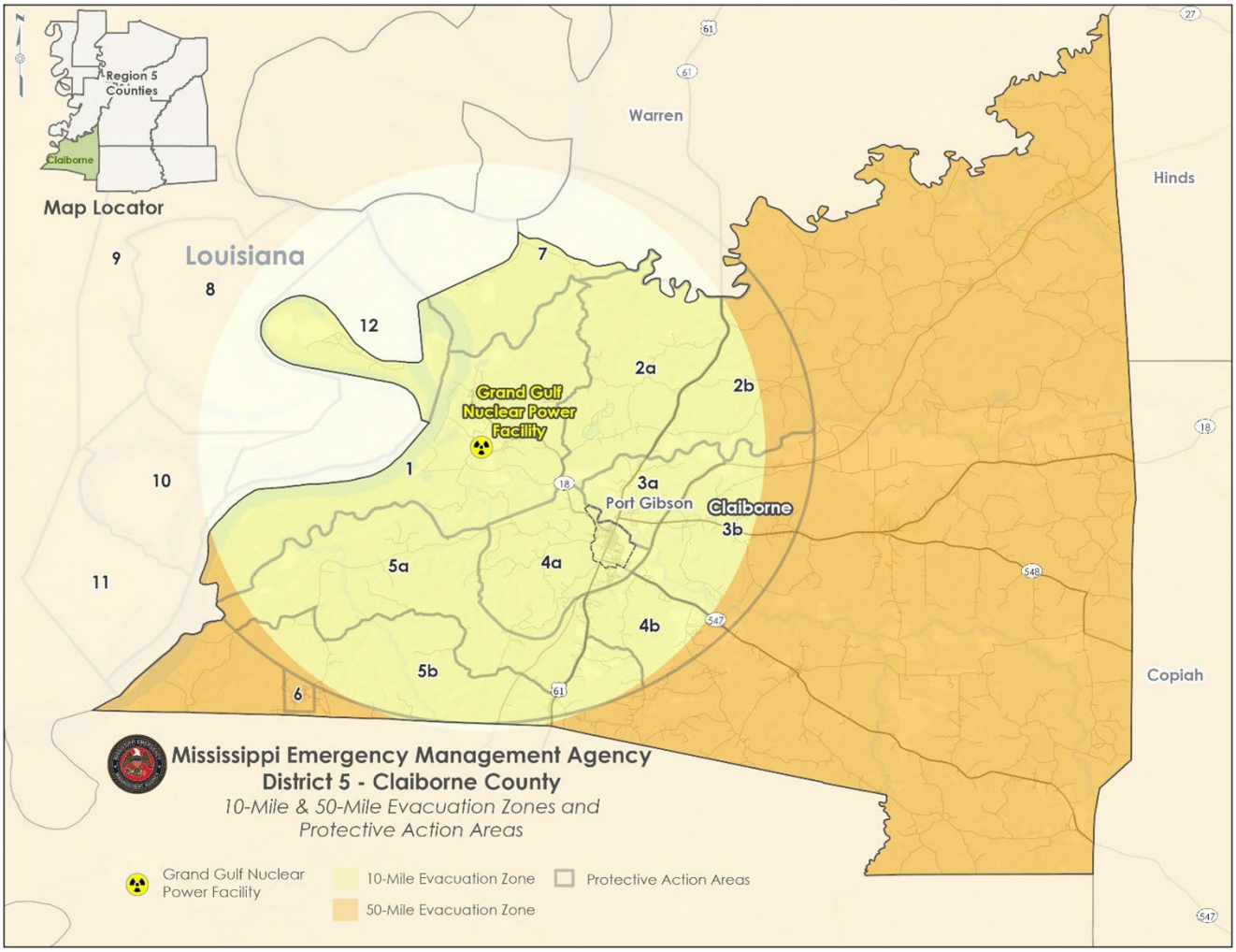
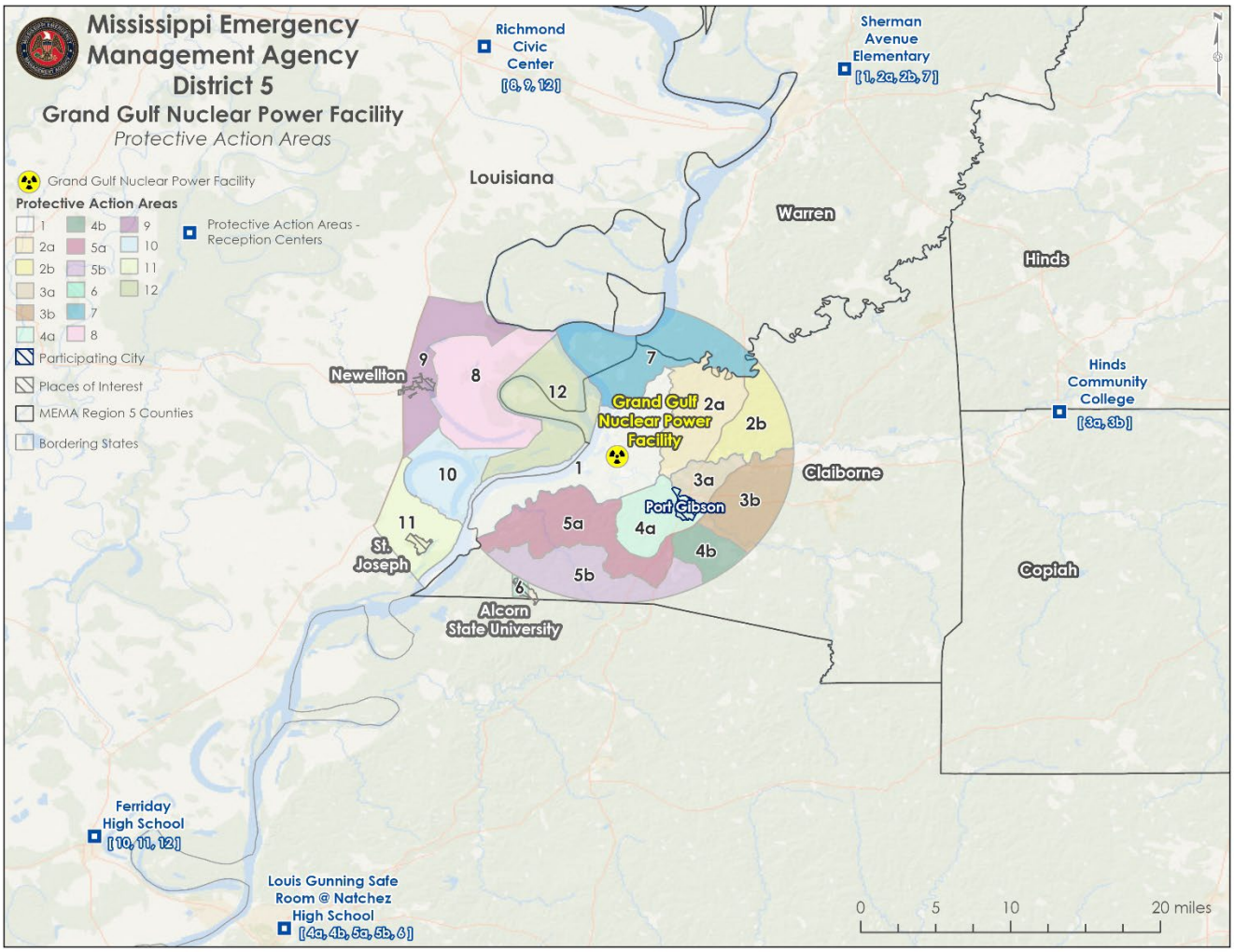


FIGURE 26: GRAND GULF PROTECTIVE ACTION AREAS



4.12.2. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. However, historical examples such as Three Mile Island (1979), Chernobyl (1986), and Fukushima Daiichi (2011) demonstrate the potential severity of such events. Grand Gulf Nuclear Station has maintained a strong safety record, but minor operational alerts have occurred in the past without offsite consequences. More information about previous occurrences can be found in the base plan.

4.12.3. PROBABILITY OF FUTURE OCCURRENCES

The probability of a major nuclear incident is **unlikely**, given strict regulatory oversight and safety protocols. However, the potential consequences are high, making this a low-probability, high-impact hazard. Natural hazards such as severe storms, flooding, or seismic activity could increase risk factors. The Fukushima Daiichi nuclear accident in 2011 is the most recent major nuclear event, and it was primarily caused by a M_w 9.0-9.1 earthquake and subsequent tsunami causing extensive damage to nearly all the facility's backup power sources. According to an NRC report, the estimated risk each year of an earthquake is intense enough to cause damage to the reactor core at Grand Gulf Nuclear Station, 1 in 83,333.

4.12.4. LOCALIZED VULNERABILITY ASSESSMENT

4.12.4.1. OVERALL VULNERABILITY

To understand how vulnerable the County is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. The overall risk of a nuclear power plant incident in Claiborne County and its communities, including Port Gibson, is **Low.** This section provides further contextualization for the anticipated vulnerability of the communities within Claiborne County to nuclear power plant incidents.

4.12.4.2. CRITICAL FACILITIES

Similar to other structures in the planning area, critical facilities are unlikely to experience direct physical damage from a nuclear power plant incident. However, such an event could still disrupt their operations. If radioactive materials are released and contaminate surrounding areas, affected facilities may need to temporarily close until safety inspections are completed and conditions are deemed safe. In addition, protective actions—such as evacuation orders, shelter-in-place directives, or restricted-access zones—may limit staff access and hinder normal facility operations. Grand Gulf Nuclear Station is located in western Claiborne County, and the county and its communities therefore face an elevated risk when compared to other District 5 communities. In the event of an incident producing a radioactive plume, critical facilities in Claiborne County and Port Gibson will be among the first facilities in District 5 that become contaminated.

Additionally, critical facilities in Claiborne County and Port Gibson have more responsibility to respond to an incident at the Grand Gulf Nuclear Station—Claiborne County Fire Department may be called upon to support emergency response efforts at the facility, and the hospital in Port Gibson has agreed to treat individuals who may be irradiated. In the event of a moderate incident that doesn't prompt evacuations but does require a prolonged response to restore the Grand Gulf Nuclear Station, Port Gibson will likely experience disruptions and challenges. Multiple agencies may need to coordinate and respond to this kind of event, and they will likely utilize facilities in Port Gibson to monitor and organize response efforts, host media events, and store vehicles, tools, and other equipment required to restore normal operations. All of these conditions could strain services provided by fire departments, medical facilities, schools, water wells, wastewater treatment, and other critical facilities. While the overall risk remains low, the relative risk of damage or disruption of critical facilities in jurisdictions participating is highest within Claiborne County and Port Gibson.

4.12.4.3. PEOPLE

In Claiborne County, the level of risk and vulnerability posed to residents by a nuclear power plant incident depends on factors such as location, population characteristics, and the community's level of emergency preparedness. People living within the 10-mile Plume Exposure Pathway Emergency Planning Zone (EPZ) face the greatest risk because this area is designated for immediate protective actions—like evacuation or sheltering in place—if a radiological release occurs. The 10-mile EPZ area includes most of the Western edge of the County, which includes the City of Port Gibson. Individuals in this zone will receive official notifications through sirens, tone-alert radios, and broadcast media, and may be instructed to take specific protective steps depending on the severity of the event. The entire County is in the designated 50-mile Ingestion Exposure Pathway Zone (IEP) zone and the residents living in that zone will get similar notifications as those located in the 10-mile EPZ. Individuals inside the 10-mile EPZ will also have a smaller window of time to take action, and they have a greater distance to travel before reaching safety. This inherently increases their vulnerability to nuclear power plant incidents. Individuals living in the eastern half of Claiborne County are outside of the 10-mile EPZ, but they are still within the 50-mile zone and closer to the Grand Gulf Nuclear Station than many other District 5 communities that are participating in this plan.

Regarding specific populations in both Port Gibson and Claiborne County overall, risk is especially high among individuals with limited mobility, including the elderly, people with disabilities, and residents of institutional settings such as schools, hospitals, and correctional facilities. These groups may face significant challenges during evacuation or shelter-in-place situations. Additionally, low-income communities may have limited access to protective equipment, transportation, and timely information, further increasing their risk. Tailored mitigation strategies and coordinated emergency planning are essential to address these challenges and protect at-risk populations across the district.

4.12.4.1. STRUCTURES AND SYSTEMS

If the Grand Gulf Nuclear Station is unable to provide energy, it will immediately strain energy supply and increase demand for the services of other energy producers in the region. Depending on the length of the outage, energy-intense systems and services such as water treatment, healthcare, education, data management, and more could experience interruptions. Structures and systems in Claiborne County, particularly those within Port Gibson and other areas inside of the 10-mile EPZ, are at a greater risk of contamination simply due to the proximity to Grand Gulf Nuclear Station.

4.12.4.2. IMPACTS OF CHANGES IN DEVELOPMENT

Census data for Port Gibson and Claiborne County, overall, shows that these populations have declined in size in recent years. There is no indication that recent development trends have appreciably increased or decreased vulnerability in Port Gibson or Claiborne County, although future trends could change. Some potential changes that *could* increase vulnerability include expansion of the Grand Gulf Nuclear Station (such as bringing a second reactor online), significant enrollment growth at Alcorn State University in southern Claiborne County, and new housing being constructed within the 10-mile EPZ.

4.13. CRITICAL FACILITIES VULNERABILITY SUMMARY

Table 26 below notes the individual critical facilities in Claiborne County that were identified by the Mitigation Council and provides information on the relative risk these facilities face from various hazards.

TABLE 26: CLAIBORNE COUNTY CRITICAL FACILITIES VULNERABILITY SUMMARY

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 10-mile Radius	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Communications	Claiborne County E-911	Port Gibson	OUT	OUT	IN	OUT	Vegetated - Very Low Density	N/A - WHP Undetermined	Direct Exposure
Communications	WATU CH 207	Port Gibson	OUT	OUT	OUT	IN	Vegetated - Very Low Density	Low	Direct Exposure
Communications	WKPG 1320	Port Gibson	IN	OUT	IN	OUT	Vegetated - Very Low Density	Very Low	WTZ: Tree
Communications	WPRL CH 219	LORMAN	OUT	OUT	IN	IN	Vegetated - Very Low Density	Very Low	Direct Exposure
Communications	WTSY 97.1	Port Gibson	OUT	OUT	IN	OUT	Interface - Medium Density	N/A - WHP Undetermined	Indirect Exposure
EOC	CLAIBORNE COUNTY EMERGENCY OPERATIONS CENTER	PORT GIBSON	OUT	OUT	IN	OUT	Vegetated - Very Low Density	N/A - WHP Undetermined	Direct Exposure
Fire Station	Claiborne County Fire Department Station 1	Lorman	OUT	OUT	IN	OUT	Vegetated - Very Low Density	N/A - WHP Undetermined	Direct Exposure
Fire Station	Claiborne County Fire Department Station 2	Port Gibson	OUT	OUT	IN	OUT	Interface - Medium Density	N/A - WHP Undetermined	Indirect Exposure

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 10-mile Radius	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Fire Station	Claiborne County Fire Department Station 3	Port Gibson	OUT	OUT	OUT	IN	Vegetated - Very Low Density	N/A - WHP Undetermined	Direct Exposure
Fire Station	Claiborne County Fire Department Station 4	HERMANVILLE	OUT	OUT	OUT	IN	Interface - Medium Density	Moderate	Direct Exposure
Fire Station	County Fire Department	Port Gibson	OUT	OUT	IN	OUT	Interface - Medium Density	N/A - WHP Undetermined	Indirect Exposure
Government	Port Gibson City Hall	Port Gibson	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	N/A - WHP Undetermined	Indirect Exposure
Medical Care Facility	AMR Ambulance Service	Port Gibson	OUT	OUT	IN	OUT	Intermix - Low Density	N/A - WHP Undetermined	Direct Exposure
Medical Care Facility	CLAIBORNE COUNTY HOSPITAL	PORT GIBSON	OUT	OUT	IN	OUT	Intermix - Low Density	N/A - WHP Undetermined	Indirect Exposure
Medical Care Facility	Glenwood Funeral Home	Port Gibson	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	N/A - WHP Undetermined	Indirect Exposure
Medical Care Facility	Port Gibson Lumber	Port Gibson	OUT	OUT	IN	OUT	Intermix - Low Density	N/A - WHP Undetermined	Indirect Exposure
Medical Care Facility	Rollins Funeral Home	Port Gibson	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	N/A - WHP Undetermined	Indirect Exposure

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 10-mile Radius	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Medical Care Facility	Thompson Funeral Home	Port Gibson	OUT	OUT	IN	OUT	Interface - Medium Density	N/A - WHP Undetermined	Indirect Exposure
Nuclear Facility	Grand Gulf Nuclear Facility - Reactor Tower Location	Port Gibson	OUT	OUT	IN	OUT	Non-Vegetated - Very Low Density	N/A - WHP Undetermined	Indirect Exposure
Police Station	ALCORN STATE UNIVERSITY CAMPUS POLICE DEPARTMENT	LORMAN	OUT	OUT	OUT	IN	Interface - Low Density	N/A - WHP Undetermined	Indirect Exposure
Police Station	Claiborne County Sheriff Dept.	Port Gibson	OUT	IN	IN	OUT	Interface - Medium Density	N/A - WHP Undetermined	Indirect Exposure
Police Station	CLAIBORNE COUNTY SHERIFFS DEPARTMENT / CLAIRBORNE COUNTY DETENTION CENTER	PORT GIBSON	OUT	IN	IN	OUT	Interface - Medium Density	N/A - WHP Undetermined	Indirect Exposure
Police Station	PORT GIBSON POLICE DEPARTMENT	PORT GIBSON	OUT	OUT	IN	OUT	Interface - Medium Density	N/A - WHP Undetermined	Indirect Exposure
Potable Water	Port Gibson Water Treatment Plant	Port Gibson	OUT	OUT	IN	OUT	Intermix - Low Density	N/A - WHP Undetermined	Indirect Exposure
School	A. W. WATSON UPPER ELEMENTARY	PORT GIBSON	OUT	IN	IN	OUT	Intermix - Medium Density	N/A - WHP Undetermined	Direct Exposure

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 10-mile Radius	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
School	ALCORN STATE UNIVERSITY	Alcorn State	OUT	OUT	OUT	IN	Interface - Low Density	N/A - WHP Undetermined	Indirect Exposure
School	CLAIBORNE COUNTY VOC COMPLEX	PORT GIBSON	OUT	OUT	IN	OUT	Interface - Low Density	N/A - WHP Undetermined	Direct Exposure
School	PORT GIBSON HIGH SCHOOL	PORT GIBSON	OUT	OUT	IN	OUT	Interface - Low Density	N/A - WHP Undetermined	Direct Exposure
School	PORT GIBSON MIDDLE SCHOOL	PORT GIBSON	OUT	OUT	IN	OUT	Intermix - Low Density	N/A - WHP Undetermined	Direct Exposure
Shelter	Claiborne County Multi-Purpose Building	Port Gibson	OUT	OUT	IN	OUT	Interface - Medium Density	N/A - WHP Undetermined	Indirect Exposure
Waste Water Facility	ALCORN STATE UNIVERSITY - WWTF	Alcorn State	OUT	OUT	OUT	IN	Vegetated - Very Low Density	Low	Direct Exposure
Waste Water Facility	PORT GIBSON POTW	Port Gibson	IN	OUT	IN	OUT	Vegetated - Very Low Density	Very Low	Direct Exposure

5. MITIGATION STRATEGY

The Mitigation Strategy section of the base plan provides an overall blueprint for all participating jurisdictions in MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Regional Hazard Mitigation Council (RHMC) and the findings and conclusions of the Capability and Risk Assessments. The goals of the MEMA District 5 can be found in Section 6 of the base plan.

This section provides community-specific strategies for Claiborne County and the City of Port Gibson, including the status of actions that were included in the previous plan and actions to be considered or pursued over the next five years. As noted in the base plan, the participants are not committing to undertaking every action suggested in this list but rather are proposing an extensive list of *potential* actions that they may wish to pursue, depending in the availability of funding.

The following information is provided in the table below, as well as in the mitigation action tables within each annex in this plan:

Project Number: Each action is assigned a project number for organizational purposes.

Action Description: This is the description of the mitigation action. Actions descriptions are intended to be actionable and specific.

Responsible Agency or Department: actions assign primary responsibility to agencies or departments for implementation. The responsible entities were determined by jurisdictional representatives on the Mitigation Council, and they reflect the representatives' assessment of the entity that would be most capable of facilitating successful implementation of the action. Other agencies, departments, organizations, etc. may assist the responsible agency or department, if necessary.

Hazards Addressed: For each mitigation action, the hazard(s) that are being addressed are listed. Some hazards are considered "multi-hazard" because the action, when implemented, is designed to mitigate impacts of all disasters profiled in this plan. Other mitigation actions are specific to individual hazards.

Estimated Cost: This is the estimate cost of the action; these costs were determined through general discussions of the resources, personnel, and time needed, and the estimates are not intended to stand in for a full, detailed benefit-cost analysis.

Action Status (D/R/N/C): FEMA's guidance for local mitigation plans requires a status update for existing mitigation actions. The statuses of previous actions were assessed throughout the planning process. The four categories used by the Mitigation Council are:

> Deleted (D): action is no longer appropriate or desired, and the community does not intend to pursue the action.
>
> Retained (R): action is still desired by the community, but implementation has not been completed. The community will continue to implement the action as time and resources allow.
>
> New (N): action is new for the 2026 District 5 plan.
>
> Completed (C): action has been completed by the community.

Status Notes: Includes any information that the community provided for additional context to the action status.

Expected Time Frame for Completion: Participating jurisdictions anticipated the amount of time it will take to carry out the action. The expected time frames for actions from the previous plan were updated to reflect the expected time frame for completion from when communities adopt this plan.

Corresponding Goals: The plan goals addressed by each action item are included to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. Each action is linked to one more of the Plan's goals:

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

Priority: The priority of each of the mitigation action items is ranked either Low, Medium, or High. This prioritization allows Mitigation Council members to quickly compare actions based on a qualitative assessment of the anticipated benefits of actions. The process utilized by the Mitigation Council to prioritize actions is described in Section 6.4 of the base plan.

Potential Funding Sources: Potential sources for funding are listed for each action and encompass a range of sources including operating budget/general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), State grants, private funding, Capital Improvement Plan, and others. It is important to acknowledge that the identified funding sources are not exhaustive or definitive. The current funding landscape is undergoing significant change, and existing funding sources may not be available in the future, while new sources may emerge. If/when a community has the opportunity to implement an action, available funding sources will be re-examined to determine which source is most appropriate.

TABLE 27: UPDATED 2026 CLAIBORNE COUNTY MITIGATION ACTIONS

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
1-Claiborne County	Maintain a public outreach strategy designed to educate citizens of the risk posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Claiborne County Emergency Management	All hazards	$45,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Claiborne County	Maintain the county's StormReady designation with the National Weather Service	Claiborne County Emergency Management	All hazards	$50,000	R	No progress since last update	On-going annually	2	High	General Fund
3-Claiborne County	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. Tv stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Claiborne County Emergency Management	All hazards	$100,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
4-Claiborne County	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the county with advanced warning of approaching weather conditions	Claiborne County Emergency Management, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
5-Claiborne County	Purchase and maintain emergency generators for use by key critical facilities throughout the county	Claiborne County Emergency Management	All hazards	$500,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, MEMA Statewide Grant Program, State Homeland Security Program

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
6-Claiborne County	As future updates are made to the county's existing policies and regulations, and as the county adopts new policies and regulation in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings	Claiborne County Board of Supervisors	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
7-Claiborne County	Seek funding to assist with the construction of a community shelter	Claiborne County Emergency Management	All hazards	$1,600,000	R	No progress since last update	On-going annually	3	Low	General Fund, HMGP, BRIC
8-Claiborne County	Encourage residents to construct individual safe rooms	Claiborne County Emergency Management	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
9-Claiborne County	Expand and maintain an effective warning system that can be used to warn county residents during emergencies of approaching weather conditions and other hazards	Claiborne County Emergency Management	All hazards	$75,000	R	No progress since last update	On-going annually	2, 3	High	General Fund
10-Claiborne County	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Claiborne County Floodplain Manager, Board of Supervisors	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
11-Claiborne County	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Claiborne County Floodplain Manager, Board of Supervisors	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
12-Claiborne County	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties	Claiborne County Floodplain Manager, Board of Supervisors	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
13-Claiborne County	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	Claiborne County Administrator	All hazards	$1,000,000	R	No progress since last update	10 years	3, 5	Low	General Fund, CDBG, USDA Rural Development
14-Claiborne County	Seek funding assistance to make repair to the Bernheimer building, a county administrative office, and reinforce the structure	Claiborne County Administrator	Flooding	$175,000	R	No progress since last update	3 years	3, 5	High	General Fund, CDBG, USDA Rural Development
15-Claiborne County	Seek funding assistance to construct the Grand Gulf Port Connector Road, which will serve as a safe route for direct ingress and egress from the Grand Gulf Nuclear Power Plant	Claiborne County Administrator, Board of Supervisors	Radiological	$5,000,000	R	No progress since last update	5 years	3, 5	High	General Fund, MDOT, Federal Highway Administration Grant
16-Claiborne County	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan	Claiborne County Board of Supervisors, Emergency Management	All hazards	$1,500 annually / $100,000 every 5 years	R	Plan update in progress	On-going annually	3	High	General Fund, HMGP
17-Claiborne County	Seek funding assistance to obtain interoperable communication capabilities and to update 911 to the next generation	Claiborne County Emergency Management	All hazards	$500,000	R	No progress since last update	5 years	3, 4	Medium	General Fund, MEMA Statewide Grant Program, State

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
										Homeland Security Program
18-Claiborne County	Seek funding to improve and repair evacuation routes	Claiborne County Administrator, Board of Supervisors	All hazards	$10,000,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund, MDOT, Federal Highway Administration Grant
19-Claiborne County	Seek funding assistance to upgrade technology used during response and recover efforts	Claiborne County Emergency Management	All hazards	$100,000	R	No progress since last update	5 years	3	High	General Fund, MEMA Statewide Grant Program, State Homeland Security Program
20-Claiborne County	Seek funding to improve capacity of "Personal Protective Equipment" (PPE) and seek legislative authority to make supplies available to the public during a pandemic	Claiborne County Board of Supervisors, Emergency Management	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
21-Claiborne County	Improve cellular tower capability throughout the County to upgrade communication efficiency	Claiborne County Administrator, Emergency Management	All hazards		R	No progress since last update	On-going annually	3	High	General Fund
22-Claiborne County	Seek funding assistance to improve high-speed internet capabilities throughout the county	Claiborne County Administrator, Emergency Management	All hazards	$1,000,000	R	No progress since last update	On-going annually	3	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
23-Claiborne County	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Claiborne County Administrator, Emergency Management	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund
24-Claiborne County	Continue to implement and expand a countywide erosion and streambank stabilization program to reduce roadway undermining, property loss, and infrastructure damage caused by heavy rainfall, storm runoff, and prolonged weather events	Board of Supervisors, Road Department, Emergency Management	Flooding, severe storms, erosion	$500,000 - $5,000,000	N	New Action	5-10 years	3, 5	High	General Fund, FEMA HMGP, BRIC, NRCS, MDOT, CDBG
25-Claiborne County	Assess and reinforce high-risk culverts, drainage channels, and road embankments experiencing accelerated erosion due to increased storm intensity and runoff	Road Department, Emergency Management	Flooding, severe storms, erosion	$250,000 - $2,000,000	N	New Action	3-5 years	5	High	General Fund, FEMA HMGP, FHWA, MDOT, NRCS
26-Claiborne County	Conduct a countywide erosion risk assessment and GIS mapping initiative to identify vulnerable roadways, agricultural areas, and drainage corridors requiring stabilization	Emergency Management, County Administrator, GIS	Flooding, severe storms, erosion	$75,000 - $250,000	N	New Action	1-3 years	2, 5	Medium	General Fund, FEMA Planning Funds, NRCS
27-Claiborne County	Continue vegetation management and slope stabilization along key emergency routes to prevent washout and improve roadway durability during storm events	Road Department	Flooding, severe storms, erosion	$100,000 - $500,000 annually	N	New Action	On-going annually	3, 5	High	General Fund, MDOT partnerships, FEMA HMGP
28-Claiborne County	Partner with agricultural stakeholders and NRCS to promote soil conservation practices that reduce runoff and erosion in rural and farmland areas	Emergency Management, County Administrator, Agricultural Partners	Flooding, erosion	$10,000	N	New Action	On-going annually	1, 2, 5	Medium	General Fund, NRCS, USDA Programs

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
29-Claiborne County	Identify and reinforce river-adjacent and high-slope areas vulnerable to long-term erosion that threaten public infrastructure and private property.	Emergency Management, Board of Supervisors	Flooding, erosion	$45,000	N	New Action	5-10 years	3, 5	High	General Fund, FEMA BRIC/HMGP, NRCS
1-Port Gibson	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Port Gibson Police and Fire Departments	All hazards	$45,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Port Gibson	Seek a StormReady designation from the National Weather Service for the city.	Port Gibson Police and Fire Departments	All hazards	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
3-Port Gibson	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazards (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.	Port Gibson City Clerk, Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
4-Port Gibson	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the city with advanced warning of approaching weather conditions.	Port Gibson Police and Fire Departments, National Weather Service	Tornado, severe weather	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
5-Port Gibson	Purchase and maintain emergency generators for use by key critical facilities throughout the city	Port Gibson Police and Fire Departments, Public Works	All hazards	$500,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, MEMA State Homeland Security Program
6-Port Gibson	As future updates are made to the city's existing policies and regulations, and as the city adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to	Port Gibson Board of Alderman, Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
	reduce the effect of natural hazards on new and existing infrastructure and buildings.									
7-Port Gibson	Seek funding to assist with the construction of a community shelter.	Port Gibson City Clerk, Mayor's Office	All hazards	$1,200,000	R	No progress since last update	On-going annually	3	Medium	General Fund, HMGP
8-Port Gibson	Encourage residents to construct individual safe rooms.	Port Gibson Police and Fire Departments	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
9-Port Gibson	Maintain an effective warning system	Port Gibson Emergency Management	All hazards	$50,000 annually	R	No progress since last update	On-going annually	3	High	General Fund
10-Port Gibson	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Port Gibson Floodplain Manager, Board of Alderman	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
11-Port Gibson	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Port Gibson Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
12-Port Gibson	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties	Port Gibson Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
13-Port Gibson	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	Port Gibson City Clerk	All hazards	$1,000,000	R	No progress since last update	10 years	3, 5	High	General Funds, CDBG, USDA Rural Development
14-Port Gibson	Seek funding assistance to maintain District 5's Regional Hazard Mitigation Plan	Port Gibson Board of Alderman, City Clerk	All hazards	$1,500 annually / $100,000 every 5 years	R	Plan update in progress	On-going annually	1	High	General Fund
15-Port Gibson	Seek funding to improve and repair evacuation routes	Port Gibson Board of Alderman, City Clerk	All hazards	$1,000,000 annually	R	No progress since last update	On-going annually	3, 4	Medium	General Fund, MDOT, Federal Highway Administration
16-Port Gibson	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Port Gibson Mayor's Office, City Clerk, Police and Fire Departments	Public Health Emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
17-Port Gibson	Improve cellular tower capability throughout the City to upgrade communication efficiency	Port Gibson Mayor's Office, City Clerk	All hazards	$10,000	R	No progress since last update	5 years	3	High	General Fund
18-Port Gibson	Seek funding assistance to improve high-speed internet capabilities throughout the City	Port Gibson Mayor's Office, City Clerk	All hazards	$1,000,000	R	No progress since last update	On-going annually	3	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
19-Port Gibson	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Port Gibson Mayor's Office, City Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund

1. INTRODUCTION

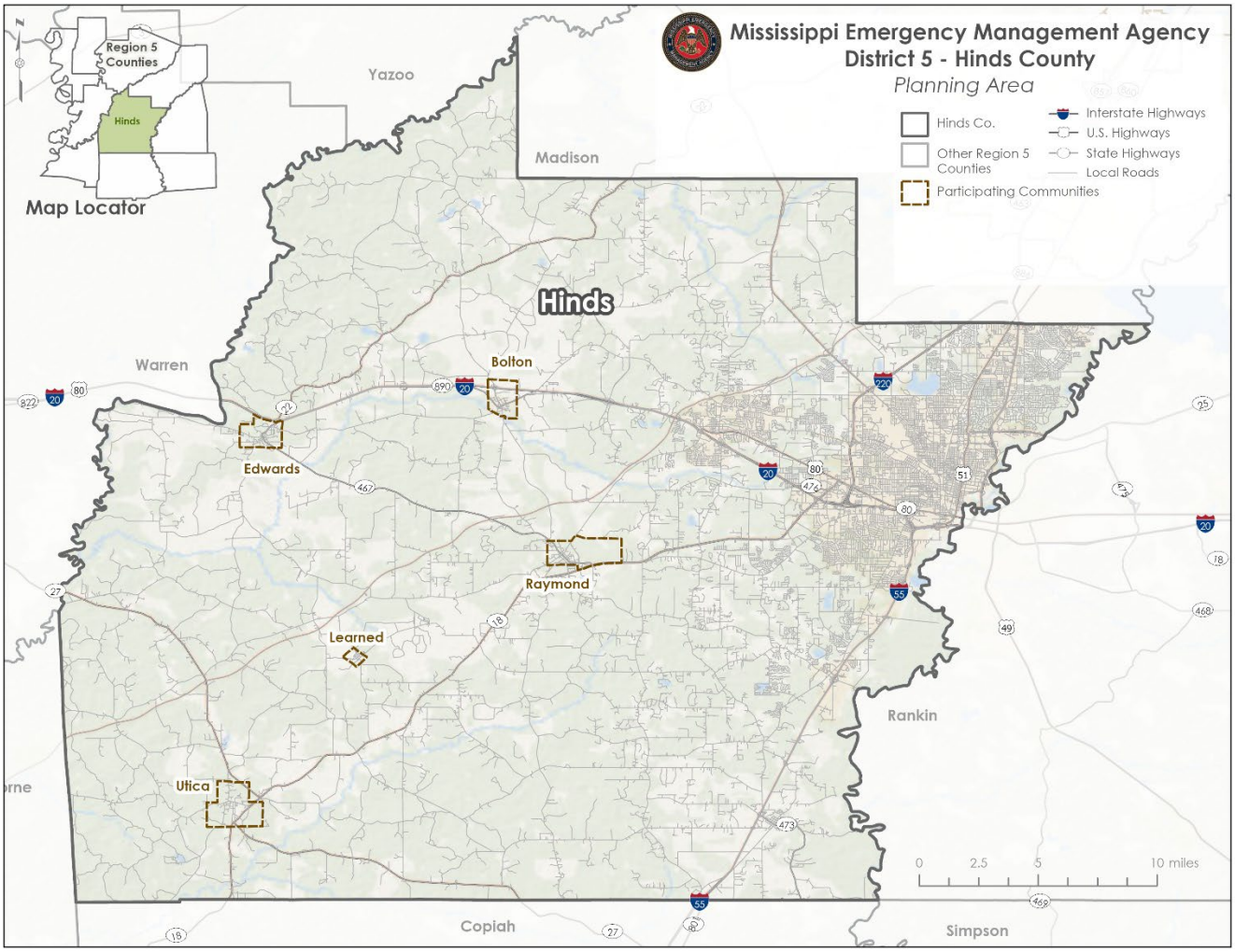
This annex provides more detailed information about Hinds County and the participants within it. It includes:

- A more localized community profile, including more detailed mapping, population and demographic information, and critical facilities information
- County-level Hazard Identification and Risk Assessment (HIRA) information, including some more localized hazard maps and conclusions related to hazard risk and how it varies across the planning area
- A localized vulnerability assessment, including the likely impact of profiled hazards on critical facilities in Hinds County
- A detailed capability assessment, describing resource and tools available to the county and municipalities to participate in hazard mitigation and reduce hazard risk
- A mitigation strategy, describing a variety of actions the county and municipalities may opt to take to reduce the risk associated with profiled hazards over the useful life of this plan

2. COMMUNITY PROFILE

This section provides a more detailed profile of Hinds County and the jurisdictions within it. The County is in the Central part of the planning area and **Figure 1** shows the planning area for Hinds County. The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey—such as poverty, lack of transportation, crowded housing, and minority status—to quantify a community's relative vulnerability. This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). According to the 2022 CDC Social Vulnerability Index, Hinds County has an overall **medium to high** (0.6543) level of vulnerability.

FIGURE 1: HINDS COUNTY



2.1. POPULATION AND DEMOGRAPHICS

Population information from the last three Census counts for each participant in Hinds County is summarized below, showing trends since the year 2010. A summary of population trends is summarized in **Table 1**. Since 2010, there has been a decrease in population across the County and all participating jurisdictions. The race and ethnicity demographic data of the plan participants within Hinds County are shown in **Table 2**. The majority of the County and its jurisdictions are White or African-American.

TABLE 1: POPULATION TRENDS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2010 Census	2020 Census	2023 Census Estimates	Percent Change 2020-2023
Hinds County	245,629	235,604	214,870	-8.8%
City of Raymond	2,420	2,007	1,856	-7.5%
Town of Bolton	387	868	693	-20.2%
Town of Edwards	1,371	1,117	903	-19.2%
Town of Learned	89	83	63	-24.1%
Town of Utica	970	861	779	-9.5%

TABLE 2: DEMOGRAPHICS IN PERCENT | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
Hinds County	23.7%	72.6%	1.6%	0.7%	0.3%	2.4%
City of Raymond	42.8%	55.7&	0%	0.2%	0%	1.2%
Town of Bolton	13.7%	86%	0%	0%	0%	0.3%
Town of Edwards	6.6%	92%	1.6%	0%	0%	1.3%
Town of Learned	96.8%	3.2%	0%	0%	0%	0%
Town of Utica	17.5%	80.1%	0.6%	0%	0%	1.8%

Table 3 summarizes what percentage of the population of the jurisdictions within Hinds County belong to certain special populations measured in the Census. **Table 4** provides annual estimates of housing units in Hinds County and its jurisdictions.

TABLE 3: VULNERABLE POPULATIONS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
Hinds County	25.2%	14,248	35,039	32,806
City of Raymond	18.2%	20	155	135
Town of Bolton	13.7%	0	131	190
Town of Edwards	19.6%	50	180	180
Town of Learned	4.8%	0	39	24
Town of Utica	33.5%	41	145	126

TABLE 4: ANNUAL ESTIMATES OF HOUSING UNITS IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023
Hinds County	104,356	106,266	106,367	106,439
City of Raymond	457	435	406	432
Town of Bolton	328	329	354	264
Town of Edwards	580	560	509	478
Town of Learned	37	31	29	38
Town of Utica	403	366	397	378

Employment in Hinds County is largely focused on healthcare, government, education and professional services, other large industries are located within the County. Employment information from the 2023 Census counts for each participant in the County is summarized below in **Table 5.**

TABLE 5: EMPLOYMENT IN HINDS COUNTY | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Hinds County	City of Raymond	Town of Bolton	Town of Edwards	Town of Learned	Town of Utica
Management, business, science and arts occupations	34,108	245	42	40	4	48
Service occupations	20,140	121	76	63	4	35
Sales and office occupations	19,705	146	76	28	2	62
Natural resources, construction	7,105	48	130	4	0	39

Employment Categories	Hinds County	City of Raymond	Town of Bolton	Town of Edwards	Town of Learned	Town of Utica
and maintenance occupations						
Production, transportation and material moving occupations	15,839	44	79	151	0	52

2.2. INFRASTRUCTURE, CRITICAL FACILITIES AND ENERGY ASSETS

2.2.1. CRITICAL FACILITIES AND INFRASTRUCTURE

Certain assets and facilities are considered as being of importance for Hinds County and the jurisdictions. **Table 6** below is a list of the critical facilities within Hinds County and its jurisdictions. **Figure 2** below displays a map showing the locations of these critical facilities and infrastructure located within the County. The table below consists of facilities identified in the previous plan for each community as well as facilities identified by HAZUS. These facilities were sent to each community representative of the Mitigation Council for review and given a chance to provide changes.

TABLE 6: HINDS COUNTY CRITICAL FACILITIES AND INFRASTRUCTURE

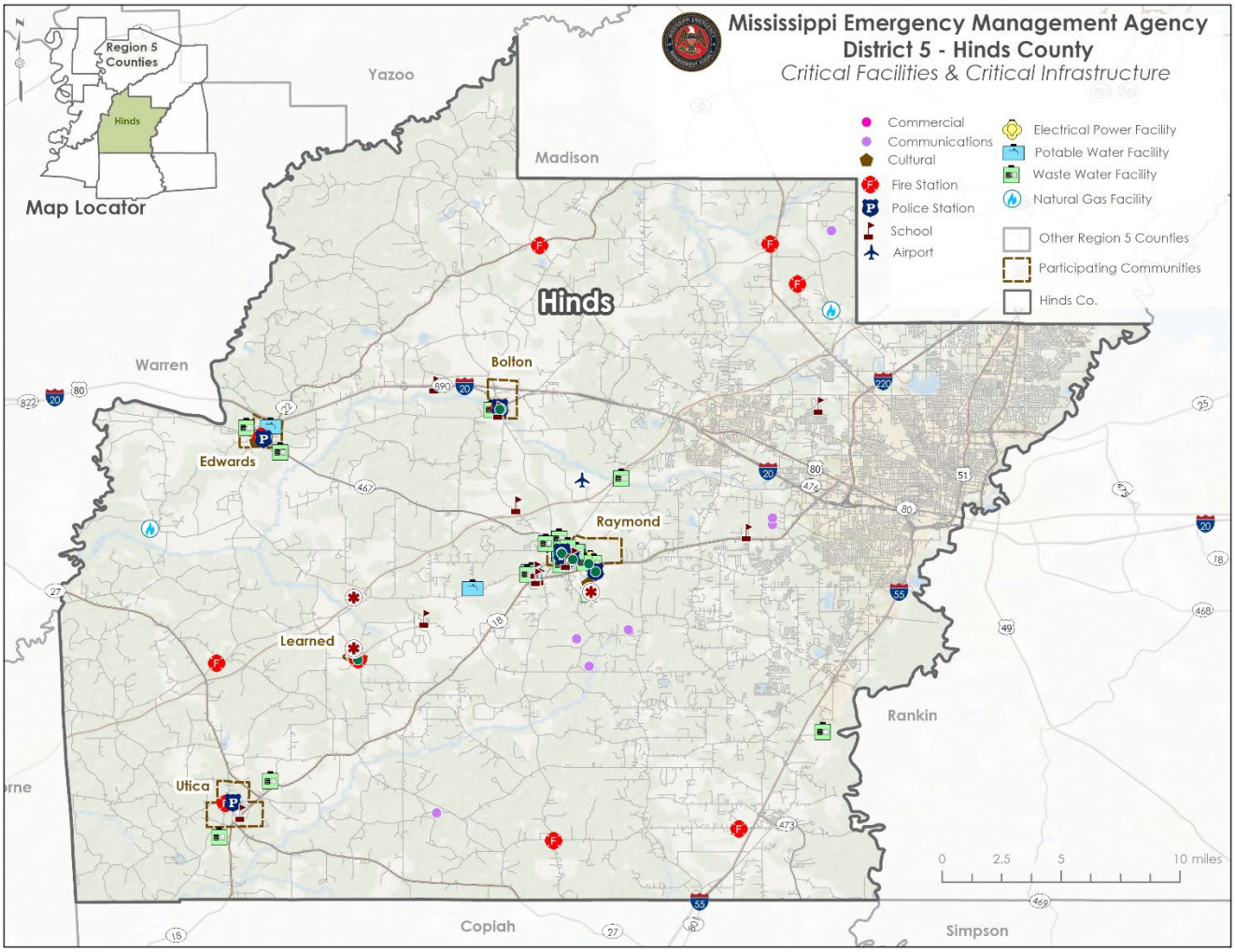
Facility Type	Facility Name	Facility Location
Airport	John Bell Williams	Raymond
Commercial - Restaurant	Gibbes Store & Restaurant	Learned
Communications	Civil Defense Siren	Learned
Communications	Civil Defense Siren	Learned
Communications	WAPT CH 16	Jackson
Communications	WBXK-CA CH 8	Jackson
Communications	WDBD CH 40	Jackson
Communications	WDBT CH 238	Jackson
Communications	WFMN CH 247	Flora
Communications	WJKK CH 254	Vicksburg
Communications	WJMI CH 259	Jackson
Communications	WJTV CH 12	Jackson
Communications	WJXN-FM CH 225	Utica
Communications	WLBT-TV CH 3	Jackson
Communications	WMPN-FM CH 217	Jackson
Communications	WMPN-TV CH 29	Jackson
Communications	WMSI-FM CH 275	Jackson
Communications	WSTZ-FM CH 294	Vicksburg
Communications	WTYX CH 234	Jackson
Communications	WUSJ CH 242	Jackson
Cultural	Eagle Ridge Conference Center	Raymond
Cultural	Edwards Community Center	Edwards
Cultural - Religious	Learned Baptist Church	Learned
Cultural - Religious	Learned Methodist Church	Learned
Cultural - Religious	Lebanon Presbyterian	Learned
Cultural - Religious	Lebanon Presbyterian Church	Learned
Electrical Power Facility	Entergy Substation	Raymond

Facility Type	Facility Name	Facility Location
Fire Station	Bench Volunteer Fire Department	Utica
Fire Station	Bolton Volunteer Fire Department	Bolton
Fire Station	Brownsville Volunteer Fire Department	Bolton
Fire Station	Crossroads Volunteer Fire Department Terry	Terry
Fire Station	Learned Volunteer Fire Department	Learned
Fire Station	Maclean Volunteer Fire Department	Jackson
Fire Station	Pocahontas Volunteer Fire Department	Jackson
Fire Station	Raymond Volunteer Fire Department	Raymond
Fire Station	Terry Volunteer Fire Department	Terry
Fire Station	Utica Volunteer Fire Department	Utica
Fire Station	West Hinds Volunteer Fire Department	Edwards
Government	Bolton City Hall	Bolton
Government	Hinds County Courthouse	Raymond
Government	Hinds County Public Works	Raymond
Government	Learned Town Hall	Learned
Government	Raymond City Hall	Raymond
Government	Town Of Bolton Town Hall	Bolton
Government	USPS Mail Drop	Learned
Government - Residential	Hinds Community College - Student Housing	Raymond
Government - Residential	Hinds County Penal Farm	Raymond
Medical Care Facility - Residential	Mercy House	Learned
Medical Care Facility - Residential	Mercy House Group Home	Learned
Medical Care Facility - Residential	Riggs Manor	Raymond
Natural Gas Facility	Clinton	Jackson
Police Station	Bolton Police Department	Bolton
Police Station	Bolton Police Station	Bolton
Police Station	Edwards Police Department	Edwards
Police Station	Hinds Community College - Raymond Campus Police	Raymond
Police Station	Hinds County Sheriff's Department - Raymond Detention Center / Hinds County Sheriff's Department Penal Farm	Raymond

Facility Type	Facility Name	Facility Location
Police Station	Hinds County Sheriff's Department - Raymond Patrol Division	Raymond
Police Station	Raymond Police Department	Raymond
Police Station	Utica Police Department	Utica
Potable Water	Downtown Water Tower	Raymond
Potable Water	Hinds Blvd. Water Well	Raymond
Potable Water	Hinds Cc Well & Elevated Tank	Raymond
Potable Water	Maqna Well & Elevated Tank	Raymond
Potable Water	Port Gibson Ratliff Rd Water Well	Raymond
Potable Water	Water Well - Magnolia	Edwards
Potable Water	Well, Elevated Tank, And Water Treatment System	Edwards
School	Bolton-Edwards Elem./Middle School	Bolton
School	Carver Middle School	Raymond
School	Central Hinds Academy	Raymond
School	Hinds Co Career/Technical Center	Raymond
School	Hinds Community College	Raymond
School	Magnolia Speech School	Jackson
School	Main Street Alternative School	Bolton
School	Raymond Elementary School	Raymond
School	Raymond High School	Raymond
School	Siwell Middle School	Jackson
School	Utica Elem. / Middle School	Utica
School	Williams School	Raymond
Waste Water Facility	Bolton POTW	Bolton
Waste Water Facility	Clinton Potw, Southside	Clinton
Waste Water Facility	Court Street Lift Station & Elevated Tank	Raymond
Waste Water Facility	E. Main Street Lift Station	Raymond
Waste Water Facility	Edwards POTW - Southeast	Edwards
Waste Water Facility	Edwards POTW - West	Edwards
Waste Water Facility	Highway 18 Lift Station	Raymond
Waste Water Facility	Jackson POTW - Trahon/Big Crk	Jackson
Waste Water Facility	Percy Street Lift Station	Raymond

Facility Type	Facility Name	Facility Location
Waste Water Facility	Raymond Potw	Raymond
Waste Water Facility	Raymond Potw - East	Raymond
Waste Water Facility	Seven Springs Road Lift Station	Raymond
Waste Water Facility	Underhill Street Lift Station	Raymond
Waste Water Facility	Utica POTW - North	Utica
Waste Water Facility	Utica POTW South	Utica
Waste Water Facility	Valley Street Lift Station & Elevated Tank	Raymond

FIGURE 2: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE

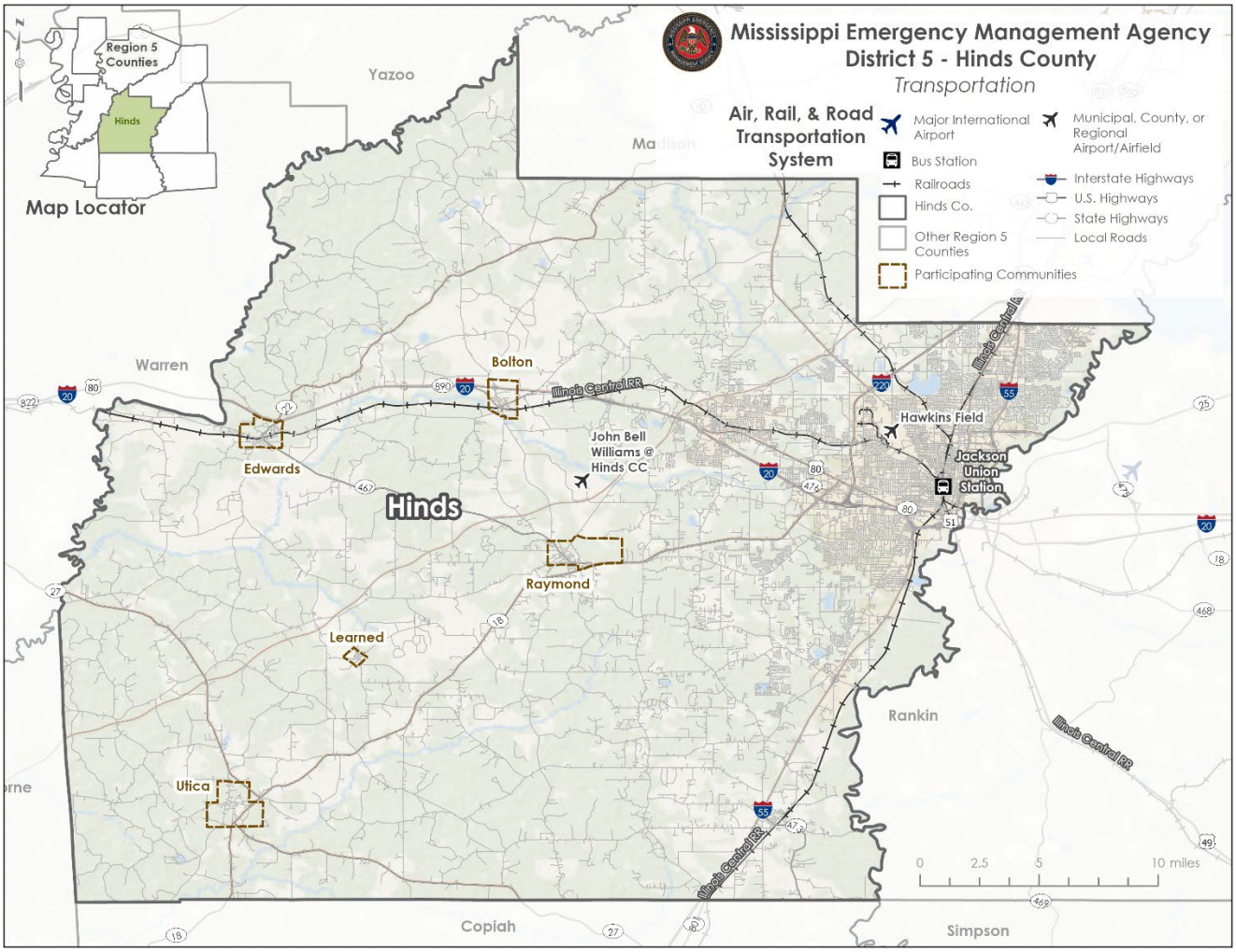


2.2.2. TRANSPORTATION

Transportation in Hinds County includes the list below and **Figure 3** displays them on a map.

- Interstates 20, 55 and 220
- U.S. Highways 49, 51 and 80
- State Highways 18, 22, 80, 467, 473 and 476
- Natchez Trace Parkway
- Illinois Central Railroad
- Jackson Union Station
- John Bell Williams Airport (KJVW)
- Hawkins Field Airport

FIGURE 3: TRANSPORTATION IN HINDS COUNTY



2.2.3. ENERGY ASSETS

Oil, natural gas pipelines and electric transmission lines traverse the County. The list below breaks down the energy infrastructure within the county.

- **Power Plant**: Hinds Energy Facility (Natural gas–fired combined cycle, ~551 MW), Hinds Generation Station (2x1 Natural Gas Combined Cycle Gas Turbine (CCGT), ~515 MW + additional 29 MW peaking unit)
- **Substation:** Lakeover Substation (Major transmission hub for Hinds Generation Station)
- **Transmission:** High-voltage lines (115 kV, 230 kV and 500 kV extra-high-voltage transmission lines) associated with Lakeover Substation
- **Pipelines:** Texas Eastern Transmission (Spectra Energy)

2.3. LAND USE AND DEVELOPMENT

Hinds County encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, and growing residential development near population centers such as the Jackson Metro Area located in the Northeastern part of the County. **Figure 4** displays the land use and development throughout the County while **Figure 5** shows the topography of the County.

FIGURE 4: HINDS COUNTY LAND USE AND DEVELOPMENT

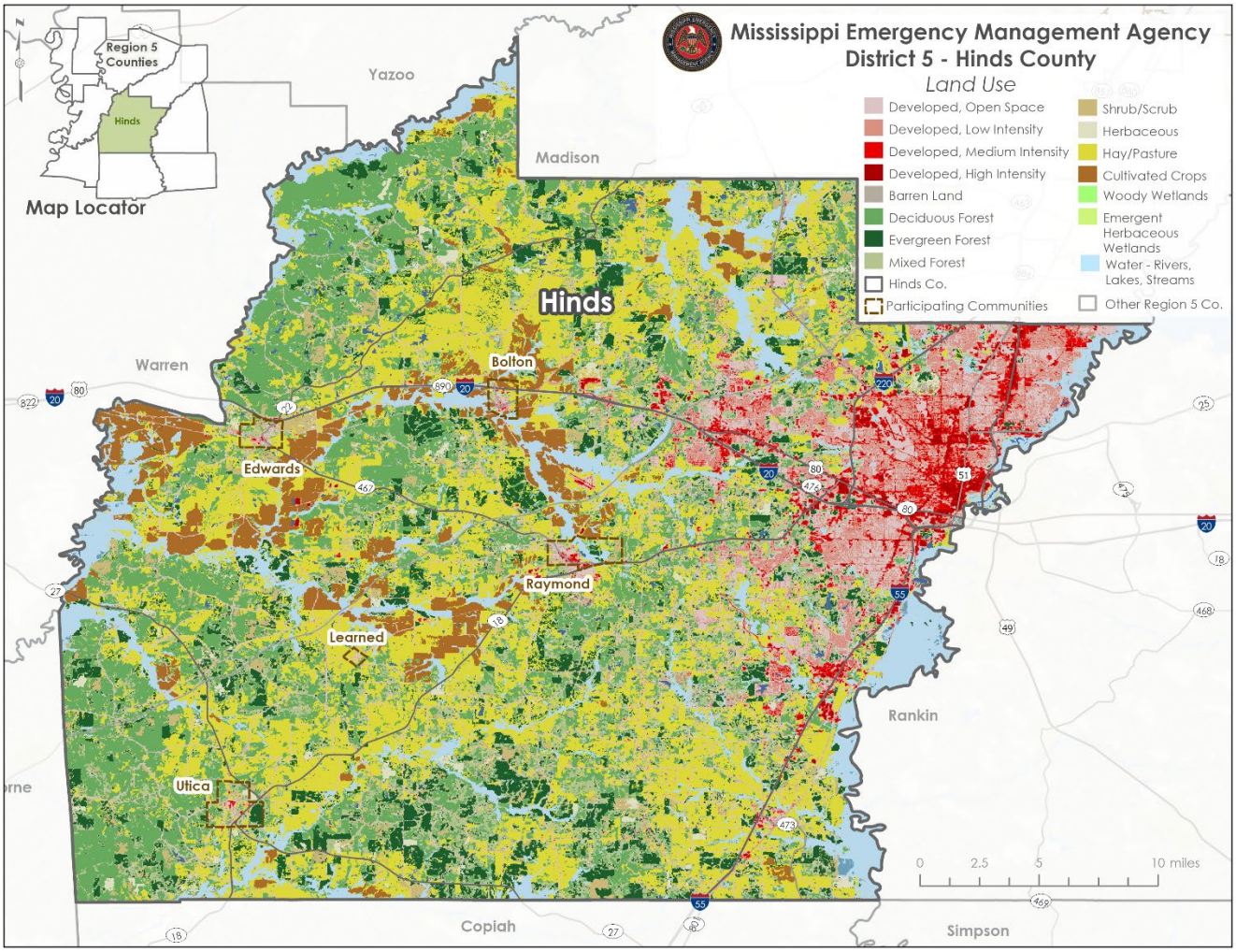
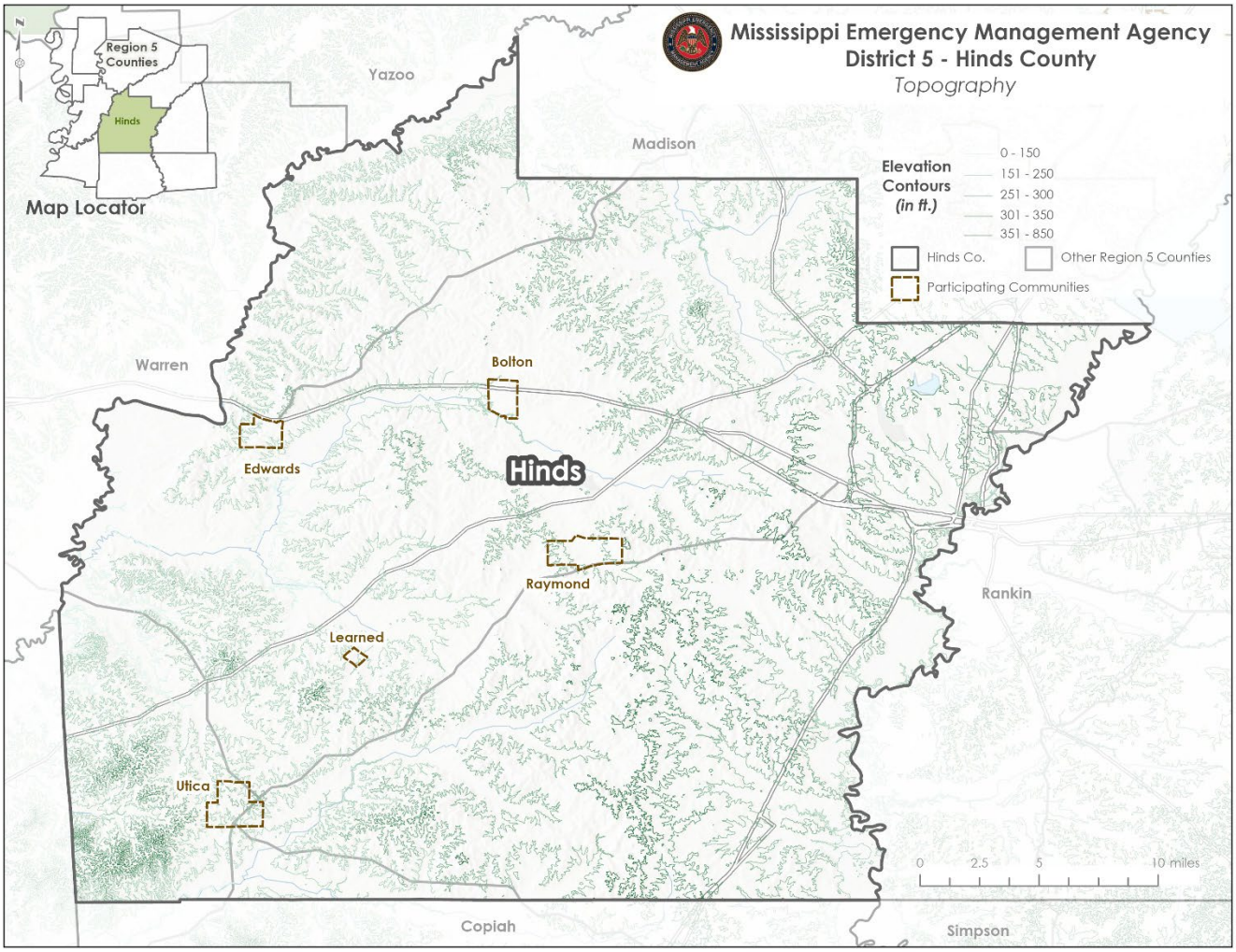


FIGURE 5: HINDS COUNTY TOPOGRAPHY



2.4. HISTORIC AND CULTURAL RESOURCES

Cultural resources and historical assets are generally unique or irreplaceable in nature due to their age or unique properties or characteristics. **Table 7** below provides a list of known cultural resources and historic assets in Hinds County.

TABLE 7: HISTORIC AND CULTURAL RESOURCES IN HINDS COUNTY

Cultural Resource	General Location	Resource Type
Ervin Lewis House	Byram	Building
The Cedars	Clinton	Building
Joseph Henry Morris House	Jackson	Building
Sims House	Jackson	Building
Virden-Patton House	Jackson	Building
Galloway-Williams House	Jackson	Building
City Hall	Jackson	Building
Merrill-Maley House	Jackson	Building
Millsaps-Bui House	Jackson	Building
The Oaks	Jackson	Building
Smith Roberston Elementary School	Jackson	Building
Manship House	Jackson	Building
Mississippi Governor's Mansion	Jackson	Building
Alex Williams House	Jackson	Building
Central Fire Station	Jackson	Building
Fountainhead	Jackson	Building
Ayer Hall	Jackson	Building
Edwards Hotel	Jackson	Building
Spengler's Corner	Jackson	Building
Hinds County Courthouse	Jackson	Building
Garner Wynn Green House	Jackson	Building
Warren-Guild-Simmons House	Jackson	Building
Mississippi Federation of Women's Club	Jackson	Building
Old State Capitol	Jackson	Building
Smith Park	Jackson	Building
Bellevue Court Apartments	Jackson	Building
North Manor Apartments	Jackson	Building
Railroad Passenger Depot	Jackson	Building
Medgar Evers House	Jackson	Building
Hinds County Armory	Jackson	Building
Naval and Marine Corps Reserve Center	Jackson	Building

Cultural Resource	General Location	Resource Type
Eudora Welty House	Jackson	Building
Spengler-Thomas Building	Jackson	Building
Chambliss Building	Jackson	Building
Lorena Duling School	Jackson	Building
N&W Overall Company	Jackson	Building
MS Foundry and Machine Company	Jackson	Building
Wiener House	Jackson	Building
George Street Grocery	Jackson	Building
Armour Company	Jackson	Building
Welty House	Jackson	Building
Will Watkins House	Jackson	Building
Municipal Art Gallery	Jackson	Building
Calvary Baptist Church	Jackson	Building
Bailey Hill Civil War	Jackson	Site
Capitol Green	Jackson	Site
Woodrow Wilson Bridge	Jackson	Structure
Dudley Jones House	Terry	Building
Illinois Central Railroad Depot	Terry	Building
Magnolia Vale	County	Building
John F. Cates House	County	Building
McNair Plantation	County	Building
James M. Futch House	County	Building
Holly Grove Plantation House	County	Building
Lebanon Presbyterian Church	County	Building
Byram Bridge	County	Structure
Big Black River Railroad Bridge	County	Structure
R.H. Henry Bridge	County	Structure

2.5. CHANGES IN DEVELOPMENT AND PRIORITIES

This section outlines recent and anticipated changes in development and priorities within Hinds County and its jurisdictions. **Table 8** lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment.

TABLE 8: HINDS COUNTY CHANGES IN DEVELOPMENT AND PRIORITIES

Jurisdiction	Changes in Development in the Past Five Years	Changes in Development Anticipated in the Next Five Years	Changes in Community Priorities over the Past Five Years
Hinds County	Yes, new residential development along with major economic development.	New data centers. New residential development.	A lot of priority on new economic development and retention of businesses and residents.
City of Raymond	No	No	N/A
Town of Bolton	Limited but ongoing residential small-scale commercial activity infrastructure aging requiring increased attention (roads, drainage, utilities).	Infrastructure improvements (roads, drainage, utilities). Economic development initiatives (business growth, industrial opportunities). Community facility upgrades (park, community spaces).	Increased focus on infrastructure repair and resilience. Greater emphasis on public safety and emergency preparedness. Expansion of community engagement and quality of life initiatives.
Town of Edwards	Yes - the Town of Edwards reported that they now have a carbon-activated water system; they will be online by the end of 2025.	Yes	Yes
Town of Learned	No	No	Yes
Town of Utica	The town has new structures along with street paving.	Community facility upgrades (new police station, housing infrastructure improvements (roads, utilities, natural gas, economic development initiative (business growth).	Increased focus on infrastructure repair water, sewer, and natural gas (waste water). Improve public safety.

3. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. More generalized information about the goals of the capability assessment, including the process and methodology, is presented in the Capability Assessment portion of the base plan.

This section articulates specific information about the capabilities of Hinds County and the plan participants within it.

3.1. HINDS COUNTY CAPABILITIES AND RESOURCES

3.1.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Hinds County to support hazard mitigation.

TABLE 9: HINDS COUNTY STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Emergency	
Engineering	Y	Public Works	
Procurement	Y	Purchasing	
Floodplain Management	Y	Permit & Zoning	
Land Use, Land Management, or Development Planning	Y	Permit & Zoning	
Grant-writing	Y	Administration	
Geographic Information Systems (GIS)	Y	Tax	
Other reported staff and technical capabilities:			

3.1.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Hinds County that might support hazard mitigation efforts.

TABLE 10: HINDS COUNTY PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)				
Community Wildfire Protection Plan (CWPP)				
General Plan / Community Development Plan				
Continuity of Operations Plan (COOP)		X		
Disaster Recovery Plan				
Economic Development Plan		X		unknown
Emergency Operations Plan (EOP)		X		
Floodplain Management Plan / Flood Mitigation Plan				
Historic Preservation Plan				
Natural Resource Protection Plan (NRPP)				
Open Space Management Plan (Parks & Rec/Green Plan)				
Threat Hazard Identification and Risk Assessment (THIRA)				

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.1.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Hinds County in the NFIP program, including how development in the floodplain is regulated.

TABLE 11: HINDS COUNTY FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	

3.1.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Hinds County's hazard mitigation efforts.

TABLE 12: HINDS COUNTY FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	International Building Codes 2020
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	International Fire Code 2020
Do you have a land use or development ordinance?	Yes
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	HMGP, HSGP, EMPG

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	

3.2. RAYMOND CAPABILITIES AND RESOURCES

3.2.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Raymond to support hazard mitigation.

TABLE 13: RAYMOND STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Hinds County	
Engineering	Y	WGK Engineering	Contract
Procurement	Y	City Clerk	Jenny Benton
Floodplain Management	Y	City Clerk	Jenny Benton
Land Use, Land Management, or Development Planning	Y	City Raymond	Zoning Commission
Grant-writing	Y	City Clerk	Jenny Benton
Geographic Information Systems (GIS)	N		
Other reported staff and technical capabilities:			

3.2.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Raymond that might support hazard mitigation efforts.

TABLE 14: RAYMOND PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)	X			
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan	X			
Continuity of Operations Plan (COOP)	X			
Disaster Recovery Plan	X			
Economic Development Plan	X			
Emergency Operations Plan (EOP)		X		
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan		X		2002
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)	X			

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.2.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Raymond in the NFIP program, including how development in the floodplain is regulated.

TABLE 15: RAYMOND FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes, 2024
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	City Clerk
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	Combination of Floodplain and Zoning Ordinance
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	N/A
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	No
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes, 2009

3.2.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Raymond's hazard mitigation efforts.

TABLE 16: RAYMOND FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes, International Building Codes, 2018
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	2006 International Fire Code
Do you have a land use or development ordinance?	Yes
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	N/A

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	N/A

3.3. BOLTON CAPABILITIES AND RESOURCES

3.3.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Bolton to support hazard mitigation.

TABLE 17: BOLTON STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Hinds Co. EMA/Police and Fire	County supported with local coordination
Engineering	Y	Contract engineers	EGK Engineers/County support
Procurement	Y	Mayor/Clerk	Handled locally per state law
Floodplain Management	Y	County/local	NFIP coordination
Land Use, Land Management, or Development Planning	Y	Mayor/Board/CMPDD	Regional planning support
Grant-writing	Y	Mayor/Consultants	Internal and external sources/support used
Geographic Information Systems (GIS)	Y	County/State	External sources/support used
Other reported staff and technical capabilities:			

3.3.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Bolton that might support hazard mitigation efforts.

TABLE 18: BOLTON PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	2026
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan			X	Ongoing
Continuity of Operations Plan (COOP)			X	In progress
Disaster Recovery Plan			X	In progress
Economic Development Plan		X		Updating
Emergency Operations Plan (EOP)		X		County supported
Floodplain Management Plan / Flood Mitigation Plan		X		Current
Historic Preservation Plan	X			
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)	X			

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.3.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Bolton in the NFIP program, including how development in the floodplain is regulated.

TABLE 19: BOLTON FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes, in compliance with NFIP requirements
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Designated Floodplain Administrator (local official in coordination with Hinds County/state guidance)
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	Development in floodplain areas in regulated through permit review, adherence to FEMA flood maps, and enforcement of local/state floodplain ordinances. Coordination occurs with county and state agencies as needed
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	Evaluated in accordance with NFIP standards and enforced through permitting and inspections
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	No
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes, latest effective maps adopted

3.3.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Bolton's hazard mitigation efforts.

TABLE 20: BOLTON FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes, adopted state required building codes (as enforced through local and state compliance)
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	Yes, fire safety standards enforced through Bolton Fire Department and state fire regulations
Do you have a land use or development ordinance?	Yes (basic structure in place; improvements ongoing)
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	CDBG (Community Development Block Grant) ARPA Funds State Legislative Appropriations Local Funds Potential FEMA/MEMA programs

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	Hinds County support CMPDD Engineering consultants State agency partnerships

3.4. EDWARDS CAPABILITIES AND RESOURCES

3.4.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Edwards to support hazard mitigation.

TABLE 21: EDWARDS STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Mayor, Board of Alderman, Police, Fire Dept.	
Engineering	N		
Procurement	Y	Mayor, with board approval	
Floodplain Management	Y		
Land Use, Land Management, or Development Planning	Y	Mayor and Board of Aldermen	
Grant-writing	N		
Geographic Information Systems (GIS)	N		
Other reported staff and technical capabilities:			

3.4.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Edwards that might support hazard mitigation efforts.

TABLE 22: EDWARDS PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	
Community Wildfire Protection Plan (CWPP)			X	
General Plan / Community Development Plan			X	
Continuity of Operations Plan (COOP)			X	
Disaster Recovery Plan			X	
Economic Development Plan			X	
Emergency Operations Plan (EOP)			X	
Floodplain Management Plan / Flood Mitigation Plan			X	
Historic Preservation Plan	X			
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)			X	
Threat Hazard Identification and Risk Assessment (THIRA)			X	

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.4.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Edwards in the NFIP program, including how development in the floodplain is regulated.

TABLE 23: EDWARDS FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	N/A
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	N/A
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	N/A
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	N/A
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	N/A

3.4.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Edwards' hazard mitigation efforts.

TABLE 24: EDWARDS FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes. The 2018 Edition of the International Building, Plumbing, Electrical , and Gas codes. Adopted 2025.
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	Yes
Do you have a land use or development ordinance?	Yes
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	CBDG

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	Yes

3.5. LEARNED CAPABILITIES AND RESOURCES

3.5.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Learned to support hazard mitigation.

TABLE 25: LEARNED STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	N		Hinds County
Engineering	N		Hinds County
Procurement	Y	Mayor and Board of Aldermen	
Floodplain Management	N		
Land Use, Land Management, or Development Planning	N		
Grant-writing	N		CMPDD
Geographic Information Systems (GIS)	N		CMPDD
Other reported staff and technical capabilities:			

3.5.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Learned that might support hazard mitigation efforts.

TABLE 26: LEARNED PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)	X			
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan	X			
Continuity of Operations Plan (COOP)	X			
Disaster Recovery Plan	X			
Economic Development Plan	X			
Emergency Operations Plan (EOP)	X			
Floodplain Management Plan / Flood Mitigation Plan	X			
Historic Preservation Plan	X			
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)	X			

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.5.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Learned in the NFIP program, including how development in the floodplain is regulated.

TABLE 27: LEARNED FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	No
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	N/A
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	N/A
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	N/A
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	N/A
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	N/A
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	N/A

3.5.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Learned's hazard mitigation efforts.

TABLE 28: LEARNED FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	No
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	No
Do you have a land use or development ordinance?	No
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	No

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	Yes

3.6. UTICA CAPABILITIES AND RESOURCES

3.6.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Utica to support hazard mitigation.

TABLE 29: UTICA STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Hinds County EMA	EMA, Police, Fire – County support
Engineering	Y	Contract Engineers	WGK Engineers/County support
Procurement	Y	Mayor/Clerk	Administration
Floodplain Management	Y	County/Local	NFIP Coordination
Land Use, Land Management, or Development Planning	Y	Mayor/Board/CMPDD	Regional Planning support
Grant-writing	Y	Consultants	Internal & External support
Geographic Information Systems (GIS)	Y	County/State	External support
Other reported staff and technical capabilities:			

3.6.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Utica that might support hazard mitigation efforts.

TABLE 30: UTICA PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	2026
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan			X	Ongoing
Continuity of Operations Plan (COOP)			X	In progress
Disaster Recovery Plan			X	In progress
Economic Development Plan		X		Updating
Emergency Operations Plan (EOP)		X		County supported
Floodplain Management Plan / Flood Mitigation Plan		X		Updating
Historic Preservation Plan	X			
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)	X			

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.6.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Utica in the NFIP program, including how development in the floodplain is regulated.

TABLE 31: UTICA FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Administrator, local officials, Hinds County/State guidance
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	Through permit review through FEMA flood maps and enforcement of local state floodplain ordinances
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	Evaluated in accordance with NFIP standards and enforced through permitting and inspections
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	No
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	N/A

3.6.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Utica's hazard mitigation efforts.

TABLE 32: UTICA FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes, adopted state required building codes
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	Yes, fire safety standards enforced through Utica Fire dept and state fire regulations.
Do you have a land use or development ordinance?	Yes, improvements ongoing, basic structure in place.
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	ARPA Funds, Local Funds, FEMA/MEMA Programs

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	Hinds County Support, CMPDD, State agency partnerships, engineering consultants

3.7. ABILITY TO EXPAND CAPABILTIES

As part of the capability assessment process, each jurisdiction was asked to discuss their ability to expand upon the capabilities discussed earlier in this section. Below is a summary of the information provided by each participant regarding how they can strengthen their ability to conduct hazard mitigation measures in the future. **Table 33** below lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment.

TABLE 33: HINDS COUNTY'S ABILITY TO EXPAND CAPABILITIES

Jurisdiction	Self-Reported Information Regarding Ability to Expand Capabilities
Hinds County	• The County should identity funding sources and grants for funding • Could provide grant writer with expertise in mitigation funding • Adopt more stringent codes to address mitigation
City of Raymond	• Pursue additional/enhanced ordinance to provide further protections and planning for hazards mitigations
Town of Bolton	• Expanding grant funding opportunities (FEMA, MEMA, federal/state programs) • Strengthening partnerships with engineering and planning consultants • Developing formal Capital Improvement and Disaster Recovery Plans • Enhancing stormwater and drainage infrastructure • Increasing GIS and data tracking capabilities • Updating ordinances to reflect current hazards risks • Investing in emergency equipment and technology (e.g., cameras, radios, warning systems)
Town of Edwards	• Continue to seek funds to retrofit the community center to serve as a safe room during hazard weather or grants to build a safe room. • We have a current CDGB grant to address flash flooding, this could be an ongoing situation, due to weather patterns changing.
Town of Learned	• Obtain and adopt a successful plan that may suit our needs. • Drainage deficiencies are our biggest needs to be addressed.
Town of Utica	• Expanding grant funding opportunities • Developing formal capital improvements and disaster recovery plans • Enhancing stormwater and drainage infrastructure • Strengthening partnerships with engineering and planning consultants • Increasing GIS and data tracking capabilities • Updating ordinances to reflect current hazard risks • Investing in emergency equipment and technology

4. HAZARD IDENTIFICATION & RISK ASSESSMENT

The Hazard Identification and Risk Assessment (HIRA) process, described in more detail in the HIRA section of the base plan, involves identifying potential hazards, evaluating their likelihood and potential consequences, and estimating and describing the level of risk these hazards present to a community.

Since 1971, Hinds County has been included in 26 federal disaster declarations, of which nine occurred since this plan was last updated. **Table 34** describes these events.

TABLE 34: HINDS COUNTY FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4790	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Hinds, Madison	6/10/2024
DR-4626	Hurricane	Hinds, Copiah, Simpson	10/22/2021
EM-3569	Hurricane	Hinds, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
DR-4598	Severe Winter Storms	Hinds, Copiah, Hinds, Rankin, Simpson, Warren, Yazoo	5/4/2021
EM-3548	Hurricane	Hinds, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020
DR-4551	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Hinds, Simpson	7/9/2020
DR-4538	Severe Storm, Flooding and Mudslides	Hinds, Copiah, Hinds, Issaquena, Sharkey, Warren, Yazoo	4/23/2020
DR-4528	Covid-19 Pandemic	Hinds, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Hinds, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4314	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Hinds, Yazoo	5/22/2017
DR-4268	Severe Storm, Flooding	Hinds, Issaquena	3/25/2016
DR-4081	Hurricane	Hinds, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1983	Flooding	Hinds, Issaquena, Sharkey, Warren, Yazoo	5/11/2011
EM-3320	Flooding	Hinds, Issaquena, Sharkey, Warren, Yazoo	5/4/2011
DR-1972	Severe Storm, Tornado	Hinds	4/29/2011
DR-1794	Hurricane	Hinds, Copiah, Issaquena	9/22/2008

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-1764	Severe Storm, Tornado	Hinds	5/28/2008
DR-1604	Hurricane	Hinds, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005
DR-1360	Severe Storm, Flooding, Tornado	Hinds, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Warren, Yazoo	2/23/2001
DR-1398	Severe Storm, Tornado	Hinds, Madison, Sharkey	12/7/2001
DR-906	Severe Storm, Tornado	Hinds, Issaquena, Madison, Sharkey, Warren, Yazoo	5/17/1991
DR-683	Flooding, Severe Storm, Tornado	Hinds, Hinds, Madison, Rankin, Warren, Yazoo	6/1/1983
DR-577	Severe Storm, Tornado	Hinds, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Hinds, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-368	Severe Storm, Tornado	Hinds, Issaquena, Sharkey, Simpson, Warren, Yazoo	3/27/1973
DR-302	Severe Storm, Tornado	Hinds, Issaquena, Sharkey, Warren, Yazoo	2/22/1971

As described in the “HIRA Methodology” section of the base plan, participants in this plan update reconsidered the relative risk posed by the profiled hazards by conducting a hazard ranking process. **Table 36** below provides a summary of how those hazards were ranked in Hinds County and by the jurisdictions within it.

TABLE 35: HAZARD RANKING BY JURISDICTION IN HINDS COUNTY

Jurisdiction	Dam/Levee Failure	Drought	Earthquake	Expansive Soils	Flood	Severe Storms	Severe Winter Weather	Tornado	Tropical Storm / Hurricane	Wil/Urban Interface (WUI) Fire	Hazardous Material Incidents	Nuclear Power Plant Incidents
Hinds County	Med	Med	Low	Med	High	High	Med	High	Med	High	N/A	N/A
City of Raymond	Low	Med	Low	Low	Low	High	Med	High	Med	Low	Low	Med
Town of Bolton	Med	Med	Med	Low	High	High	High	High	High	Med	Low	Low
Town of Edwards	Low	Med	Low	Low	Low	High	Med	High	Med	Low	N/A	N/A
Town of Learned	Low	Med	Low	Low	Med	High	Med	Med	Low	Low	Low	Med
Town of Utica	Low	Med	Low	Low	Low	High	Med	High	Med	Low	N/A	N/A

Each of the 12 natural and manmade hazards discussed in this section are described in more detail in the HIRA section of the base plan. **Table 36** below shows the hazard scores for Hinds County and the jurisdictions within the County. This section endeavors to provide more detailed, local-level information, mapping, and conclusions for these hazards wherever relevant.

TABLE 36: HAZARD RISK SCORES

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Hinds County							
Dam/Levee Failure	4	2	1	2	2	2	**22**
Drought	4	1	0	1	1	2	**14**
Earthquake	4	2	2	2	4	1	**14**
Expansive Soils	4	0	1	1	2	1	**8**
Flood	4	2	1	1	2	4	**40**
Severe Storms	4	1	2	1	1	5	**45**
Severe Winter Weather	4	1	1	1	1	2	**16**
Tornado	4	2	2	1	2	5	**55**
Tropical Storms	4	2	2	2	1	2	**22**
Wild/Urban Interface Fire	4	1	0	0	0	5	**25**
Hazardous Material Incidents	4	1	1	1	1	5	**40**
Nuclear Power Plant Incident	4	1	4	3	4	1	**16**
City of Raymond							
Dam/Levee Failure	1	0	0	0	0	1	**1**
Drought	4	1	1	2	2	3	**30**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	1	1	**4**
Flood	1	1	1	1	1	2	**10**
Severe Storms	4	1	2	2	2	5	**55**
Severe Winter Weather	4	1	1	1	2	3	**27**
Tornado	4	1	2	2	3	3	**36**
Tropical Storms	4	1	1	1	2	2	**18**
Wild/Urban Interface Fire	1	1	1	2	2	2	**14**

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Hazardous Material Incidents	2	1	0	1	1	2	**10**
Nuclear Power Plant Incident	3	1	0	1	2	7	**21**
Town of Bolton							
Dam/Levee Failure	4	1	4	3	4	1	**16**
Drought	4	1	1	1	1	2	**16**
Earthquake	4	3	4	3	4	1	**18**
Expansive Soils	1	0	3	2	1	1	**7**
Flood	4	1	4	3	3	5	**75**
Severe Storms	4	1	4	3	4	5	**80**
Severe Winter Weather	4	2	4	3	4	3	**51**
Tornado	4	3	4	3	4	4	**72**
Tropical Storms	4	2	4	3	4	2	**34**
Wild/Urban Interface Fire	4	2	4	3	4	1	**17**
Hazardous Material Incidents	4	1	2	2	1	1	**10**
Nuclear Power Plant Incident	4	1	2	3	2	1	**12**
Town of Edwards							
Dam/Levee Failure	0	0	0	0	0	1	**0**
Drought	4	1	1	2	3	2	**22**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	1	1	**4**
Flood	1	1	1	1	1	2	**10**
Severe Storms	4	1	2	1	1	5	**45**
Severe Winter Weather	4	1	1	1	1	3	**24**
Tornado	4	2	2	2	3	3	**39**
Tropical Storms	4	1	1	1	2	2	**18**
Wild/Urban Interface Fire	1	1	1	1	2	1	**6**
Hazardous Material Incidents	-	-	-	-	-	-	**-**
Nuclear Power Plant Incident	-	-	-	-	-	-	**-**
Town of Learned							

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Dam/Levee Failure	0	0	0	0	0	1	**0**
Drought	3	1	2	2	1	2	**18**
Earthquake	0	1	1	0	0	1	**2**
Expansive Soils	0	0	1	0	0	1	**1**
Flood	3	2	2	1	2	2	**20**
Severe Storms	4	2	2	1	2	3	**33**
Severe Winter Weather	2	2	1	1	2	2	**16**
Tornado	2	2	2	2	2	3	**30**
Tropical Storms	0	1	0	0	0	1	**1**
Wild/Urban Interface Fire	2	2	2	2	2	1	**10**
Hazardous Material Incidents	1	1	1	1	1	1	**5**
Nuclear Power Plant Incident	4	4	3	5	5	1	**21**
Town of Utica							
Dam/Levee Failure	0	0	0	0	0	1	**0**
Drought	4	1	1	2	3	2	**22**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	1	1	**4**
Flood	2	1	1	1	1	2	**12**
Severe Storms	4	2	2	2	2	5	**60**
Severe Winter Weather	4	2	2	1	2	3	**33**
Tornado	4	3	4	2	3	3	**48**
Tropical Storms	4	1	1	1	2	2	**18**
Wild/Urban Interface Fire	1	1	1	1	2	1	**6**
Hazardous Material Incidents	1	1	1	1	1	1	**5**
Nuclear Power Plant Incident	1	3	1	1	2	1	**8**

4.1. DAM/LEVEE FAILURE

4.1.1. LOCATION AND EXTENT

There are 301 dams in Hinds County, of which 24 are High Hazard, four are Significant Hazard, 245 are Low Hazard, and 28 are of Undetermined Hazard level.

Dam classifications were designed based on the potential impacts of failure. The potential impacts from each dam classification are detailed below in the event of a dam failure.

- **Low Hazard Dam**: In the event of the failure of a high-hazard dam, loss of life is probable, as are economic, environmental, and lifeline impacts.
- **Significant Hazard Dam**: In the event of the failure of a significant hazard dam, loss of life is not expected, but economic, environmental, and lifeline impacts are expected.
- **High Hazard Dam**: In the event of the failure of a low-hazard dam, there is no anticipated loss of life, and economic, environmental, and lifeline impacts are expected to be minimal, with losses principally limited to the owner's property.

Figure 6 below shows the location of these dams within Hinds County while **Figure 7** displays all the 24 high hazard dams.

There are 24 High Hazard Potential Dams (HHPD) in Hinds County, and the majority are in the center of the County. These dams are rated high due to the catastrophic damage a dam breach or failure could cause. Due to the extent of impact, HHPDs are required to develop an Emergency Response Plan (ERP) that details how the dam will respond in the event of a breach or failure. Within the ERPs inundations maps are required to be developed to understand which areas would be impacted in the event of a breach or failure.

There is one critical facility within the inundation area of the Raymond Lake Dam and there are several essential transportation roadways located in the inundation areas. **Figure 8** through **Figure 31** show the location and inundation areas of the 24 high hazard dams impacting Hinds County.

There are several levees along the eastern border of Hinds County and there is a levee protected area within the City of Jackson. The Jackson-Fairgrounds Levee System was constructed in 1968 to provide flood risk reduction to the eastern portion of Jackson, Mississippi. It is locally maintained by the Rankin-Hinds Pearl River Flood and Drainage Control District. The levee has an average height of 21 feet and has a length of approximately 2 miles. The levee protected area is a small area that is protected by a levee close to Interstate 55 and U.S. Highway 51. See **Figure 37** for more information on the location and extent of the levee and levee protected area.

FIGURE 6: MAP OF DAMS IN HINDS COUNTY

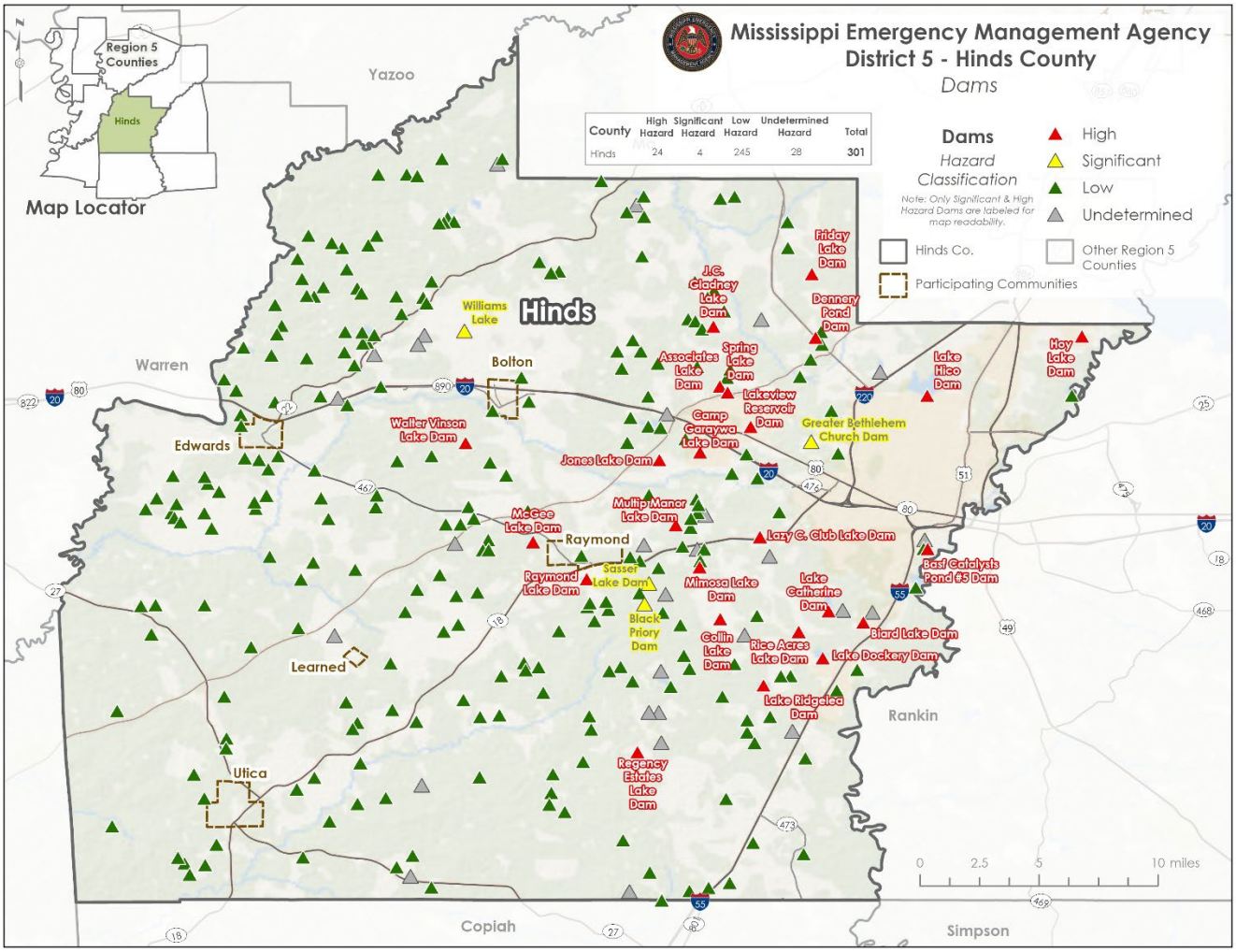


FIGURE 7: MAP OF HIGH HAZARD DAMS IN HINDS COUNTY

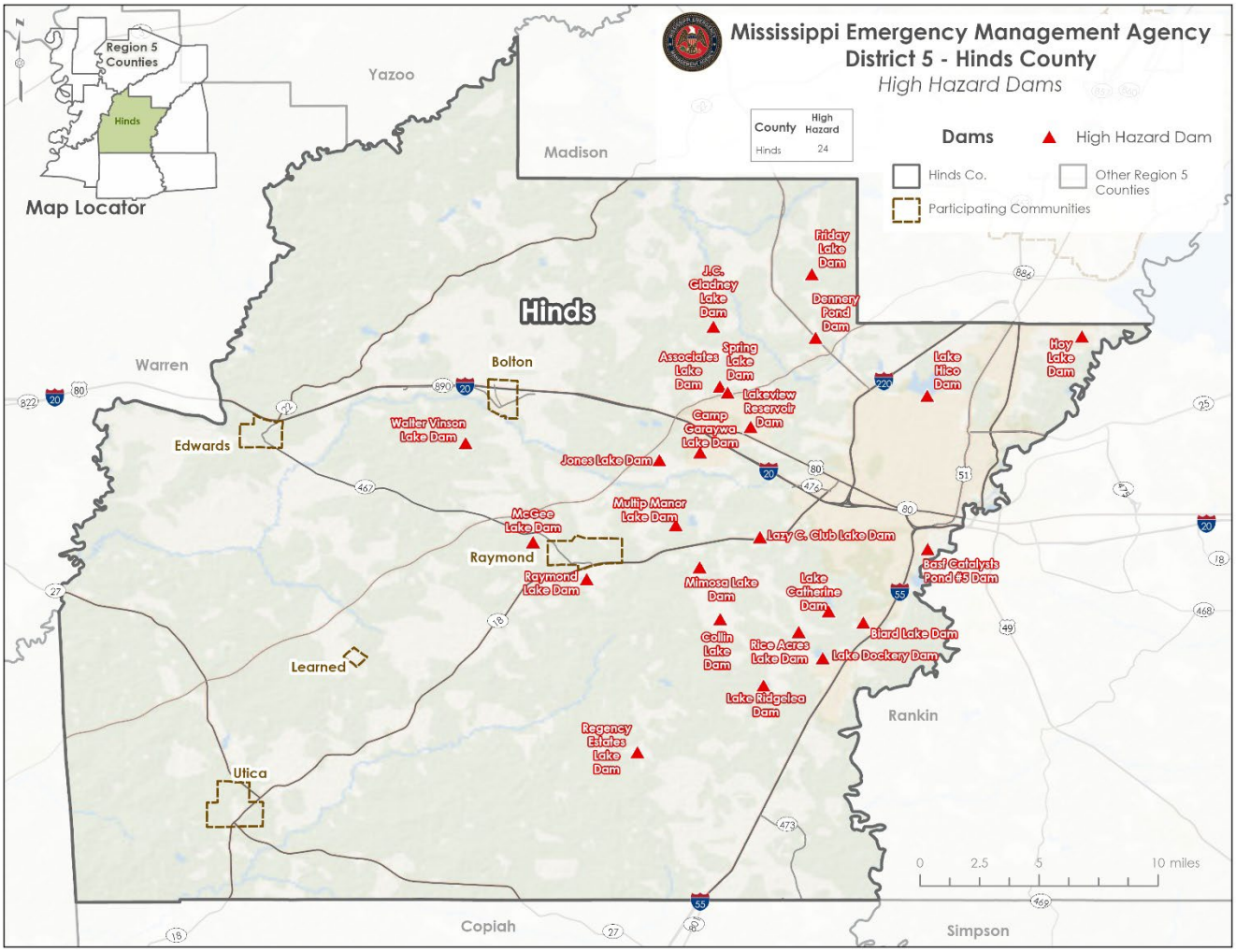


FIGURE 8: LOCATION AND INUNDATION AREA OF ASSOCIATES LAKE DAM

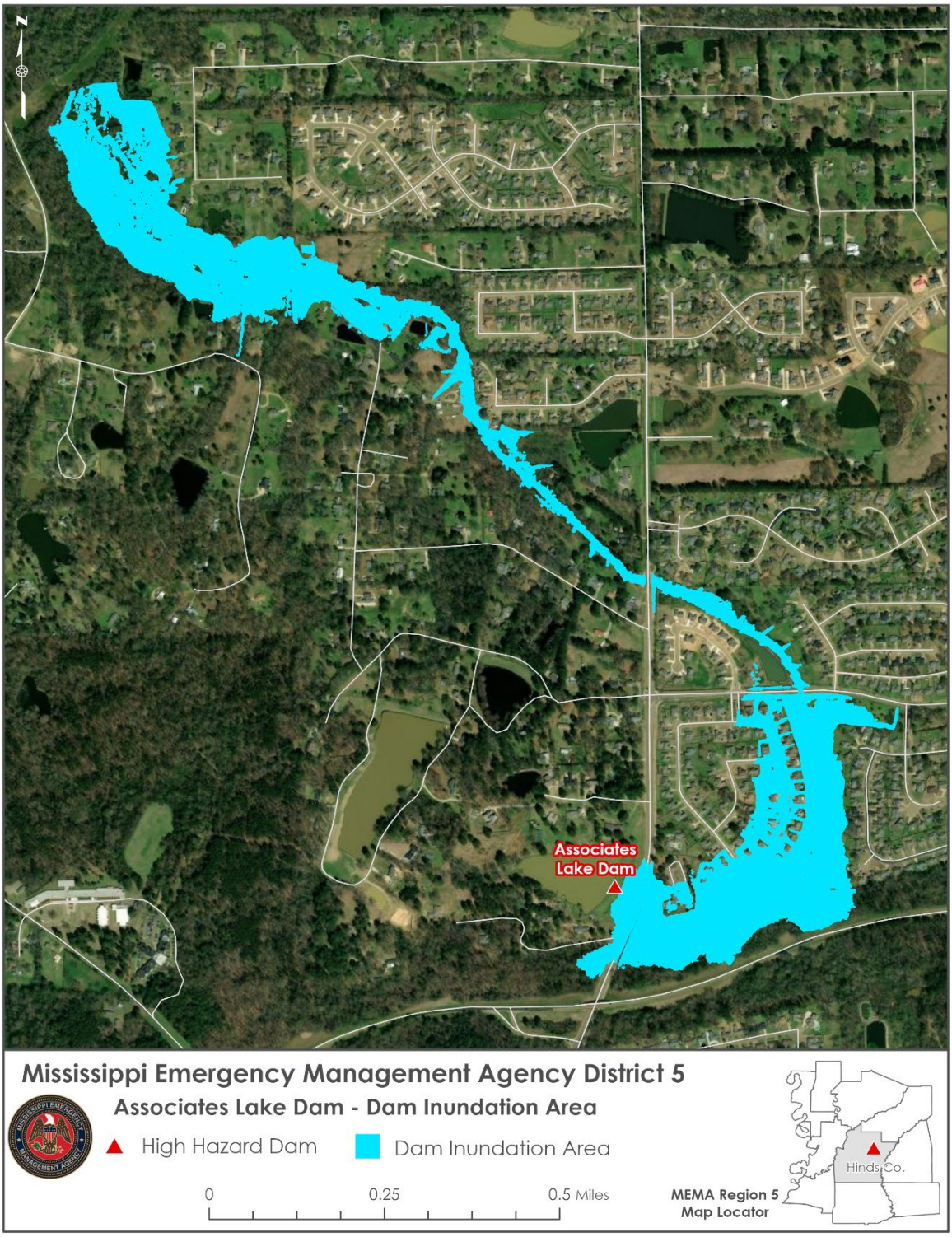


FIGURE 9: LOCATION AND INUNDATION AREA OF BASF CATALYSTS POND #5 DAM

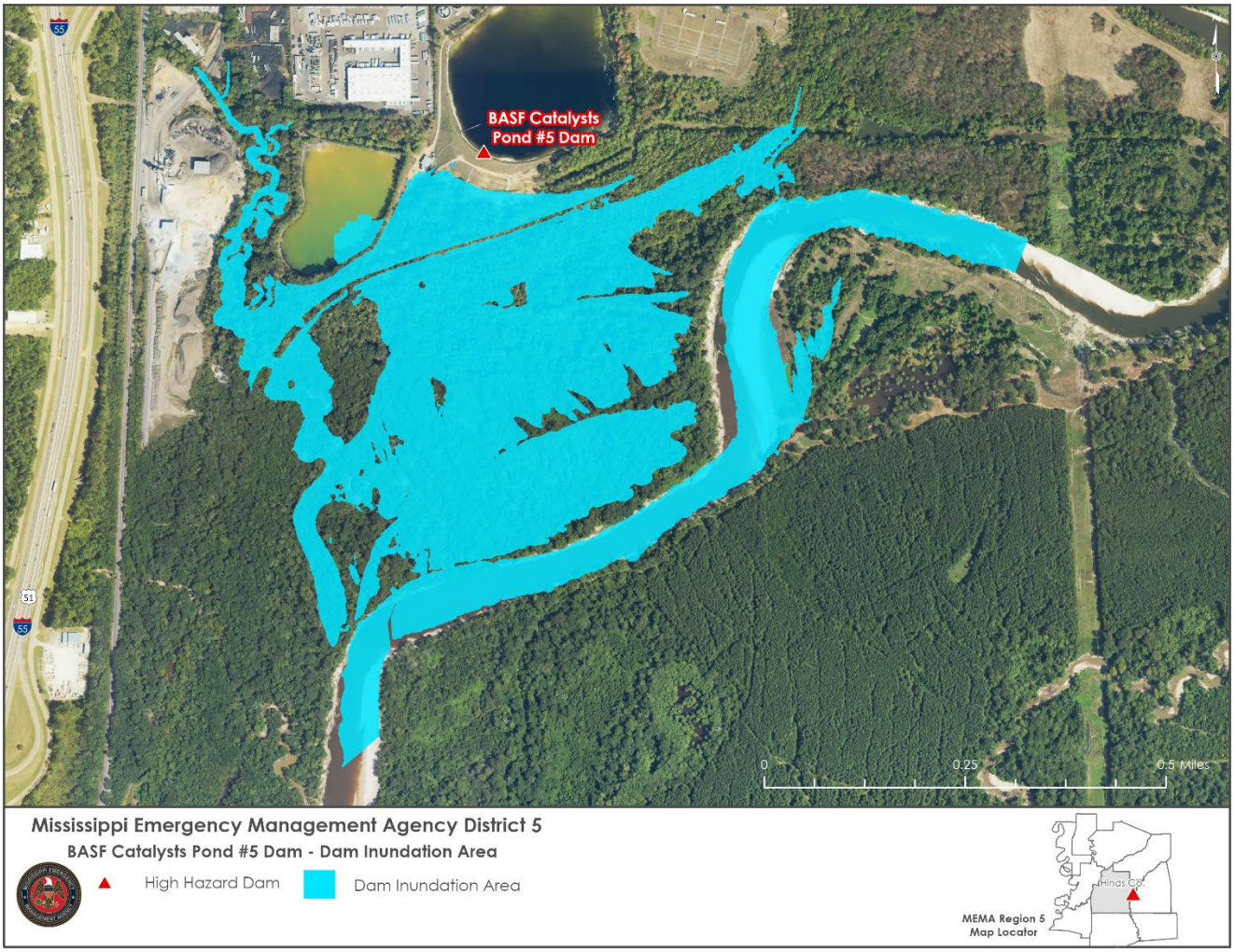


FIGURE 10: LOCATION AND INUNDATION AREA OF BIARD LAKE DAM

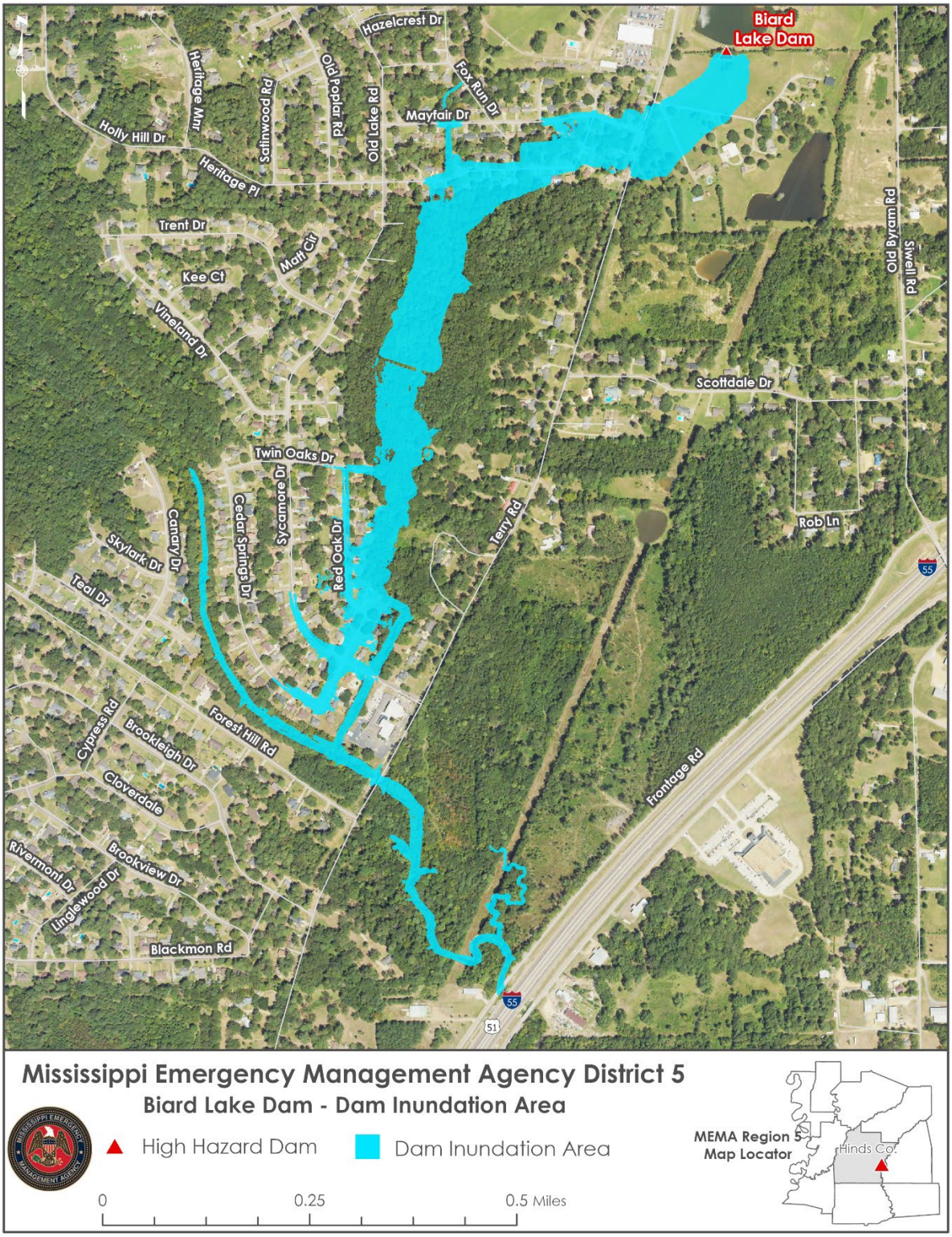


FIGURE 11: LOCATION AND INUNDATION AREA OF CAMP GARAYWA LAKE DAM

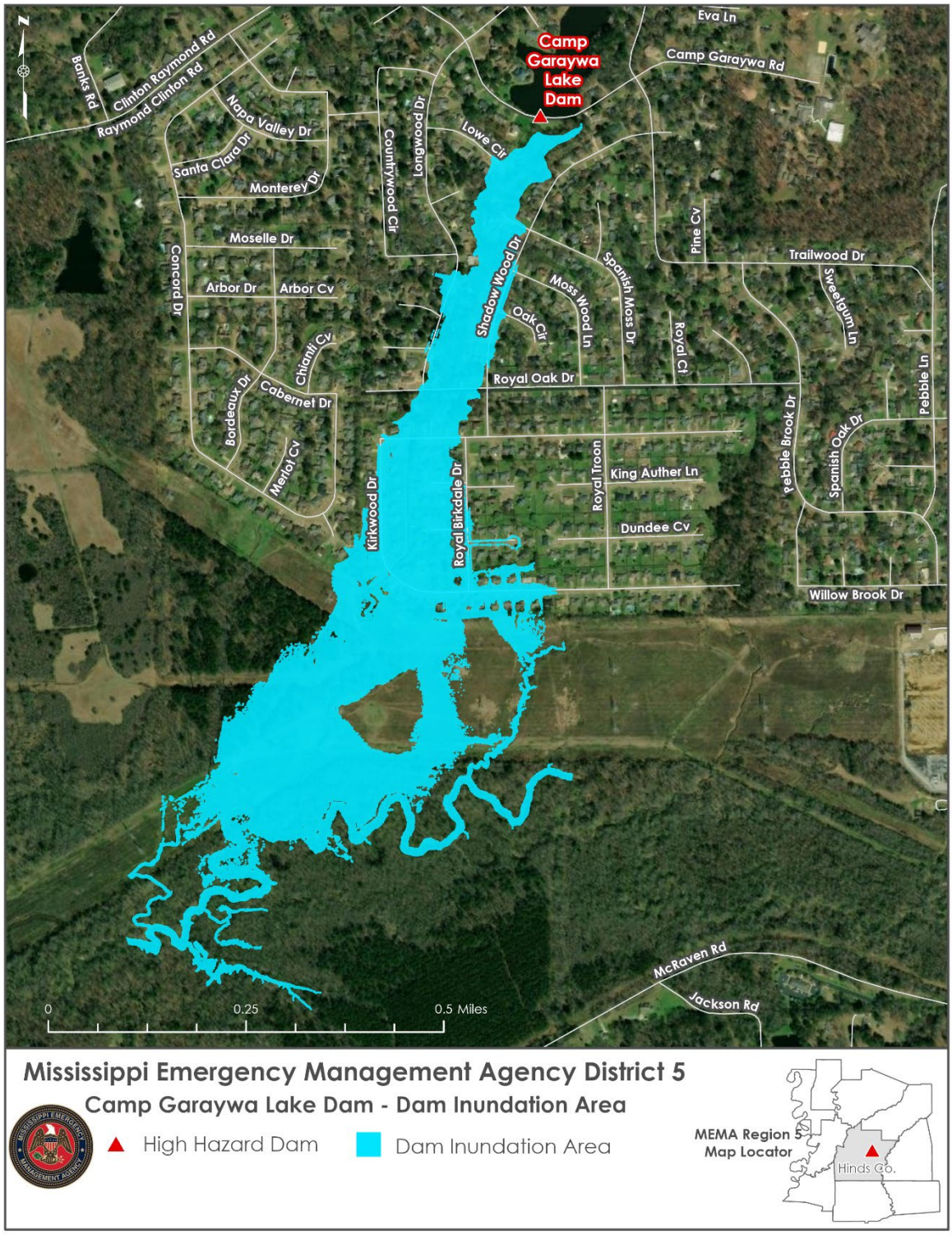


FIGURE 12: LOCATION AND INUNDATION AREA OF COLLIN LAKE DAM

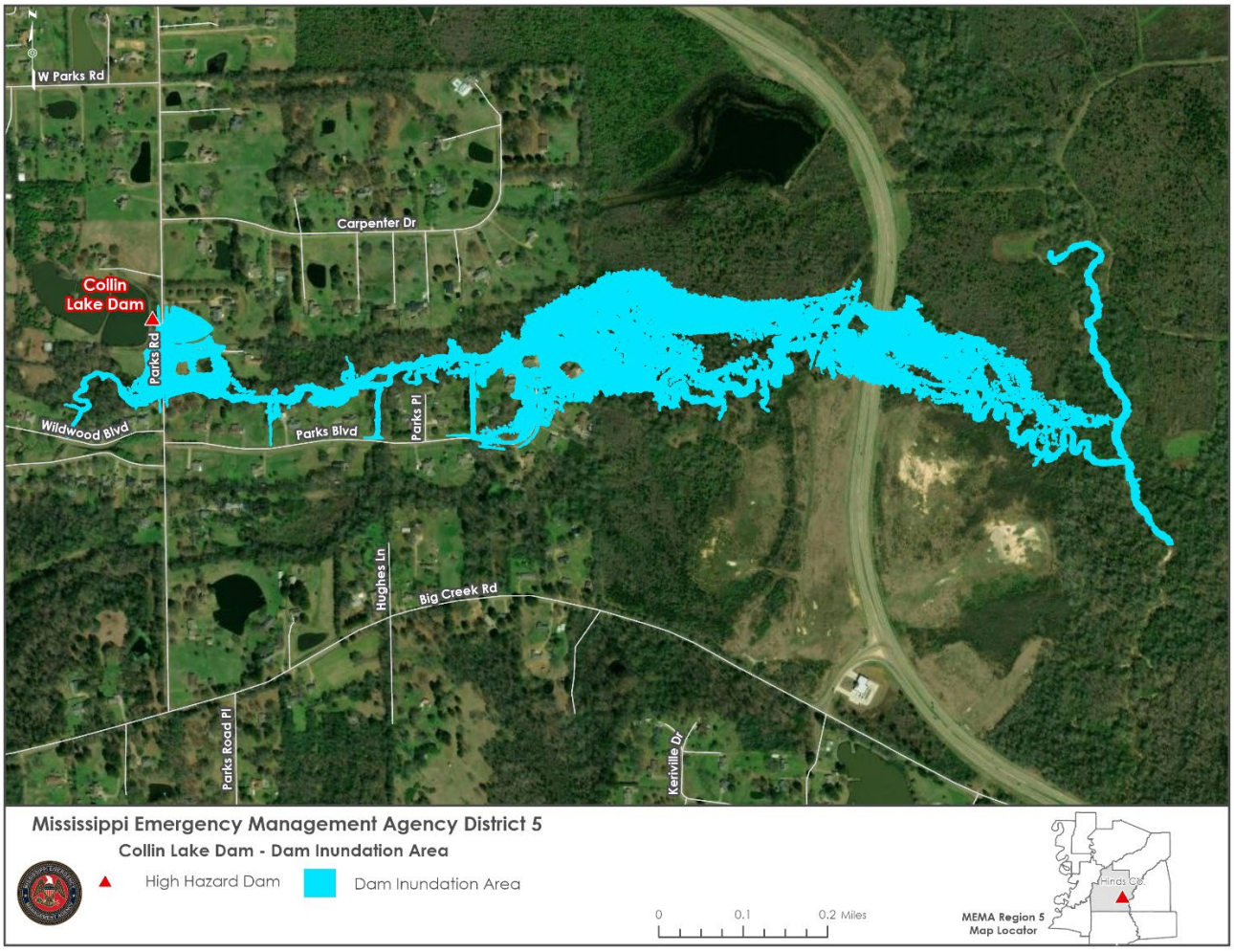


FIGURE 13: LOCATION AND INUNDATION AREA OF DENNERY POND DAM

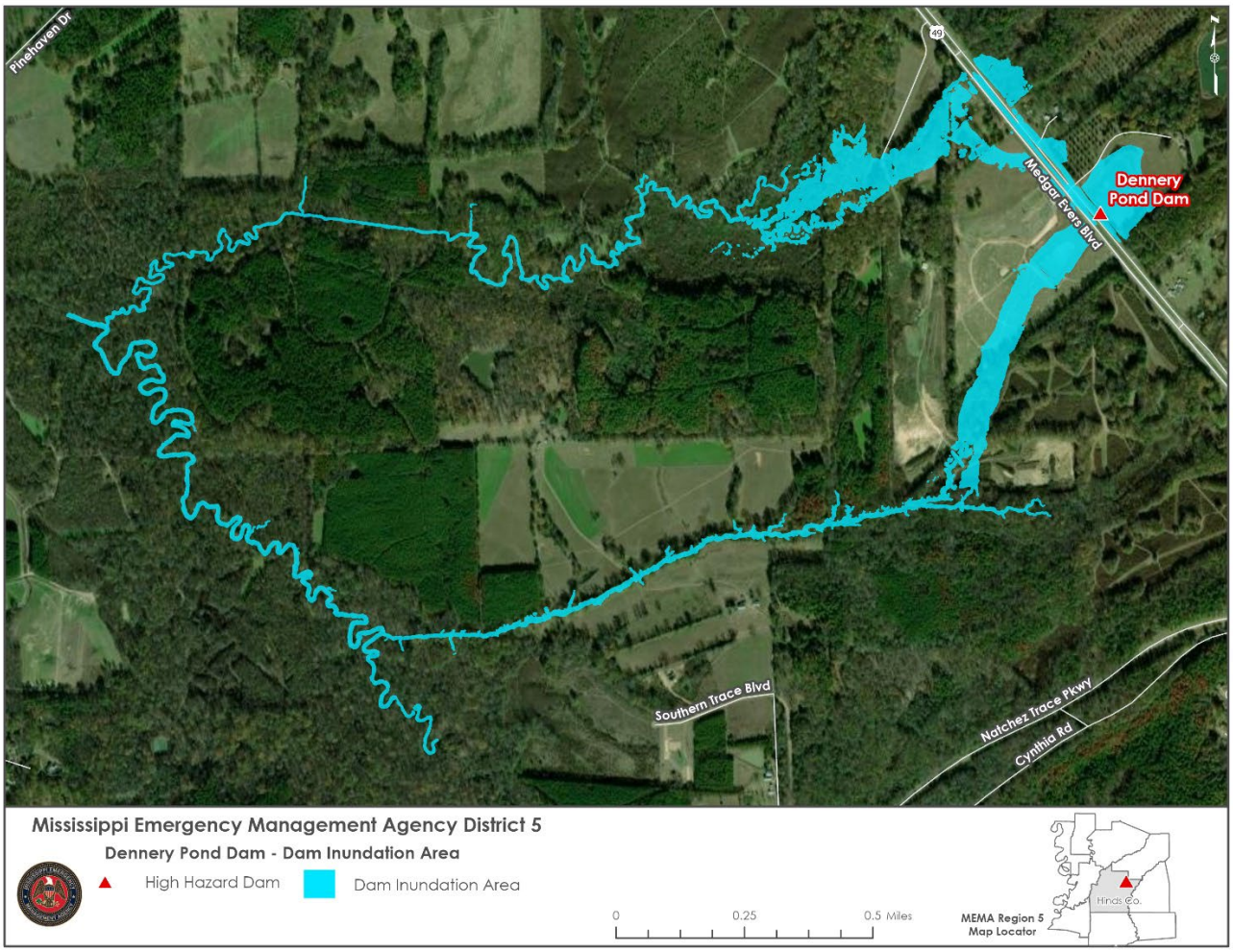


FIGURE 14: LOCATION AND INUNDATION AREA OF FRIDAY LAKE DAM

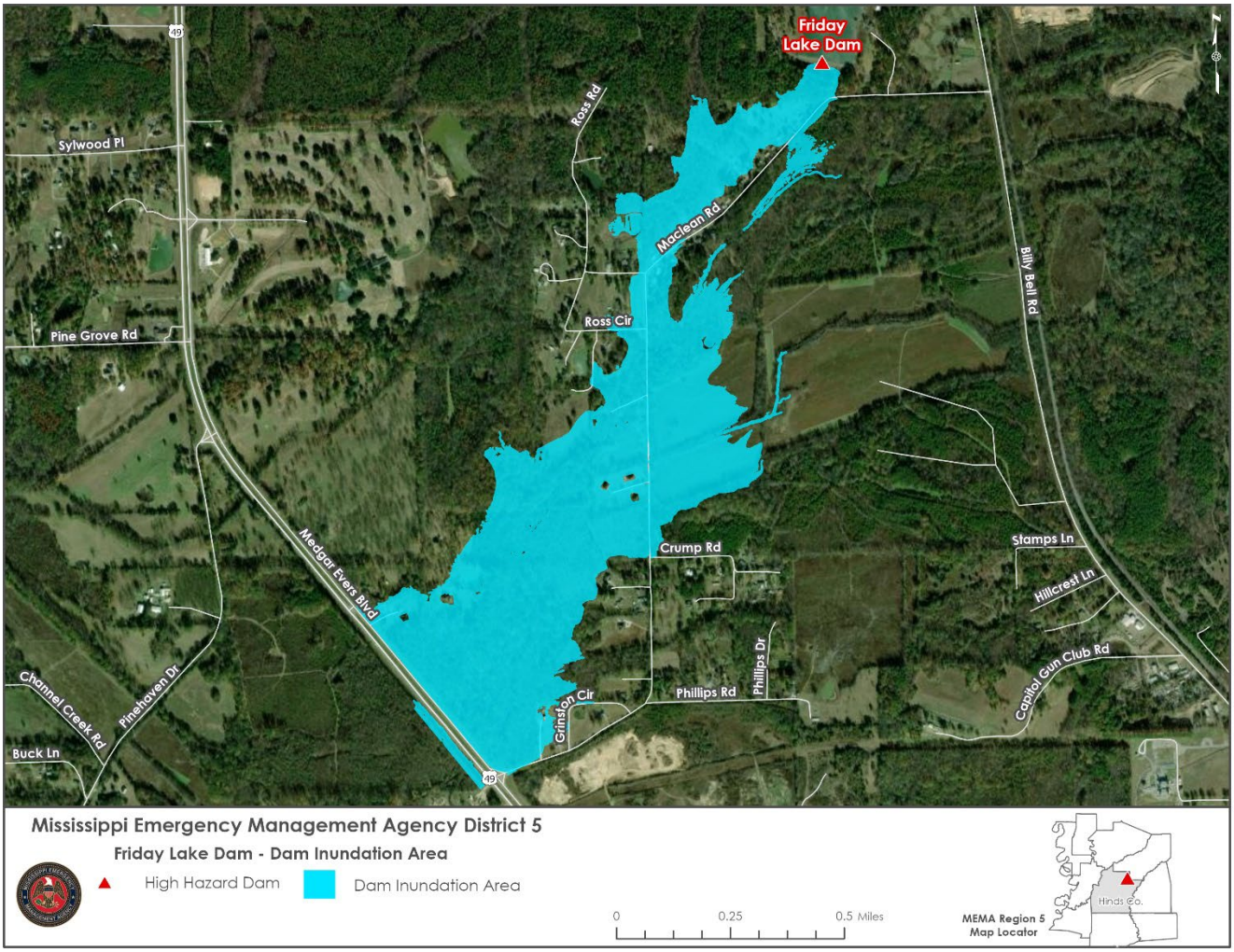


FIGURE 15: LOCATION AND INUNDATION AREA OF HOY LAKE DAM

FIGURE 16: LOCATION AND INUNDATION AREA OF J.C. GLADNEY LAKE DAM

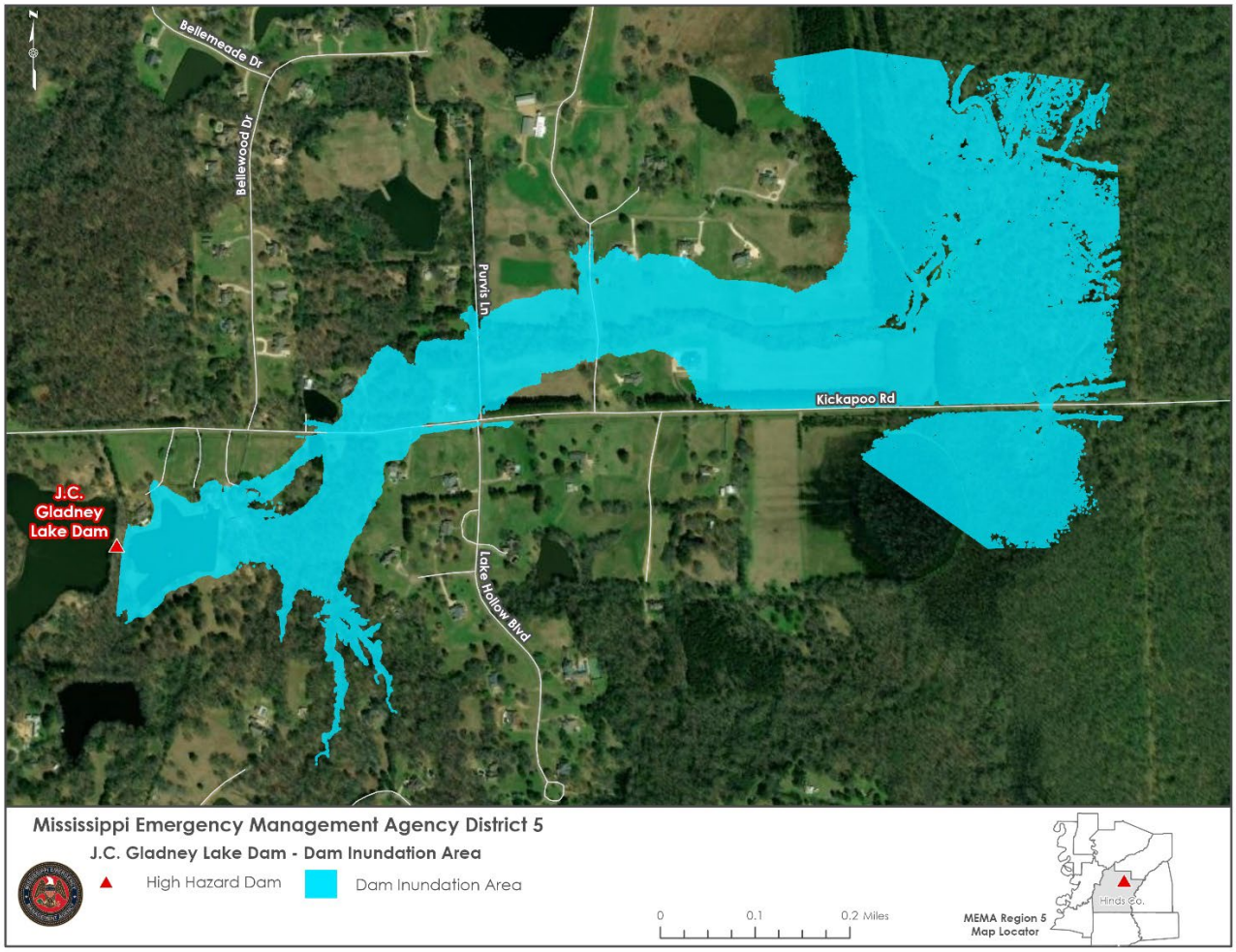


FIGURE 17: LOCATION AND INUNDATION AREA OF JONES LAKE DAM

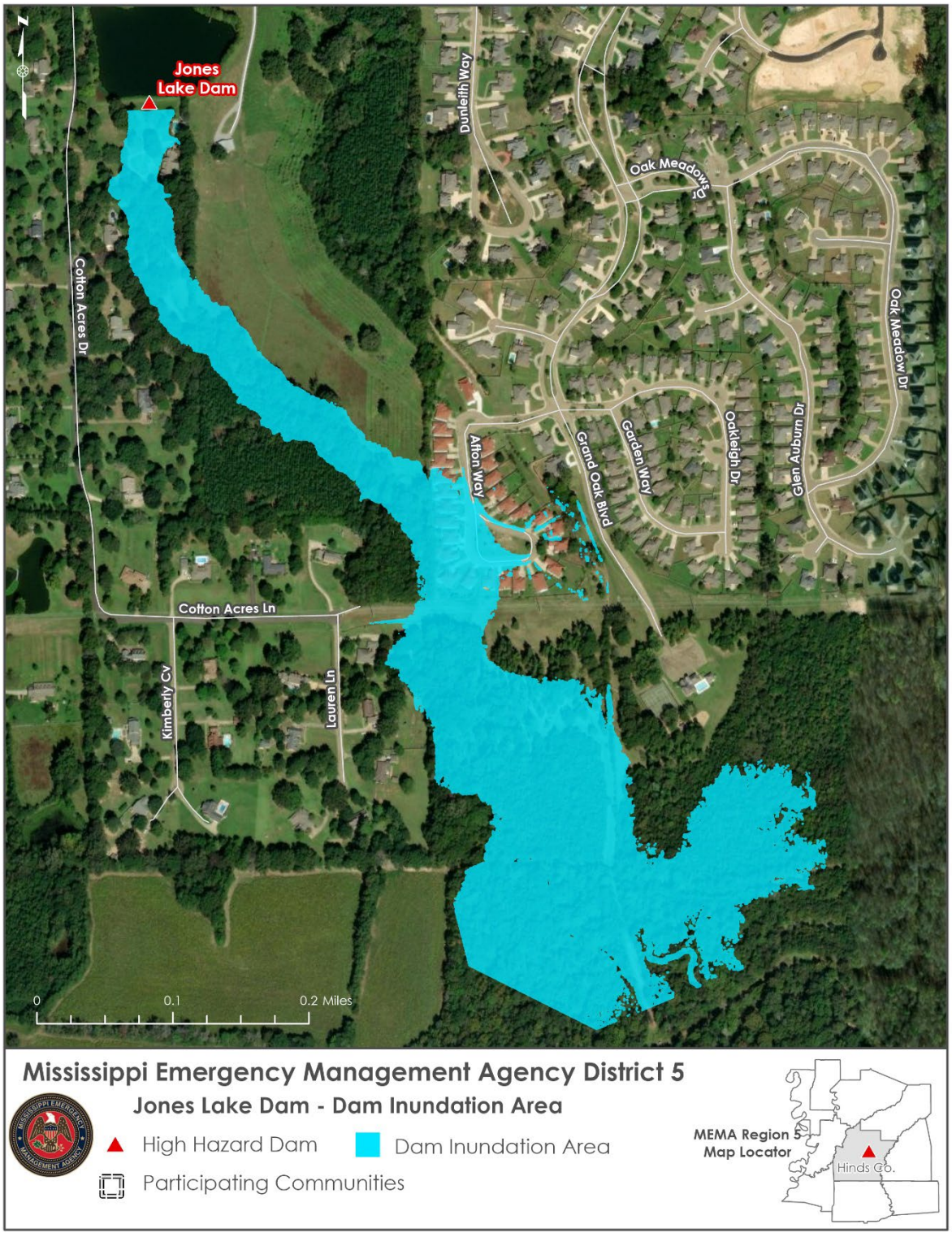


FIGURE 18: LOCATION AND INUNDATION AREA OF LAKE CATHERINE DAM

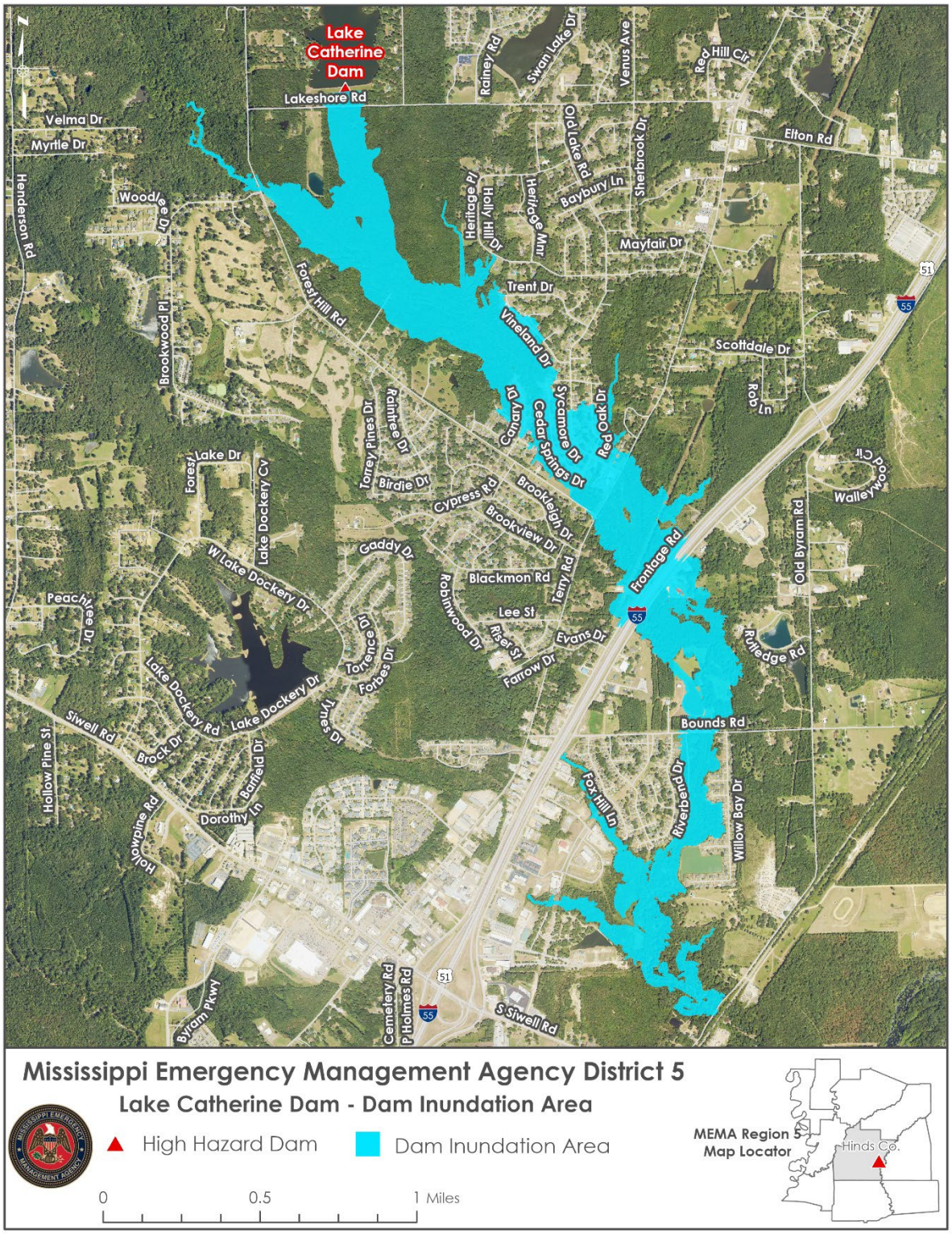


FIGURE 19: LOCATION AND INUNDATION AREA OF LAKE DOCKERY DAM

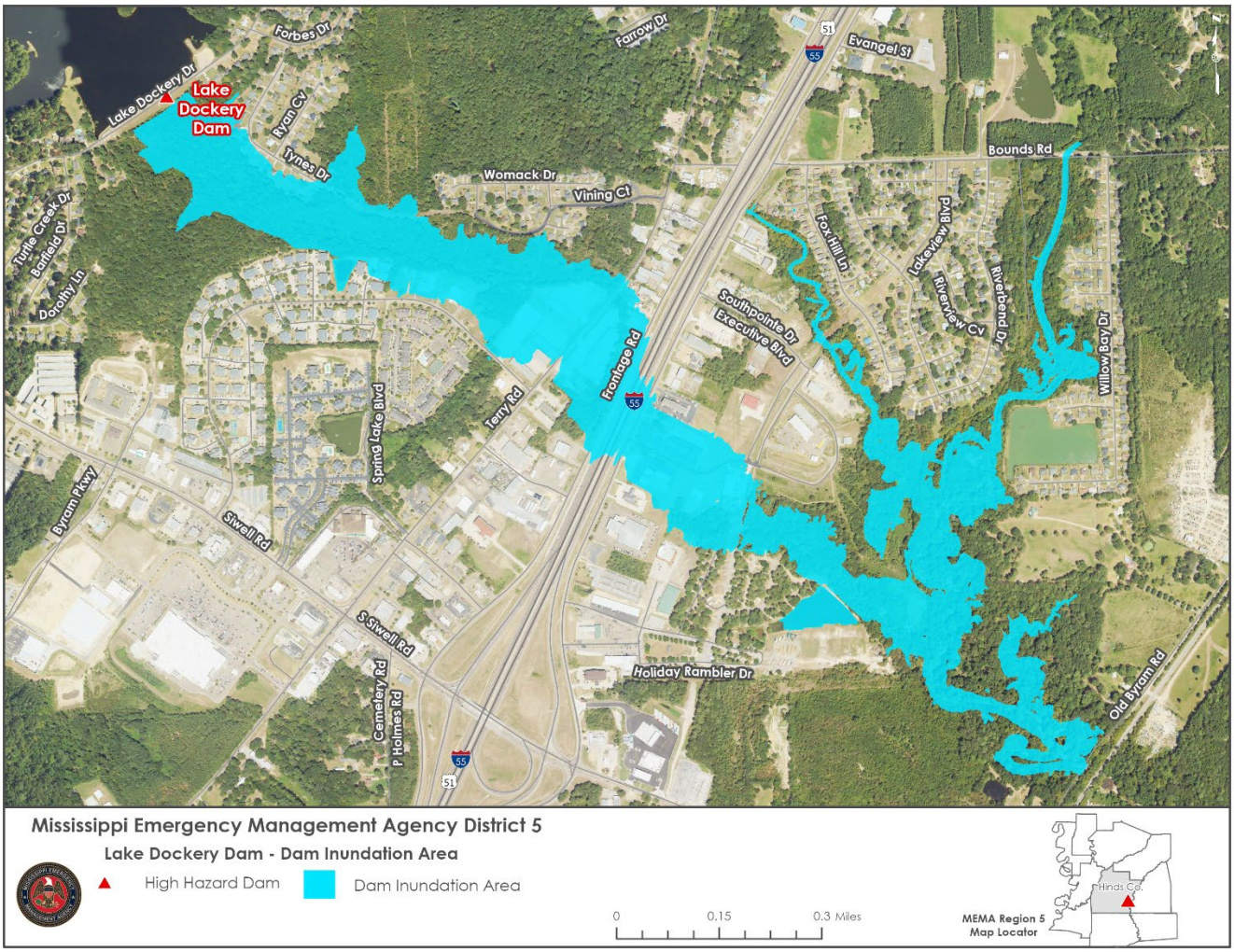


FIGURE 20: LOCATION AND INUNDATION AREA OF LAKE HICO DAM

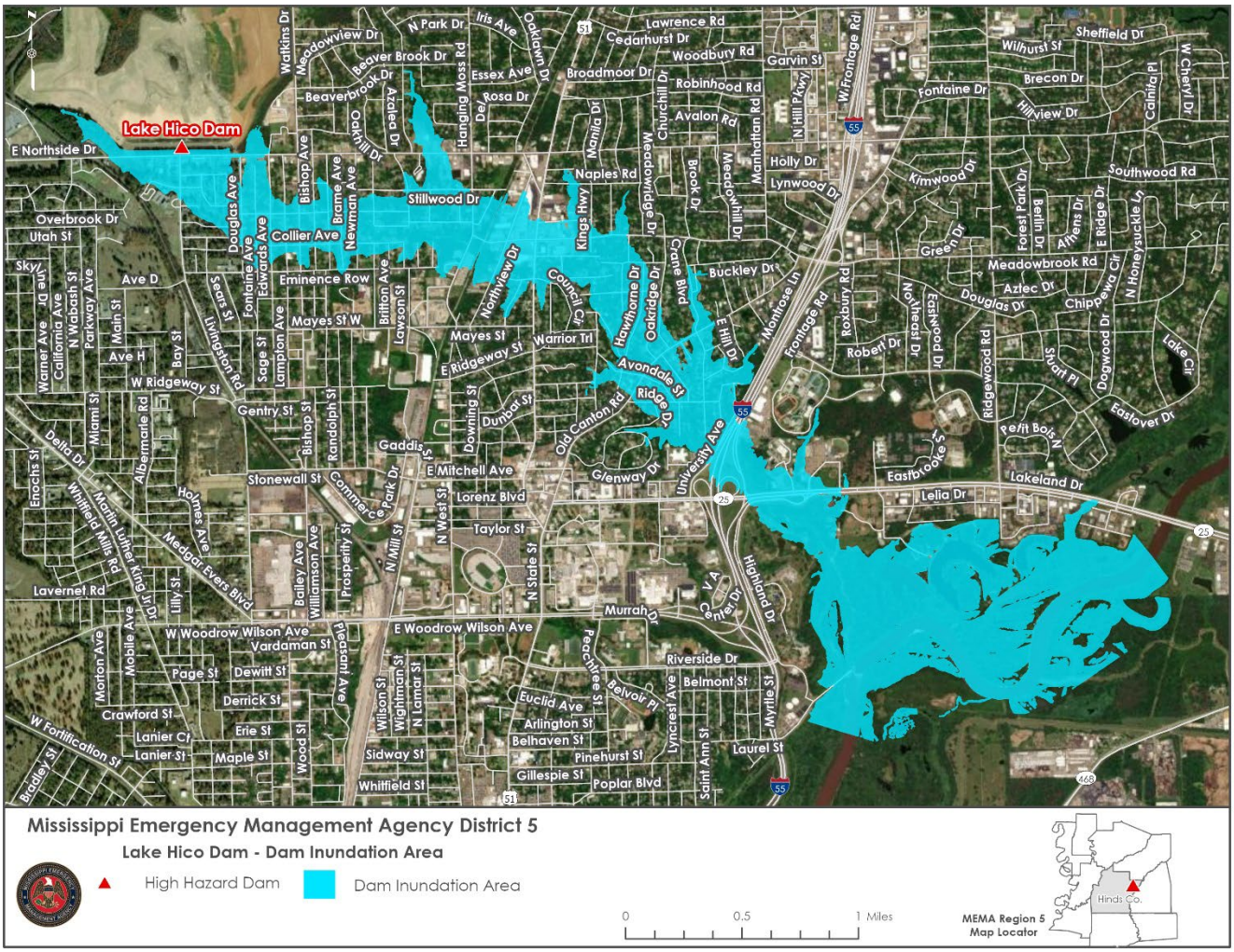


FIGURE 21: LOCATION AND INUNDATION AREA OF LAKE RIDGELEA DAM

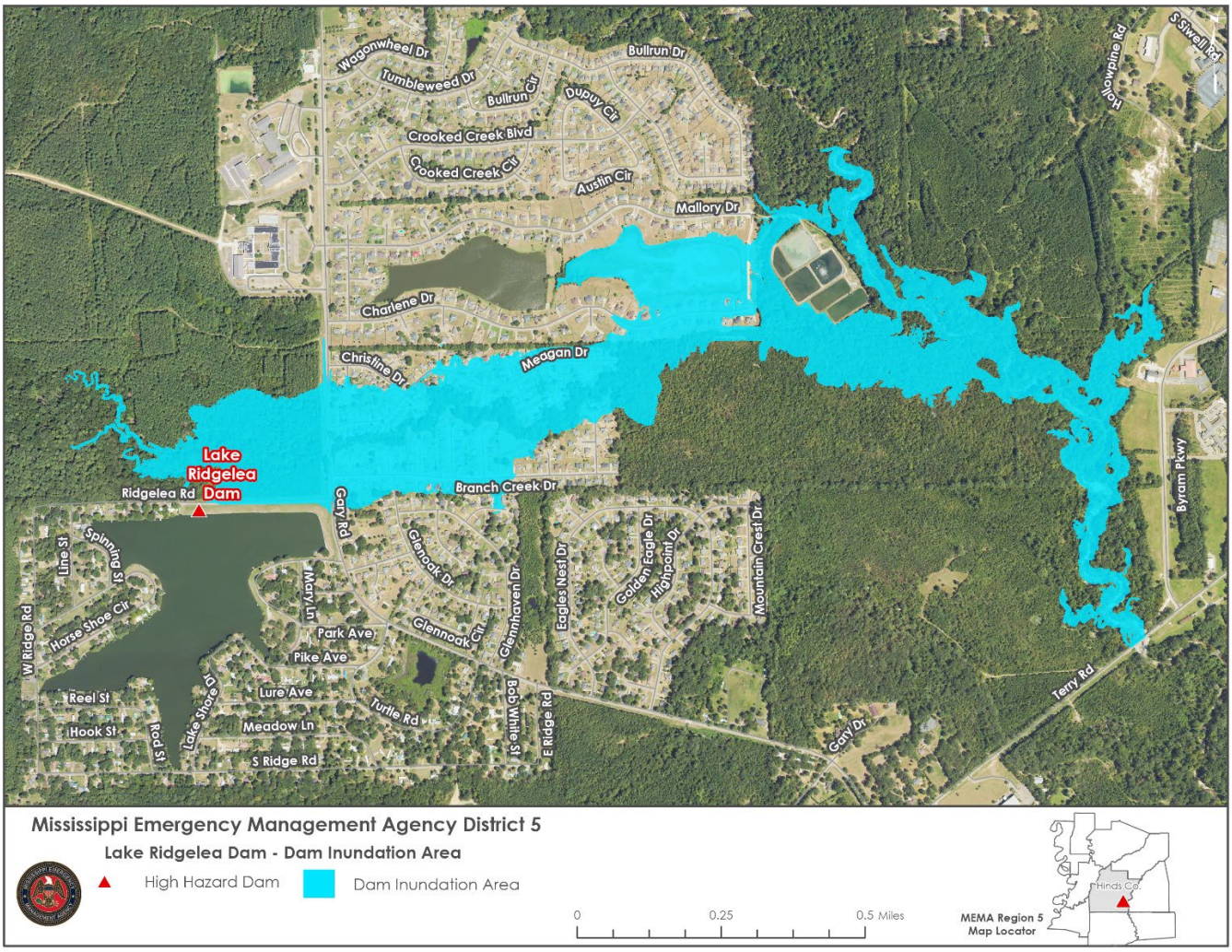


FIGURE 22: LOCATION AND INUNDATION AREA OF LAKEVIEW RESERVOIR DAM

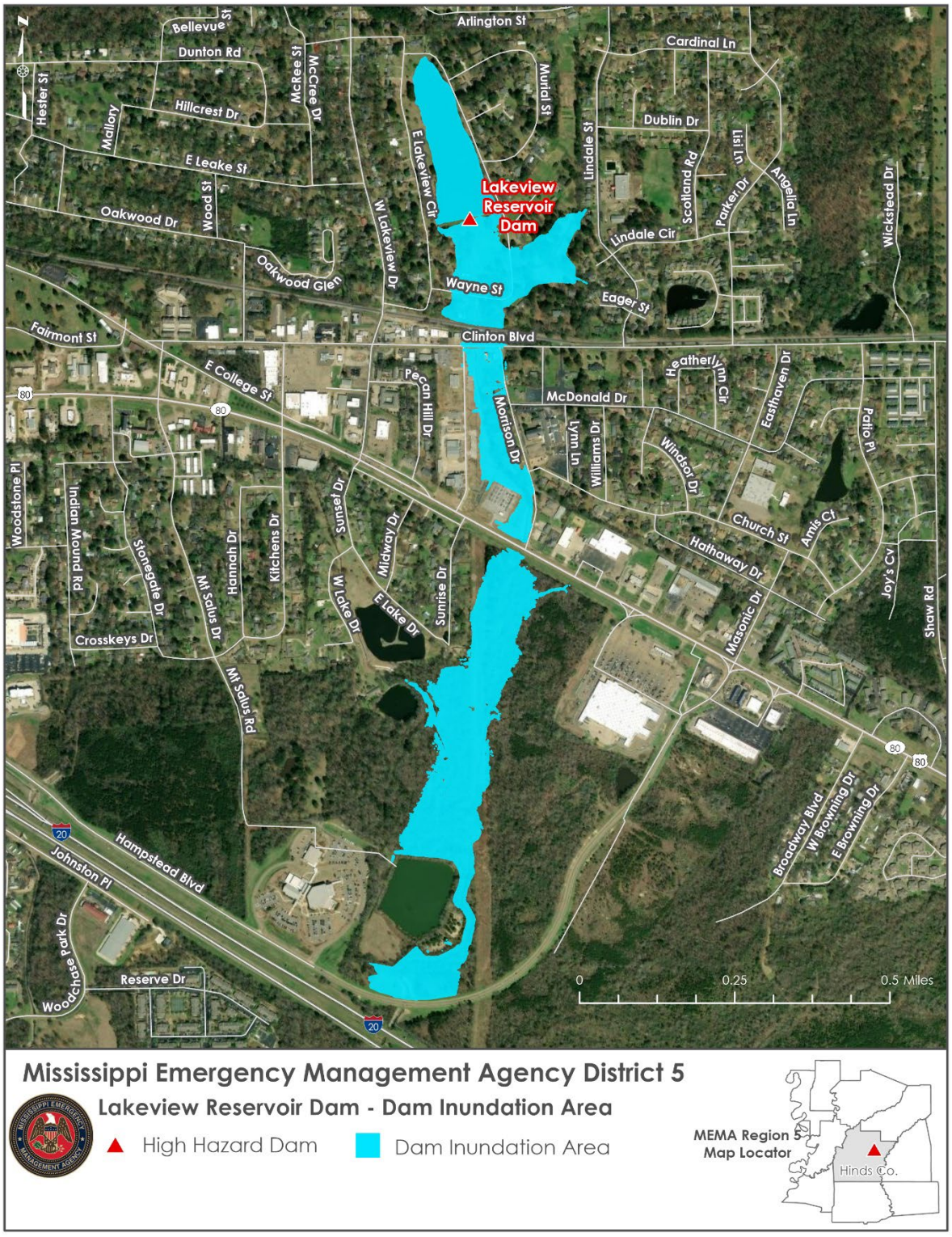


FIGURE 23: LOCATION AND INUNDATION AREA OF LAZY C. CLUB LAKE DAM

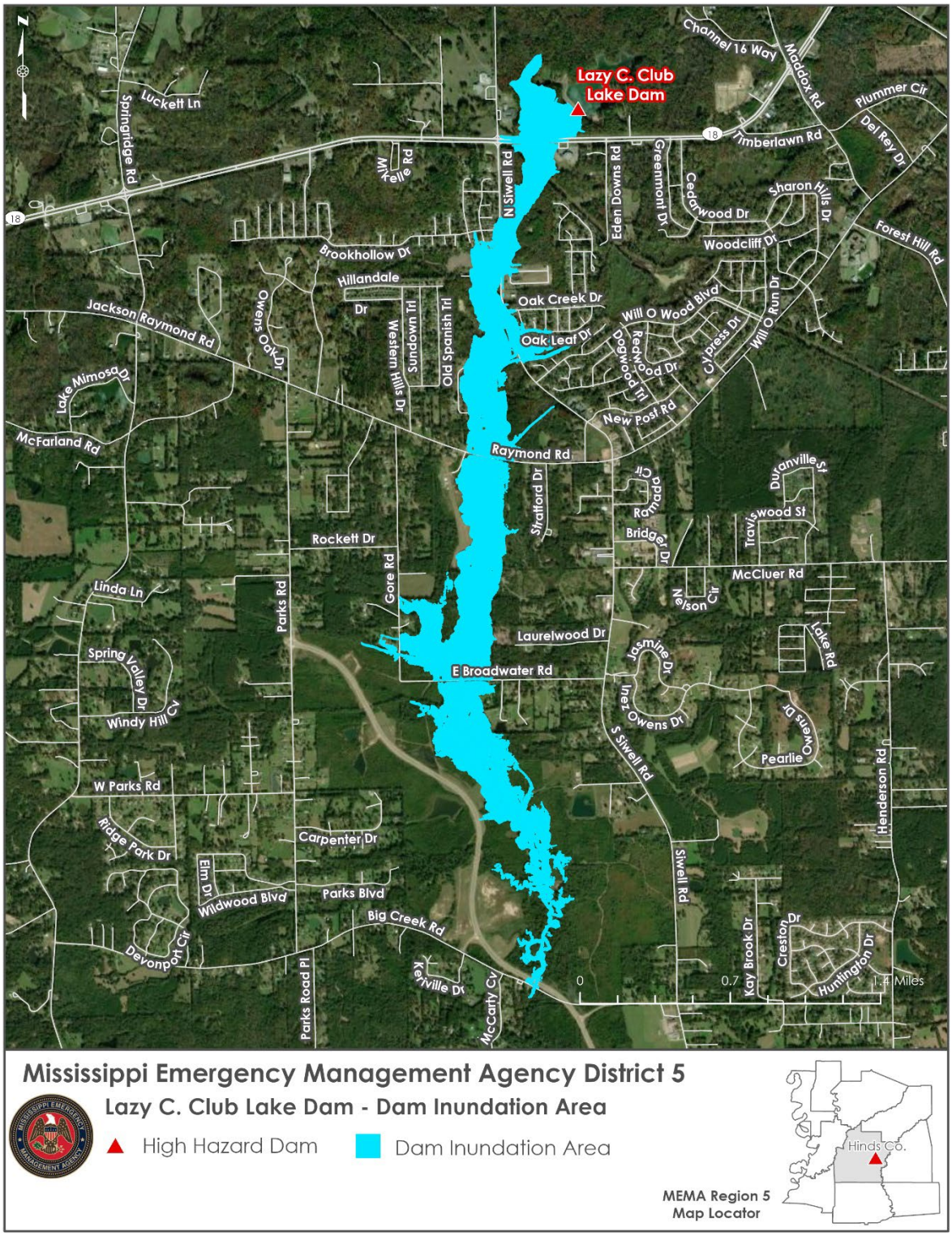


FIGURE 24: LOCATION AND INUNDATION AREA OF MAGEE LAKE DAM

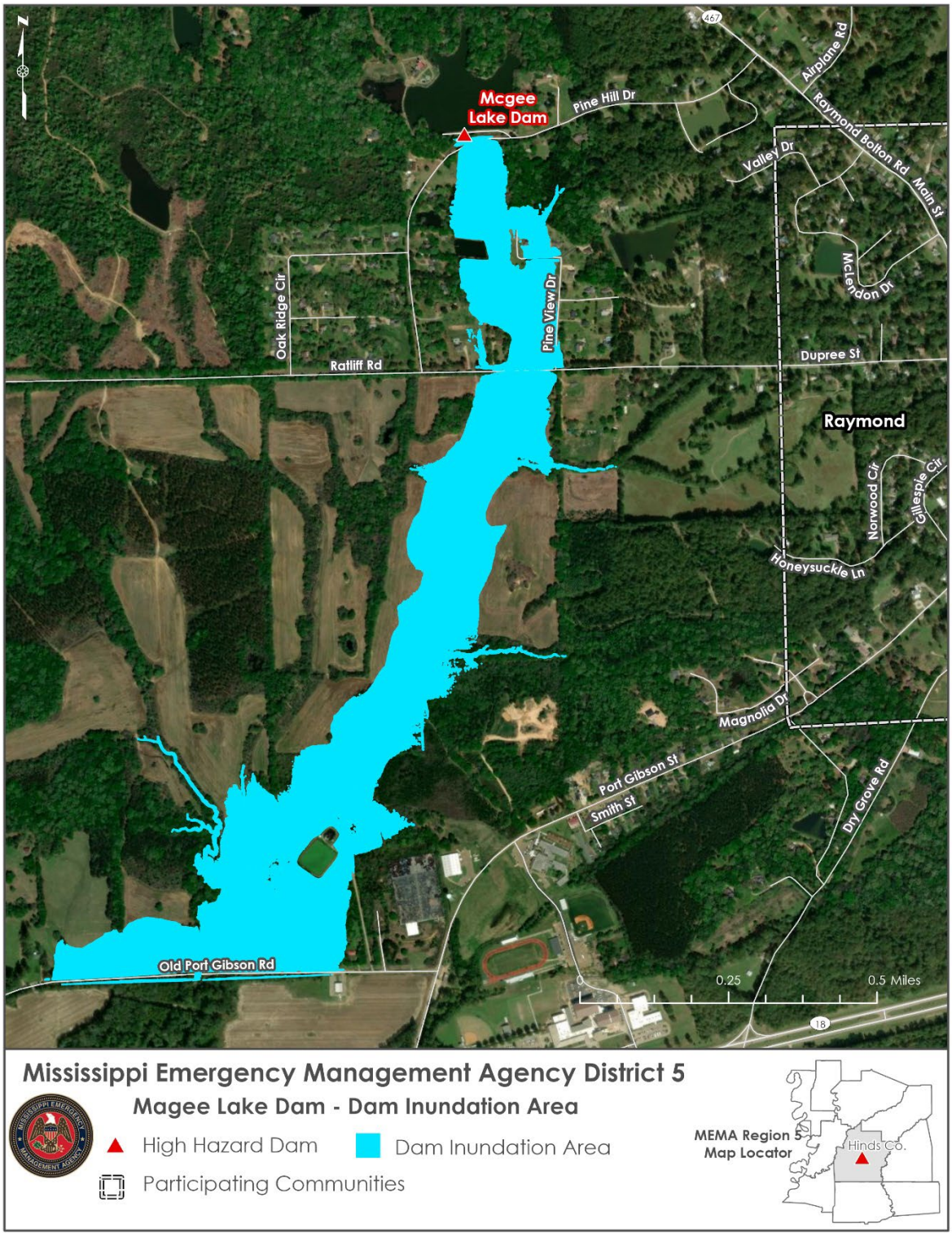


FIGURE 25: LOCATION AND INUNDATION AREA OF MIMOSA LAKE DAM

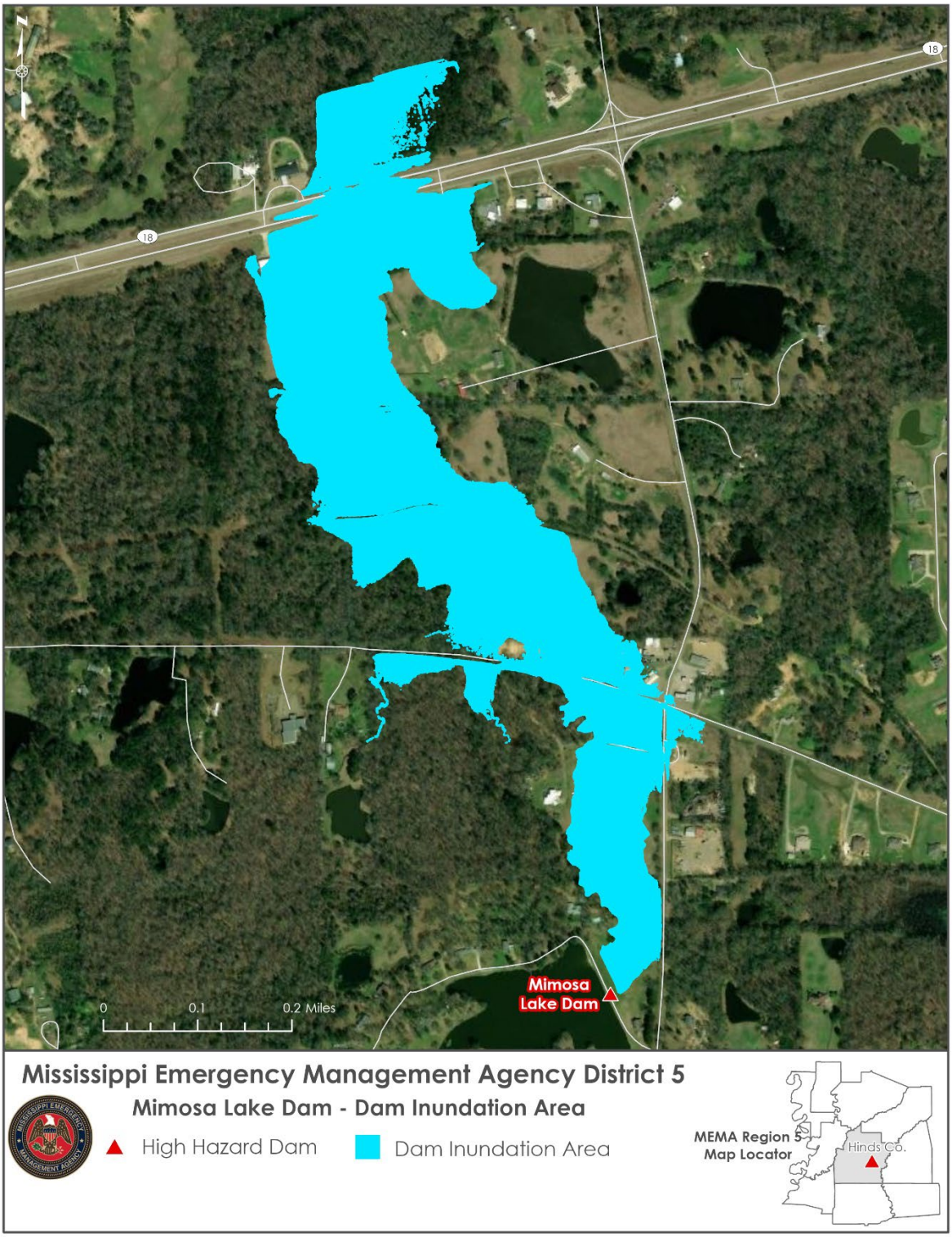


FIGURE 26: LOCATION AND INUNDATION AREA OF MULTIP MANOR DAM

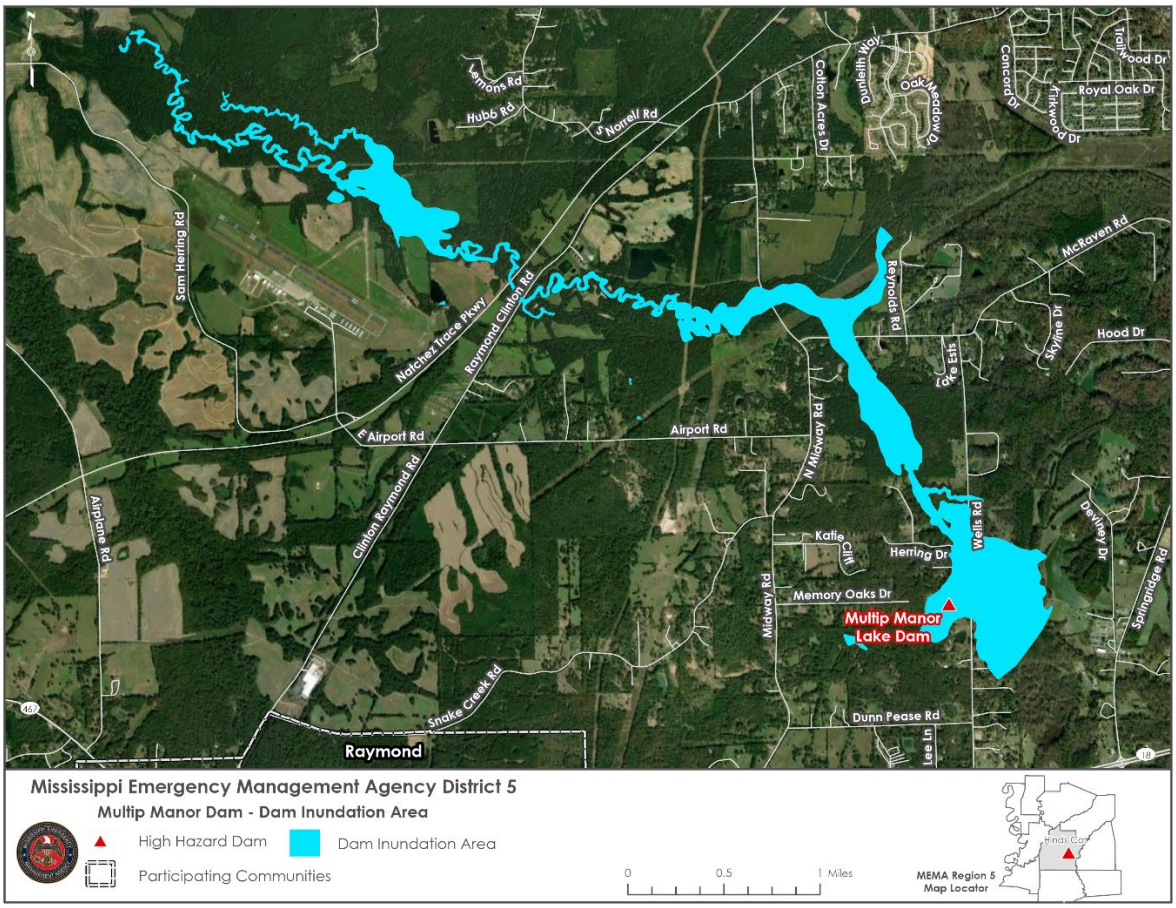


FIGURE 27: LOCATION AND INUNDATION AREA OF RAYMOND LAKE DAM

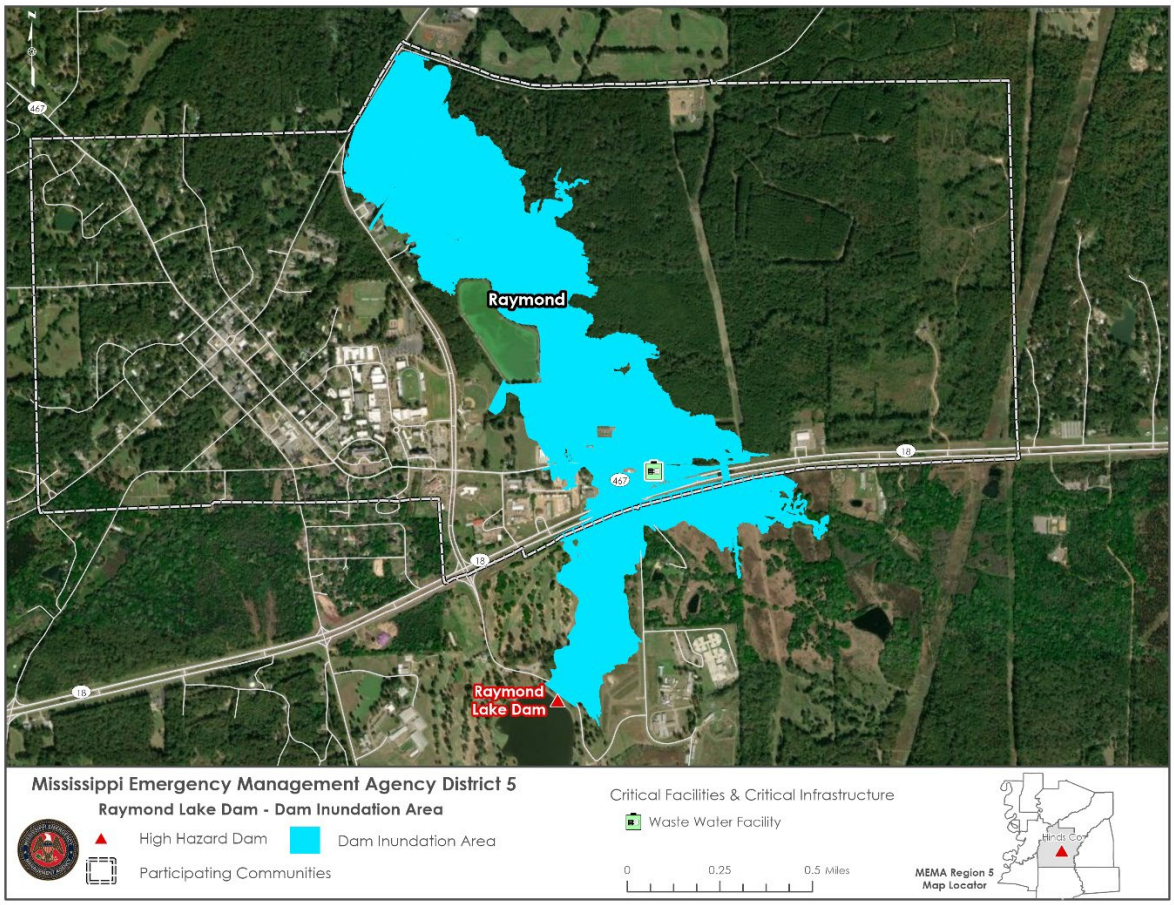


FIGURE 28: LOCATION AND INUNDATION AREA OF REGENCY ESTATES LAKE DAM

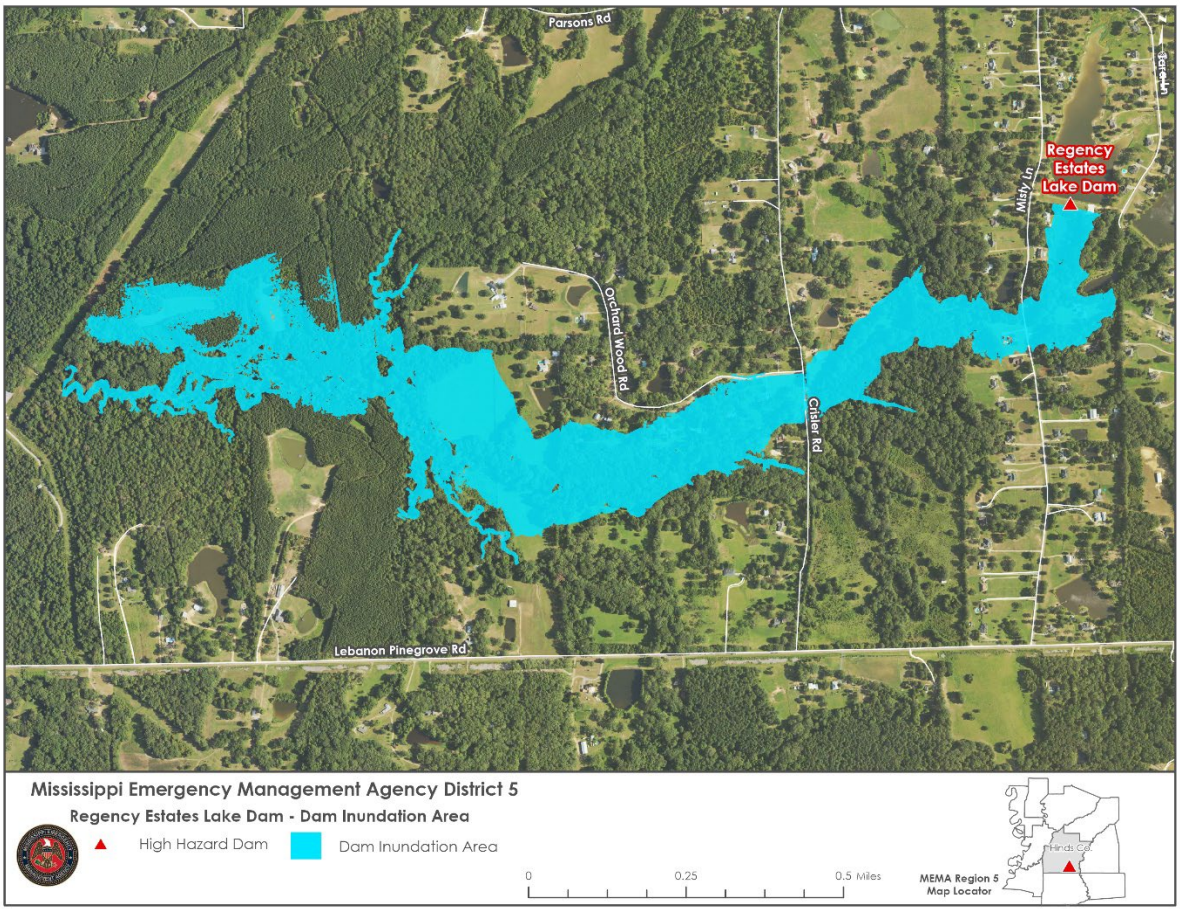


FIGURE 29: LOCATION AND INUNDATION AREA OF RICE ACRES LAKE DAM

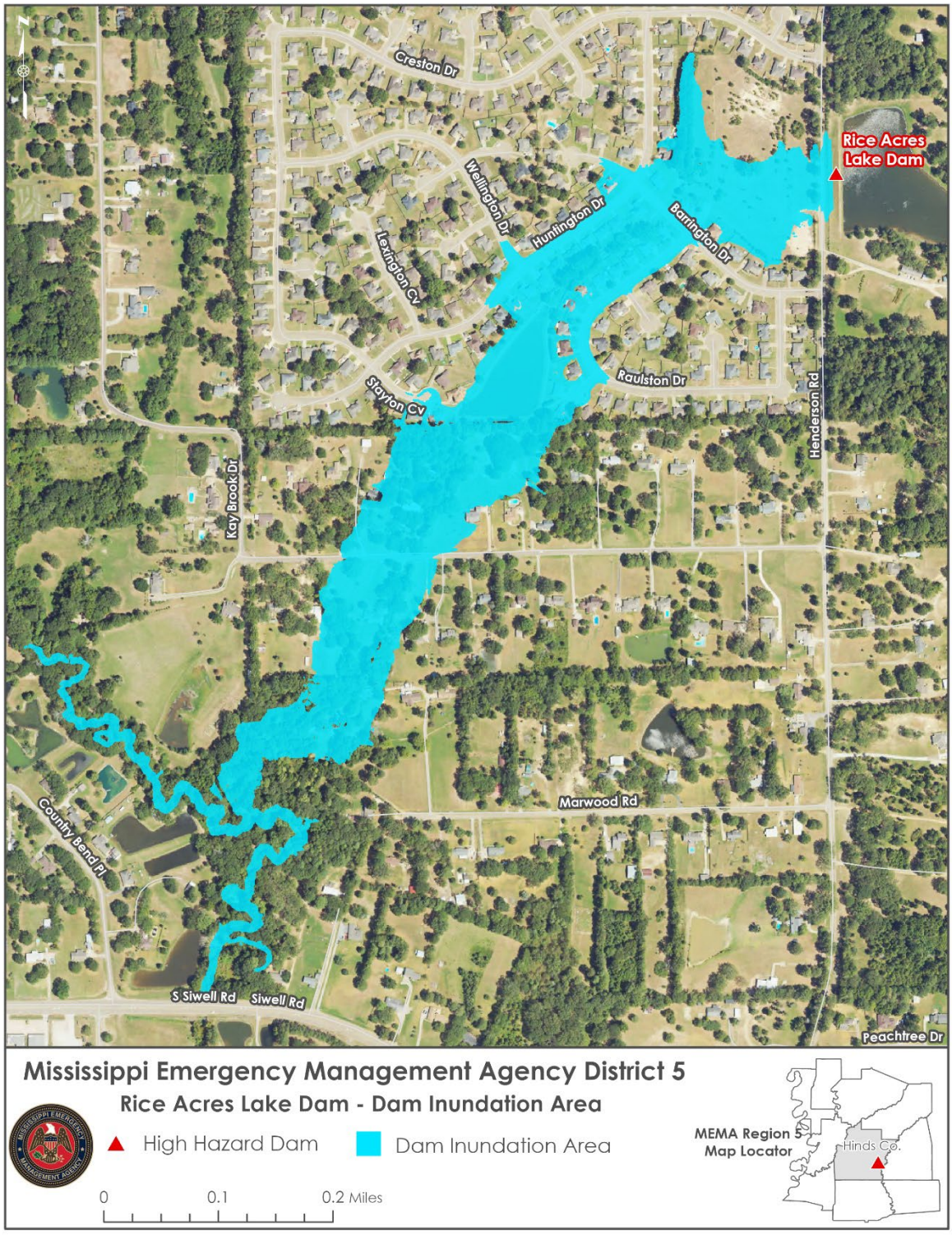


FIGURE 30: LOCATION AND INUNDATION AREA OF SPRING LAKE DAM

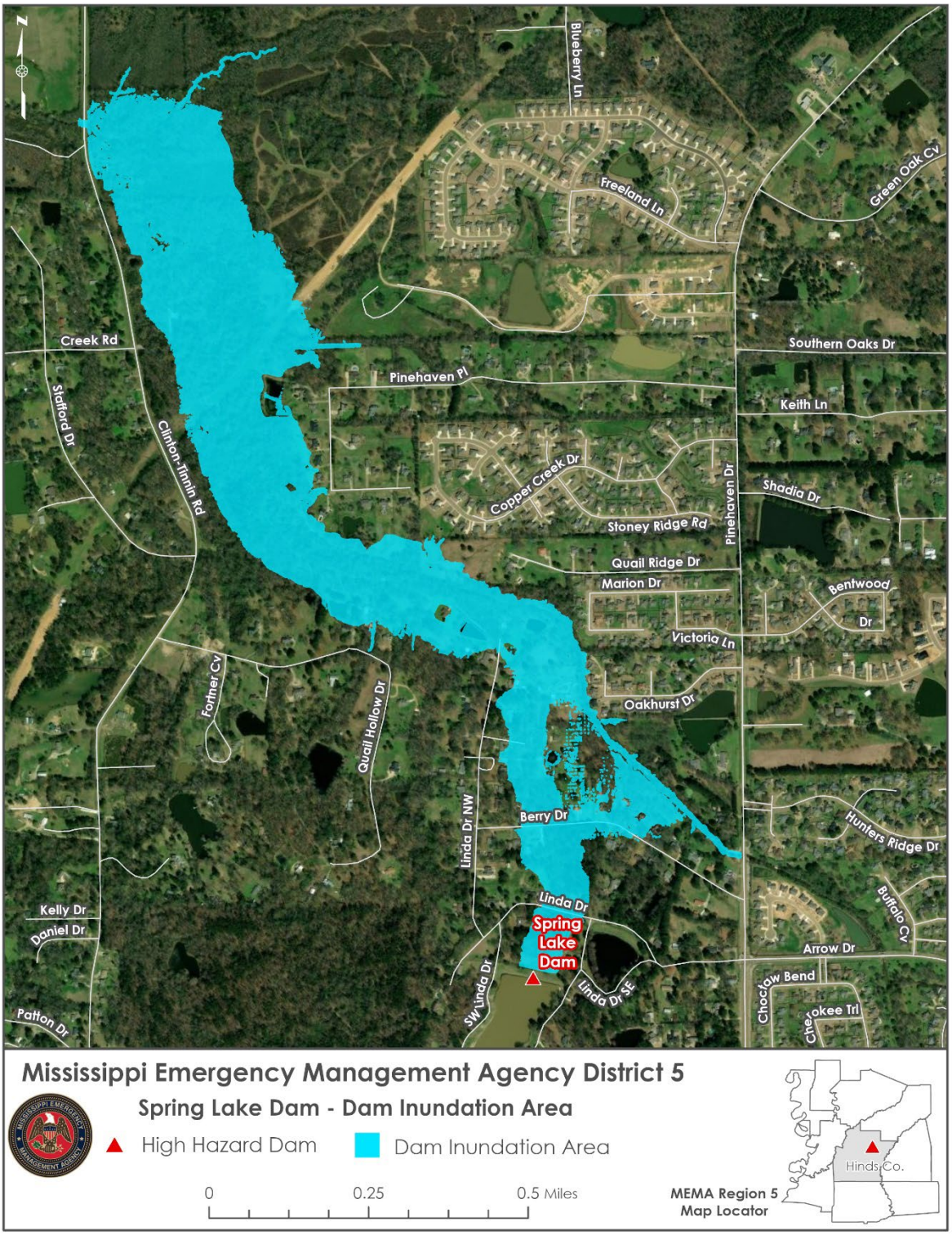
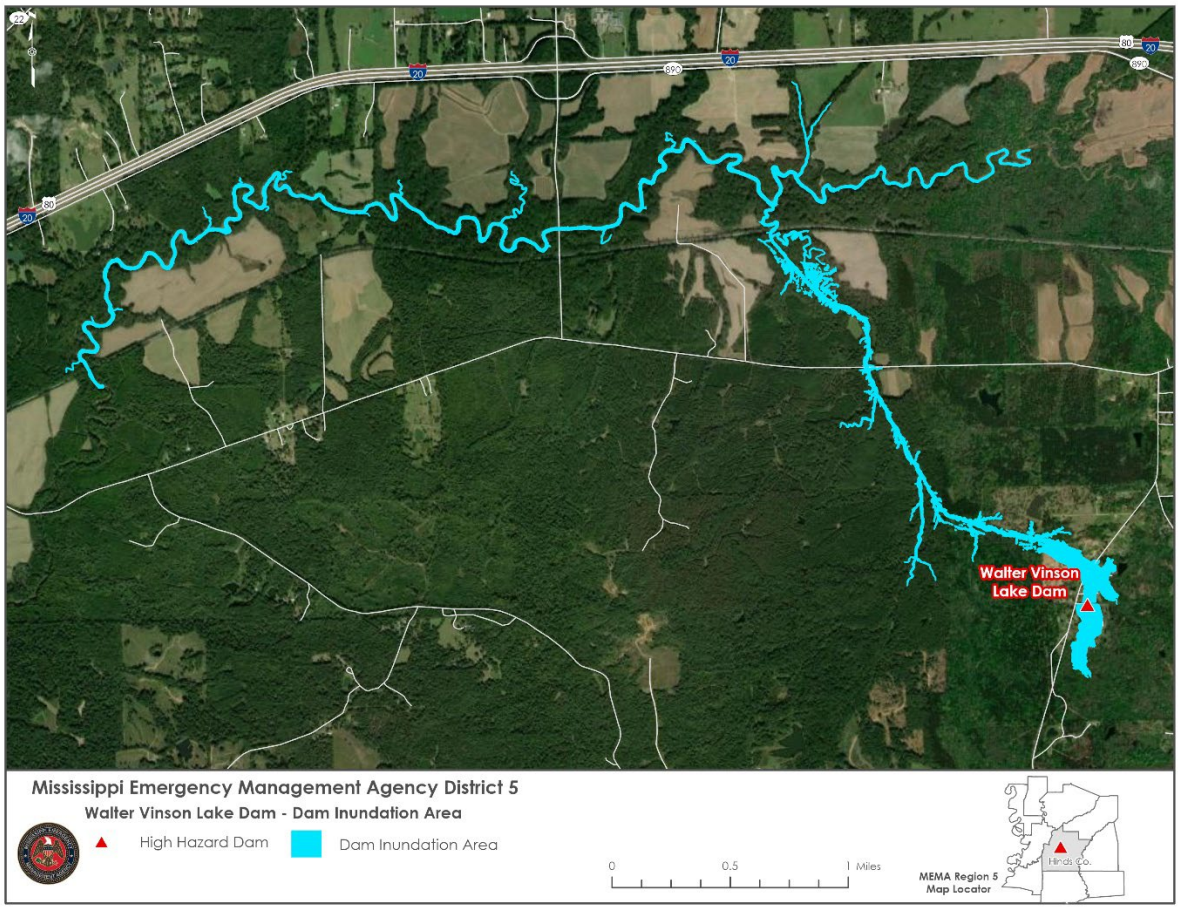


FIGURE 31: LOCATION AND INUNDATION AREA OF WALTER VINSON LAKE DAM



Based on the high number of high hazard dams and inundation areas across the County, the residents of Hinds County are vulnerable to the potential failure of each of the 24 high hazard dams. These classifications were designed based on the potential impacts of failure of said dams. In the event of the failure of a high-hazard dam, loss of life is probable, as are economic, environmental, and lifeline impacts.

In the event of the failure of a significant hazard dam, loss of life is not expected, but economic, environmental, and lifeline impacts are expected. In the event of the failure of a low-hazard dam, there is no anticipated loss of life, and economic, environmental, and lifeline impacts are expected to be minimal, with losses principally limited to the owner's property.

4.1.2. PREVIOUS OCCURRENCES

Since the last plan update, MDEQ Dam Safety Division has recorded three breaches in Hinds County and zero were categorized as high hazard dams. It is important to note that some failures may not have been detected and reported. **Table 37** below lists the dam failures within Hinds County since the last plan update. There have been no reported levee failures from the Jackson-Fairground Levee System. However, there has been one overtopping event in 1979. There was minimal damage from that event.

TABLE 37: DAM FAILURES IN HINDS COUNTY | SOURCE: 2023 STATE HAZARD MITIGATION PLAN

Date	County	Structure Name	Cause of Failure
August 2022	Hinds	Raymond Sewage Lagoon	Backslope erosion
March 2021	Hinds	Linda Drive	Downstream slope seepage
January 2020	Hinds	Holmes Lake Dam	Piping

4.1.3. PROBABILITY OF FUTURE OCCURRENCES

Structural vulnerabilities in dams may be observable through external inspection; however, failure can still occur unexpectedly, even during fair weather conditions. A sunny day breach, particularly in earthen dams, can result in sudden and severe flooding. While there are tools and methods available to assess the likelihood of imminent failure, these do not always provide sufficient foresight into future events. Consequently, all dams located within the County should be considered at risk of breach at any time. The probability of future failure in Hinds County is classified as **Low**, indicating a persistent potential for occurrence and the extent of inundation areas within the County. Based on the location and lack of previous occurrences, the provability of future dam failures is **Unlikely** to Raymond, Bolton, Edwards, and Utica.

4.1.4. LOCALIZED VULNERABILITY ASSESSMENT

4.1.4.1. OVERALL VULNERABILITY

All dams and levees within Hinds County are considered susceptible to breach at any time. Breaches may lead to impacts across community lifelines, as described in the base plan. In the event of the high hazard dam failing in Hinds County, all people, systems, structures, and the environment would be vulnerable to significant and catastrophic impacts. The risk of dam failure occurring in Hinds County and Edwards is **Medium** due to the history of previous occurrences and high number of dams and high hazard potential dams. However, due to the lack of previous occurrences, and small area impacted, the risk of levee failures to Raymond, Edwards, and Utica is **Low**.

Dam failures at any class could cause damage. In the event of a levee failure the levee protected area within the City of Jackson would be at risk of flooding and subject to flood damage to its community. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to dam/levee failures.

4.1.4.2. CRITICAL FACILITIES

There is one critical facility in Hinds County within the mapped inundation area of the Raymond Lake Dam, as described in the **Table 38** below and **Figure 27** above. However, inundation mapping is not required or available for all dam classifications, and this should not be considered an exhaustive list of the facilities that might be impacted by this hazard. All structures located downstream of a dam are at some level of risk. There are no mapped Hinds County critical facilities within the leveed protected area from the Jackson-Fairground Levee System.

TABLE 38: CRITICAL FACILITIES IN DAM INUNDATION AREAS IN HINDS COUNTY

Jurisdiction	Facility Type	Facility	Dam
Hinds County	Waste Water Facility	E. Main Street Lift Station	Raymond Lake Dam

4.1.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Dam failure has the potential to cause severe and sudden impacts to cultural, historic, and natural resources in the County due to rapid downstream flooding, high-velocity flows, and extensive erosion. Historic structures, cemeteries, archeological sites, and culturally significant landscapes located downstream of dams or along rivers and creeks may be damaged or destroyed by inundation, scour, or debris impacts associated with a dam breach. Floodwaters can erode soils and displace archeological materials, resulting in irreversible loss of cultural resources and historic context. Natural resources may also experience significant impacts, including stream channel alteration, sediment deposition, destruction of wetlands and riparian habitats, reduced water quality, and displacement or loss of wildlife. All structures located downstream of a dam are at some level of risk.

Much of the levee protected area from the Jackson-Fairground Levee System encompasses the Mississippi State Fairgrounds.

4.1.4.4. PEOPLE

The primary impact of dam failure is flooding, which is more likely to impact older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate and harder to recover. In the County, individuals living below the poverty level are very high at 22%. These populations can experience disproportionate impacts to dam failures and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. The population within the leveed protected area is also vulnerable and at risk of impacts from flooding in the event of a levee failure. There are some residential structures located within the leveed protected area.

4.1.4.5. STRUCTURES AND SYSTEMS

Dam failure can result in sudden and severe impacts to structures and systems in the County due to rapid flooding, high-velocity water flow, and debris transport downstream of a breached dam. Residential, commercial, and public structures located within dam-inundation areas may experience extensive structural damage or complete destruction as foundations, walls, and load-bearing components are undermined by erosion and scour. Utility systems such as water, wastewater, electrical, and communications infrastructure may also be damaged or disabled by floodwaters, resulting in service interruptions, contamination risks, and prolonged outages. All structures within dam inundation areas would be at risk of flooding and damage. Transportation systems, including roads, bridges, and culverts, are particularly vulnerable to washouts and structural failure, which can isolate communities and impede emergency response and recovery efforts. Transportation infrastructure in the mapped inundation areas of the 24 high hazard dams is listed in **Table 39**. All structures and systems located downstream of a dam are at some level of risk.

All structures and systems within the leveed protected area within the City of Jackson would be vulnerable for flood related impacts in the event of a levee failure.

TABLE 39: TRANSPORTATION SYSTEMS IN INUNDATION AREAS

Dam Name	Roadways Impacted
Associates Lake Dam	Multiple Unnamed Roadways
BASF Catalyst Pond #5 Dam	N/A
Biard Lake Dam	Cedar Springs Drive Sycamore Drive

Dam Name	Roadways Impacted
	Red Oak Drive Twin Oaks Drive Heritage Place Mayfair Drive
Camp Garaywa Lake Dam	Kirkwood Drive Royal Birkdale Drive Shadow Wood Drive Lowe Circle Oak Circle Moss Wood Lane Longwood Drive
Collin Lake Dam	Parks Road Parks Boulevard
Dennery Pond Dam	U.S. Highway 49
Friday Lake Dam	Maclean Road Grinston Circle Crump Road Ross Circle
Hoy Lake Dam	Multiple Unnamed Roadways
J.C. Gladney Lake Dam	Kickapoo Road Lake Hollow Boulevard Purvis Lane Multiple Unnamed Roadways
Jones Lake Dam	Alton Way Cotton Acres Lane
Lake Catherine Dam	Interstate 55 Frontage Road Fox Hill Lane Riverbend Drive Bounds Road Terry Road Canary Drive Cedar Springs Drive Sycamore Drive Red Oak Drive Vineland Drive Trent Drive Lakeshore Road
Lake Dockery Dam	Interstate 55 Frontage Road Tynes Drive Terry Road Vining Court Old Byrum Road

Dam Name	Roadways Impacted
	Bounds Road Multiple Unnamed Roadways
Lake Hico Dam	Interstate 55 U.S. Highway 51 State Highway 25 Frontage Road E. Northside Drive Douglas Avenue Fontaine Avenue Edwards Avenue Collier Avenue Lampton Avenue Collier Avenue Bishop Avenue Brame Avenue Newman Avenue Britton Avenue Stillwood Drive N. Mill Street Northview Drive Council Circle Kings Highway Naples Road Meadowbrook Road Hawthorne Drive Oakridge Drive Avondale Street Old Canton Road Ridge Drive Crane Boulevard E. Hill Drive Glenway Drive University Avenue Laurel Street Highland Drive Multiple Unnamed Roadways
Lake Ridgelea Dam	Ridgelea Road Gary Road Christine Drive Branch Creek Drive Meagan Drive Multiple Unnamed Roadways
Lakeview Reservoir Dam	Wayne Street Clinton Boulevard Morrison Drive

Dam Name	Roadways Impacted
Lazy C. Club Lake Dam	State Highway 18 N. Siwell Road Oak Creek Drive Oak Leaf Drive Raymond Road Gore Road E. Broadwater Road Big Creek Road
McGee Lake Dam	Pine Hill Drive Pine View Drive Ratliff Road Old Port Gibson Road
Mimosa Lake Dam	State Highway 18 Multiple Unnamed Roadways
Multip Manor Lake Dam	Natchez Trace Parkway Raymond Clinton Road Wells Road Herring Drive McRaven Road N. Midway Road
Raymond Lake Dam	State Highway 18 State Highway 467 Multiple Unnamed Roadways
Regency Estates Lake Dam	Crisler Road Orchard Wood Road Mysty Lane
Rica Acres Lake Dam	Slayton Court Wellington Drive Huntington Drive Raulston Drive Barrington Drive Henderson Road Multiple Unnamed Roadways
Spring Lake Dam	Linda Drive Berry Drive Linda Drive NW Clinton-Tinnin Road
Walter Vinson Lake Dam	Multiple Unnamed Roadways

4.1.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Hinds County may lead to a decrease in the populations in the inundation zone of each dam. A related decrease in the number of impervious surfaces from urbanization can reduce runoff and strain on existing drainage systems, potentially decreasing the likelihood of overtopping or erosion near dam and levee sites. Any development within

the leveed protected area would be vulnerable and at risk of potential flooding in the event of a levee failure.

4.2. DROUGHT

4.2.1. LOCATION AND EXTENT

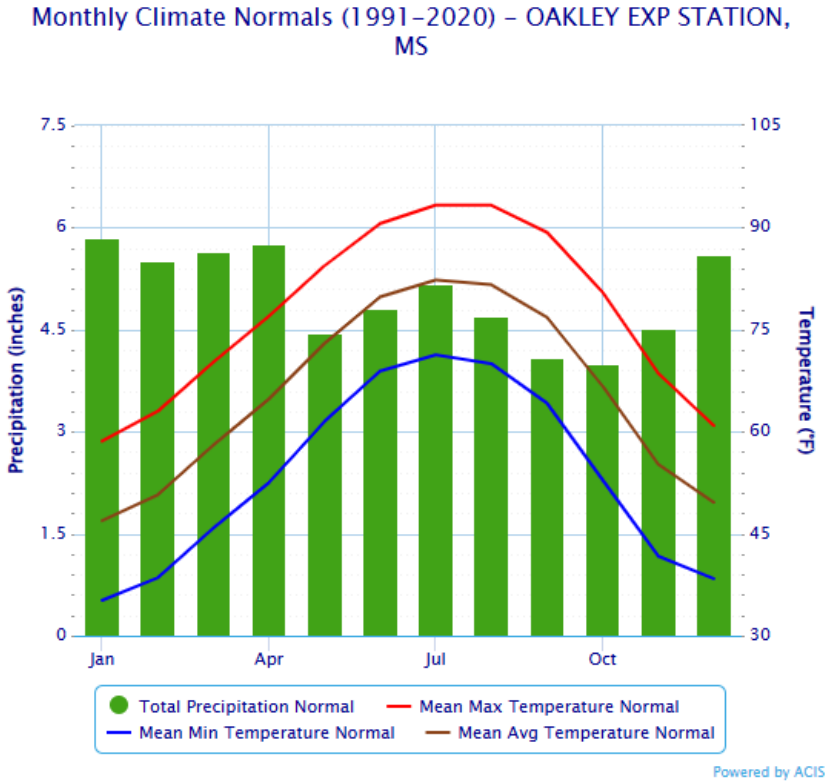
Drought affects the entire planning area equally; Hinds County and its jurisdictions are not more or less susceptible to drought than other communities in District 5. For more information on droughts across the District, refer to the base plan.

Figure 32 and **Figure 33** below display the monthly precipitation and temperature normals for the area surrounding the Oakley EXP, MS National Weather Service (NWS) station. According to the data, the County experiences about 60 inches of precipitation annually with an average mean temperature of 66 degrees. The hottest months are June through September while the wettest months are January through April.

FIGURE 32: MONTHLY NORMAL PRECIPITATION AND TEMPERATURE – OAKLEY EXP, MS | SOURCE: NWS

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	5.86	58.6	35.2	46.9
February	5.52	63.0	38.5	50.7
March	5.65	70.2	45.8	58.0
April	5.77	77.0	52.5	64.8
May	4.45	84.4	61.5	73.0
June	4.82	90.6	68.9	79.8
July	5.18	93.3	71.3	82.3
August	4.70	93.3	70.0	81.6
September	4.09	89.3	64.2	76.8
October	3.99	80.5	52.9	66.7
November	4.51	68.6	41.7	55.2
December	5.61	60.9	38.4	49.6
Annual	60.15	77.5	53.4	65.5

FIGURE 33: MONTHLY CLIMATE NORMALS – OAKLEY EXP, MS | SOURCE: NWS



4.2.2. PREVIOUS OCCURRENCES

Drought has significantly affected agricultural areas in Hinds County in the past ten years. Between the 2015 and 2020 plans, five droughts occurred in Hinds County, causing $100,000 in property damage and $491,200 in crop damages. Between the 2020 and 2025 plans, there were three droughts causing zero reported property damage and $5,810,000 in crop damage.

4.2.1. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been eight drought events in the past 10 years which equates to a drought event every 1-2 years. Therefore, the probability of a drought event occurring in the future is **Likely** for Hinds County and Raymond. However, based on limited previous occurrences the probability of future events is **Low** for Bolton, Edwards, Utica.

4.2.2. LOCALIZED VULNERABILITY ASSESSMENT

4.2.2.1. OVERALL VULNERABILITY

The drought vulnerability assessment in the base plan highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Within Hinds County and its jurisdictions, drought poses a **Medium** risk due to potential impacts, largely to public health, agriculture, and the local economy. Potential impacts on Community Lifelines and historic and cultural resources are consistent across the District 5 planning area and are described in the base plan. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to drought.

4.2.2.2. CRITICAL FACILITIES

Drought poses a slow-onset but significant risk to critical facilities in Hinds County by stressing water supply systems, increasing wildfire risk, and disrupting essential services. Prolonged dry conditions can reduce groundwater and surface water availability needed for drinking water, sanitation, medical care, and fire suppression, potentially affecting facilities such as hospitals, emergency services, schools, and government buildings. Drought conditions also elevate wildfire danger, which can strain fire response capabilities and threaten nearby infrastructure, while increased heat and energy demand may place additional stress on electrical systems supporting critical operations.

4.2.2.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Drought can damage cultural, historic, and natural resources in Hinds County by reducing soil moisture and water levels needed for their preservation. Prolonged dry conditions may harm historic sites, stress forests and wetlands, increase wildfire risk, and degrade ecosystems and culturally important water resources, potentially leading to long-term loss.

4.2.2.4. PEOPLE

As noted in the base plan, drought poses a significant threat to public health and safety, particularly when it disrupts access to clean and sufficient water supplies, and particularly for vulnerable populations. These populations can experience disproportionate impacts to droughts and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.2.2.5. STRUCTURES AND SYSTEMS

Although drought doesn't typically cause direct physical damage to buildings or infrastructure, systems reliant on water (particularly those supporting agricultural operations) are the most vulnerable. Hinds County has a total approximate land area of 556,643 acres, of which 40.3% is farmland (847 farms totaling 224,068 acres of farmland). These portions of the county and their structures and systems are more vulnerable to impact than others. Based on previous occurrences, drought has caused over $6,000,000 in crop damage and $100,000 in property damage within the past 10 years. It is expected that similar impacts will continue in the future.

Non-agricultural critical facilities such as transportation infrastructure, utility infrastructure, and public buildings are unlikely to be affected by drought across the planning area, including in Hinds County.

4.2.2.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Hinds County may lead to lower strain on water systems during times of drought in the future.

4.3. EARTHQUAKE

4.3.1. LOCATION AND EXTENT

The earthquake seismic risk in MEMA District 5 varies from low to very high. Hinds County is more susceptible to earthquakes than other communities in District 5. Hinds County has areas where the earthquake seismic risk is low, high and very high. Ground shaking can be exacerbated by liquefaction zones. Within Hinds County, areas in the Western portion of the County, including Edwards, Bolton and Utica, have high liquefaction zones. The liquefaction zone severity decreases very low towards the South and Eastern sides of the County. If a strong earthquake were to occur, Hinds County may experience greater shaking and damage compared to other counties such as Copiah and Simpson Counties. For more information on earthquakes across the District, refer to the base plan.

4.3.2. PREVIOUS OCCURRENCES

As noted in the base plan, Mississippi experiences relatively low seismic activity, although there have been some minor earthquakes producing light shaking felt in District 5 in recent history. Since 2000, there have been eight earthquakes in MEMA District 5. The strongest was a magnitude 3.2 that occurred in Madison County in 2015. The majority of the earthquakes occur in Madison County and occurred in 2015.

4.3.3. PROBABILITY OF FUTURE OCCURRENCES

As noted in the base plan, Mississippi MEMA District 5 is unlikely to experience damaging earthquakes, but it is not entirely free from seismic risk. While strong earthquakes are **Unlikely** to the County and its jurisdictions, minor to moderate shaking could occur in Hinds County, especially from distant seismic sources like the New Madrid Seismic Zone (NMSZ).

4.3.4. LOCALIZED VULNERABILITY ASSESSMENT

4.3.4.1. OVERALL VULNERABILITY

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. Hinds County contains a mixture of low, high and very high liquefaction susceptibility zones. The County also contains earthquake soil classifications of D (stiff soil), E (soft soil) and F (soils requiring site-specific evaluation, such as liquefiable soils, peats, or certain clays). These two factors put the County and its jurisdictions at a relatively **Low** risk of earthquake impacts compared to the rest of the district, especially in the western and eastern parts of the County. However, earthquakes pose a **Medium** risk to the City of Bolton. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to earthquakes.

Figure 34 and **Figure 35** show both the liquefaction susceptibility zones and the earthquake soils throughout the County. The western side of the County has a higher liquefaction susceptibility zone and the eastern side of the County has soils more susceptible to ground shaking. The most vulnerable areas in the County for ground shaking are the areas along the western County border.

FIGURE 34: HINDS COUNTY LIQUEFACTION SUSCEPTIBILITY ZONES

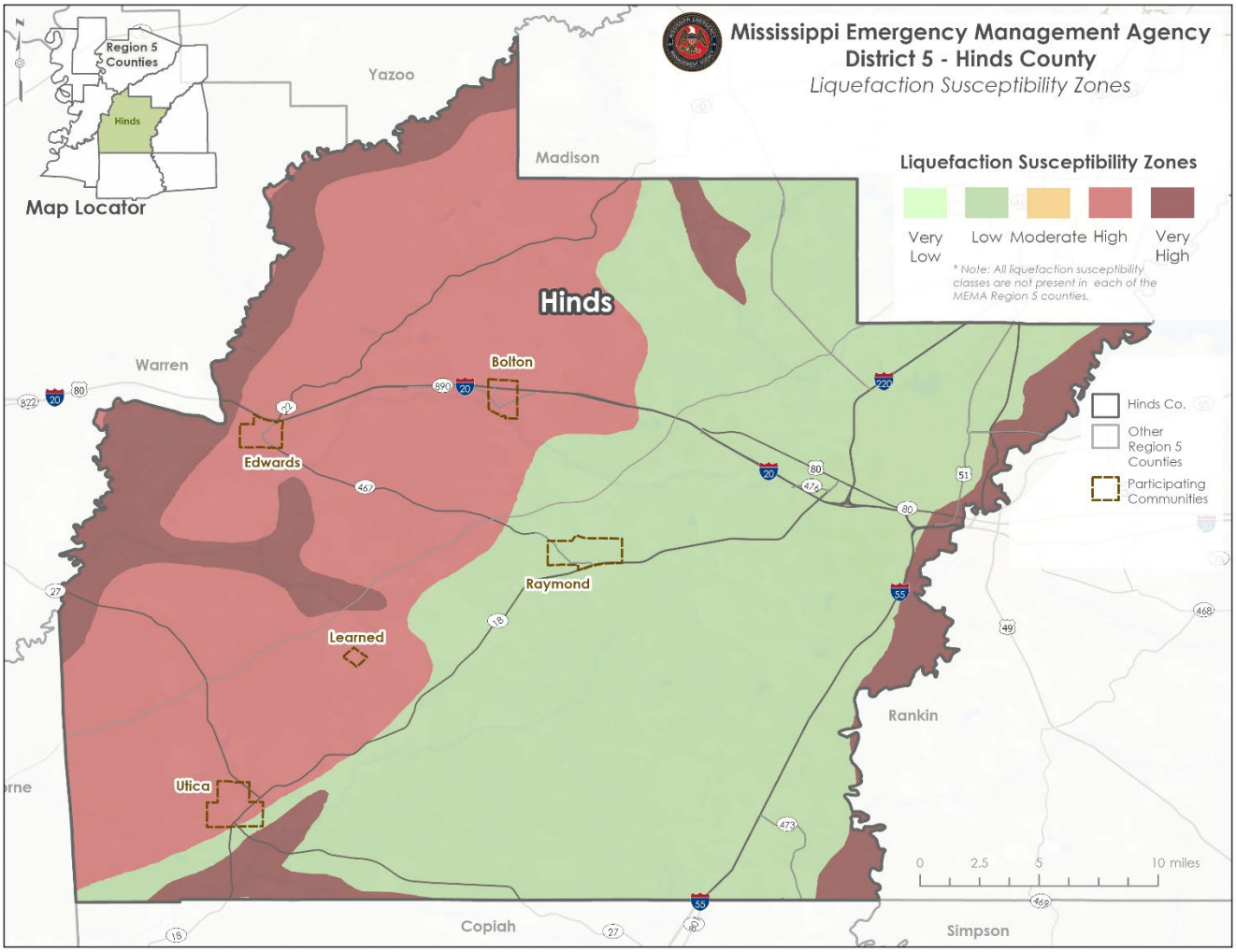
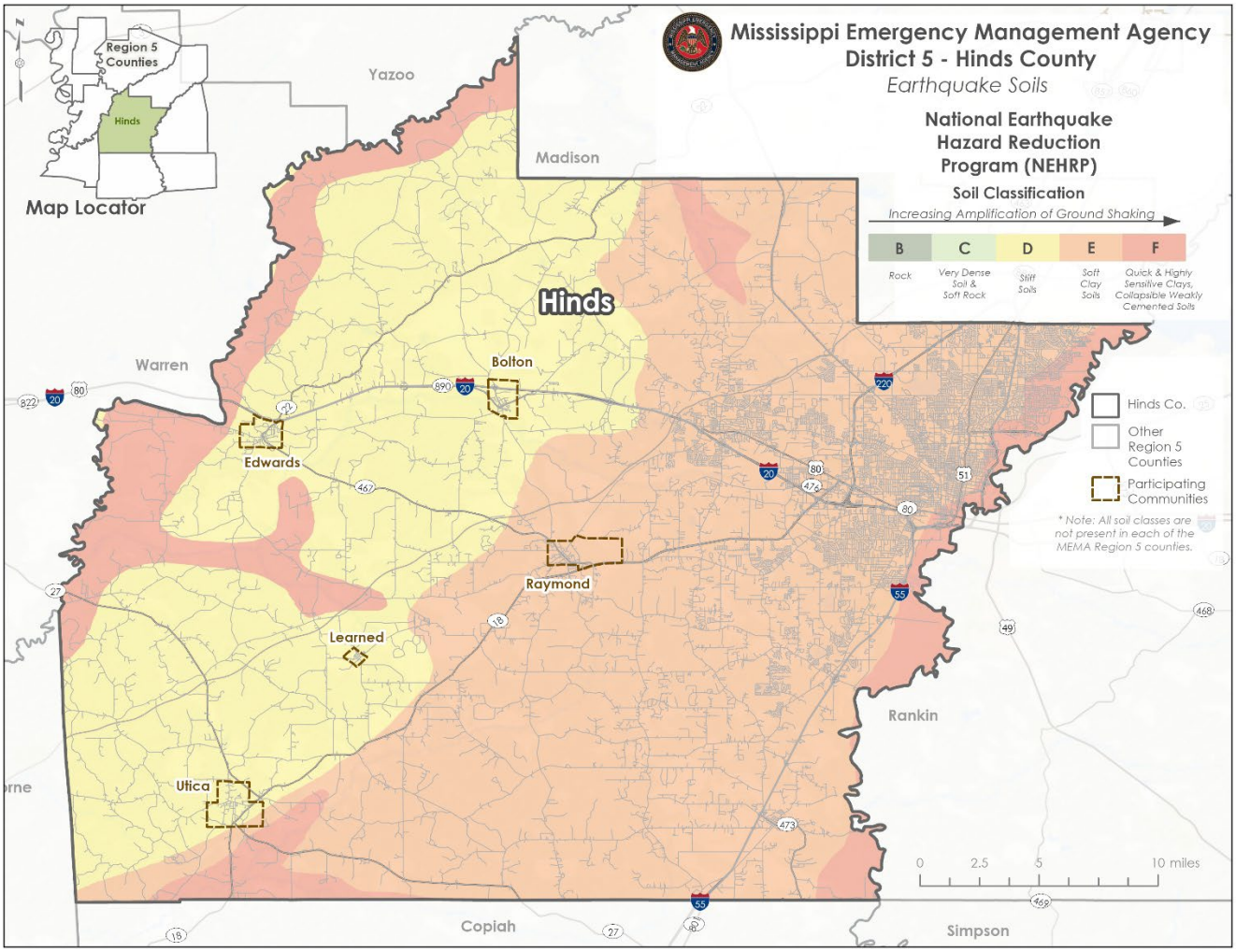


FIGURE 35: HINDS COUNTY EARTHQUAKE SOILS



4.3.4.1. CRITICAL FACILITIES

Although earthquakes occur infrequently in Hinds County, seismic activity associated with the New Madrid Seismic Zone could result in ground shaking that damages critical facilities and infrastructure. Earthquake impacts may disrupt essential services and utilities and damage transportation routes, potentially limiting access to critical facilities and hindering emergency response and recovery efforts. In the event of a rare strong earthquake, critical facilities within high liquefaction susceptibility zones and moderate seismic risk are most at risk of earthquake impacts.

4.3.4.2. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Earthquakes have the potential to damage cultural, historic, and natural resources through ground shaking and ground deformation associated with regional seismic activity such as the New Madrid Seismic Zone. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be particularly vulnerable due to age, unreinforced masonry construction, or shallow foundations that are susceptible to cracking or collapse during seismic events. Natural resources may be affected through soil instability, slope failure, altered drainage patterns, and damage to wetlands, streams, or wildlife habitats. In the event of a rare strong earthquake, resources within high liquefaction susceptibility zones and moderate seismic risk are the most at risk of earthquake impacts.

4.3.4.3. PEOPLE

Some populations may face greater risk to earthquakes--the relatively short warning time typically provided for earthquakes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

As noted in the base plan, although earthquakes are rare, rural communities with limited access to emergency services and infrastructure that may be disrupted by the impacts of an earthquake are at increased risk, as are vulnerable populations. These populations can experience disproportionate impacts to earthquakes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower other than residents of District 5.

4.3.4.4. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking. Because Hinds County has soils and geography that put it at slightly higher risk of earthquake impacts, the impacts of earthquake on critical facilities, community lifelines, natural and cultural resources, and infrastructure within Hinds County and its jurisdictions are likely to be slightly higher than the rest of the District.

4.3.4.5. IMPACTS OF CHANGES IN DEVELOPMENT

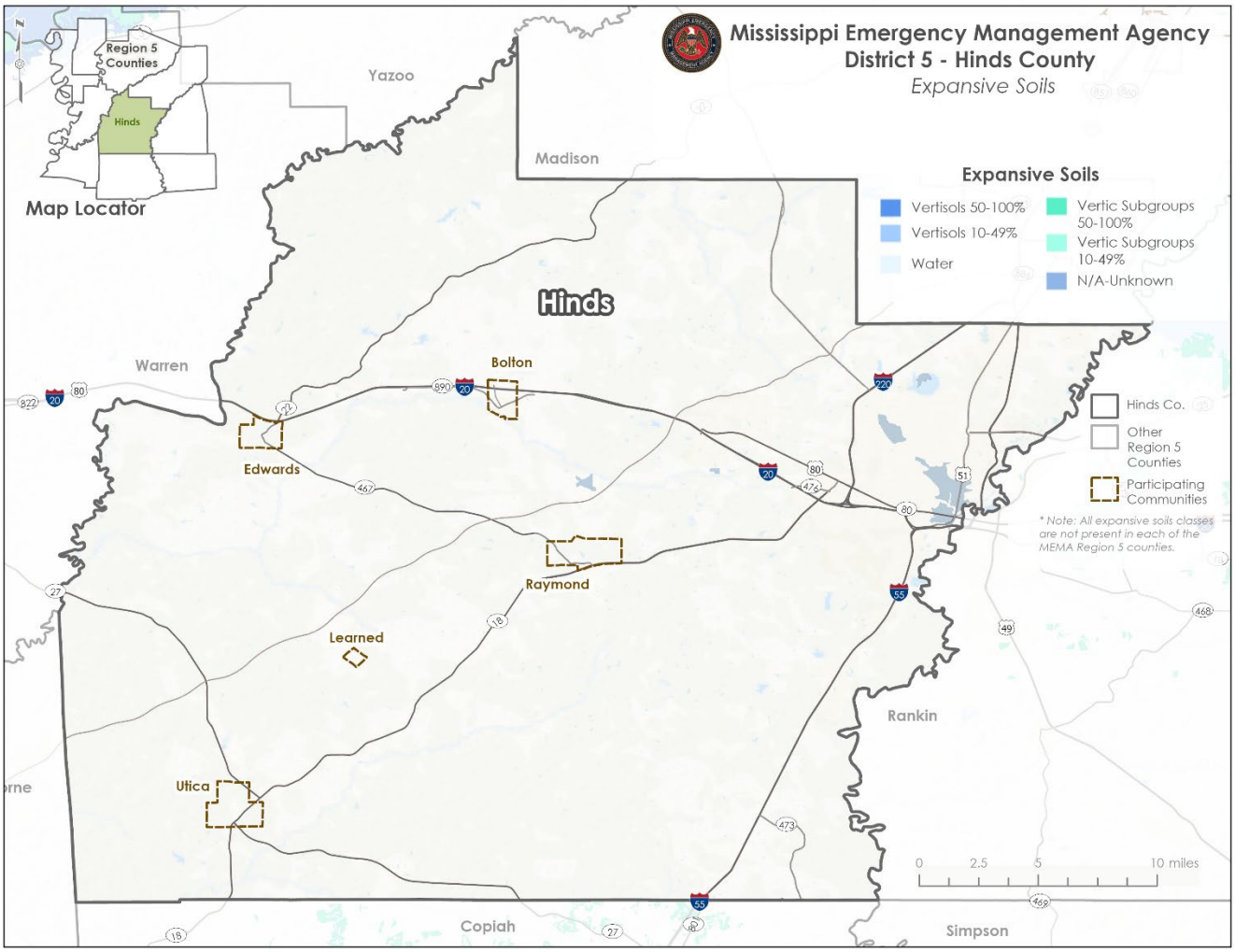
The overall decrease in development and population in Hinds County may lead to lower impacts of earthquakes on its residents in the future.

4.4. EXPANSIVE SOILS

4.4.1. LOCATION AND EXTENT

As noted in the base plan, expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. Hinds County and its jurisdictions have zero areas of expansive soils, which puts these communities at a significantly lower risk than the district overall. More information about location and extent is provided in the base plan and can be visually seen in **Figure 36** below. For more information on expansive soils across the District, refer to the base plan.

FIGURE 36: HINDS COUNTY EXPANSIVE SOILS



4.4.2. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the D5 Region, including in Hinds County.

4.4.3. PROBABILITY OF FUTURE OCCURRENCES

In MEMA District 5, the probability of future damage from expansive soils is considered **Unlikely** due to the District's geologic makeup and historical patterns of soil movement. Because Hinds County and the

communities within it do not contain areas with high vertisols or vertic subgroups, they are at a lower risk of future occurrences than the district overall.

4.4.4. LOCALIZED VULNERABILITY ASSESSMENT

4.4.4.1. OVERALL VULNERABILITY

There are no expansive soils located in the Hinds County; therefore, the risk of expansive soils is **Medium** due to the potential of expansive soils to impact the County in the future. All other participating jurisdictions are at a **Low** risk for impacts from expansive soils.

4.4.4.2. CRITICAL FACILITIES

Expansive soil does not pose a risk to the Hinds County; therefore, no critical facilities are impacted or vulnerable.

4.4.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Expansive soil does not pose a risk to the Hinds County, therefore no cultural, historic, or natural resources are impacted or vulnerable.

4.4.4.4. PEOPLE

The risk factors for expansive soils are structural and not demographic in nature. The people of Hinds County are at overall lower relative risk than the rest of the District, due to the soil and geographic factors described above. If expansive soils were to cause significant structural damage, individuals may be impacted by needing to pay for repairing damages of their homes or needing to relocate from their current residences.

4.4.4.5. STRUCTURES AND SYSTEMS

Because the geography of Hinds County puts it at lower relative risk of this hazard, the structures and systems (including critical facilities, community lifelines, and natural, historic, and cultural resources) in the County and its municipalities are at lower relative risk as well. The potential impacts to these structures and systems are described in more detail in the base plan.

4.4.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Hinds County may lead to lower impact of expansive soils on its residents in the future, although this risk can be significantly mitigated with smart planning and zoning decisions, including restricting or regulating development in high-risk areas. Careful management of the 12 active and 23 inactive surface mines in the county can also impact this risk.

4.5. FLOOD

4.5.1. LOCATION

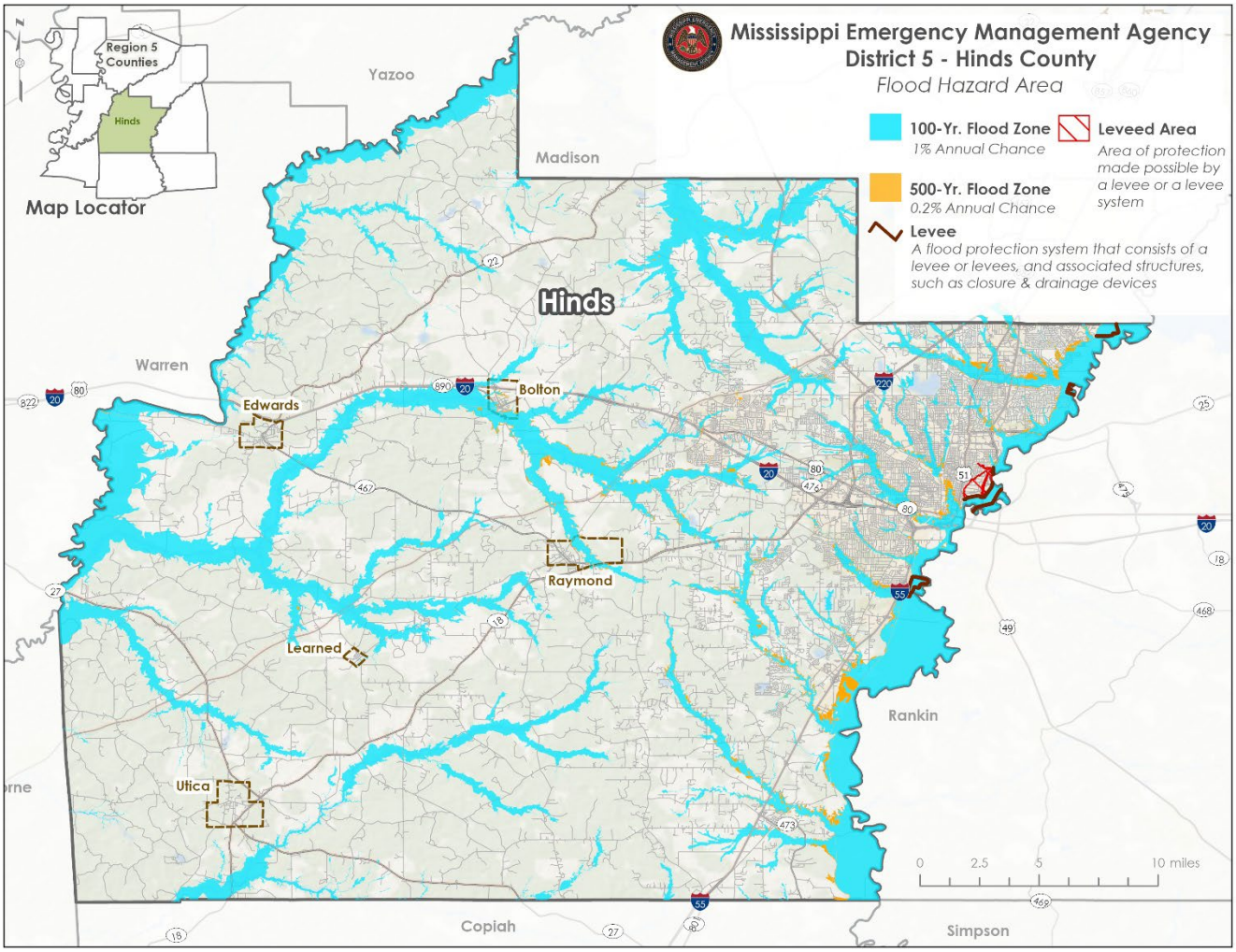
Floods are the most common type of natural disaster, occurring when water overflows onto land that is typically dry after heavy rainfall, storm surges, or rapid snowmelt. Flooding often leads to significant impacts on both human life and the environment. This section provides detailed information about the location, extent, previous occurrences, and overall vulnerability of communities within Hinds County to flooding than is provided in the base plan. For more information on flooding across the District, refer to the base plan.

For purposes of this hazard profile and vulnerability analysis, the geographic location/extent for river flooding will be primarily considered as those areas at risk to the 100-year flood (also known as the 1% annual chance flood). The 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. However, the accompanying maps also show the 500-year floodplains (also known as the 0.2% annual chance floodplains) for two major reasons. First, climate models suggest that the planning area should anticipate rain events with increasing intensity in the coming years and decades. Second, any future population growth may result in new development within or near 500-year floodplains.

Figure 37 below shows the location of flood hazard areas within Hinds County. The 100-year floodplain is located along the Western and Eastern areas of the County. The 500-year floodplain covers small areas throughout the County. Additionally, the County has a small area that is protected by a levee close to Interstate 55 and U.S. Highway 51. The leveed protected area does contain areas within the 100-year floodplain. In the event of a levee failure, the levee protected area may be flooded.

The main waterways in Hinds County are centered around the Pearl River and the Big Black River, which define the County's Eastern and Western geography and agricultural landscape. Other key water features include the Lynch Creek and Hanging Moss Creek. The County also features smaller, localized lakes and dams used for flood control and recreation.

FIGURE 37: HINDS COUNTY FLOOD HAZARD AREAS



4.5.2. EXTENT

Riverine flooding is among the most significant hazards in the planning area due to its ability to impact large geographic areas, threatening a significant number of people and properties, the relatively small amount of flood water that it takes to cause significant injury or property damage, and the ability of flood water to linger for days, causing extensive damage. Because variations in geography, elevation, and building design mean that the same flood can cause a wide variety of extents of damage to different structures, the variation in extent across the County is most accurately captured by the flood zone mapping provided above under “location.”

The most significant recorded flooding event in the State’s history, indicating the potential extent of the threat of the flood hazard, was in 1927, when persistent heavy rainfall and run-off inundated 27,000 square miles. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

4.5.3. PREVIOUS OCCURRENCES

Since 1983 there have been 3 federal disaster declarations pertaining to flooding in Hinds County, details of which are provided below in **Table 40**. The most significant recorded flooding event in Hinds

County during this planning cycle was in 2020, when numerous thunderstorms and heavy rainfall that produced widespread rainfall between 2 and 6 inches with heavy rain falling in the corridor right across the central portion of the forecast area. This resulted in widespread flash flooding across the region as this additional rain fell on very saturated conditions.

TABLE 40: FLOODING-RELATED MAJOR DISASTER DECLARATIONS IN HINDS COUNTY

Disaster Number	Description	(Declaration Date) and Incident Period	Individual Assistance	Public Assistance
DR-4790	Severe Storm, Tornadoes, Straight-line Winds, Flooding	(6/10/2024) 4/8/2024-4/11/2024	Y	N
DR-4538	Severe Storm, Flooding and Mudslides	(4/23/2020) 2/10/2020-2/18/2020	N	Y
DR-683	Flooding, Severe Storm, Tornado	(6/1/1983) 6/1/1983	Y	N

Between the 2015 and 2020 plans, there were 34 flooding events in Hinds County, causing $4,966,000 in property damage. Since the 2020 plan, there have been 56 such events, causing $4,196,000 in damage, no fatalities, and no injuries according to information provided by the NCEI. Additional information about these events is provided in **Table 41.**

Table 41. Individual Flood Events 2020-2025

Date	Time (CST-6)	Event Description	Assessed Damages	Estimated Flood Depth
01/02/2020	06:58	Water from Bakers Creek flowed across the entrance road to Buddy Butts Park.	$1,000	4 inches
01/02/2020	15:45	Street flooding occurred near Hampstead Boulevard and Broadway Street.	$2,000	4 inches
01/02/2020	18:15	A car was stuck in a ditch on Industrial Drive. Water covered Ridgewood Road near Sheffield. There was flooding on Fairbanks Street and on West Street near Fortification Street. There was flooding at the Camelot Apartments, with the floor level apartments evacuated due to water entering them. Water threatened homes in the Presidential Hills neighborhood.	$500,000	8 inches
01/02/2020	19:30	There was minor flooding of low lying areas south of Raymond Road near Highway 18 and Wright Road. Holmes Lake Dam experienced a complete failure, where damage was caused to a barn, several cars and a fence. Oakley-Palestine Road may have also been damaged.	$400,000	6 inches
01/11/2020	08:25	Water flowed across Suncrest Drive near Autumn Street and the road was closed.	$3,000	4 inches
01/11/2020	09:05	Flash flooding occurred in Belhaven. Water also was in buildings and flowed across the street at the intersection of Highway 80 and Lynch Street. Flash flooding also occurred on Myrtlewood Drive.	$700,000	6 inches
01/14/2020	11:10	Flooding occurred along I-20 near the Big Black River.	$3,000	6 inches
01/14/2020	11:34	At least one house was inundated with water off of Highway 18 near Wright Road.	$75,000	6 inches

01/14/2020	12:30	Swift water rescues occurred on Content Street. Camelot Apartments were flooded and multiple rescues occurred. Close to a foot of water was across Ridgewood Road at Jackson Academy. High Street was barricaded due to high water. Presidential Hills was flooded and had no access due to flood waters. Parts of Industrial Drive near Hawkins Field was underwater.	$1,300,000	18 inches
01/14/2020	13:00	Neighborhoods around Cany Creek in Oak Forest saw floodwaters.	$5,000	4 inches
01/14/2020	13:30	Springridge Road near Entergy was flooded.	$2,000	4 inches
04/23/2020	01:55	Widespread flash flooding occurred across the city of Jackson. There was also significant flooding along Torrey Pines Drive near Byram, as well as along Woodell Drive near Forest Hill.	$5,000	8 inches
04/23/2020	03:00	Tank Road was flooded.	$2,000	4 inches
04/23/2020	07:00	A house along Mississippi Highway 18 near Wright Road had taken on water from recent heavy rain and flooding also occurred on Highway 18 near Cidero Road.	$50,000	8 inches
07/02/2020	12:00	A portion of Pear Orchard Road was flooded.	$1,000	4 inches
08/13/2020	05:50	Lyons Road near Houston Road was flooded.	$2,000	4 inches
08/13/2020	06:50	Several rural roads in west central Hinds County were flooded.	$5,000	4 inches
04/09/2021	21:09	Flash flooding occurred on St. Mary Street. There was around one foot of water at the intersection of State Street and Woodrow Wilson Ave. Many underpasses were flooded in South Jackson especially near the railways, with at least one car mostly submerged. There was flooding at the Live Oaks golf course area as well as along State Street and Meadowbrook. Holmes Avenue was flooded and impassable. Eubanks Creek was flooding out of its banks onto State and Choctaw Streets. Water was several feet deep, cars stalled, and homes with water inside.	$200,000	18 inches
07/02/2021	09:50	Several yards and at least two homes along Choctaw Rd and the Eubanks Creek were flooded following heavy rain in the area. Radar estimates showed over one inch of rain in 15 minutes in the area. The intersection at Seminole Ave was still flooded around 1230 PM, and at one earlier point the creek had flooded over the bridge at N State St. The crawl space under one home was flooded, but the house did not take on water. Several other streets around Jackson were flooded and impassable.	$5,000	4 inches
07/07/2021	13:45	Flash flooding occurred along Suncrest Drive.	$1,000	4 inches
07/07/2021	14:09	Street flooding occurred around Clinton and water accumulated in yards. Flooding occurred in the Kentwood subdivision where one to two feet of water was across roads. Water also entered a house on Neal Street.	$35,000	18 inches
07/07/2021	14:29	Flooding occurred with water near homes and in yards. Street flooding occurred in South Jackson.	$15,000	6 inches
07/16/2021	15:40	Slow moving thunderstorms resulted in very heavy rainfall across the city of Jackson. This resulted in numerous instances of flash flooding across the area. Dozens of streets were flooded, including some that had at least 1-2 feet of water over the roadway. In addition, several cars were stalled and inundated in flood waters. Water also entered units of at least one apartment complex as well as	$265,000	18 inches

		several buildings on the University of Mississippi Medical Center campus.		
04/17/2022	17:10	Tank Road was flooded near Green Gable Drive.	$1,000	4 inches
04/17/2022	17:50	Water flooded several roads in the Belhaven area to a depth of at least 6 inches, and at least one vehicle was damaged attempting to cross a flooded intersection.	$25,000	6 inches
08/24/2022	08:35	Flooding occurred in portions of Jackson, and 6 homes experienced minor flood damage.	$200,000	8 inches
08/24/2022	09:20	Two southbound lanes of I-20 blocked by flooding between Meadowbrook Road and Lakeland Drive.	$2,000	8 inches
08/24/2022	10:00	White Oak Creek was out of its banks and flooded several back yards in the Briarwood Drive area.	$2,000	6 inches
08/24/2022	10:15	A convenience store on State Street was flooded when Eubanks Creek rose out of its banks.	$30,000	6 inches
08/24/2022	12:07	A social media post showed flooding on Briarwood Drive in Jackson. A school bus was partially submerged in flood water.	$25,000	8 inches
08/25/2022	17:47	An underpass flooded in Jackson.	$1,000	8 inches
12/14/2022	12:44	Heavy rain resulted in about 10 inches of flowing water across Ridgewood Road.	$1,000	10 inches
01/08/2023	06:00	Flooding on Gallatin Street near Porter Street. Vehicle stalled in water.	$15,000	10 inches
03/26/2023	17:02	Car stuck in flood waters on Autumn Street at Fleetwood Drive off of Suncrest Drive.	$50,000	10 inches
03/26/2023	17:24	Vehicle submerged in flood water on West Monument street near the viaduct.	$20,000	10 inches
03/26/2023	17:50	Flash flooding was observed at Forest Hill Road and Mccluer Road.	$1,000	6 inches
03/26/2023	18:05	Standing water as a result of flash flooding was observed at the intersection of Lynch Street and Highway 80.	$1,000	6 inches
04/05/2023	17:50	Flash flooding on Highway 80 just east of intersection with Lynch Street.	$1,000	6 inches
01/24/2024	06:45	Creeks and fields were flooded near Learned.	$0	4 inches
01/24/2024	07:15	Water was across the road with culverts flooding over driveways near the corner of Old Jackson Road and Ford Road.	$1,000	6 inches
02/11/2024	21:30	Portions of Old Highway 51 at the Hinds-Copiah county line were flooded with 6 inches of water.	$1,000	6 inches
03/08/2024	09:55	A creek near Byram flowed out of its banks.	$1,000	4 inches
03/08/2024	10:00	Multiple roads were flooded in Jackson including Williams Drive, Hattiesburg Street near Jim Hill High School, Gallatin Street, and the Monument Street underpass at Town Creek where a vehicle stalled in floodwaters.	$20,000	12 inches
03/08/2024	11:35	A creek near Utica overflowed its banks.	$1,000	4 inches
04/09/2024	23:30	Multiple streets in the Belhaven area were flooded.	$5,000	8 inches
04/10/2024	05:30	After several rounds of rainfall in the area, flash flooding began in the Shrewbury Court area long Lynch Creek. Several cars were flooded, and water approached several homes.	$50,000	12 inches

04/10/2024	05:30	After several rounds of rainfall in the area, flooding occurred in the Shrewbury Court area along Lynch Creek. Several cars were flooded, and water approached several homes.	$50,000	12 inches
05/09/2024	22:00	Several roads were flooded around Briarfield Road.	$3,000	6 inches
09/16/2024	16:16	Water pooled over the road and approached houses near Hanging Moss Road.	$5,000	6 inches
03/04/2025	15:20	Brief heavy rainfall caused portions of University Boulevard, near the soccer fields, Rose Street and Terry Road to flood. Water was up to and over street curbs as well as Monument and Gallatin Streets near the railroad intersections which were closed due to high water.	$3,000	8 inches
04/06/2025	01:00	Multiple streets were flooded with a vehicle stalled at Highway 80 and John Lynch St.	$40,000	8 inches
04/06/2025	01:05	A vehicle was stuck in high water on Oakley Road near Old Port Gibson Road.	$30,000	8 inches
05/17/2025	11:00	Numerous roads and streets were flooded.	$15,000	8 inches
06/27/2025	16:20	Flash flooding at the intersection of Mill St and Whitfield St.	$2,000	6 inches
06/27/2025	16:20	Flash flooding on Ridgeland Drive. Water over 18 inches deep, over the roadway at the intersection of Patio Place and Hathaway Dr. One home was flooded in this area.	$12,000	18 inches
07/31/2025	15:55	Water covered over parts of several roads in the vicinity of Ridgewood Road north of Northside Drive.	$5,000	6 inches

4.5.4. PROBABILITY OF FUTURE OCCURRENCES

Based on events documented by the NCEI's Storm Events Database, representatives from Hinds County and Bolton agreed that the probability of future flooding events impacting their jurisdictions is **Extremely Likely**. Representatives from Learned, Raymond, Edwards, and Utica assessed that the future probability of flooding impacting their communities was **Low**. As climate change increases the intensity and unpredictability of rainfall, the likelihood of flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience.

4.5.5. LOCALIZED VULNERABILITY ASSESSMENT

4.5.5.1. OVERALL VULNERABILITY

As noted in the base plan, flooding can cause widespread damage to buildings, roads, utilities, and public infrastructure, and can significantly impact all eight community lifelines as well as natural, historical, and cultural resources. Representatives from Hinds County and communities within the county that are participating in the District 5 plan considered multiple factors when quantifying their overall vulnerability to flooding. This includes the number of recorded events; the potential area exposed to flooding; economic and environmental impacts; and the risk to human safety. In consideration of these factors, participants determined that the vulnerability of Hinds County overall and the community of Bolton is **High**. The community of Learned has a **Medium** overall risk, and the communities of Raymond, Edwards, and Utica have a **Low** risk. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to flooding events.

4.5.5.2. CRITICAL FACILITIES

Flooding poses a significant risk to critical facilities in Hinds County by causing structural damage, inundating mechanical and electrical systems, and disrupting essential services. Flood events can

impact hospitals, fire stations, law enforcement facilities, schools, emergency operations centers, and water and wastewater infrastructure, particularly those located in low-lying areas or within Special Flood Hazard Areas. Inundation of utility systems may contaminate drinking water supplies, impair wastewater treatment, and result in power and communications outages that hinder emergency response and continuity of government. Flooded roads and bridges can also restrict access to critical facilities, delaying emergency services, evacuation, and recovery efforts. **Figure 39** displays the critical facilities and infrastructure in the flood hazard areas. **Table 41** below lists the critical facilities in Hinds County that are in the 1% annual chance and 0.2% annual chance floodplains.

FIGURE 38: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE FLOOD HAZARD AREAS

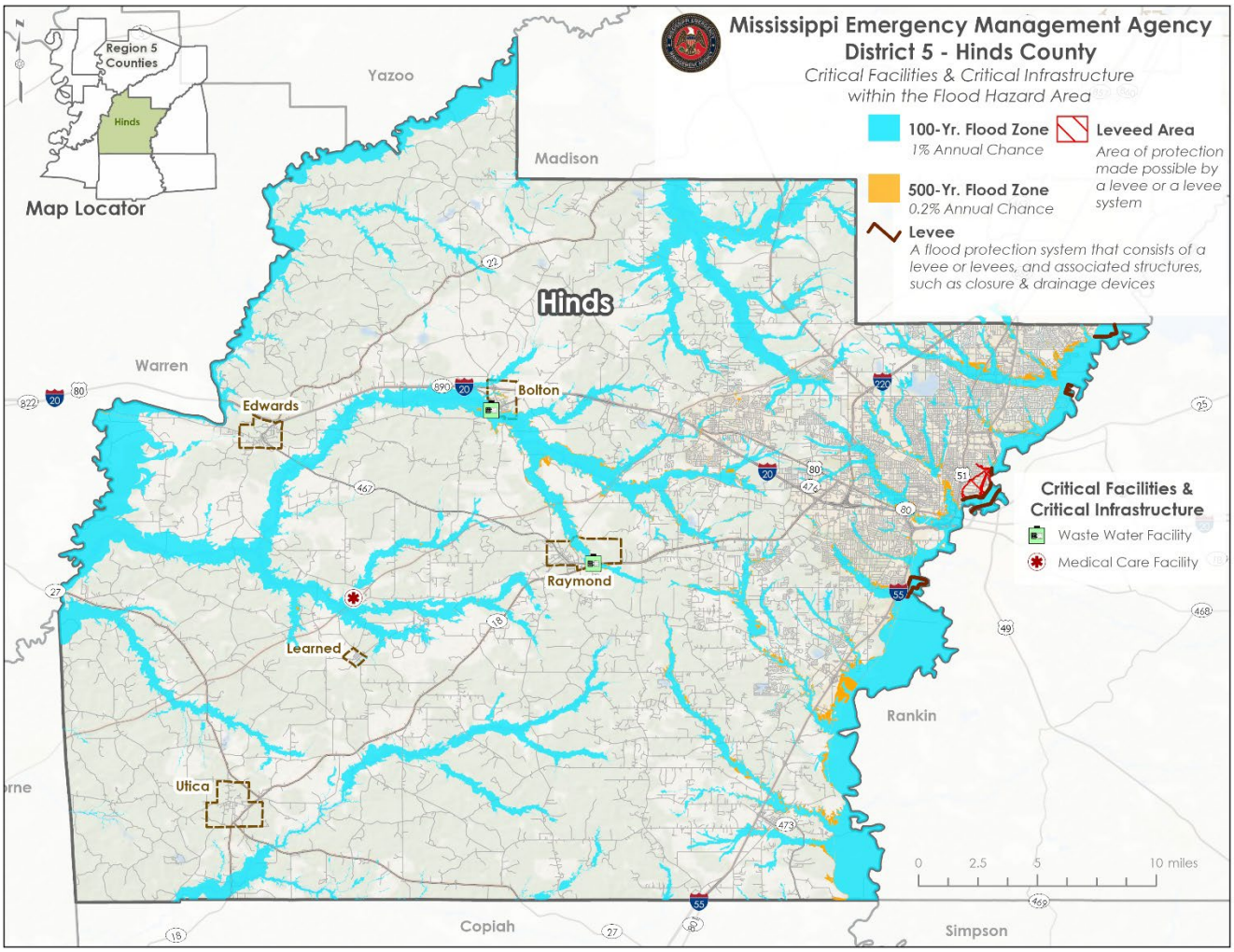


TABLE 42: CRITICAL FACILITIES IN THE FLOODPLAINS

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
Learned	Medical Care Facility - Residential	Mercy House	N	Y

Bolton	Waste Water Facility	Bolton POTW	N	Y
Raymond	Waste Water Facility	E. Main Street Lift Station	Y	N

4.5.5.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Flooding can adversely impact cultural, historic, and natural resources in Hinds County by causing erosion, structural damage, and long-term degradation of sensitive sites and landscapes. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be damaged by prolonged inundation, saturated soils, or repeated flood events, particularly where foundations, grave markers, or unreinforced masonry are exposed to water and shifting ground conditions. Floodwaters can erode soil and displace or destroy archeological materials, resulting in irreversible loss of cultural resources. Natural resources are also vulnerable, as flooding can alter stream channels, degrade wetlands, reduce water quality, damage vegetation, and disrupt wildlife habitats. While some ecosystems may recover over time, repeated or severe flooding can permanently alter natural and cultural landscapes.

4.5.5.4. PEOPLE

Some populations may face greater risk to flooding--the relatively short warning time typically provided for flooding means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations most at risk of the impacts of flooding include older adults, low-income families, and individuals without access to flood insurance or reliable transportation, as these can make it more difficult to evacuate when flood warnings occur, and it is harder to recover from the impacts of a flood. These populations can experience disproportionate impacts to floods and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower than other residents of District 5.

4.5.5.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, flooding has caused over $10,000,000 in damages in the past 10 years within the County and is expected to continue in the future. Flooding poses a significant risk to structures and critical systems in Hinds County by causing physical damage, inundation, and operational disruptions. Floodwaters can damage building foundations, walls, and interiors, particularly in structures located in low-lying areas or flood-prone zones, leading to costly repairs and long-term structural degradation. Electrical, mechanical, and HVAC systems are especially vulnerable to water damage, which can result in power outages and prolonged service interruptions. Flooding may also impair transportation networks, water distribution, wastewater treatment, and drainage systems, reducing access to essential services and facilities. These impacts can disrupt emergency responses, government operations, and community recovery efforts, especially when flood events are recurrent or severe.

4.5.5.6. NFIP INSURED STRUCTURES

The National Flood Insurance Program (NFIP) is a federal program managed by FEMA that provides flood insurance to property owners, renters, and businesses in participating communities. It aims to reduce flood damage by restricting floodplain development and offering affordable insurance, as standard homeowners insurance typically does not cover flood damage. Hinds County and most of its

jurisdictions are a participating in the NFIP. The Town of Learned does not participate in the NFIP. Additionally, the County participates in the Community Rating System (CRS). The CRS is a voluntary program within the National Flood Insurance Program (NFIP) that reduces flood insurance premiums for policyholders in communities that exceed minimum floodplain management requirements. For more information about the NFIP, reference **Section 5.8.6.3** in the base plan.

According to current data from the NFIP, there are 11 Repetitive Loss properties in Hinds County as of 2025. Of these, 10 are single-family residences and one is a non-residential commercial business. The table below provides a breakdown of these structures by jurisdiction. Due to the repetitive nature of these losses, structures meeting the NFIP definitions of repetitive loss and severe repetitive loss should be prioritized for mitigation measures, as these measures are likely to be relatively cost effective. **Table 42** lists the properties that are repetitive loss or severe repetitive loss in the County.

TABLE 43: REPETITIVE LOSS AND SEVERE REPETITIVE LOSS PROPERTIES IN HINDS COUNTY

Jurisdiction	Number of Repetitive Loss Properties (2025)	Number of Severe Repetitive Loss Properties (2025)	Total Number of Flood Claims	Total Amount ($) of Flood Claims
Hinds County	11	--	--	--
City of Raymond	--	--	--	--
Town of Bolton	--	--	--	--
Town of Edwards	--	--	--	--
Town of Learned	--	--	--	--
Town of Utica	--	--	--	--

4.5.5.7. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Hinds County may lead to lower impacts of flooding. A decrease in the number of structures in the floodplain allows for more permeable surface to absorb floodwater, along with lower strain on stormwater management systems that can contribute to an overall reduction in the severity of flood events.

4.6. SEVERE STORMS

4.6.1. LOCATION AND EXTENT

Severe storms are a region-wide hazard in the Mississippi Delta and are not confined to specific locations. Severe storms affect the entire planning area equally; Hinds County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. For more information on severe storms across the District, refer to the base plan.

4.6.2. PREVIOUS OCCURRENCES

Recent events highlight the destructive potential of these storms. Since 2020, the following events have taken place in Hinds County:

- 72 thunderstorms, causing $3,288,000 in property damage
- Three occurrences of severe lightning, causing $222,000 in property damage
- Eight high wind events, causing $86,000 in property damage
- 16 hailstorms, causing $17,950,000 in property damage

Figure 40 and **Figure 41** below show historic wind and hail events in Hinds County since 1955.

FIGURE 39: HINDS COUNTY HISTORIC WIND EVENTS 1955-2024

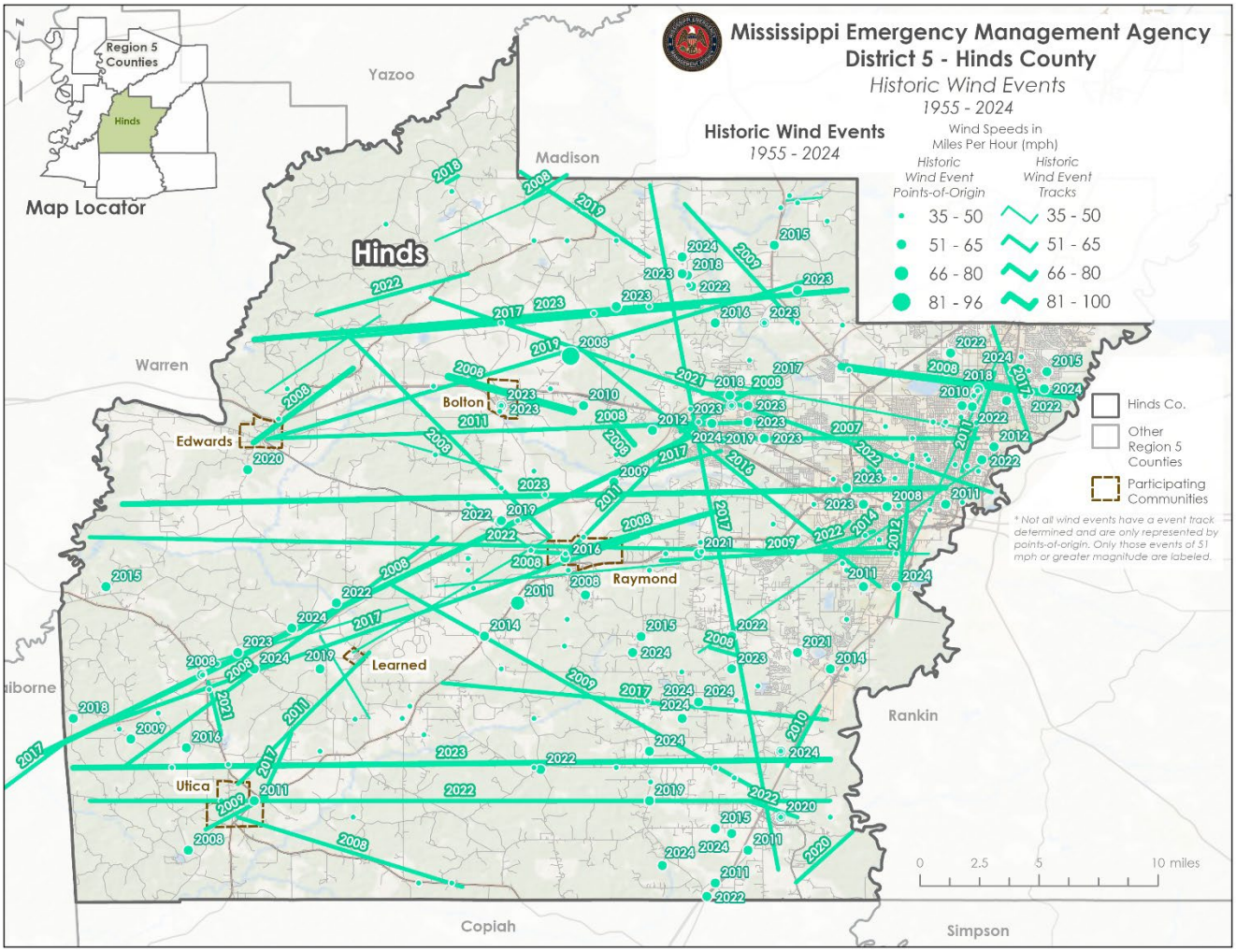
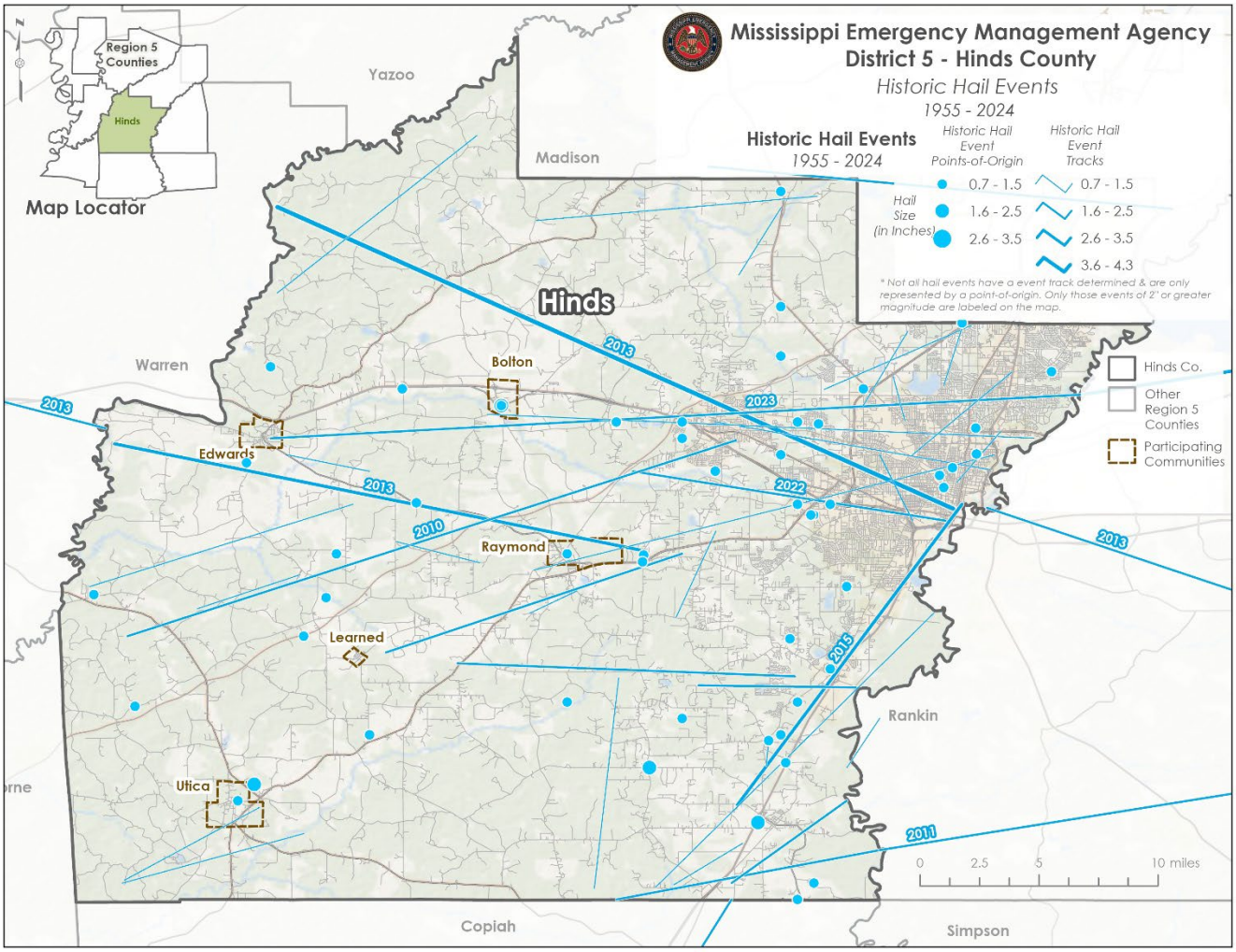


FIGURE 40: HINDS COUNTY HISTORIC HAIL EVENTS 1955-2024



4.6.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 99 severe storm events over the past 10 years. Every year there are on average 9-10 severe storm events. As with the rest of District 5, the probability of future occurrences of severe storms in Hinds County and its jurisdictions is **Extremely Likely**, especially during peak storm seasons. These storms are expected to occur multiple times per year.

4.6.4. LOCALIZED VULNERABILITY ASSESSMENT

4.6.4.1. OVERALL VULNERABILITY

As noted above, the risk of severe storms (due to the frequency and ubiquity of these events) is largely equal across the entire planning area, posing risks to natural and cultural resources and community lifelines, as discussed in the base plan. However, demographic and development factors can cause variation in vulnerability to this risk. Based on the frequency and the extent of damage that severe storms can cause the risk of severe storms is **High** for Hinds County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to severe storms.

4.6.4.2. CRITICAL FACILITIES

Severe storms affect the entire planning area, putting all critical facilities in Hinds County at risk. Thunderstorms with high winds, heavy rain, hail, and lightning can damage essential buildings such as hospitals, emergency services, schools, and government facilities. These storms may cause roof failures, broken windows, and damage from flying debris, posing ongoing threats to critical infrastructure.

4.6.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Severe storm events can adversely affect cultural, historic, and natural resources in the County through high winds, heavy rainfall, flooding, hail, and lightning. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, falling trees, erosion, or prolonged moisture exposure, particularly where resources are older or lack protective reinforcement. Intense rainfall can erode soils and displace archeological materials, leading to the loss of historic context and integrity. Natural resources may also be impacted by severe storms that could damage forests, alter stream channels, degrade wetlands, and reduce water quality through increased sedimentation and runoff.

4.6.4.4. PEOPLE

The wind, hail, lightning, and flooding often produced by severe storms can lead to injury or death. Some populations may face greater risk to severe storms--the relatively short warning time typically provided for severe storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.6.4.5. STRUCTURES AND SYSTEMS

Aging infrastructure and limited emergency resources without redundancies increase the vulnerability of structures and systems in Hinds County to the impacts of severe storms. However, this vulnerability is not markedly higher or lower in the County than the rest of the District; the vulnerability of structures and systems across D5 is described in more detail in the base plan. Based on previous occurrences, there have been over $20,000,000 in damage from severe storms in the past five years. It is expected that in the next several years, similar damage from severe storms will continue to occur.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Hinds County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.6.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Hinds County means fewer people and structures for storms to damage. Additionally, lower strain on stormwater management systems can contribute to an overall reduction in the likelihood of severe storms to lead to flooding.

4.7. SEVERE WINTER WEATHER

4.7.1. LOCATION AND EXTENT

Severe winter weather is a region-wide hazard in the Mississippi Delta and is not confined to specific locations. Winter storms affect the entire planning area equally; Hinds County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. More information on the extent of the threat posed by these storms is provided in the base plan. However, the extent of these storms is limited, with an average amount of annual snowfall in the County of 0-1 inches. For more information on severe winter weather across the District, refer to the base plan.

4.7.2. PREVIOUS OCCURRENCES

Several impactful severe winter weather events have occurred in Hinds County over the past two decades. The most significant of these in recent years include:

- The January 2018 cold snap that led to challenges like burst pipes, increased heating demands, and risk to seniors and other vulnerable populations
- The February 2021 freezing rain, sleet, and snow event that led to widespread power outages due to ice accumulation
- The January 2014 snowstorm led to significant travel hazards

Between 2015 and 2020, there were four severe winter weather events in Hinds County, causing $22,000 in property damage. Since the 2020 plan update, there have been four such events, causing $153,000 in damage.

4.7.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been eight events in the past 10 years. A severe winter event is expected to occur every 1-2 years. Therefore, the probability of a severe winter storm occurring in the County and its jurisdictions is **Likely**.

4.7.4. LOCALIZED VULNERABILITY ASSESSMENT

4.7.4.1. OVERALL VULNERABILITY

All counties within District 5 are vulnerable to the impact of severe winter storms. Because it is closer to the Southern portion of the region, winter weather in Hinds County may be slightly less severe than across the region. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the County's natural, historic, and cultural assets, as discussed in the base plan. Based on the frequency and the severity of severe winter storms, the risk to the County and most jurisdictions is **Medium**; the risk to Bolton is **High**. Severe winter storms can disrupt utility and critical infrastructure which can significantly disrupt the communities of Hinds County. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to severe winter storms.

4.7.4.2. CRITICAL FACILITIES

Severe winter weather, including freezing temperatures, ice, and occasional snow, can disrupt critical facilities in Hinds County by causing power outages, damaging water and wastewater systems, and limiting transportation access. Freezing conditions may result in broken pipes, equipment failures, and interruptions to essential services at hospitals, emergency response facilities, schools, and government buildings.

4.7.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Although severe winter weather occurs infrequently, its effects can result in lasting damage to sensitive cultural, historic, and natural resources. Severe winter weather can adversely affect cultural, historic, and natural resources in the County by causing structural stress, moisture damage, and ecological disruption. Historic buildings, cemeteries, and monuments may experience cracking, spalling, or material deterioration due to freeze–thaw cycles, while ice accumulation and fallen trees can damage structures and cultural landscapes. Natural resources are also vulnerable, as winter weather can damage vegetation, alter wildlife habitats, and degrade water quality through increased runoff and erosion.

4.7.4.4. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations. As with other hazards, those who are elderly, disabled, or economically disadvantaged are at heightened risk due to limited access to reliable heating, transportation, and emergency services, and a reduced ability to physically withstand cold temperatures. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe winter weather and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.7.4.5. STRUCTURES AND SYSTEMS

Urban centers are more likely to experience infrastructure strain, including power outages, traffic disruptions, and increased demand for emergency services and shelters. While these areas may experience slightly milder winter conditions, the potential impacts are magnified due to the higher number of residents, aging utility systems, and limited access to alternate heating sources. Based on previous occurrences, severe winter weather has caused $175,000 damages within the past 10 years.

4.7.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Hinds County reduces the strain on electrical and other utility systems, reducing the likelihood that these systems experience failure during significant events. However, this may also contribute to quicker emergency response times, decreasing the overall risk.

4.8. TORNADO

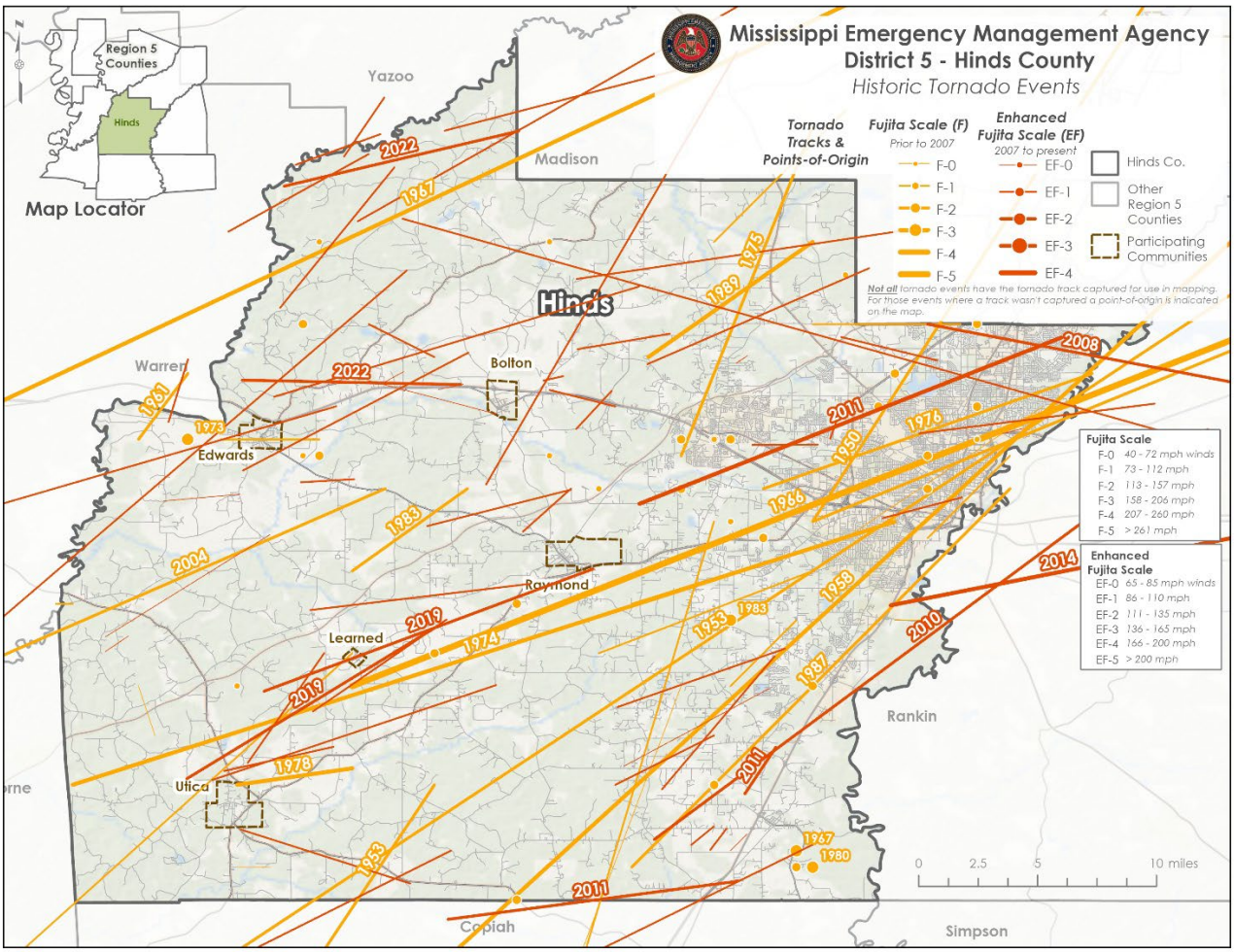
4.8.1. LOCATION AND EXTENT

Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments. Due to the unpredictable nature of tornado formation and the ability for the entire planning area to be impacted by severe storms, the entirety of Hinds County is equally likely to experience a tornado of any magnitude. Tornados of any strength on the Enhanced Fujita (EF) scale are possible throughout the county. For more information on tornadoes across the Districts, refer to the base plan.

4.8.2. PREVIOUS OCCURRENCES

Between 1950 and 2023, there were 112 tornadoes reported in Hinds County, causing a total of $95,838,000 in property damage. **Figure 42** below shows the historic tornado events throughout the County. Hinds County ranks first in most tornado events and third in reported property damage across District 5.

FIGURE 41: HINDS COUNTY HISTORIC TORNADO EVENTS



4.8.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 112 tornadoes in the past 72 years, which means multiple tornadoes can occur each year. Historical data spanning 72 years indicates a consistent pattern of tornado activity across Hinds County, indicating that tornadoes are **Extremely Likely** if not certain to recur at some point in the future. For the City of Bolton, the probability is **Highly Likely** and **Likely** for Raymond, Edwards, and Utica.

4.8.4. LOCALIZED VULNERABILITY ASSESSMENT

4.8.4.1. OVERALL VULNERABILITY

More populous and developed counties like Hinds County face elevated risk from tornadoes due to greater exposure and potential for cascading impacts. These areas are more likely to experience significant property damage, disruption of services, and challenges in post-disaster recovery. Additionally, mobile homes are extremely susceptible to high winds and may sustain more damage or be flipped over during a strong tornado. Tornadoes cause flying debris which can be dangerous for people in the surrounding areas and other buildings, infrastructure, and critical facilities. Due to the severity tornadoes can cause, they pose a **High** risk to Hinds County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to tornadoes.

4.8.4.2. CRITICAL FACILITIES

Tornadoes pose a serious risk to critical facilities in Hinds County due to extreme winds and flying debris that can cause sudden and severe structural damage. Facilities such as hospitals, emergency response buildings, schools, and water or wastewater infrastructure may experience roof failure, wall collapse, or loss of utilities, leading to immediate service interruptions. Power and communications outages are common during tornado events, and debris-blocked roads can restrict access to critical facilities and delay emergency response.

4.8.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tornadoes can significantly impact cultural, historic, and natural resources in the County through extreme winds, flying debris, and associated storm damage. Historic structures, cemeteries, monuments, and archeological sites may sustain damage or complete loss due to building collapse, fallen trees, or debris impacts, particularly where resources are older or lack structural reinforcement. Cultural landscapes and historic settings can also be altered by the destruction of surrounding features such as fences, vegetation, and access paths. Natural resources may be affected through forest damage, habitat loss, soil erosion, and disruption of wildlife caused by wind and debris.

4.8.4.4. PEOPLE

Some populations may face greater risk to tornadoes--the relatively short warning time typically provided for tornadoes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. 3,954 (3.9%) of the residents of Hinds County reside in mobile or manufactured homes, placing them at increased risk. These populations can experience disproportionate impacts to tornadoes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower than other residents of District 5.

4.8.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that do not have safe rooms or have not been retrofitted for extreme winds are vulnerable to the impacts of tornados, including in Hinds County, as described in the base plan. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of tornadoes. Hinds County may be at slightly higher risk of these impacts simply because it is more developed than other counties in the district, and there are more such facilities to be impacted. Based on previous occurrences, there have been nearly $96,000,000 in damages in the past 72 years which approximately $1,300,000 in damages a year.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. Hinds County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.8.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Hinds County means fewer people and structures for tornado to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tornadoes.

4.9. TROPICAL STORM/HURRICANE

4.9.1. LOCATION AND EXTENT

Like the rest of District 5, Hinds County is inland but is still vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. This risk is not measurably varied across the County or planning area, except for low-lying and flood-prone areas that might be more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

The extent of the impacts of tropical storm typically includes sustained winds of 30-60 MPH with higher gusts, heavy rainfalls of six or more inches in a 24-hour period, and occasional tornadoes. For more information on tropical storms and hurricanes across the District, refer to the base plan.

4.9.2. PREVIOUS OCCURRENCES

Hinds County is inland but has experienced the direct impacts of tropical storms in the past. The tracks of the following storms have passed directly through the County, producing damaging wind, heavy rainfall, power outages, and occasional tornadoes:

- Unnamed Tropical Storm (1987)
- Hurricane Andrew (1992)
- Hurricane Gordon (2018)

4.9.3. PROBABILITY OF FUTURE OCCURRENCES

Although Hinds County and its jurisdictions are located inland, the probability of experiencing hurricane-related impacts remains **Low** due to the district's proximity to the Gulf Coast and historical storm tracks. The county can expect to experience the effects of a tropical storm or hurricane approximately every 5 to 10 years, although climate trends and increased storm intensity may elevate risk.

4.9.4. LOCALIZED VULNERABILITY ASSESSMENT

4.9.4.1. OVERALL VULNERABILITY

Being in the middle half of the district, Hinds County is likely to experience slightly more frequent and intense tropical storm impacts than the district overall. Due to the low frequency, geography, and potential damage from tropical storms and hurricanes, they pose a **Medium** risk to Hinds County and its jurisdictions. However, tropical storms and hurricanes pose a **High** risk to the City of Bolton. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to tropical storms and hurricanes.

4.9.4.2. CRITICAL FACILITIES

Although weakened inland, tropical storms and hurricanes can affect critical facilities in Hinds County through heavy rainfall, strong winds, and localized flooding that strain infrastructure and disrupt essential operations. Hospitals, emergency response facilities, schools, government buildings, and water or wastewater systems may experience structural damage, power and communications outages, and flooding of mechanical or electrical components. Excessive rainfall can also overwhelm drainage systems and flood roadways, restricting access to critical facilities and delaying emergency response.

4.9.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tropical storms and hurricanes can adversely impact cultural, historic, and natural resources in the County through heavy rainfall, strong winds, localized flooding, and prolonged soil saturation. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris,

roof failure, flooding, or erosion, particularly where structures and sites are older or not designed to withstand prolonged moisture exposure. Excessive rainfall can erode soils and displace archeological materials, while flooding may degrade cultural landscapes and historic settings. Natural resources are also vulnerable, as tropical storm impacts can damage forested areas, alter stream channels, degrade wetlands, and reduce water quality due to increased runoff and sedimentation.

4.9.4.4. PEOPLE

Some populations may face greater risk to tropical storms--the relatively short warning time typically provided for tropical storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. These factors increase risk to the population in the County to tropical storms and may have difficulty in preparing and recovering from them. These populations can experience disproportionate impacts to tropical storms and hurricanes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower than other residents of District 5.

4.9.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storms like high winds. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of these storms across the planning area, including in Hinds County, as described in the base plan. The County may be at slightly higher risk of these impacts simply because it is more developed than other counties in the district, and there are more such facilities to be impacted. As noted above, low-lying and flood-prone areas are more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. Hinds County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.9.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Hinds County means fewer people and structures for these storms to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tropical storms.

4.10. WILD/URBAN INTERFACE (WUI) FIRE

4.10.1. LOCATION AND EXTENT

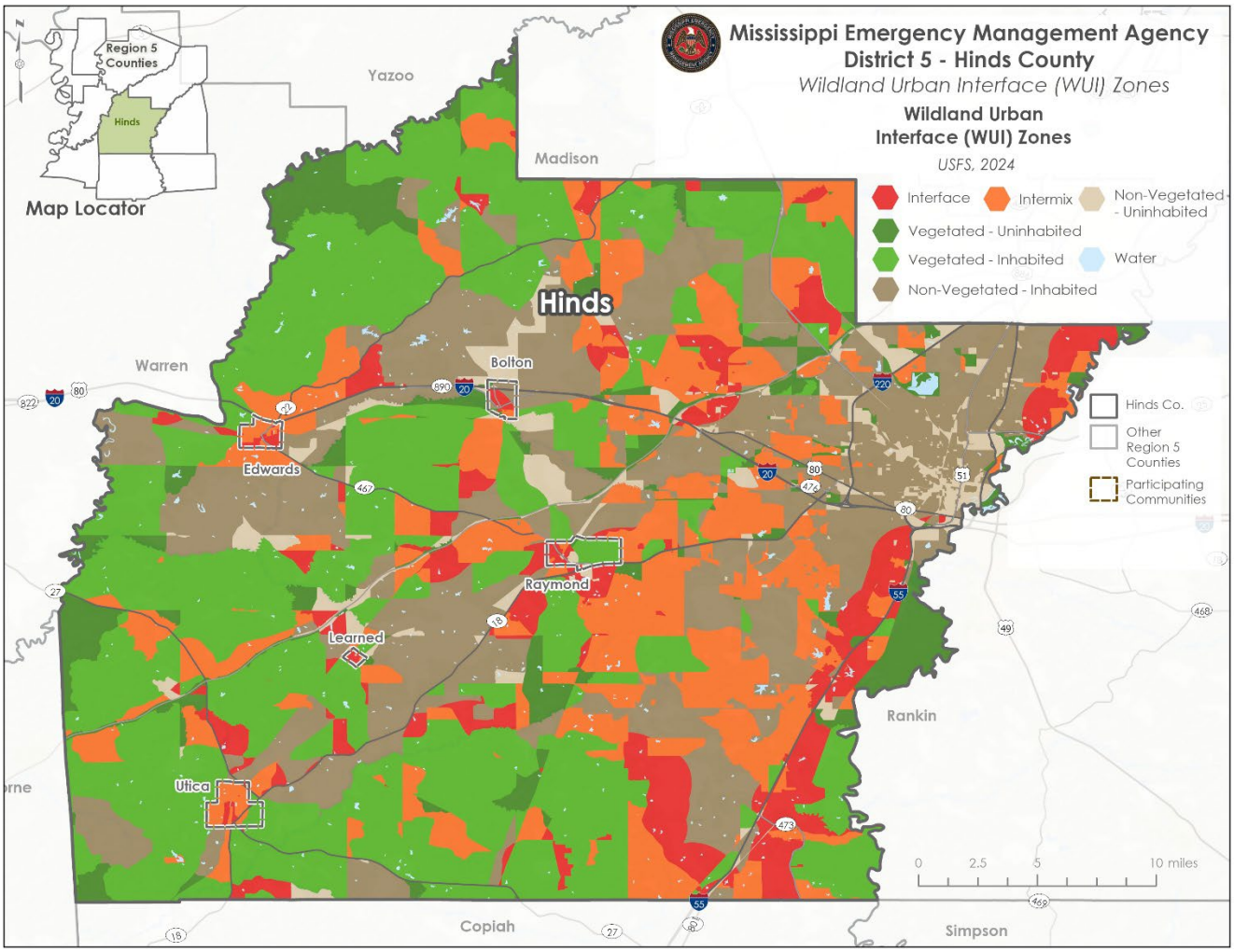
Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas. There are two types of WUI Zones, and they are briefly described below.

Interface: Development is bordered by wildlands on at least one side.

Intermix: Development is surrounded on two or more sides by wildlands.

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. **Figure 43** is a map showing the areas where this hazard is most significant in Hinds County. The areas susceptible to WUI fires are within and surrounding the participating jurisdictions, as well as other areas across the County. The Eastern parts of the County gradually become more vegetative. For more information on urban and WUI fires across the District, refer to the base plan.

FIGURE 42: WILDLAND URBAN INTERFACE (WUI) AREA IN HINDS COUNTY

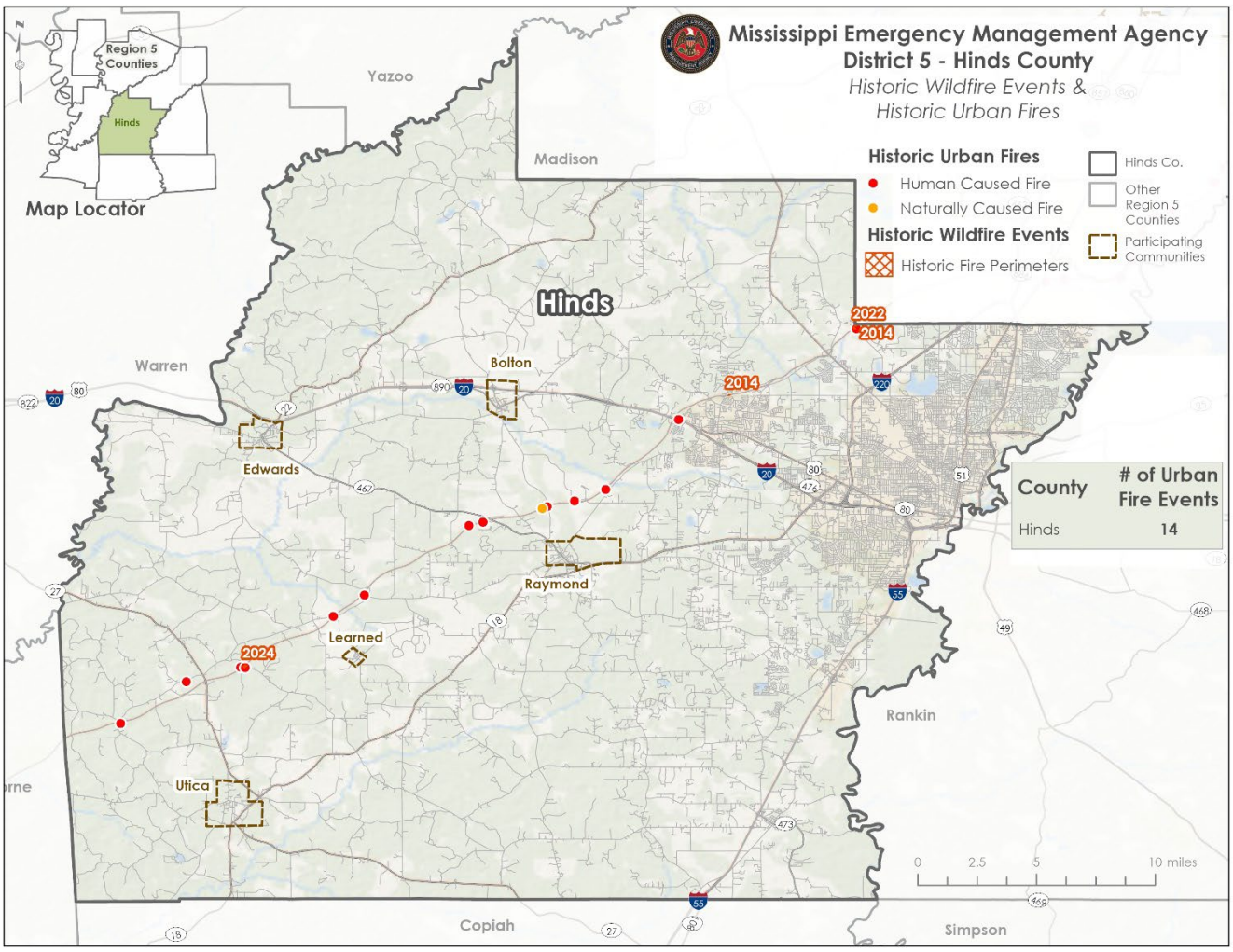


The extent of a potential WUI fire impact in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development, but is not substantively different in Hinds County than in the District overall. This extent is described further in the base plan.

4.10.2. PREVIOUS OCCURRENCES

There have been 14 fire incidents in Hinds County from 1992-2020. The only instance of a wildfire was a 135-acre wildfire that was contained along Midway Road in Utica. The Mississippi Forestry Commission (MFC) responded with crews, along with assistance from Claiborne County and local volunteer fire departments. See **Figure 44** below for the map of historical fire events in the County. It is also important to note that some District 3 participating communities provided anecdotal information that previous fire events have not been captured using state level data. Due to this data limitation, it is possible that the number of previous occurrences could be more than reported.

FIGURE 43: HINDS COUNTY HISTORIC FIRE EVENTS



4.10.3. PROBABILITY OF FUTURE OCCURRENCES

Wildland/Urban Interface (WUI) fires are expected to remain a recurring hazard in Hinds County. Hundreds of wildfires occur in Mississippi each year, indicating that such fires may occur in the county likely to occur in the County. However, based on local capacity to respond to such fires, the impact on

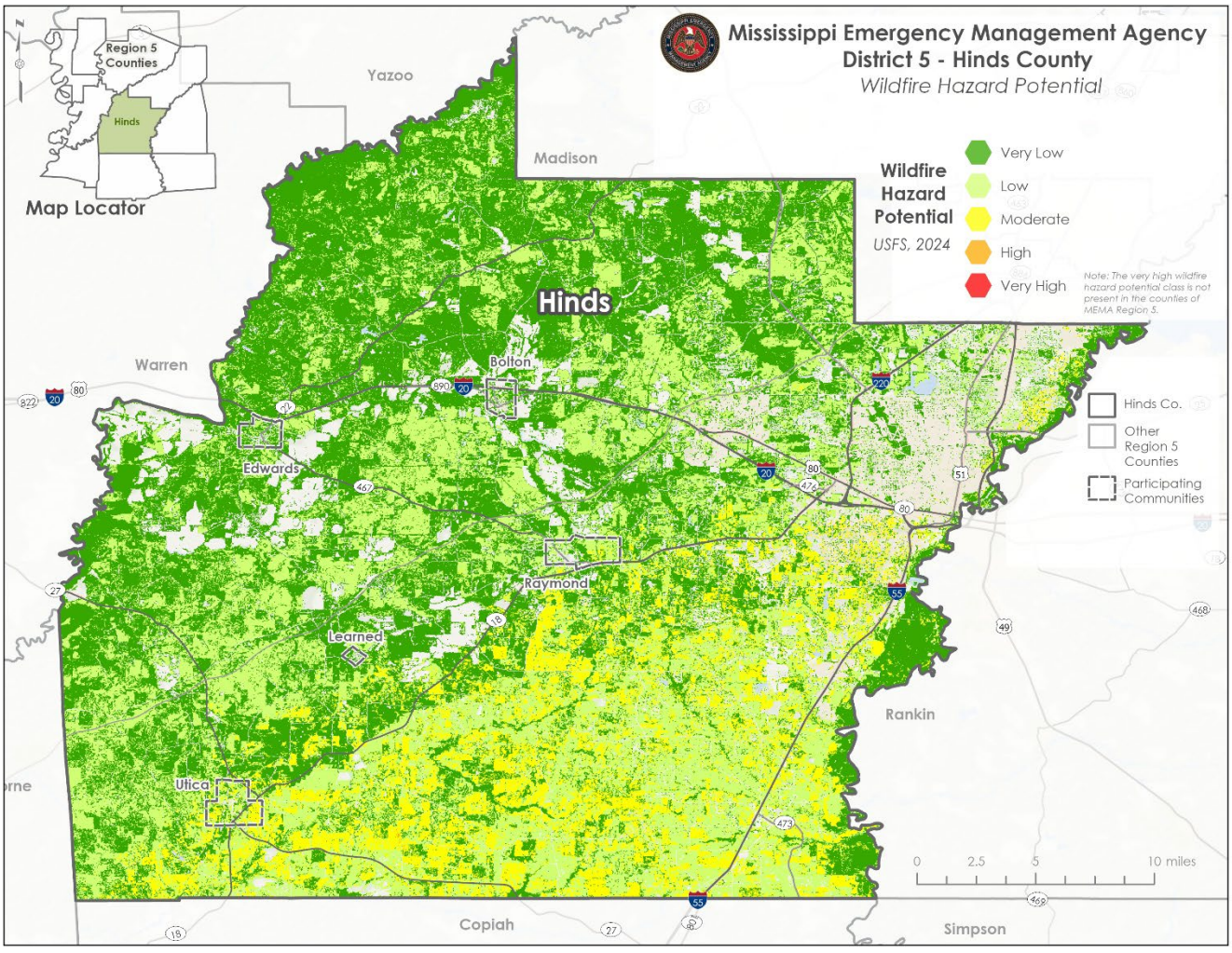
the County is low. The probability of the County and Raymond responding to a severe fire is **Low** and **Unlikely** for Bolton, Edwards, and Utica.

4.10.4. LOCALIZED VULNERABILITY ASSESSMENT

4.10.4.1. OVERALL VULNERABILITY

Counties like Hinds County in the central part of the district, due to a variety of geographic factors like drier climate and soils and trends in development, are more susceptible to both WUI and urban fire. Wildfire hazard potential is generally very low to low across the County with some moderate areas in the Southern and Eastern part of the County. **Figure 45** below for a visual of the wildfire hazard potential throughout the County. While the frequency of fires occurring in the County is low, the impact is low since the County has the capacity to respond effectively to most incidents. Therefore, the risk of wildfires is **High** for Hinds County. However, the risk to Bolton is **Medium** and **Low** for Raymond, Edwards, and Utica. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to wildfires.

FIGURE 44: HINDS COUNTY WILDFIRE HAZARD POTENTIAL



4.10.4.2. CRITICAL FACILITIES

Urban and wildland fires pose a significant risk to critical facilities in Claiborne County by threatening structural integrity, utility systems, and operational continuity. Hospitals, fire stations, schools, government buildings, and water or wastewater facilities may be damaged or rendered inoperable by direct flame contact, radiant heat, smoke infiltration, and wind-driven embers. Fire events can disrupt electrical power, communications, and water supplies needed for medical care, emergency response, and fire suppression, while evacuation orders and hazardous conditions may limit staff access to critical facilities. Wildfires occurring in or near the wildland-urban interface can also restrict transportation routes and delay response efforts. **Figure 45** displays the critical facilities and infrastructure in the WUI zones and **Table 43** provides a list of these facilities at increased risk.

FIGURE 45: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE WUI ZONES

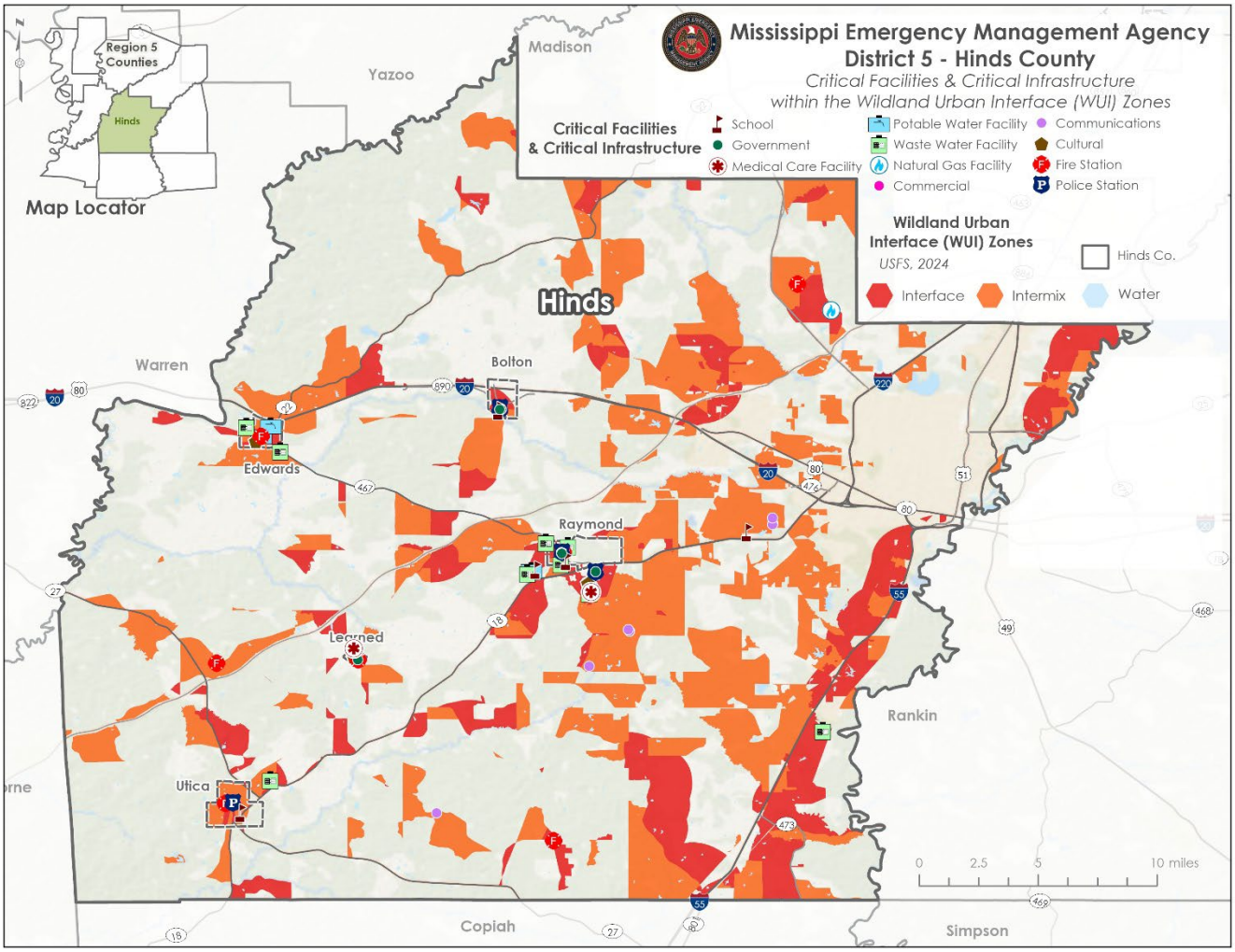


TABLE 44: CRITICAL FACILITIES IN THE WUI

Jurisdiction	Facility Type	Facility	WUI Zone
Learned	Commercial - Restaurant	Gibbes Store & Restaurant	Interface - Medium Density
Learned	Communications	Civil Defense Siren	Interface - Low Density

Jurisdiction	Facility Type	Facility	WUI Zone
Learned	Communications	Civil Defense Siren	Interface - Low Density
Jackson	Communications	WAPT CH 16	Intermix - Low Density
Jackson, Etc.	Communications	WBXK-CA CH 8	Intermix - Low Density
Jackson	Communications	WDBD CH 40	Intermix - Low Density
Jackson	Communications	WDBT CH 238	Intermix - Low Density
Learned	Commercial - Restaurant	Gibbes Store & Restaurant	Interface - Medium Density
Jackson	Communications	WJMI CH 259	Intermix - Low Density
Jackson	Communications	WJTV CH 12	Interface - Low Density
Utica	Communications	WJXN-FM CH 225	Intermix - Low Density
Jackson	Communications	WLBT-TV CH 3	Intermix - Low Density
Jackson	Communications	WMPN-FM CH 217	Intermix - Low Density
Jackson	Communications	WMPN-TV CH 29	Intermix - Low Density
Jackson	Communications	WMSI-FM CH 275	Intermix - Low Density
Vicksburg	Communications	WSTZ-FM CH 294	Intermix - Low Density
Jackson	Communications	WTYX CH 234	Intermix - Low Density
Jackson	Communications	WUSJ CH 242	Interface - Low Density
Raymond	Cultural	Eagle Ridge Conference Center	Interface - Low Density
Edwards	Cultural	Edwards Community Center	Interface - Low Density
Learned	Cultural - Religious	Learned Baptist Church	Interface - Medium Density
Learned	Cultural - Religious	Learned Methodist Church	Interface - Medium Density
Learned	Cultural - Religious	Lebanon Presbyterian	Interface - Low Density
Learned	Cultural - Religious	Lebanon Presbyterian Church	Interface - Low Density
Utica	Fire Station	Bench Volunteer Fire Department	Intermix - Low Density
Bolton	Fire Station	Bolton Volunteer Fire Department	Interface - Medium Density
Terry	Fire Station	Crossroads Volunteer Fire Department Terry	Interface - Low Density
Learned	Fire Station	Learned Volunteer Fire Department	Interface - Low Density
Jackson	Fire Station	Maclean Volunteer Fire Department	Interface - Medium Density
Raymond	Fire Station	Raymond Volunteer Fire Department	Intermix - Medium Density
Utica	Fire Station	Utica Volunteer Fire Department	Interface - Medium Density
Edwards	Fire Station	West Hinds Volunteer Fire Department	Interface - Medium Density

Jurisdiction	Facility Type	Facility	WUI Zone
Bolton	Government	Bolton City Hall	Interface - Medium Density
Raymond	Government	Hinds County Courthouse	Interface - Medium Density
Learned	Government	Learned Town Hall	Interface - Low Density
Raymond	Government	Raymond City Hall	Interface - Medium Density
Bolton	Government	Town Of Bolton Town Hall	Interface - Medium Density
Learned	Government	USPS Mail Drop	Interface - Low Density
Raymond	Government - Residential	Hinds County Penal Farm	Interface - Low Density
Learned	Medical Care Facility - Residential	Mercy House Group Home	Interface - Low Density
Raymond	Medical Care Facility - Residential	Riggs Manor	Interface - Low Density
Jackson	Natural Gas Facility	Clinton	Interface - Low Density
Bolton	Police Station	Bolton Police Department	Interface - Medium Density
Bolton	Police Station	Bolton Police Station	Interface - Medium Density
Raymond	Police Station	Hinds County Sheriffs' Department - Raymond Detention Center / Hinds County Sheriff's Department Penal Farm	Interface - Low Density
Raymond	Police Station	Hinds County Sheriffs' Department - Raymond Patrol Division	Interface - Medium Density
Utica	Police Station	Utica Police Department	Interface - Low Density
Raymond	Potable Water	Maqna Well & Elevated Tank	Interface - Low Density
Edwards	Potable Water	Water Well - Magnolia	Interface - Medium Density
Edwards	Potable Water	Well, Elevated Tank, And Water Treatment System	Interface - Medium Density
Raymond	School	Carver Middle School	Interface - Medium Density
Bolton	School	Main Street Alternative School	Interface - Medium Density
Raymond	School	Raymond Elementary School	Interface - Medium Density
Jackson	School	Siwell Middle School	Intermix - Low Density
Utica	School	Utica Elem. / Middle School	Intermix - Low Density
Edwards	Waste Water Facility	Edwards POTW - Southeast	Intermix - Low Density

Jurisdiction	Facility Type	Facility	WUI Zone
Edwards	Waste Water Facility	Edwards POTW - West	Intermix - Low Density
Jackson	Waste Water Facility	Jackson POTW - Trahon/Big Crk	Interface - Low Density
Raymond	Waste Water Facility	Percy Street Lift Station	Intermix - Low Density
Raymond	Waste Water Facility	Raymond POTW	Interface - Low Density
Raymond	Waste Water Facility	Seven Springs Road Lift Station	Interface - Low Density
Raymond	Waste Water Facility	Underhill Street Lift Station	Interface - Medium Density
Utica	Waste Water Facility	Utica POTW - North	Intermix - Low Density
Raymond	Waste Water Facility	Valley Street Lift Station & Elevated Tank	Interface - Medium Density

4.10.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Urban and wildland fires can cause significant damage to cultural, historic, and natural resources in the County through flame exposure, extreme heat, smoke, and post-fire environmental degradation. Historic structures, cemeteries, monuments, and archeological sites may be damaged or lost because of direct fire contact, structural weakening from heat, falling trees, or fire-suppression activities. The destruction of surrounding vegetation can alter historic settings and cultural landscapes, reducing their integrity and context. Natural resources are particularly vulnerable, as fires can result in the loss of forested areas and wildlife habitat, degrade air and water quality, and increase erosion and sediment runoff following vegetation loss.

4.10.4.4. PEOPLE

For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Issaquena and Sharkey Counties and the City of Madison, thus putting those populations at a slightly lower risk than the rest of the District.

Populations most at risk of the impacts of fires include older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate when these fires occur. These populations can experience disproportionate impacts to urban and WUI fires and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. Because it is more urban than the district, people in Hinds County may be at slightly lower risk from wildfire, as the higher access to road infrastructure and warning systems may make evacuation easier.

4.10.4.5. STRUCTURES AND SYSTEMS

Hinds County contains moderate areas of direct exposure to wildfire risk, as shown in the Wildfire Risk Reduction Zones map in the base plan. In these areas, homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk and complicating suppression efforts. Hinds County does not) have a Community Wildfire Protection Plan (CWPP) in place, which could help address and reduce risk in the future.

4.10.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In urbanizing areas like Hinds County, the expansion of housing into fire-prone zones like forested and rural areas increases the number of people and structures exposed to wildfire hazards. Development in these areas often leads to fragmented habitats and increased ignition sources, which heighten the potential for wildfires and complicate emergency response efforts.

4.11. HAZARDOUS MATERIAL INCIDENTS

4.11.1. LOCATION AND EXTENT

Hazardous materials incidents can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, agricultural operations, and facilities that store or use chemicals. In Hinds County, these include:

- Interstates 20, 55 and 220
- U.S. Highways 49, 51 and 80
- State Highways 18, 22, 80, 467, 473 and 476
- Natchez Trace Parkway
- Illinois Central Railroad
- Jackson Union Station

As noted in the base plan, the severity of the impact from HazMat incidents depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures. Because Hinds County is more urban, impacts of a release on the surrounding population might be more significant due to population density, although faster emergency response times may impact the severity of an incident.

Figure 46 below shows the gas transmission pipelines and hazardous liquid pipelines while **Figure 47** below displays the ground transportation throughout the County. For more information on hazardous material incidents across the District, refer to the base plan.

FIGURE 46: PIPELINES IN HINDS COUNTY

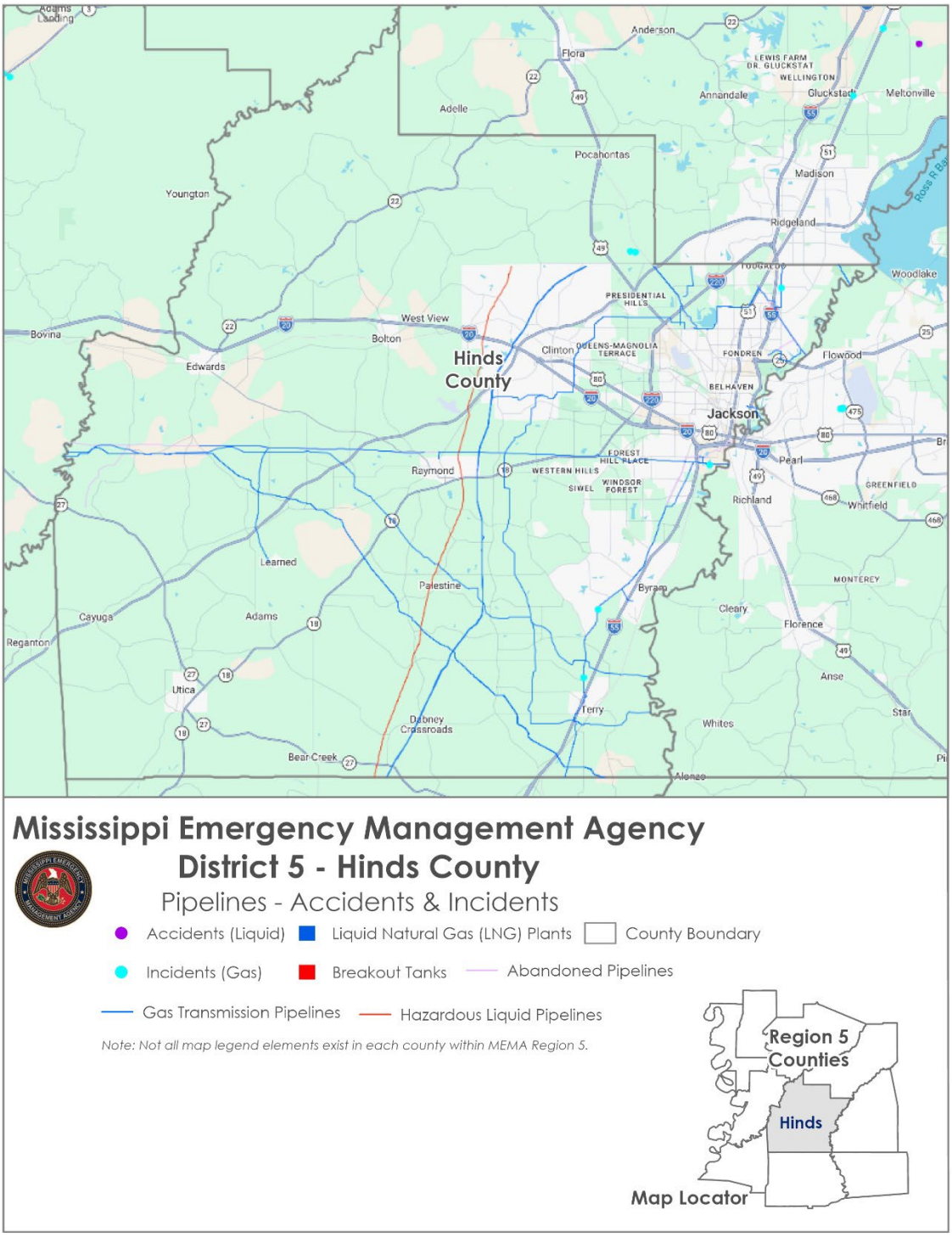
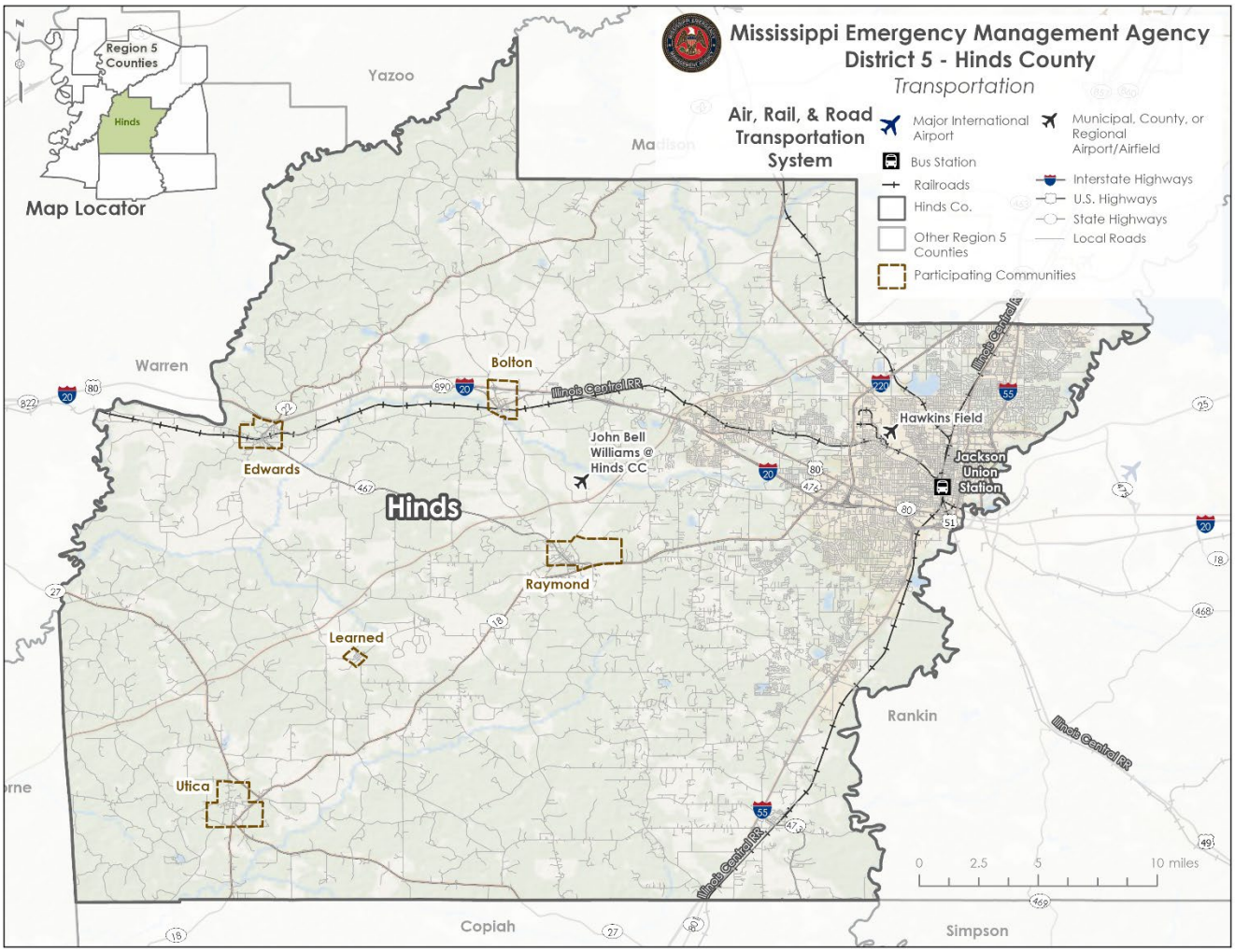


FIGURE 47: GROUND TRANSPORTATION IN HINDS COUNTY



4.11.2. PREVIOUS OCCURRENCES

In Hinds County, there have been a total of 410 hazardous materials releases reported to the EPA since 2014.

- 2014: 39 reports at 16 facilities
- 2015: 39 reports at 16 facilities
- 2016: 36 reports at 17 facilities
- 2017: 35 reports at 14 facilities
- 2018: 35 reports at 12 facilities
- 2019: 36 reports at 14 facilities
- 2020: 34 reports at 13 facilities
- 2021: 37 reports at 12 facilities
- 2022: 39 reports at 12 facilities
- 2023: 42 reports at 12 facilities

- 2024: 38 reports at 10 facilities

4.11.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 410 incidents in the past 11 years and equates to 37 incidents per year within the County. As with the rest of District 5, the likelihood of future hazardous materials incidents in Raymond is **Low** and for Bolton is **Unlikely**. With major highways, rail lines, and facilities regularly handling and transporting hazardous substances, the potential for accidental spills or releases remains ongoing. Since hazardous materials incidents are not considered “natural hazards”, the jurisdictions are not required to evaluate the probability of future occurrences. Therefore, the risk is **Unrated** for Hinds County, Edwards, and Utica.

4.11.4. LOCALIZED VULNERABILITY ASSESSMENT

4.11.4.1. OVERALL VULNERABILITY

More populous and developed counties like Hinds County face elevated risk from HazMat incidents due to greater exposure and potential for cascading impacts. These areas are more likely to experience HazMat incidents, and to experience significant disruption of services when they do occur. The overall risk of a hazardous material incident in Raymond and Bolton is **Low**. Since hazardous materials incidents are not considered “natural hazards”, the jurisdictions are not required to evaluate the of the overall risk. Therefore, the risk is **Unrated** for Hinds County, Edwards, and Utica. This section provides further contextualization for the anticipated vulnerability of the communities within Hinds County to hazardous material incidents.

4.11.4.2. CRITICAL FACILITIES

Hazardous materials incidents can pose significant risks to critical facilities in Hinds County by causing contamination, toxic exposure, or fire and explosion hazards that may require evacuations or temporary shutdowns. Hospitals, schools, emergency services, government buildings, and water and wastewater systems may face service disruptions due to safety concerns, limited access, or impacts to supporting utilities. These events can also strain emergency operations as personnel and resources are redirected toward containment and cleanup.

4.11.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Hazardous materials incidents can negatively affect cultural, historic, and natural resources in the County through contamination of soil, water, vegetation, and sensitive sites. Historic buildings, cemeteries, and archeological resources may be damaged by chemical spills, airborne releases, or cleanup activities that disturb structures and surrounding landscapes. Natural resources are particularly vulnerable, as hazardous substances can pollute streams, wetlands, and groundwater, harm wildlife, and degrade ecosystems for extended periods.

4.11.4.4. PEOPLE

Populations most at risk of the impacts of hazardous materials incidents are those living near transportation corridors, industrial facilities, and storage sites, who are more likely to be lower income. This population is also less likely to have reliable access to transportation, complicating evacuation efforts. Other vulnerable populations include older adults, children, and those with respiratory conditions, who may face challenges during shelter-in-place orders. These populations can experience disproportionate impacts to hazardous materials incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Hinds County has a medium to high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.11.4.5. STRUCTURES AND SYSTEMS

Because it is more urban than the rest of the district, people in Hinds County may be at slightly higher risk from HazMat incidents due to the relative number of facilities that might cause releases. However, higher access to road infrastructure and warning systems may make evacuation easier than in other areas, as would higher emergency response capability. Impacts on lifelines and to natural, cultural, and historic resources are generally consistent across the planning area and are described in the base plan.

4.11.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In urbanizing areas like Hinds County, population growth increases the number of people and structures that could be exposed to hazardous materials when released.

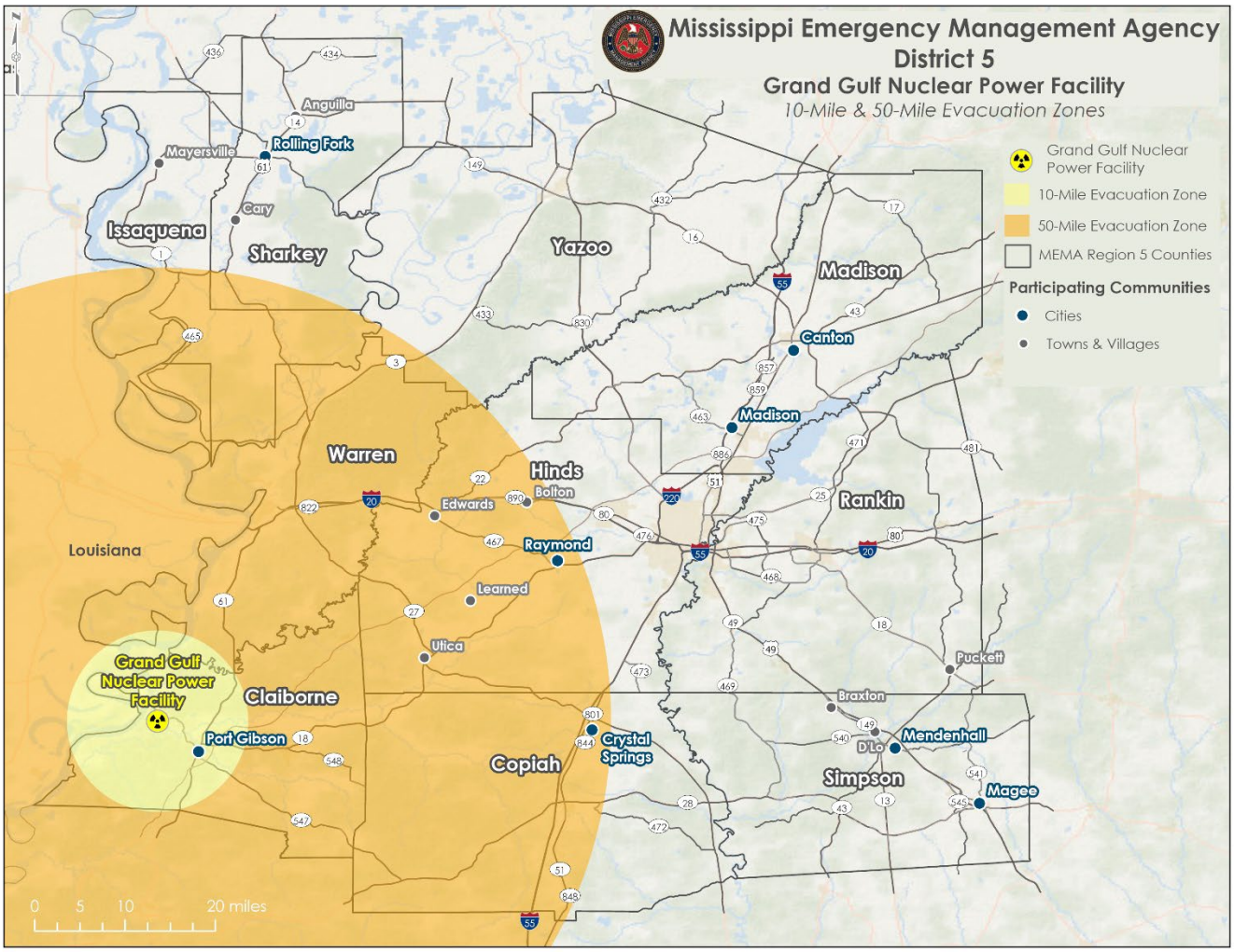
4.12. NUCLEAR POWER PLANT INCIDENTS

4.12.1. LOCATION AND EXTENT

A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies. For more information on nuclear power plant incidents across the District, refer to the base plan.

Grand Gulf Nuclear Station (GGNS) is the only nuclear power plant in Mississippi. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP), includes a 50-mile radius from the facility, shown in **Figure 48.** Hinds County is partially located in the Eastern edge of the 50-mile IEP area, which includes the City of Raymond and the Towns of Bolton, Edwards, Learned and Utica. For more information on nuclear power plant incidents across the District, refer to the base plan.

FIGURE 48: GRAND GULF 10-MILE AND 50-MILE EVACUATION ZONES



4.12.2. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. However, historical examples such as Three Mile Island (1979), Chernobyl (1986), and Fukushima Daiichi (2011) demonstrate the potential severity of such events. Grand Gulf Nuclear Station has maintained a strong safety record, but minor operational alerts have occurred in the past without offsite consequences. More information about previous occurrences can be found in the base plan.

4.12.3. PROBABILITY OF FUTURE OCCURRENCES

Nuclear power plants have strict regulatory oversight and safety protocols. However, the potential consequences are high. Natural hazards such as severe storms, flooding, or seismic activity could increase risk factors. The Fukushima Daiichi nuclear accident in 2011 is the most recent major nuclear event, and it was primarily caused by a M_w 9.0-9.1 earthquake and subsequent tsunami causing extensive damage to nearly all the facility's backup power sources. According to an NRC report, the estimated risk each year of an earthquake is intense enough to cause damage to the reactor core at Grand Gulf Nuclear Station, 1 in 83,333.

Based on historical events, the probability of a major nuclear incident is **unlikely** for Hinds County and its communities. Hinds County, Bolton, Edwards, Learned, and Utica did not dispute this assessment, but members of the Mitigation Council representing the City of Raymond felt that the probability was higher, and identified this hazard as **likely**. This plan respects Raymond's decision to assess the probability of nuclear power plant incidents differently than other jurisdictions; the Mitigation Council consists of individuals who each possess local expertise and knowledge of their community that goes beyond what can be determined through national and state-level datasets.

4.12.4. LOCALIZED VULNERABILITY ASSESSMENT

4.12.4.1. OVERALL VULNERABILITY

To understand how vulnerable the County is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. Since nuclear incidents are not considered "natural hazards", jurisdictions are not required to evaluate the overall risk of this hazard to the same extent as natural hazards profiled in this plan. Some communities opted to evaluate nuclear power plant incidents in a manner consistent with other hazards, but other communities did not wish to attempt to quantify the area impacted, health and safety consequences, property damage, environmental damage, and economic disruption of nuclear power plant incidents.

For Bolton, Raymond, and Learned which evaluated their vulnerability to nuclear power plant incidents through the same methodology used for natural hazards, their overall vulnerability is **low, medium,** and **medium,** respectively. For Hinds County overall, Edwards, and Utica, the overall vulnerability of these communities to this hazard is **unrated**. The following sections provide further contextualization for the anticipated vulnerabilities of Hinds County and its communities to nuclear power plant incidents.

4.12.4.2. CRITICAL FACILITIES

Critical facilities are unlikely to sustain direct physical damage from a nuclear power plant incident, but the operations of these facilities and the services they provide could still be significantly disrupted. If radioactive materials are released and contaminate portions of Hinds County, any impacted facilities may need to close temporarily while safety inspections are conducted and conditions are verified as safe. Additionally, protective measures—such as evacuation orders, shelter-in-place instructions, or restricted-access zones—could limit staff access and impede normal operations. Hinds County and all participating jurisdictions within the county have critical facilities such as fire departments, medical facilities, schools, water wells, wastewater treatment sites, government offices, and other facilities that could be disrupted by radioactive contamination.

Even without radioactive contamination, critical facilities and services can be disrupted if evacuation orders prevent normal operations at these facilities. Western Hinds County and the communities of Bolton, Edwards, Learned, Raymond, and Utica are within the 50-mile Ingestion Exposure Pathway Zone, and an accident at the Grand Gulf Nuclear Station could prompt shelter-in-place orders for these communities. Additionally, residents in these communities may be advised to avoid using water wells until they are tested, schools may temporarily shift to remote/virtual programming, and medical facilities may face a surge of residents seeking screening and monitoring. The eastern portion of Hinds County is outside of the 50-mile Ingestion Exposure Pathway Zone, and it's unlikely that critical facilities in this area will experience significant impacts.

4.12.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Within the 50-mile Ingestion Exposure Pathway Zone, contamination of crops, livestock, and soil could result in restrictions on the production, distribution, and consumption of agricultural products, leading to economic losses and supply chain disruptions. Depending on the severity of the event, it may be necessary to destroy contaminated products, and contaminated land may require years or remediation before it can safely be used for agricultural purposes. Cultural and historic sites are not uniquely

vulnerable to this hazard, although historic structures sometimes require frequent or specialized maintenance which may no longer be possible if they are within areas that are unsafe for humans after a nuclear incident.

4.12.4.4. PEOPLE

As mentioned above, the western half of Hinds County, including the communities of Bolton, Edwards, Learned, Raymond, and Utica, is in the designated 50-mile Ingestion Exposure Pathway Zone. Individuals in this zone will receive official notifications through sirens, tone-alert radios, and broadcast media, and may be instructed to take specific protective steps depending on the severity of the event. Populations with access and functional needs may be disproportionately affected by a nuclear power plant incident. This includes elderly individuals and young children, individuals with disabilities, individuals who are physically isolated and lack internet and cell phone connectivity, and low-income populations.

Vulnerable populations may have trouble receiving or understanding warnings and instructions, lack access to protective equipment and emergency supplies, and require assistance evacuating to a safe location. According to the CDC Social Vulnerability Index (SVI), Hinds County communities have a medium to high SVI score, indicating that they may be more vulnerable to disasters, including nuclear power plant incidents, than the average Mississippi community. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.12.4.5. STRUCTURES AND SYSTEMS

Overall, the impacts of a nuclear incident would be driven by contamination and disruption to the normal function of structures and systems rather than physical destruction. In the event of a significant release, radioactive materials could be transported by wind and deposited on buildings, infrastructure, soil, and surface water. While most structures would remain intact, contamination of rooftops, ventilation systems, and exterior surfaces could limit their use and require decontamination.

If the Grand Gulf Nuclear Station is unable to provide energy, it will immediately strain energy supply and increase demand for the services of other energy producers in the region. Depending on the length of the outage, energy-intense systems and services such as water treatment, healthcare, education, data management, and more could experience interruptions. The transportation infrastructure in Hinds County and its communities may be temporarily overwhelmed if panic leads to large portions of the population fleeing in an uncoordinated manner. Gridlock and chaos on roadways can lead to accidents and injuries, delay the evacuation of residents to safe areas, and delay emergency response operations.

Residential and commercial structures are not expected to be physically damaged, but they may need to be abandoned if they are in areas that are deemed unsafe, which could significantly reduce property values and leave residents homeless. If the contamination is severe, it may take years before affected homes can be occupied and businesses can reopen. A prolonged period without routine maintenance and care can cause structures to become dilapidated, potentially adding an economic burden on the owners.

4.12.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Census data for Hinds County, Bolton, Edwards, Learned, and Utica shows that these populations have declined in recent years, while the population of Raymond has seen a small increase. Overall, there is no indication that recent development trends have appreciably increased or decreased vulnerability in Hinds County or its communities, although future trends could change.

Appendix E: Hinds County

4.13. CRITICAL FACILITIES VULNERABILITY SUMMARY

Table 44 below notes the individual critical facilities in Hinds County that were identified by the Mitigation Council and provides information on the relative risk these facilities face from various hazards.

TABLE 45: HINDS COUNTY CRITICAL FACILITIES VULNERABILITY SUMMARY

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Airport	JOHN BELL WILLIAMS	Raymond	OUT	OUT	IN	Non-Vegetated - Very Low Density	WTZ: Non-Vegetated	N/A - WHP Undetermined
Commercial - Restaurant	Gibbes Store & Restaurant	Learned	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Communications	Civil Defense Siren	Learned	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Communications	Civil Defense Siren	Learned	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Communications	WAPT CH 16	JACKSON	OUT	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Communications	WBXK-CA CH 8	JACKSON, ETC.	OUT	OUT	OUT	Intermix - Low Density	Direct Exposure	Low
Communications	WDBD CH 40	JACKSON	OUT	OUT	OUT	Intermix - Low Density	Direct Exposure	Low
Communications	WDBT CH 238	JACKSON	OUT	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Communications	WFMN CH 247	FLORA	OUT	OUT	OUT	Vegetated - Very Low Density	Direct Exposure	Very Low
Communications	WJKK CH 254	VICKSBURG	OUT	OUT	IN	Vegetated - Very Low Density	Direct Exposure	Moderate
Communications	WJMI CH 259	JACKSON	OUT	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Communications	WJTV CH 12	JACKSON	OUT	OUT	IN	Interface - Low Density	Direct Exposure	Very Low
Communications	WJXN-FM CH 225	Utica	OUT	OUT	IN	Intermix - Low Density	WTZ: Tree	Low
Communications	WLBT-TV CH 3	JACKSON	OUT	OUT	IN	Intermix - Low Density	Direct Exposure	Very Low
Communications	WMPN-FM CH 217	JACKSON	OUT	OUT	IN	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Communications	WMPN-TV CH 29	JACKSON	OUT	OUT	IN	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Communications	WMSI-FM CH 275	JACKSON	OUT	OUT	IN	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Communications	WSTZ-FM CH 294	VICKSBURG	OUT	OUT	IN	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Communications	WTYX CH 234	JACKSON	OUT	OUT	OUT	Intermix - Low Density	Direct Exposure	Low

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Communications	WUSJ CH 242	JACKSON	OUT	OUT	IN	Interface - Low Density	Direct Exposure	Very Low
Cultural	Eagle Ridge Conference Center	Raymond	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Cultural	Edwards Community Center	Edwards	OUT	OUT	IN	Interface - Low Density	Direct Exposure	Very Low
Cultural - Religious	Learned Baptist Church	Learned	OUT	OUT	IN	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Cultural - Religious	Learned Methodist Church	Learned	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	Very Low
Cultural - Religious	Lebanon Presbyterian	Learned	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Cultural - Religious	Lebanon Presbyterian Church	Learned	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Electrical Power Facility	Entergy Substation	Raymond	OUT	OUT	IN	Vegetated - Very Low Density	Direct Exposure	Very Low
Fire Station	Bench Volunteer Fire Department	Utica	OUT	OUT	IN	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Fire Station	Bolton Volunteer Fire Department	Bolton	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Fire Station	Brownsville Volunteer Fire Department	Bolton	OUT	OUT	OUT	Vegetated - Very Low Density	Direct Exposure	Very Low
Fire Station	Crossroads Volunteer Fire Department Terry	Terry	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Fire Station	Learned Volunteer Fire Department	Learned	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Fire Station	Maclean Volunteer Fire Department	Jackson	OUT	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Fire Station	Pocahontas Volunteer Fire Department	Jackson	OUT	OUT	OUT	Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
Fire Station	Raymond Volunteer Fire Department	Raymond	OUT	OUT	IN	Intermix - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Fire Station	Terry Volunteer Fire Department	Terry	OUT	OUT	OUT	Non-Vegetated - Low Density	Direct Exposure	Very Low
Fire Station	Utica Volunteer Fire Department	Utica	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Fire Station	West Hinds Volunteer Fire Department	Edwards	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Government	Bolton City Hall	Bolton	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Government	Hinds County Courthouse	Raymond	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Government	Hinds County Public Works	Raymond	OUT	OUT	IN	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Government	Learned Town Hall	Learned	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Government	Raymond City Hall	Raymond	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Government	Town of Bolton Town Hall	Bolton	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Government	USPS Mail Drop	Learned	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Government - Residential	Hinds Community College - student housing	Raymond	OUT	OUT	IN	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Government - Residential	Hinds County Penal Farm	Raymond	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Medical Care Facility - Residential	Mercy House	Learned	IN	OUT	IN	Non-Vegetated - Uninhabited	WTZ: Tree	Very Low
Medical Care Facility - Residential	Mercy House Group Home	Learned	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Medical Care Facility - Residential	Riggs Manor	Raymond	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Natural Gas Facility	CLINTON	JACKSON	OUT	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Natural Gas Facility	MEP-4 (VICKSBURG	Edwards	OUT	OUT	IN	Vegetated - Very Low Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	BOLTON POLICE DEPARTMENT	Bolton	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	Bolton Police Station	Bolton	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	EDWARDS POLICE DEPARTMENT	Edwards	OUT	OUT	IN	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Police Station	HINDS COMMUNITY COLLEGE -	Raymond	OUT	OUT	IN	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
	RAYMOND CAMPUS POLICE							
Police Station	HINDS COUNTY SHERIFFS DEPARTMENT - RAYMOND DETENTION CENTER / HINDS COUNTY SHERIFFS DEPARTMENT PENAL FARM	Raymond	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Police Station	HINDS COUNTY SHERIFFS DEPARTMENT - RAYMOND PATROL DIVISION	Raymond	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	RAYMOND POLICE DEPARTMENT	Raymond	OUT	OUT	IN	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Police Station	UTICA POLICE DEPARTMENT	Utica	OUT	OUT	IN	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Downtown Water Tower	Raymond	OUT	OUT	IN	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Hinds Blvd. Water Well	Raymond	OUT	OUT	IN	Non-Vegetated - Uninhabited	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Potable Water	Hinds CC Well & Elevated Tank	Raymond	OUT	OUT	IN	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Maqna Well & Elevated Tank	Raymond	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Potable Water	Port Gibson Ratliff Rd Water Well	Raymond	OUT	OUT	IN	Non-Vegetated - Low Density	WTZ: Non-Vegetated	Very Low
Potable Water	Water Well - Magnolia	Edwards	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Well, Elevated Tank, and Water Treatment System	Edwards	OUT	OUT	IN	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
School	BOLTON-EDWARDS ELEM./MIDDLE SCHOOL	Bolton	OUT	OUT	IN	Non-Vegetated - Very Low Density	Direct Exposure	Very Low
School	CARVER MIDDLE SCHOOL	Raymond	OUT	OUT	IN	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
School	CENTRAL HINDS ACADEMY	RAYMOND	OUT	OUT	IN	Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
School	HINDS CO CAREER/TECHNICAL CENTER	Raymond	OUT	OUT	IN	Non-Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
School	HINDS COMMUNITY COLLEGE	Raymond	OUT	OUT	IN	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
School	MAGNOLIA SPEECH SCHOOL	JACKSON	OUT	OUT	OUT	Non-Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
School	MAIN STREET ALTERNATIVE SCHOOL	Bolton	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
School	RAYMOND ELEMENTARY SCHOOL	Raymond	OUT	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
School	RAYMOND HIGH SCHOOL	Raymond	OUT	OUT	IN	Non-Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
School	SIWELL MIDDLE SCHOOL	JACKSON	OUT	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
School	UTICA ELEM. / MIDDLE SCHOOL	Utica	OUT	OUT	IN	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
School	WILLIAMS SCHOOL	Raymond	OUT	OUT	IN	Non-Vegetated - Low Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	BOLTON POTW	Bolton	IN	OUT	IN	Vegetated - Inhabited	WTZ: Tree	Low
Waste Water Facility	CLINTON POTW, SOUTHSIDE	CLINTON	OUT	OUT	OUT	Non-Vegetated - Uninhabited	Direct Exposure	Very Low
Waste Water Facility	Court Street Lift Station & Elevated Tank	Raymond	OUT	OUT	IN	Vegetated - Very Low Density	Direct Exposure	Low
Waste Water Facility	E. Main Street Lift Station	Raymond	OUT	IN	IN	Vegetated - Very Low Density	Direct Exposure	Very Low
Waste Water Facility	EDWARDS POTW - SOUTHEAST	Edwards	OUT	OUT	IN	Intermix - Low Density	WTZ: Grass	Very Low
Waste Water Facility	EDWARDS POTW - WEST	Edwards	OUT	OUT	IN	Intermix - Low Density	WTZ: Tree	Very Low
Waste Water Facility	Highway 18 Lift Station	Raymond	OUT	OUT	IN	Vegetated - Very Low Density	Direct Exposure	Very Low
Waste Water Facility	JACKSON POTW - TRAHON/BIG CRK	JACKSON	OUT	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Percy Street Lift Station	Raymond	OUT	OUT	IN	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	RAYMOND POTW	Raymond	OUT	OUT	IN	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	RAYMOND POTW - EAST	Raymond	OUT	OUT	IN	Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Seven Springs Road Lift Station	Raymond	OUT	OUT	IN	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Underhill Street Lift Station	Raymond	OUT	OUT	IN	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	UTICA POTW - NORTH	Utica	OUT	OUT	IN	Intermix - Low Density	Direct Exposure	Low
Waste Water Facility	UTICA POTW SOUTH	Utica	OUT	OUT	IN	Non-Vegetated - Very Low Density	WTZ: Tree	Low
Waste Water Facility	Valley Street Lift Station & Elevated Tank	Raymond	OUT	OUT	IN	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined

5. MITIGATION STRATEGY

The Mitigation Strategy section of the base plan provides an overall blueprint for all participating jurisdictions in MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Regional Hazard Mitigation Council (RHMC) and the findings and conclusions of the Capability and Risk Assessments. The goals of the MEMA District 5 can be found in Section 6 of the base plan.

This section provides community-specific strategies for the participating jurisdictions within Hinds County, including the status of actions that were included in the previous plan and actions to be considered or pursued over the next five years. As noted in the base plan, the participants are not committing to undertaking every action suggested in this list but rather are proposing an extensive list of *potential* actions that they may wish to pursue, depending on the availability of funding.

The following information is provided in the table below, as well as in the mitigation action tables within each annex in this plan:

Project Number: Each action is assigned a project number for organizational purposes.

Action Description: This is the description of the mitigation action. Actions descriptions are intended to be actionable and specific.

Responsible Agency or Department: actions assign primary responsibility to agencies or departments for implementation. The responsible entities were determined by jurisdictional representatives on the Mitigation Council, and they reflect the representatives' assessment of the entity that would be most capable of facilitating successful implementation of the action. Other agencies, departments, organizations, etc. may assist the responsible agency or department, if necessary.

Hazards Addressed: For each mitigation action, the hazard(s) that are being addressed are listed. Some hazards are considered "multi-hazard" because the action, when implemented, is designed to mitigate impacts of all disasters profiled in this plan. Other mitigation actions are specific to individual hazards.

Estimated Cost: This is the estimate cost of the action; these costs were determined through general discussions of the resources, personnel, and time needed, and the estimates are not intended to stand in for a full, detailed benefit-cost analysis.

Action Status (D/R/N/C): FEMA's guidance for local mitigation plans requires a status update for existing mitigation actions. The statuses of previous actions were assessed throughout the planning process. The four categories used by the Mitigation Council are:

> Deleted (D): action is no longer appropriate or desired, and the community does not intend to pursue the action. Rows for deleted actions are colored grey in the mitigation actions table for easy identification.
>
> Retained (R): action is still desired by the community, but implementation has not been completed. The community will continue to implement the action as time and resources allow.
>
> New (N): action is new for the 2026 District 5 plan.
>
> Completed (C): action has been completed by the community.

Status Notes: Includes any information that the community provided for additional context to the action status.

Expected Time Frame for Completion: Participating jurisdictions anticipated the amount of time it will take to carry out the action. The expected time frames for actions from the previous plan were updated to reflect the expected time frame for completion from when communities adopt this plan.

Corresponding Goals: The plan goals addressed by each action item are included to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. Each action is linked to one more of the Plan's goals:

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

Priority: The priority of each of the mitigation action items is ranked either Low, Medium, or High. This prioritization allows Mitigation Council members to quickly compare actions based on a qualitative assessment of the anticipated benefits of actions. The process utilized by the Mitigation Council to prioritize actions is described in Section 6.4 of the base plan.

Potential Funding Sources: Potential sources for funding are listed for each action and encompass a range of sources including operating budget/general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), State grants, private funding, Capital Improvement Plan, and others. It is important to acknowledge that the identified funding sources are not exhaustive or definitive. The current funding landscape is undergoing significant change, and existing funding sources may not be available in the future, while new sources may emerge. If/when a community has the opportunity to implement an action, available funding sources will be re-examined to determine which source is most appropriate.

TABLE 46: UPDATED 2026 HINDS COUNTY MITIGATION ACTIONS

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
1-Hinds County	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Emergency Management, Board of Supervisors	All hazards	$15,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Hinds County	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Emergency Management	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Hinds County	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the county with advanced warning of approaching weather conditions	Emergency Management, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Hinds County	Purchase and maintain emergency generators for use by key critical facilities	Public Works, Emergency Management	All hazards	$300,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, HMGP, HSGP
5-Hinds County	As future updates are made to the county's existing policies and regulations, and as the county adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings	Board of Supervisors, Planning Commission, Permit & Zoning	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
6-Hinds County	Seek funding to assist with the construction of a community shelter	Emergency Management	All hazards	$4,000,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, HSGP

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
7-Hinds County	Encourage residents to construct individual safe rooms.	Building Department, Emergency Management	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
8-Hinds County	Maintain compliance wit the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance educations with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Floodplain Manager, Board of Supervisors	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
9-Hinds County	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Floodplain Manager, Board of Supervisors, Planning Commission	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Hinds County	Assist residents who want to participate in the “Buy-Out” program for repetitive loss properties	Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund
11-Hinds County	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	Emergency Management	All hazards	$1,000,000	R	No progress since last update	10 years	3, 5	High	General Fund, CDBG, USDA Rural Development
12-Hinds County	Seek funding assistance to maintain District 5’s regional Hazard Mitigation Plan.	Board of Supervisors, Emergency Management	All hazards	$1,500 annually / $7,500 every five years	R	Plan update in progress	On-going annually	1	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
13-Hinds County	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	Emergency Management	All hazards	$60,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund
14-Hinds County	Seek funding assistance to develop and implement an effective flood warning system that can be used to inform emergency management personnel and residents of impending flood conditions	Emergency Management	Flooding	$2,000,000	R	No progress since last update	On-going annually	2, 3, 4	High	General Fund
15-Hinds County	Develop a Pandemic Influenza Plan to improve preparedness, response and recovery for a public health crisis	Emergency Management	Public health emergency	$10,000	R	No progress since last update	5 years	3	High	General Fund, staff time
16-Hinds County	Seek funding assistance for dam repair and maintenance to improve dam conditions and reduce the potential of failure	Emergency Management	Flooding	$5,000,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, MDEQ
17-Hinds County	Seek funding assistance to improve capacity of “Personal Protective Equipment” (PPE) and develop a protocol to make supplies available to the public during a pandemic	Board of Supervisors, Emergency Management	Public health emergency	$200,000	R	No progress since last update	On-going annually	3	High	General Fund
18-Hinds County	Improve cellular tower capability throughout the County to upgrade communication efficiency	Board of Supervisors, Emergency Management	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC
19-Hinds County	Seek funding assistance to improve high-speed internet capabilities throughout the County	Board of Supervisors, Emergency Management	All hazards	$3,000,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
20-Hinds County	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Hinds County Administrator, Emergency Management	All hazards	$250,000	R	No progress since last update	On-going annually	3	High	General Fund
1-Bolton	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Police and Fire Departments, Emergency Management	All hazards	$5,000 - $10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Bolton	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Bolton	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the town with advanced warning of approaching weather conditions.	Police and Fire Departments, with support from National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Bolton	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	Public Works, Police and Fire Departments	All hazards	$100,000 - $250,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, MEMA Statewide Grant Program, State Homeland Security Program
5-Bolton	As future updates are made to the town's existing policies and regulations, and as the town adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to	Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
	reduce the effect of natural hazards on new Rand existing infrastructure and buildings.									
6-Bolton	Seek funding to assist with the construction of a community shelter.	Mayor's Office	All hazards	$1,500,000	R	No progress since last update	On-going annually	3	Medium	General Fund, HMGP, BRIC
7-Bolton	Encourage residents to construct individual safe rooms.	Police and Fire Departments	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
8-Bolton	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Floodplain Manager, Board of Alderman	Flooding	$35,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund
9-Bolton	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Bolton	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties.	Floodplain Manager, Town Clerk	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
11-Bolton	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	Town Clerk	All hazards	$1,500,000	R	No progress since last update	10 years	3, 5	Low	General Fund, CDBG, USDA Rural Development
12-Bolton	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	Board of Alderman, Town Clerk	All hazards	$2,500 annually / $200,000 every 5 years	R	No progress since last update	On-going annually	1	High	General Fund
13-Bolton	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards.	Emergency Management	All hazards	$8,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund
14-Bolton	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$100,000	R	No progress since last update	On-going annually	3	High	General Fund
15-Bolton	Improve cellular tower capability throughout the Town to upgrade communication efficiency	Board of Alderman, Town Clerk	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund
16-Bolton	Seek funding assistance to improve high-speed internet capabilities throughout the Town	Board of Alderman, Town Clerk	All hazards	$500,000 - $700,000	R	No progress since last update	On-going annually	3	High	General Fund
17-Bolton	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Board of Alderman, Town Clerk	All hazards	$100,000	R	No progress since last update	On-going annually	3	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
1-Edwards	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Edwards Police and Fire Departments, Emergency Management	All hazards	$5,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Edwards	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Edwards Mayor's Office, Emergency Management	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Edwards	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the town with advanced warning of approaching weather conditions.	Edwards Police and Fire Department, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Edwards	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	Edwards Public Works, Police and Fire Departments	All hazards	$100,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, MEMA Statewide Grant Program, State Homeland Security Program
5-Edwards	As future updates are made to the town's existing policies and regulations, and as the town adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Edwards Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
6-Edwards	Seek funding to assist with the construction of a community shelter.	Edwards Mayor's Office	All hazards	$1,200,000	D	Deleted	Deleted	-	High	General Fund
7-Edwards	Encourage residents to construct individual safe rooms.	Edwards Police and Fire Departments	Tornado, severe storms	-	D	Deleted	Deleted	-	Medium	General Fund
8-Edwards	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Edwards Floodplain Manager, Board of Alderman	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund
9-Edwards	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Edwards Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Edwards	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties.	Edwards Floodplain Manager, Town Clerk	Flooding	-	D	Deleted	Deleted	-	Medium	General Fund, HMGP
11-Edwards	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	Edwards Town Clerk	All hazards	$500,000	R	No progress since last update	10 years	3, 5	High	General Fund, CDBG, USDA Rural Development

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
12-Edwards	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	Edwards Board of Alderman, Town Clerk	All hazards	$1,500 annually / $100,000 every five years	R	No progress since last update	On-going annually	1	High	General Fund
13-Edwards	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards.	Edwards Emergency Management	All hazards	$5,000 annually	D	Deleted	Deleted	-	High	General Fund
14-Edwards	Seek funding assistance to retrofit community facilities to act as community shelters	Edwards Town Clerk	All hazards	$500,000	R	No progress since last update	10 years	3	High	General Fund, CDBG, USDA Rural Development
15-Edwards	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Edwards Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
16-Edwards	Improve cellular tower capability throughout the Town to upgrade communication efficiency	Edwards Board of Alderman, Town Clerk	All hazards	-	D	Deleted	Deleted	-	High	-
17-Edwards	Seek funding assistance to improve high-speed internet capabilities throughout the Town	Edwards Board of Alderman, Town Clerk	All hazards	$500,000	D	Deleted	Deleted	-	High	General Fund
18-Edwards	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Edwards Board of Alderman, Town Clerk	All hazards	$75,000	D	Deleted	Deleted	-	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
1-Learned	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Emergency Management, Board of Supervisors	All hazards	$45,000	N	New action	On-going annually	3, 4	High	General Fund
2-Learned	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Emergency Management	All hazards	$10,000	N	New action	On-going annually	1, 3, 4	High	General Fund
3-Learned	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the town with advanced warning of approaching weather conditions.	Emergency Management, Fire Department, with support from National Weather Service	Tornado, severe storms	$10,000	N	New action	On-going annually	2	High	General Fund
4-Learned	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	Public Works, Emergency Management	All hazards	$300,000	N	New action	On-going annually	3, 5	Medium	General Fund, State Homeland Security Program, HMGP, CDBG
5-Learned	As future updates are made to the town's existing policies and regulations, and as the town adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Board of Supervisors, Planning Commission	All hazards	$10,000	N	New action	On-going annually	1, 5	High	General Fund
6-Learned	Seek funding to assist with the construction of a community shelter.	Emergency Management, Fire Department	All hazards	$4,000,000	N	New action	On-going annually	3	High	General Fund, HMGP, BRIC

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
7-Learned	Encourage residents to construct individual safe rooms.	Building Department, Emergency Management	Tornado, severe storms	$10,000	N	New action	On-going annually	3, 4	High	General Fund, staff time
8-Learned	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Floodplain Manager, Board of Supervisors	Flooding	$25,000 annually	N	New action	On-going annually	1, 3, 5	High	General Fund, staff time
9-Learned	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Floodplain Manager, Board of Supervisors, Planning Commission	Flooding	$10,000	N	New action	On-going annually	2, 3, 5	High	General Fund, staff time
10-Learned	Assist residents who want to participate in the “Buy-Out” program for repetitive loss properties.	Floodplain Manager	Flooding	$10,000	N	New action	On-going annually	5	High	General Fund, HMGP
11-Learned	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	Emergency Management, Fire Department	All hazards	$1,000,000	N	New action	On-going annually	3, 5	High	General Fund, CDBG, USDA Rural Development
12-Learned	Seek funding assistance to maintain District 5’s regional Hazard Mitigation Plan.	Board of Supervisors, Emergency Management	All hazards	$1,500 annually / $100,000	N	New action	On-going annually	1	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
				every 5 years						
13-Learned	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards.	Emergency Management	All hazards	$60,000 annually	N	New action	On-going annually	3, 4	High	General Fund, BRIC
14-Learned	Seek funding assistance to develop and implement an effective flood warning system that can be used to inform emergency management personnel and residents of impending flood conditions.	Emergency Management	Flooding	$2,000,000	N	New action	On-going annually	2, 3, 4	High	General Fund, HMGP
15-Learned	Develop a Pandemic Influenza Plan to improve preparedness, response, and recovery for a public health crisis	Emergency Management	Public health emergency	$10,000	N	New action	5-years	3	High	General Fund
1-Raymond	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Police and Fire Departments, Emergency Management	All hazards	$25,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Raymond	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Raymond	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	Public Works, Police and Fire Departments	All hazards	$300,000	R	Grant process has moved along and the city continues to	On-going annually	3, 5	Medium	General Fund, MEMA Statewide Grant Program

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
						provide additional information for the grant.				
4-Raymond	As future updates are made to the town's existing policies and regulations, and as the town adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Board of Alderman, Planning Commission	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
5-Raymond	Seek funding to assist with the construction of a community shelter.	Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	3	Medium	General Fund, HMGP, BRIC
6-Raymond	Encourage residents to construct individual safe rooms.	Police and Fire Departments	Tornadoes, Severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
7-Raymond	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Board of Alderman, Floodplain Manager	Flooding	$25,000	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund

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8-Raymond	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Board of Alderman, Floodplain Manager, Planning Commission	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
9-Raymond	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties.	Floodplain Manager, City Clerk	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund
10-Raymond	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	City Clerk	All hazards	$1,000,000	R	No progress since last update	10 years	3, 5	Low	General Fund, CDBG, USDA Rural Development
11-Raymond	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	Board of Alderman, City Clerk	All hazards	$1,500 annually / $100,000 every 5 years	R	No progress since last update	On-going annually	1	High	General Fund
12-Raymond	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards.	Emergency Management	All hazards	$5,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund
13-Raymond	Work with engineers to find solutions to the identified flooding problems in the city, and seek funding to carry-out projects that will help alleviate flooding problems.	Mayor, Board of Alderman, Public Works	All hazards	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund BRIC, IIJA, HMGP, CDBG
14-Raymond	Seek funding assistance to retrofit community facilities to act as community shelters	City Clerk	All hazards	$500,000	R	No progress since last update	10 years	3	High	General Fund, CDBG, USDA Rural Development

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
15-Raymond	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
16-Raymond	Improve cellular tower capability throughout the Town to upgrade communication efficiency	Mayor's Office, City Clerk	All hazards	$10,000	R	Current cell coverage is good in the City	On-going annually	3	High	General Fund, HMGP, BRIC
17-Raymond	Seek funding assistance to improve high-speed internet capabilities throughout the Town	Mayor's Office, City Clerk	All hazards	$1,000,000	D	Action removed--no longer necessary	Deleted	-	High	General Fund, IIJA
18-Raymond	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Mayor's Office, City Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund
1-Utica	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Police and Fire Departments, Emergency Management	All hazards	$5,000 - $20,000	R	Cost estimate updated	On-going annually	3, 4	High	General Fund, HMGP
2-Utica	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Mayor's Office, Emergency Management	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund, HMGP
3-Utica	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the town with advanced warning of approaching weather conditions.	Police and Fire Departments, National Weather Service	Tornado, severe winter storms	$20,000	R	No progress since last update	On-going annually	2	High	General Fund, HMGP

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
4-Utica	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	Public Works, Police and Fire Departments	All hazards	$100,000 - $300,000	R	Cost estimate updated	On-going annually	3, 4	High	General Fund, HMGP
5-Utica	As future updates are made to the town's existing policies and regulations, and as the town adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Board of Alderman	All hazards	$20,000	R	Cost estimate updated	On-going annually	1, 5	High	General Fund, HMGP
6-Utica	Seek funding to assist with the construction of a community shelter.	Mayor's Office, Fire Department	All hazards	$2,500,000	R	Cost estimate updated	On-going annually	3	High	HMGP, CDBG
7-Utica	Encourage residents to construct individual safe rooms.	Emergency Management, Police and Fire Departments	Tornado, severe storms	$10,000	R	Cost estimate updated	On-going annually	3, 4	High	HMGP
8-Utica	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Floodplain Manager, Board of Alderman	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	HMGP

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
9-Utica	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Floodplain Manager, Board of Alderman	Flooding	$50,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time, HMGP
10-Utica	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	Town Clerk	All hazards	$4,000,000	R	Cost estimate updated	10 years	3, 5	Low	CDBG, USDA Rural Development, HMGP
11-Utica	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	Board of Alderman, Town Clerk	All hazards	$20,000 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund, HMGP
12-Utica	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards.	Emergency Management	All hazards	$5,000 - $50,000 annually	R	Cost estimate updated	On-going annually	3, 4	High	CIF
13-Utica	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000 - $100,000	R	Cost estimate updated	On-going annually	3	High	General Fund, CIF, HMGP
14-Utica	Improve cellular tower capability throughout the Town to upgrade communication efficiency	Board of Alderman, Town Clerk	All hazards	$1,200,000	R	Cost estimate updated	On-going annually	3	High	HMGP, CDBG, CIF
15-Utica	Seek funding assistance to improve high-speed internet capabilities throughout the Town	Board of Alderman, Town Clerk	All hazards	$1,200,000	R	Cost estimate updated	On-going annually	3	High	General Fund, HMGP, CIF

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
16-Utica	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Board of Alderman, Town Clerk	All hazards	$75,000 - $150,000	R	Cost estimate updated	On-going annually	3	High	General Fund, HMGP, CIF

1. INTRODUCTION

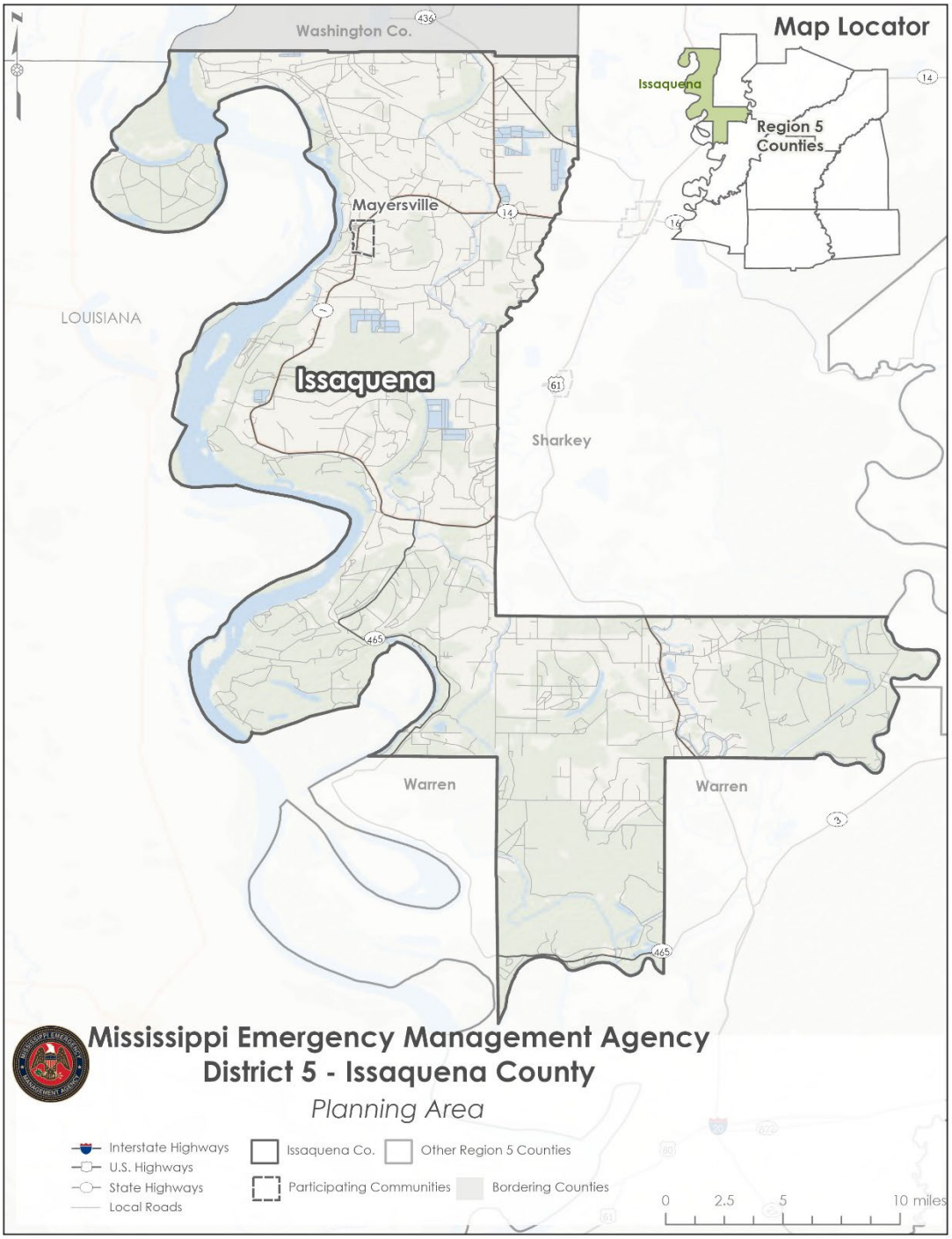
This annex provides more detailed information about Issaquena County and the participants within it. It includes:

- A more localized community profile, including more detailed mapping, population and demographic information, and critical facilities information
- County-level Hazard Identification and Risk Assessment (HIRA) information, including some more localized hazard maps and conclusions related to hazard risk and how it varies across the planning area
- A localized vulnerability assessment, including the likely impact of profiled hazards on critical facilities in Issaquena County
- A detailed capability assessment, describing resources and tools available to the county and municipalities to participate in hazard mitigation and reduce hazard risk
- A mitigation strategy, describing a variety of actions the county and municipalities may opt to take to reduce the risk associated with profiled hazards over the useful life of this plan

2. COMMUNITY PROFILE

This section provides a more detailed profile of Issaquena County and the jurisdictions within it. The County is in the Northwestern part of the planning area and **Figure 1** below shows the planning area for Issaquena County. The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey—such as poverty, lack of transportation, crowded housing, and minority status—to quantify a community's relative vulnerability. This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). According to the 2022 CDC Social Vulnerability Index, Issaquena County has an overall **high** (0.9012) level of vulnerability. The County has the second highest level of vulnerability in the entire planning area.

FIGURE 1: ISSAQUENA COUNTY



2.1. POPULATION AND DEMOGRAPHICS

Population information from the last three Census counts for each participant in Issaquena County is summarized below, showing trends since the year 2010. A summary of population trends is summarized in **Table 1**. Since 2010, there has been a decrease in population within the County and the Town of Mayersville. The race and ethnicity demographic data of the plan participants within Issaquena County are shown in **Table 2**. The majority of the population across the County and in the Town of Mayersville is African-American.

TABLE 1: POPULATION TRENDS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2010 Census	2020 Census	2023 Census	Percent Change 2020-2023
Issaquena County	1,893	1,223	1,095	-10.5%
Town of Mayersville	205	270	205	-24.1%

TABLE 2: DEMOGRAPHICS IN PERCENT | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
Issaquena County	27.2%	71.1%	1.3%	0.4%	0%	1.6%
Town of Mayersville	2%	97.1%	0%	0%	0%	1%

The table below summarizes what percentage of the population of the jurisdictions within Issaquena County belong to certain special populations measured in the Census. A summary of information in **Table 3**. **Table 4** provides annual estimates of housing units in Issaquena County and its jurisdictions.

TABLE 3: VULNERABLE POPULATIONS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
Issaquena County	17.2%	0	213	272
Town of Mayersville	33.7%	0	37	94

TABLE 4: ANNUAL ESTIMATES OF HOUSING UNITS IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023
Issaquena County	553	457	449	438
Town of Mayersville	159	128	150	148

While there is a large agricultural economic segment in Issaquena County, several other large industries are located within the County. Employment information from the 2023 Census counts for each participant in the County is summarized below in **Table 5**.

TABLE 5: EMPLOYMENT IN ISSAQUENA COUNTY | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Issaquena County	Town of Mayersville
Management, business, science and arts occupations	34	0
Service occupations	20	0
Sales and office occupations	46	10
Natural resources, construction and maintenance occupations	53	0
Production, transportation and material moving occupations	27	4

2.2. INFRASTRUCTURE, CRITICAL FACILITIES AND ENERGY ASSETS

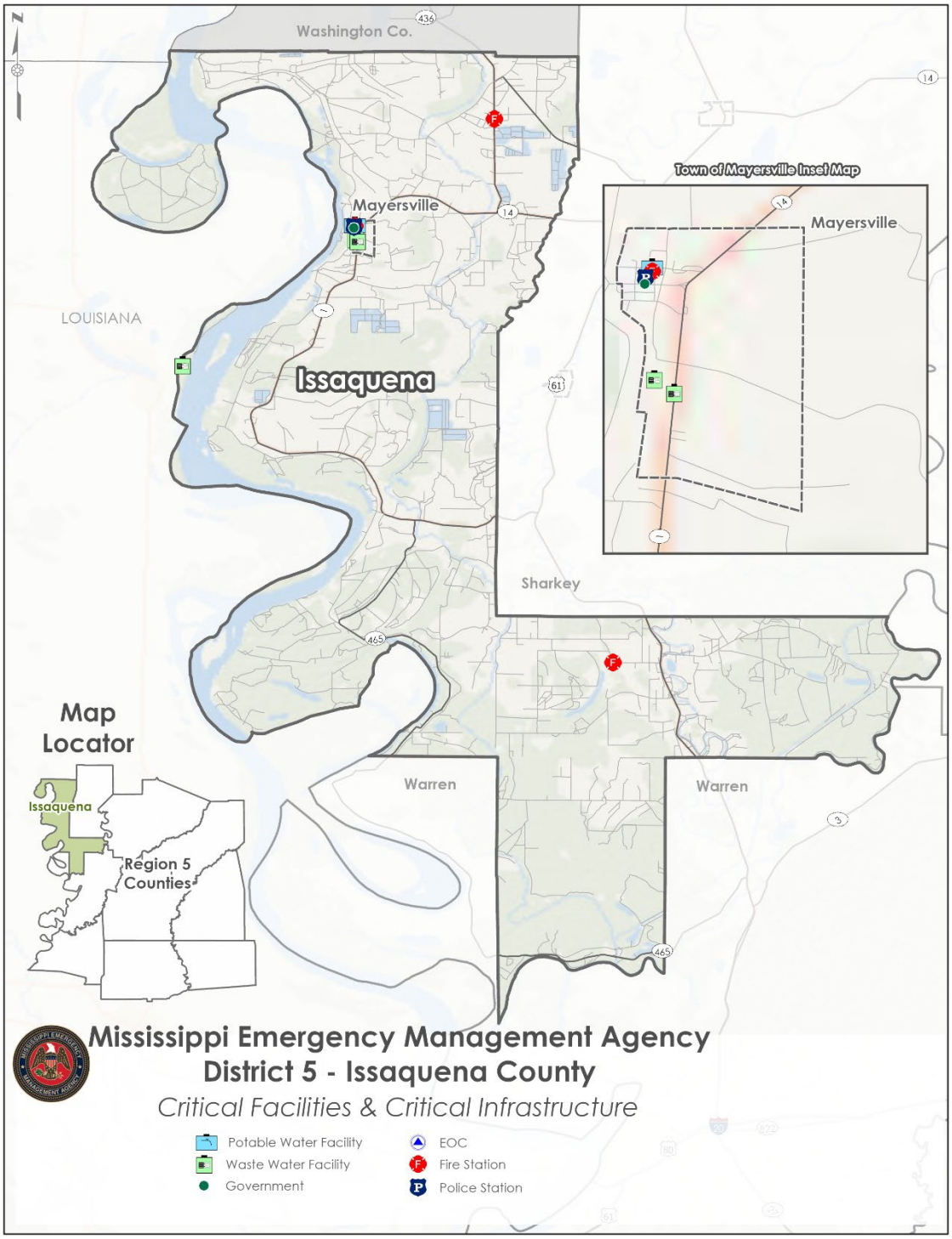
2.2.1. CRITICAL FACILITIES AND INFRASTRUCTURE

Certain assets and facilities are considered as being of importance for Issaquena County and the jurisdictions. **Table 6** below is a list of the critical facilities within Issaquena County and its jurisdictions. **Figure 2** below displays a map showing the locations of these critical facilities and infrastructure located within the County. The table below consists of facilities identified in the previous plan for each community as well as facilities identified by HAZUS. These facilities were sent to each community representative of the Mitigation Council for review and given a chance to provide changes.

TABLE 6: ISSAQUENA COUNTY CRITICAL FACILITIES AND INFRASTRUCTURE

Facility Type	Facility Name	Facility Location
EOC	Issaquena County Emergency Operations Center	Mayersville
Fire Station	Grace Fire Department	Grace
Fire Station	Mayersville Fire Department	Mayersville
Fire Station	Valley Park Fire Department	Valley Park
Government	Mayersville Town Hall	Mayersville
Police Station	Issaquena County Sheriff's Department	Mayersville
Potable Water	Mayersville Water System - Potable Water	Mayersville
Waste Water Facility	Lake Providence, Town Of- North Pond	Lake Providence
Waste Water Facility	Mayersville POTW	Mayersville
Waste Water Facility	Mayersville Water System - Waste Water	Mayersville

FIGURE 2: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE



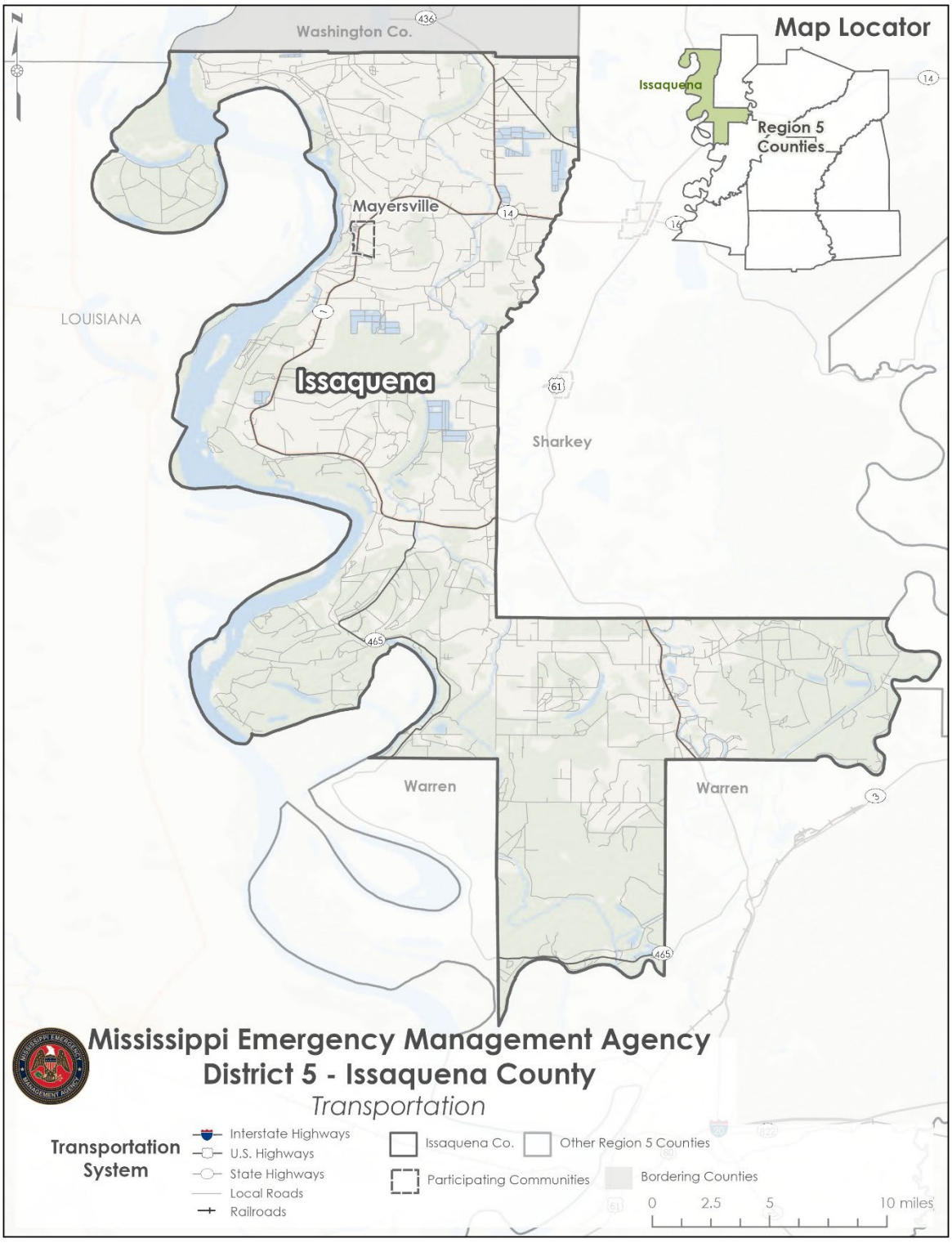
2.2.2. TRANSPORTATION

Transportation in Issaquena County includes the list below and **Figure 3** displays them on a map.

- U.S. Highway 61

- State Highways 1, 14 and 465

FIGURE 3: TRANSPORTATION IN ISSAQUENA COUNTY



2.2.3. ENERGY ASSETS

Oil, natural gas pipelines and electric transmission lines traverse the County. The list below breaks down the energy infrastructure within the county.

- **Power Plant:** No utility-scale power plants are in Issaquena County
- **Substation:** No substations are in Issaquena County
- **Transmission:** No transmission lines are in Issaquena County
- **Pipelines:** Mid Valley Pipeline in Mayersville

2.3. LAND USE AND DEVELOPMENT

Issaquena County encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, Delta National Forest and growing residential development near population centers such as the Town of Mayersville. **Figure 4** displays the land use and development throughout the County while **Figure 5** shows the topography of the County.

FIGURE 4: ISSAQUENA COUNTY LAND USE AND DEVELOPMENT

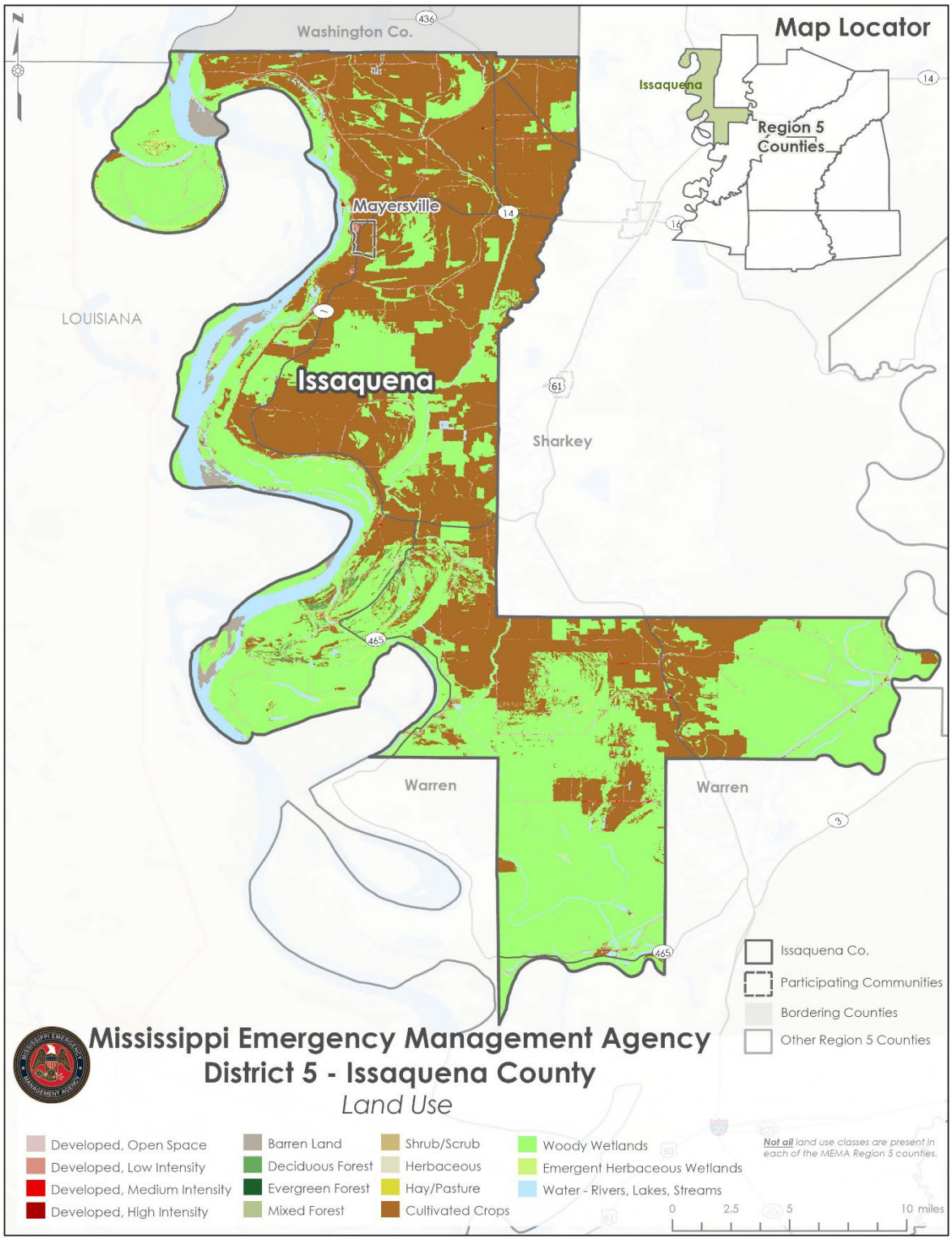
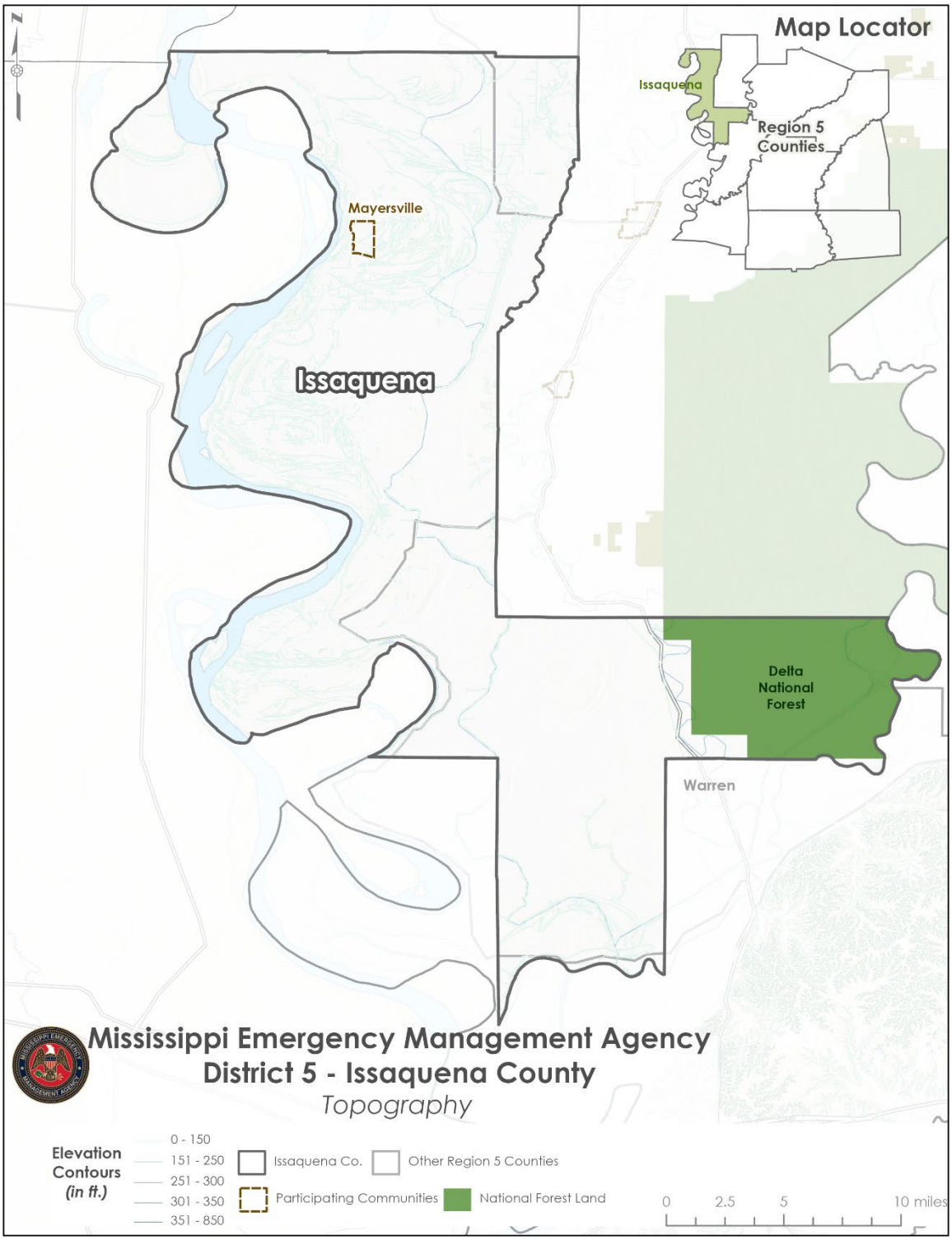


FIGURE 5: ISSAQUENA COUNTY TOPOGRAPHY



2.4. HISTORIC AND CULTURAL RESOURCES

Cultural resources and historical assets are generally unique or irreplaceable in nature due to their age or unique properties or characteristics. **Table 7** below provides a list of known cultural resources and historic assets in Issaquena County.

TABLE 7: HISTORIC AND CULTURAL RESOURCES IN ISSAQUENA COUNTY

Cultural Resource	General Location	Resource Type
Railroad Section Foreman's House	Issaquena County	Building

2.5. CHANGES IN DEVELOPMENT AND PRIORITIES

This section outlines recent and anticipated changes in development and priorities within Issaquena County and its jurisdictions. **Table 8** lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment. Both jurisdictions did not detail changes in development since the last plan update.

TABLE 8: ISSAQUENA COUNTY CHANGES IN DEVELOPMENT AND PRIORITIES

Jurisdiction	Changes in Development in the Past Five Years	Changes in Development Anticipated in the Next Five Years	Changes in Community Priorities over the Past Five Years
Issaquena County	No	No	No
Town of Mayersville	No	No	No

3. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. More generalized information about the goals of the capability assessment, including the process and methodology, is presented in the Capability Assessment portion of the base plan.

This section articulates specific information about the capabilities of Issaquena County and the plan participants within it.

3.1. ISSAQUENA COUNTY CAPABILITIES AND RESOURCES

3.1.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Issaquena County to support hazard mitigation.

TABLE 9: ISSAQUENA COUNTY STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Issaquena County	Larry Short
Engineering	Y	Town Engineer	Engineer
Procurement	N		
Floodplain Management	Y	Issaquena County	Randy Scott
Land Use, Land Management, or Development Planning	N		
Grant-writing	Y	South Delta Planning	
Geographic Information Systems (GIS)	N		
Other reported staff and technical capabilities:			

3.1.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Issaquena County that might support hazard mitigation efforts.

TABLE 10: ISSAQUENA COUNTY PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)		X		
Community Wildfire Protection Plan (CWPP)		X		
General Plan / Community Development Plan		X		
Continuity of Operations Plan (COOP)		X		
Disaster Recovery Plan		X		
Economic Development Plan		X		
Emergency Operations Plan (EOP)		X		
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan		X		
Natural Resource Protection Plan (NRPP)		X		
Open Space Management Plan (Parks & Rec/Green Plan)		X		
Threat Hazard Identification and Risk Assessment (THIRA)		X		

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.1.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Issaquena County in the NFIP program, including how development in the floodplain is regulated.

TABLE 11: ISSAQUENA COUNTY FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Board of Supervisors
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	Issaquena County has a floodplain administrator Randy Scott. He issues building permits based on inspections and location. Every build that is in the floodplain must have an elevation certificate and comply to the ordinance
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	Explained in the base plan
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	None
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Feb 2012

3.1.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Issaquena County's hazard mitigation efforts.

TABLE 12: ISSAQUENA COUNTY FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	N/A
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	N/A
Do you have a land use or development ordinance?	N/A
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	N/A

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	N/A

3.2. MAYERSVILLE CAPABILITIES AND RESOURCES

3.2.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Mayersville to support hazard mitigation.

TABLE 13: MAYERSVILLE STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Issaquena County	
Engineering	Y	Town Engineer	
Procurement	N		
Floodplain Management	Y	Issaquena County	
Land Use, Land Management, or Development Planning	N		
Grant-writing	Y	South Delta Planning	
Geographic Information Systems (GIS)	N		
Other reported staff and technical capabilities:			

3.2.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Mayersville that might support hazard mitigation efforts.

TABLE 14: MAYERSVILLE PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)		X		
Community Wildfire Protection Plan (CWPP)		X		
General Plan / Community Development Plan		X		
Continuity of Operations Plan (COOP)		X		
Disaster Recovery Plan		X		
Economic Development Plan		X		
Emergency Operations Plan (EOP)		X		
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan		X		
Natural Resource Protection Plan (NRPP)		X		
Open Space Management Plan (Parks & Rec/Green Plan)		X		
Threat Hazard Identification and Risk Assessment (THIRA)		X		

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.2.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Mayersville in the NFIP program, including how development in the floodplain is regulated.

TABLE 15: MAYERSVILLE FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Board of Supervisors
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	Issaquena County has a floodplain administrator Randy Scott. He issues building permits based on inspections and location. Every build that is in the floodplain must have an elevation certificate and comply to the ordinance
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	Explained in the base plan
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	None
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Feb 2012

3.2.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Mayersville's hazard mitigation efforts.

TABLE 16: MAYERSVILLE FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	N/A
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	
Do you have a land use or development ordinance?	
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	

3.3. ABILITY TO EXPAND CAPABILTIES

As part of the capability assessment process, each jurisdiction was asked to discuss their ability to expand upon the capabilities discussed earlier in this section. Below is a summary of the information provided by each participant regarding how they can strengthen their ability to conduct hazard mitigation measures in the future. **Table 17** below lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment. Each of the jurisdictions did not details how they plan to expand their capabilities.

TABLE 17: ISSAQUENA COUNTY'S ABILITY TO EXPAND CAPABILITIES

Jurisdiction	Self-Reported Information Regarding Ability to Expand Capabilities
Issaquena County	N/A
Town of Mayersville	N/A

4. HAZARD IDENTIFICATION & RISK ASSESSMENT

The Hazard Identification and Risk Assessment (HIRA) process, described in more detail in the HIRA section of the base plan, involves identifying potential hazards, evaluating their likelihood and potential consequences, and estimating and describing the level of risk these hazards present to a community.

Since 1971, Issaquena County has been included in 25 federal disaster declarations, of which nine occurred since this plan was last updated. **Table 18** describes these events.

TABLE 18: ISSAQUENA COUNTY FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4874	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Issaquena	5/11/2025
DR-4626	Hurricane	Issaquena, Copiah, Simpson	10/22/2021
EM-3569	Hurricane	Issaquena, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
DR-4598	Severe Winter Storms	Issaquena, Copiah, Hinds, Rankin, Simpson, Warren, Yazoo	5/4/2021
EM-3548	Hurricane	Issaquena, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020
DR-4551	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Issaquena, Simpson	7/9/2020
DR-4538	Severe Storm, Flooding and Mudslides	Issaquena, Copiah, Hinds, Issaquena, Sharkey, Warren, Yazoo	4/23/2020
DR-4528	Covid-19 Pandemic	Issaquena, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Issaquena, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4314	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Issaquena, Yazoo	5/22/2017
DR-4268	Severe Storm, Flooding	Issaquena, Issaquena	3/25/2016
DR-4081	Hurricane	Issaquena, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1983	Flooding	Issaquena, Issaquena, Sharkey, Warren, Yazoo	5/11/2011
EM-3320	Flooding	Issaquena, Issaquena, Sharkey, Warren, Yazoo	5/4/2011
DR-1906	Severe Storm, Tornado	Issaquena, Warren, Yazoo	4/29/2010
DR-1794	Hurricane	Issaquena, Copiah, Issaquena	9/22/2008

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-1604	Hurricane	Issaquena, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005
DR-1360	Severe Storm, Flooding, Tornado	Issaquena, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Warren, Yazoo	2/23/2001
DR-1265	Severe Winter Weather	Issaquena, Sharkey, Warren, Yazoo	1/25/1999
DR-906	Severe Storm, Tornado	Issaquena, Issaquena, Madison, Sharkey, Warren, Yazoo	5/17/1991
DR-683	Flooding, Severe Storm, Tornado	Issaquena, Hinds, Madison, Rankin, Warren, Yazoo	6/1/1983
DR-577	Severe Storm, Tornado	Issaquena, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Issaquena, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-368	Severe Storm, Tornado	Issaquena, Issaquena, Sharkey, Simpson, Warren, Yazoo	3/27/1973
DR-302	Severe Storm, Tornado	Hinds, Issaquena, Sharkey, Warren, Yazoo	2/22/1971

As described in the "HIRA Methodology" section of the base plan, participants in this plan update reconsidered the relative risk posed by the profiled hazards by conducting a hazard ranking process. **Table 19** below provides a summary of how those hazards were ranked in Issaquena County and by the jurisdictions within it.

TABLE 19: HAZARD RANKING BY JURISDICTION IN ISSAQUENA COUNTY

Jurisdiction	Dam/Levee Failure	Drought	Earthquake	Expansive Soils	Flood	Severe Storms	Severe Winter Weather	Tornado	Tropical Storm / Hurricane	Wil/Urban Interface (WUI) Fire	Hazardous Material Incidents	Nuclear Power Plant Incidents
Issaquena County	Med	Med	Low	Low	High	High	High	High	Med	Low	Low	Low
Town of Mayersville	Med	Med	Low	Low	High	High	High	High	Med	Low	Low	Low

Each of the 12 natural and manmade hazards discussed in this section are described in more detail in the HIRA section of the base plan. **Table 20** below shows the hazard scores for Issaquena County and the Town of Mayersville. This section endeavors to provide more detailed, local-level information, mapping, and conclusions for these hazards wherever relevant.

TABLE 20: HAZARD RISK SCORES

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption	Probability	Hazard Risk Score
Issaquena County							
Dam/Levee Failure	4	3	4	2	4	1	**17**
Drought	4	1	1	1	2	3	**27**
Earthquake	2	2	3	1	3	1	**11**
Expansive Soils	1	1	1	1	1	1	**5**
Flood	4	1	2	2	3	3	**36**
Severe Storms	3	1	2	1	1	5	**40**
Severe Winter Weather	4	2	3	2	2	3	**39**
Tornado	4	2	3	2	4	5	**75**
Tropical Storms	3	1	1	1	3	2	**18**
Wild/Urban Interface Fire	1	0	1	1	1	3	**12**
Hazardous Material Incidents	2	1	1	1	1	2	**12**
Nuclear Power Plant Incident	2	2	1	2	3	1	**10**
Town of Mayersville							
Dam/Levee Failure	4	3	4	2	4	1	**17**
Drought	4	1	1	1	2	3	**27**
Earthquake	2	2	3	1	3	1	**11**
Expansive Soils	1	1	1	1	1	2	**10**
Flood	4	1	2	2	3	3	**36**
Severe Storms	3	1	2	1	1	5	**40**
Severe Winter Weather	4	2	3	2	2	3	**39**
Tornado	4	2	3	2	4	5	**75**
Tropical Storms	3	1	1	1	3	2	**18**
Wild/Urban Interface Fire	1	0	1	1	1	3	**12**
Hazardous Material Incidents	2	1	1	1	1	2	**12**
Nuclear Power Plant Incident	2	2	1	2	3	1	**10**

4.1. DAM/LEVEE FAILURE

4.1.1. LOCATION AND EXTENT

As noted in the base plan, dam or levee failures are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. Issaquena County and its jurisdictions do not have any dams and therefore are not at risk of its impact.

There is a large levee system, called the Mississippi Levee District that protects a large area of northern Issaquena County from flood risk, as well as other counties along the Mississippi River. The levee was built due to overflow from the Mississippi River and consistent flooding issues. This area is called a leveed protected area. In the event of a levee failure, this area would be at risk of flooding. More information about location and extent of dam or levee failure within the District is provided in the base plan.

4.1.2. PREVIOUS OCCURRENCES

There have been no reported levee failures within or impacting Issaquena County and its jurisdictions.

4.1.3. PROBABILITY OF FUTURE OCCURRENCES

Based on the lack of previous occurrences and the large area impacted in the event of a levee failure in the future, the probability of a levee failure occurring in the future is **unlikely** for the County and the Town of Mayersville.

4.1.4. LOCALIZED VULNERABILITY ASSESSMENT

4.1.4.1. OVERALL VULNERABILITY

Levee failures can cause significant damage to communities from rapid flooding to critical infrastructure, structures, and residents. Large scale evacuations would need to be implemented to save as many people as possible. Levee failures can cause a large number of casualties and fatalities as well as leading to long-term displacement of people from damaged residences. While there have been no reported failures, the rare occurrence of a levee failure would be catastrophic to the County. While there are no dams located in Issaquena County, there is a large levee system within the County and a large area that would be at risk of flooding in the event of a levee failure, Therefore, the risk of dams or levee failure is **Low**.

4.1.4.2. CRITICAL FACILITIES

There are seven critical facilities within the levee protected area, the majority of which are located in Mayersville. Levee failures are a high-consequence, low-probability hazard due to the potential for sudden, fast-moving floodwaters downstream. A rapid breach could impact hospitals, fire stations, law enforcement centers, emergency operations centers, schools, water and wastewater treatment facilities, and government buildings located within the inundation zone, leading to structural damage and loss of function. Flooding may also damage electrical and mechanical systems, contaminate drinking-water supplies, overload wastewater infrastructure, and cause widespread power and communications disruptions.

4.1.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Levee failures have the potential to cause severe and sudden impacts to cultural, historic, and natural resources in the County due to rapid downstream flooding, high-velocity flows, and extensive erosion. Historic structures, cemeteries, archeological sites, and culturally significant landscapes located within the levee protected area or along rivers and creeks may be damaged or destroyed by inundation, scour, or debris impacts associated with a dam breach. Floodwaters can erode soils and displace archeological materials, resulting in irreversible loss of cultural resources and historic context. Natural

resources may also experience significant impacts, including stream channel alteration, sediment deposition, destruction of wetlands and riparian habitats, reduced water quality, and displacement or loss of wildlife. All cultural, historic, and natural resources within the levee protected area are vulnerable to impacting from flooding in the event of a levee failure.

4.1.4.4. PEOPLE

The primary impact of levee failure is flooding, which is more likely to impact older adults, low-income families, and individuals without access to reliable transportation. As with many other hazards, vulnerable populations—such as low-income households, the elderly, and individuals with disabilities—may face compounded risks due to limited mobility, lack of resources, or inadequate shelter options. In the County, individuals living in poverty are very high at 56%, the highest in the planning area. These populations can experience disproportionate impacts to dam failures and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.1.4.5. STRUCTURES AND SYSTEMS

Levee failures can result in sudden and severe impacts to structures and systems in the County due to rapid flooding, high-velocity water flow, and debris transport downstream of a breached dam. Residential, commercial, and public structures located within the leveed protected areas may experience extensive structural damage or complete destruction as foundations, walls, and load-bearing components are undermined by erosion and scour. Utility systems such as water, wastewater, electrical, and communications infrastructure may also be damaged or disabled by floodwaters, resulting in service interruptions, contamination risks, and prolonged outages. All structures within the leveed protected areas would be at risk of flooding and damage. Transportation systems, including roads, bridges, and culverts, are particularly vulnerable to washouts and structural failure, which can isolate communities and impede emergency response and recovery efforts.

4.1.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Any new development within the leveed protected area would be vulnerable to flooding in the event of a levee failure. However, Issaquena County and the Town of Mayersville have experienced a significant population decrease over the decades, as well as a decrease in the number of housing units. The decrease in population growth could decrease the number of people and structures vulnerable to flood risk from a levee failure.

4.2. DROUGHT

4.2.1. LOCATION AND EXTENT

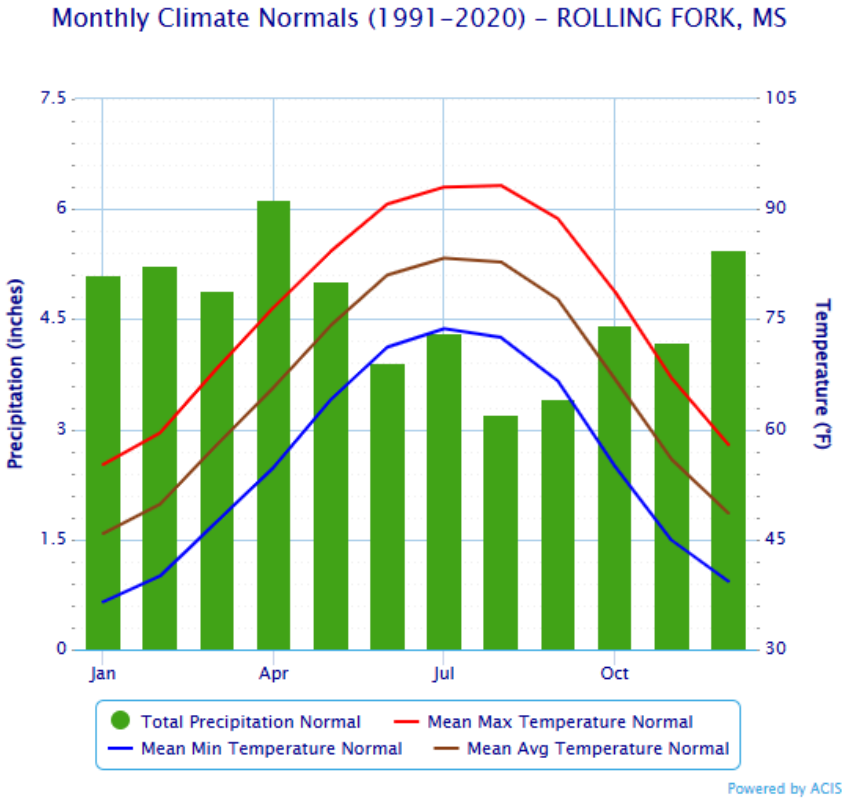
Drought affects the entire planning area equally; Issaquena County and its jurisdictions are not more or less susceptible to drought than other communities in District 5.

Figure 6 and **Figure 7** below display the monthly precipitation and temperature normals for the area surrounding the Rolling Fork, MS National Weather Service (NWS) station. According to the data, the County experiences about 55 inches of precipitation annually with an average mean temperature of 66 degrees. The hottest months are June through September while the wettest months are April and May. For more information on drought across the District, refer to the base plan.

FIGURE 6: MONTHLY NORMAL PRECIPITATION AND TEMPERATURE – ROLLING FORK, MS | SOURCE: NWS

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	5.10	55.2	36.5	45.8
February	5.23	59.5	40.0	49.8
March	4.90	68.3	47.4	57.9
April	6.13	76.6	54.8	65.7
May	5.02	84.2	64.0	74.1
June	3.91	90.7	71.2	81.0
July	4.31	93.0	73.7	83.3
August	3.21	93.2	72.5	82.8
September	3.41	88.7	66.6	77.7
October	4.42	78.8	55.0	66.9
November	4.19	67.0	44.9	55.9
December	5.45	57.9	39.3	48.6
Annual	55.28	76.1	55.5	65.8

FIGURE 7: MONTHLY CLIMATE NORMALS – ROLLING FORK, MS | SOURCE: NWS



4.2.2. PREVIOUS OCCURRENCES

Between the 2015 and 2020 plans, four droughts occurred in Issaquena County, causing zero reported property damage and $501,200 in crop damages. Between the 2020 and 2025 plans, there were four droughts causing zero reported property damage and $50,000 in crop damages.

4.2.1. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been eight drought events in the past 10 years, which equates to a drought every 1-2 years. Therefore, the probability of a drought occurring is **Low** for the County and its jurisdictions. The probability is consistent across District 5, even though any given drought will likely cause uneven impacts across the planning area.

4.2.2. LOCALIZED VULNERABILITY ASSESSMENT

4.2.2.1. OVERALL VULNERABILITY

The drought vulnerability assessment in the base plan highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Within Issaquena County and its jurisdictions, drought poses a **medium** risk due to potential impacts, largely to public health, agriculture, and the local economy. Potential impacts on Community Lifelines and historic and cultural resources are consistent across the District 5 planning area and are described in the base plan. This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to drought.

4.2.2.2. CRITICAL FACILITIES

Drought poses a slow-onset but significant risk to critical facilities in Issaquena County by stressing water supply systems, increasing wildfire risk, and disrupting essential services. Prolonged dry conditions can reduce groundwater and surface water availability needed for drinking water, sanitation, medical care, and fire suppression, potentially affecting facilities such as hospitals, emergency services, schools, and government buildings. Drought conditions also elevate wildfire danger, which can strain fire response capabilities and threaten nearby infrastructure, while increased heat and energy demand may place additional stress on electrical systems supporting critical operations.

4.2.2.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Drought can damage cultural, historic, and natural resources in the County by reducing soil moisture and water levels needed for their preservation. Prolonged dry conditions may harm historic sites, stress forests and wetlands, increase wildfire risk, and degrade ecosystems and culturally important water resources, potentially leading to long-term loss.

4.2.2.4. PEOPLE

Drought, as outlined in the base plan, presents a serious risk to public health and safety—especially when it limits access to clean, reliable water supplies. These impacts are often more severe for vulnerable populations, including low-income households, older adults, and individuals with disabilities, who may face additional challenges such as reduced mobility, limited financial resources, or insufficient access to safe shelter. These populations can experience disproportionate impacts to droughts and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.2.2.5. STRUCTURES AND SYSTEMS

Although drought doesn't typically cause direct physical damage to buildings or infrastructure, systems reliant on water (particularly those supporting agricultural operations) are the most vulnerable. Issaquena County has a total approximate land area of 364,349 acres, of which 36.4% is farmland (103 farms totaling 132,550 acres of farmland). These portions of the county and their structures and systems are more vulnerable to impact than others. Based on previous occurrences, drought has caused over $500,000 in crop damages.

Non-agricultural critical facilities such as transportation infrastructure, utility infrastructure, and public buildings are unlikely to be affected by drought across the planning area, including in Issaquena County.

4.2.2.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Issaquena County may lead to lower strain on water systems during times of drought in the future.

4.3. EARTHQUAKE

4.3.1. LOCATION AND EXTENT

The earthquake seismic risk in MEMA District 5 varies from low to very high. Issaquena County is more susceptible to earthquakes than other communities in District 5. The entire County has a high liquefaction zone and stiff clay soils, both of which increases the County's risk to ground shaking. In the event of a strong earthquake, Issaquena County may experience greater shaking and damage compared to other counties such as Copiah and Simpson Counties. For more information on earthquakes across the District, refer to the base plan.

4.3.2. PREVIOUS OCCURRENCES

As noted in the base plan, Mississippi experiences relatively low seismic activity, although there have been some minor earthquakes producing light shaking felt in District 5 in recent history. Since 2000, there have been eight earthquakes in MEMA District 5. The strongest was a magnitude 3.2 that occurred in Madison County in 2015. The majority of the earthquakes occur in Madison County and occurred in 2015. Since Issaquena is near Arkansas, a magnitude 3.7 earthquake occurred in 2019 nearby where ground shaking could've been felt.

4.3.3. PROBABILITY OF FUTURE OCCURRENCES

As noted in the base plan, Mississippi MEMA District 5 is unlikely to experience damaging earthquakes, but it is not entirely free from seismic risk. While strong earthquakes are **Unlikely**, minor to moderate shaking could occur in Issaquena County and its jurisdictions, especially from distant seismic sources like the New Madrid Seismic Zone (NMSZ).

4.3.4. LOCALIZED VULNERABILITY ASSESSMENT

4.3.4.1. OVERALL VULNERABILITY

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. Issaquena County contains very high liquefaction susceptibility zones. It also contains earthquake soil classification F (soils requiring site-specific evaluation, such as liquefiable soils, peats, or certain clays). While these two factors increase ground shaking, the risk of a strong earthquake is **Low** for the County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to earthquakes.

Figure 8 and **Figure 9** show both the liquefaction susceptibility zones and the earthquake soils throughout the County.

FIGURE 8: ISSAQUENA COUNTY LIQUEFACTION SUSCEPTIBILITY ZONES

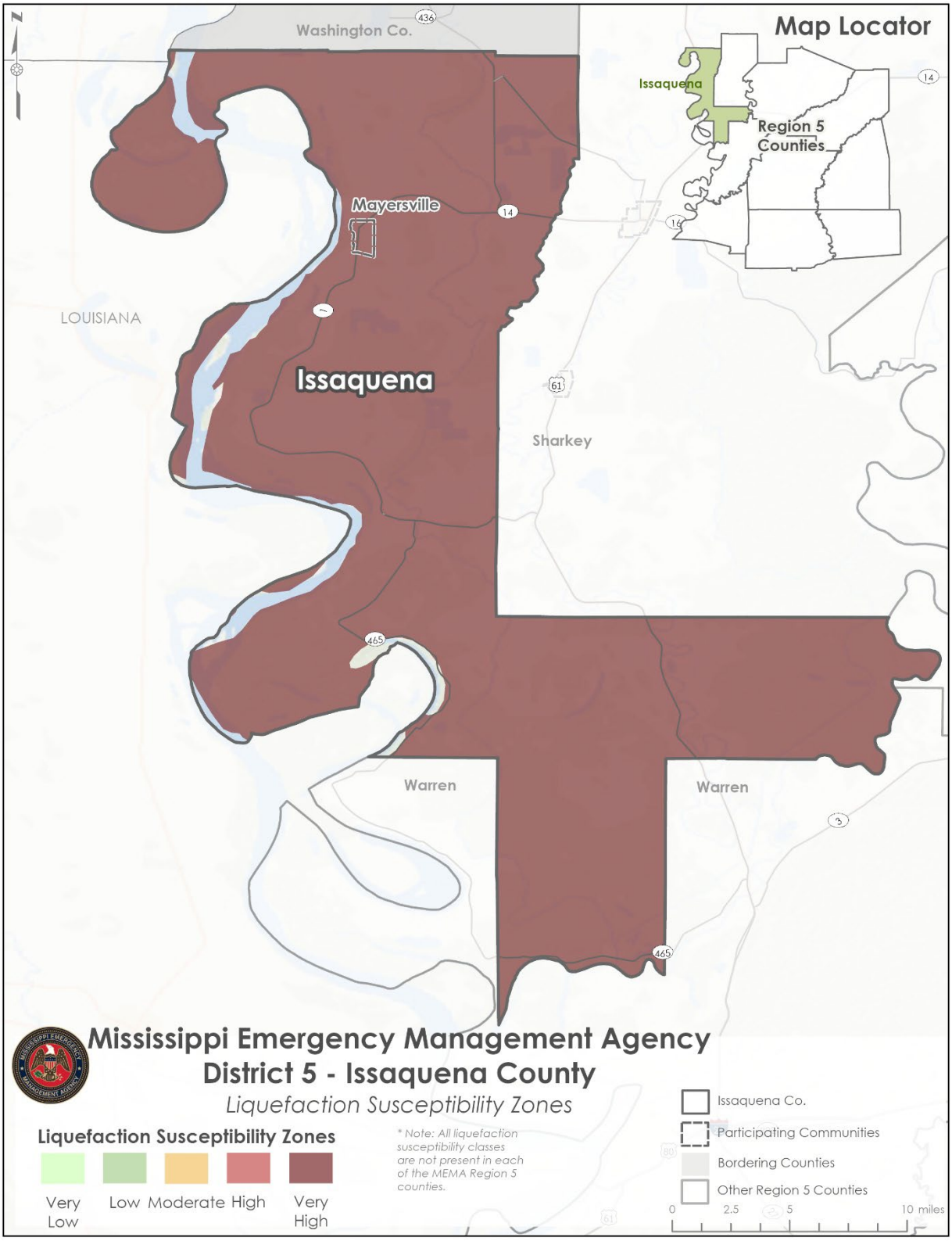
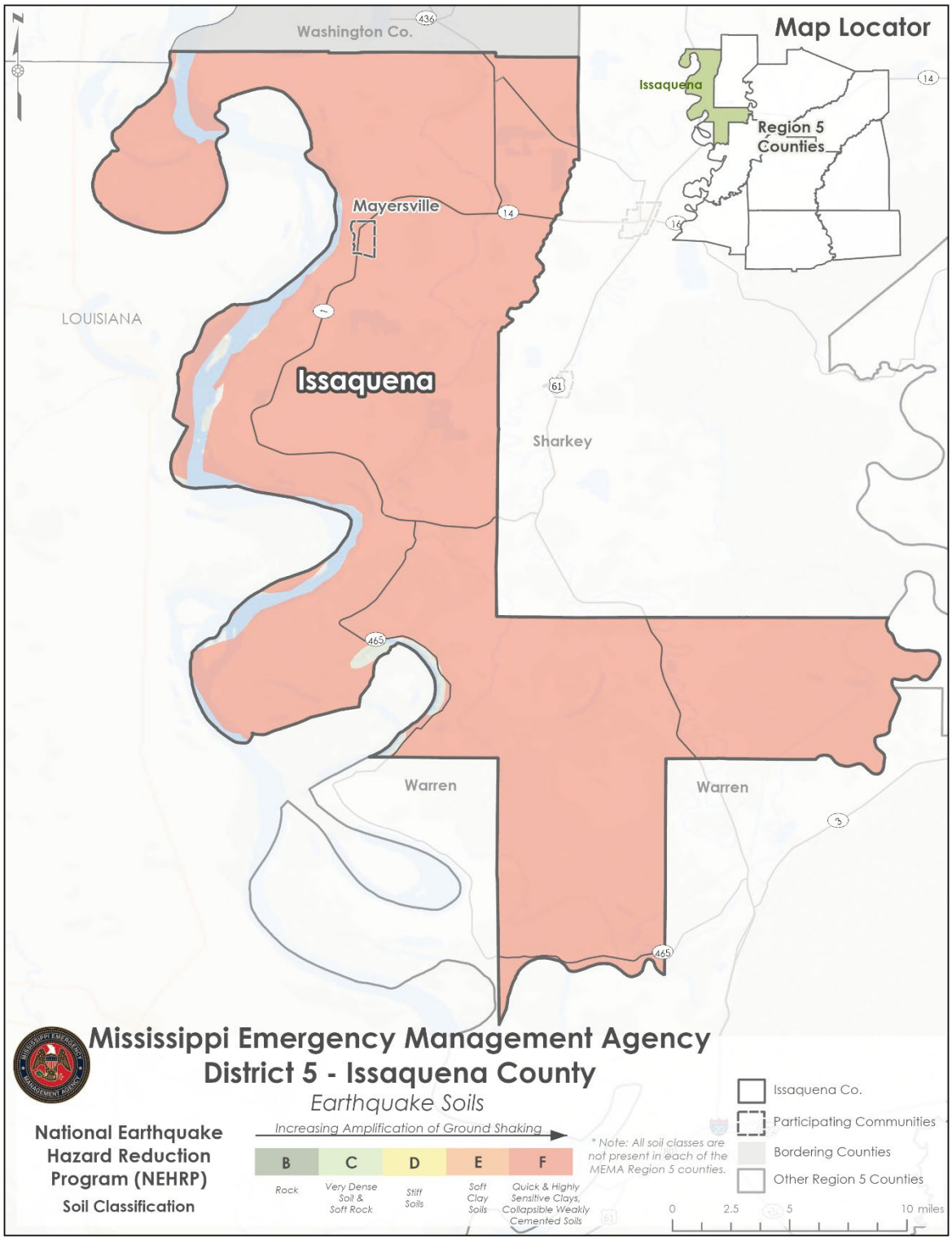


FIGURE 9: ISSAQUENA COUNTY EARTHQUAKE SOILS



4.3.4.2. CRITICAL FACILITIES

Although earthquakes occur infrequently in Issaquena County, seismic activity associated with the New Madrid Seismic Zone could result in ground shaking that damages critical facilities and infrastructure. Earthquake impacts may disrupt essential services and utilities and damage transportation routes, potentially limiting access to critical facilities and hindering emergency response and recovery efforts. In the event of a rare strong earthquake, critical facilities within high liquefaction susceptibility zones and moderate seismic risk are most at risk of earthquake impacts.

4.3.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Earthquakes have the potential to damage cultural, historic, and natural resources through ground shaking and ground deformation associated with regional seismic activity such as the New Madrid Seismic Zone. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be particularly vulnerable due to age, unreinforced masonry construction, or shallow foundations that are susceptible to cracking or collapse during seismic events. Natural resources may be affected through soil instability, slope failure, altered drainage patterns, and damage to wetlands, streams, or wildlife habitats. In the event of a rare strong earthquake, resources within high liquefaction susceptibility zones and moderate seismic risk are the most at risk of earthquake impacts.

4.3.4.4. PEOPLE

Some populations may face greater risk to earthquakes--the relatively short warning time typically provided for earthquakes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

As outlined in the base plan, earthquakes are infrequent, but rural communities face elevated risk due to limited access to emergency services and the potential for infrastructure disruptions. These risks are further magnified for vulnerable populations. These populations can experience disproportionate impacts to earthquakes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5.

4.3.4.5. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking.

4.3.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

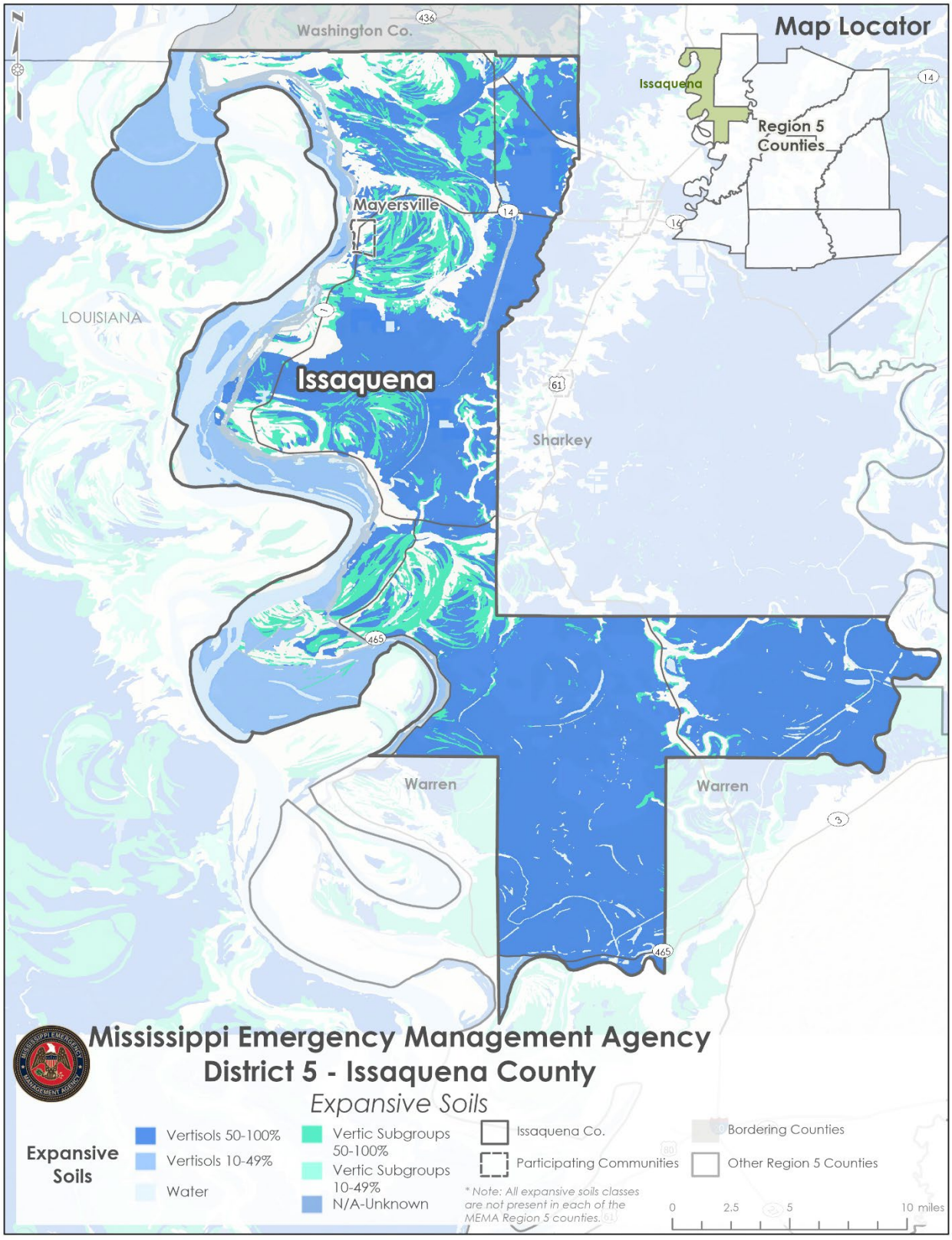
The overall decrease in development and population in Issaquena County may lead to lower impacts of earthquakes on its residents in the future.

4.4. EXPANSIVE SOILS

4.4.1. LOCATION AND EXTENT

As noted in the base plan, expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. Issaquena County and its jurisdictions have areas in the Vertisols (10-49% and 50-100%) and Vertic Subgroups (10-49% and 50-100%) which puts these communities at higher risk than the district overall. More information about location and extent is provided in the base plan and can be visually seen in **Figure 11** below. For more information on expansive soils across the District, refer to the base plan.

FIGURE 10: ISSAQUENA COUNTY EXPANSIVE SOILS



4.4.2. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the D5 Region, including in Issaquena County.

4.4.3. PROBABILITY OF FUTURE OCCURRENCES

The probability of future damage from expansive soils is considered **Unlikely** due to the County's geologic makeup and historical patterns of soil movement. Because Issaquena County and the communities within it do contain areas with high vertisols or vertic subgroups, they are at a higher risk of future occurrences than the district overall.

4.4.4. LOCALIZED VULNERABILITY ASSESSMENT

4.4.4.1. OVERALL VULNERABILITY

Assets vulnerable to the impacts of expansive soils include residential housing, schools, emergency services facilities, and aging infrastructure, especially those constructed without geotechnical assessments or soil stabilization measures. While there are expansive soils in the County, expansive soils have not caused significant damage. Therefore, Issaquena County and its jurisdictions has an overall **Low** risk to expansive soils due to the presence of expansive soils, but due to the lack of reported damages, lowers the risk. This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to expansive soils.

4.4.4.2. CRITICAL FACILITIES

Expansive soils in Issaquena County can cause foundations and building slabs to lift, crack, or shift as moisture changes make clay-rich soils swell and shrink. This movement can damage structural frames, misalign doors or equipment, and break underground utilities like water or wastewater lines. USDA soil data includes shrink–swell ratings that help identify locations where facilities may be more vulnerable to these impacts.

4.4.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Expansive soils can threaten cultural, natural, and historic resources in Issaquena County by causing ground movement that leads to cracking, shifting, and structural distortion. Clay-rich soils that swell when wet and contract when dry can damage historic buildings, monuments, cemeteries, and archeological features, leading to foundation heave, wall cracking, or displacement of markers and artifacts. These soils can also disturb natural landscapes, causing soil fissures, changes in surface drainage, and stress on vegetation.

4.4.4.4. PEOPLE

The risk factors for expansive soils are structural and not demographic in nature. As with many other hazards, vulnerable populations—such as low-income households, the elderly, and individuals with disabilities—may face compounded risks of expansive soils. These populations can experience disproportionate impacts to expansive soils and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.4.4.5. STRUCTURES AND SYSTEMS

Because the geography of Issaquena County puts it at higher relative risk of this hazard, the structures and systems (including critical facilities, community lifelines, and natural, historic, and cultural resources) in the County and its municipalities are at higher relative risk as well. The potential impacts

to these structures and systems are described in more detail in the base plan. There have been no reported damages in the County from expansive soils.

4.4.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Issaquena County may lead to lower impacts of expansive on its residents in the future, although this risk can be significantly mitigated with smart planning and zoning decisions, including restricting or regulating development in high-risk areas. The County has zero active and inactive surface mines in the planning area.

4.5. FLOOD

4.5.1. LOCATION

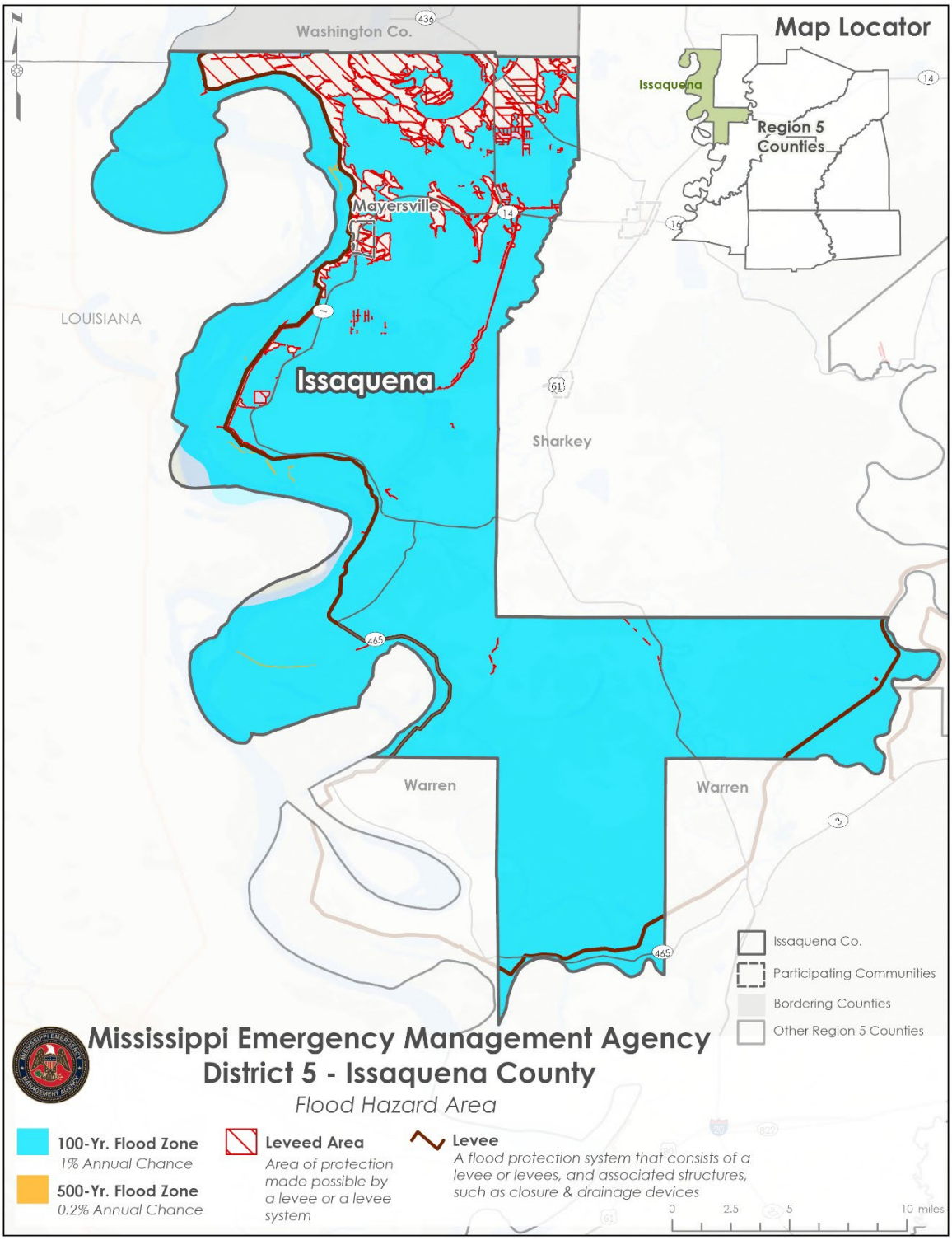
Floods are the most common type of natural disaster, occurring when water overflows onto land that is typically dry after heavy rainfall, storm surges, or rapid snowmelt. Flooding often leads to significant impacts on both human life and the environment. This section provides detailed information about the location, extent, previous occurrences, and overall vulnerability of communities within Issaquena County to flooding than is provided in the base plan. For more information on flooding across the District, refer to the base plan.

For purposes of this hazard profile and vulnerability analysis, the geographic location/extent for river flooding will be primarily considered as those areas at risk to the 100-year flood (also known as the 1% annual chance flood). The 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. However, the accompanying maps also show the 500-year floodplains (also known as the 0.2% annual chance floodplains) for two major reasons. First, climate models suggest that the planning area should anticipate rain events with increasing intensity in the coming years and decades. Second, any future population growth may result in new development within or near 500-year floodplains.

Figure 11 below shows that the entire County is in the 100-Year Flood Zone except for some Northern parts above Mayersville protected by leveed areas. In the event of a levee failure, the levee protected area may be flooded.

The main waterway in Issaquena County is the Mississippi River that forms the Western border of the County. The Big and Little Sunflower Rivers are major tributaries in the area while the Lower Yazoo River flows in parts of the Eastern and Southern of the County. Other key water features include the Deer Creek and Steele Bayou. The County also features smaller, localized lakes and dams used for flood control and recreation.

FIGURE 11: ISSAQUENA COUNTY FLOOD HAZARD AREAS



4.5.2. EXTENT

Riverine flooding is among the most significant hazards in the planning area due to its ability to impact large geographic areas, threatening a significant number of people and properties, the relatively small amount of flood water that it takes to cause significant injury or property damage, and the ability of flood water to linger for days, causing extensive damage. Because variations in geography, elevation, and building design mean that the same flood can cause a wide variety of extents of damage to different structures, the variation in extent across the County is most accurately captured by the flood zone mapping provided above under “location.”

The most significant recorded flooding event in the State’s history, indicating the potential extent of the threat of the flood hazard, was in 1927, when persistent heavy rainfall and run-off inundated 27,000 square miles. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

4.5.3. PREVIOUS OCCURRENCES

Since 2011 there have been five federal disaster declarations pertaining to flooding in Issaquena County, details of which are provided below in **Table 21**. There have been no significant recorded flooding events in Issaquena County in the past five years. However, while historical flooding in the District can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

TABLE 21: FLOODING-RELATED MAJOR DISASTER DECLARATIONS IN ISSAQUENA COUNTY

Disaster Number	Description	(Declaration Date) and Incident Period	Individual Assistance	Public Assistance
DR-4874	Severe Storm, Tornadoes, Straight-line Winds, Flooding	(5/21/2025) 3/14/2025-3/15/2025	Y	Y
DR-4538	Severe Storm, Flooding and Mudslides	(4/23/2020) 2/10/2020-2/18/2020	N	Y
DR-4268	Severe Storm, Flooding	(3/25/2016) 3/9/2016-3/29/2016	N	Y
DR-1983	Flooding	(5/11/2011) 5/3/2011-6/17-2011	Y	Y
EM-3320	Flooding	(5/4/2011) 4/27/2011-6/17/2011	N	Y

Between the 2015 and 2020 plans, there were one flooding events in Issaquena County, causing $9,000 in property damage. Since the 2020 plan, there have been zero reported events. It is important to note that the lack of reported flooding events in the last five years does not guarantee that flooding has not occurred or that it will not occur in the future. It is possible that flooding has occurred over the last five years in parts of Issaquena County that are uninhabited or remote, preventing observers from documenting it.

4.5.4. PROBABILITY OF FUTURE OCCURRENCES

While there have been no significant recorded flooding events in Issaquena County in the past five years, representatives from Issaquena County and the Town of Mayersville determined that the future probability of flooding impacting their jurisdictions is **Likely**. A majority of Issaquena County, including parts in and around Mayersville, are considered to be within the 1% annual chance flood zone. The lack of reported flooding events over the previous five years is fortunate but should not be considered the

norm. As climate change increases the intensity and unpredictability of rainfall, the likelihood of flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience.

4.5.5. LOCALIZED VULNERABILITY ASSESSMENT

4.5.5.1. OVERALL VULNERABILITY

As noted in the base plan, flooding can cause widespread damage to buildings, roads, utilities, and public infrastructure. Areas such as Issaquena and Sharkey Counties are in the Delta region, characterized by flat terrain and proximity to major rivers. These areas have a history of repetitive flood losses and are frequently within FEMA-designated 100-year floodplains. Vulnerability is heightened by aging infrastructure, limited drainage capacity, and socioeconomic challenges. Additionally, if not for the leveed protected areas, the entire County would be within a floodplain. in the event of a levee failure, that area would be flooded. Representatives from Issaquena County and Mayersville considered multiple factors when quantifying their overall vulnerability to flooding. This includes the number of recorded events; the potential area exposed to flooding; economic and environmental impacts; and the risk to human safety. Through careful consideration of these factors, it was determined that the overall vulnerability of both Issaquena County and Mayersville to flooding is **High.** This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to flooding events.

4.5.5.2. CRITICAL FACILITIES

Flooding poses a significant risk to critical facilities in Issaquena County by causing structural damage, inundating mechanical and electrical systems, and disrupting essential services. Flood events can impact hospitals, fire stations, law enforcement facilities, schools, emergency operations centers, and water and wastewater infrastructure, particularly those located in low-lying areas or within Special Flood Hazard Areas. Inundation of utility systems may contaminate drinking water supplies, impair wastewater treatment, and result in power and communications outages that hinder emergency response and continuity of government. Flooded roads and bridges can also restrict access to critical facilities, delaying emergency services, evacuation, and recovery efforts. **Figure 12** displays the critical facilities and infrastructure in the flood hazard areas. **Table 22** below lists the critical facilities in Issaquena County that are in the 1% annual chance and 0.2% annual chance floodplains.

FIGURE 12: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE FLOOD HAZARD AREAS

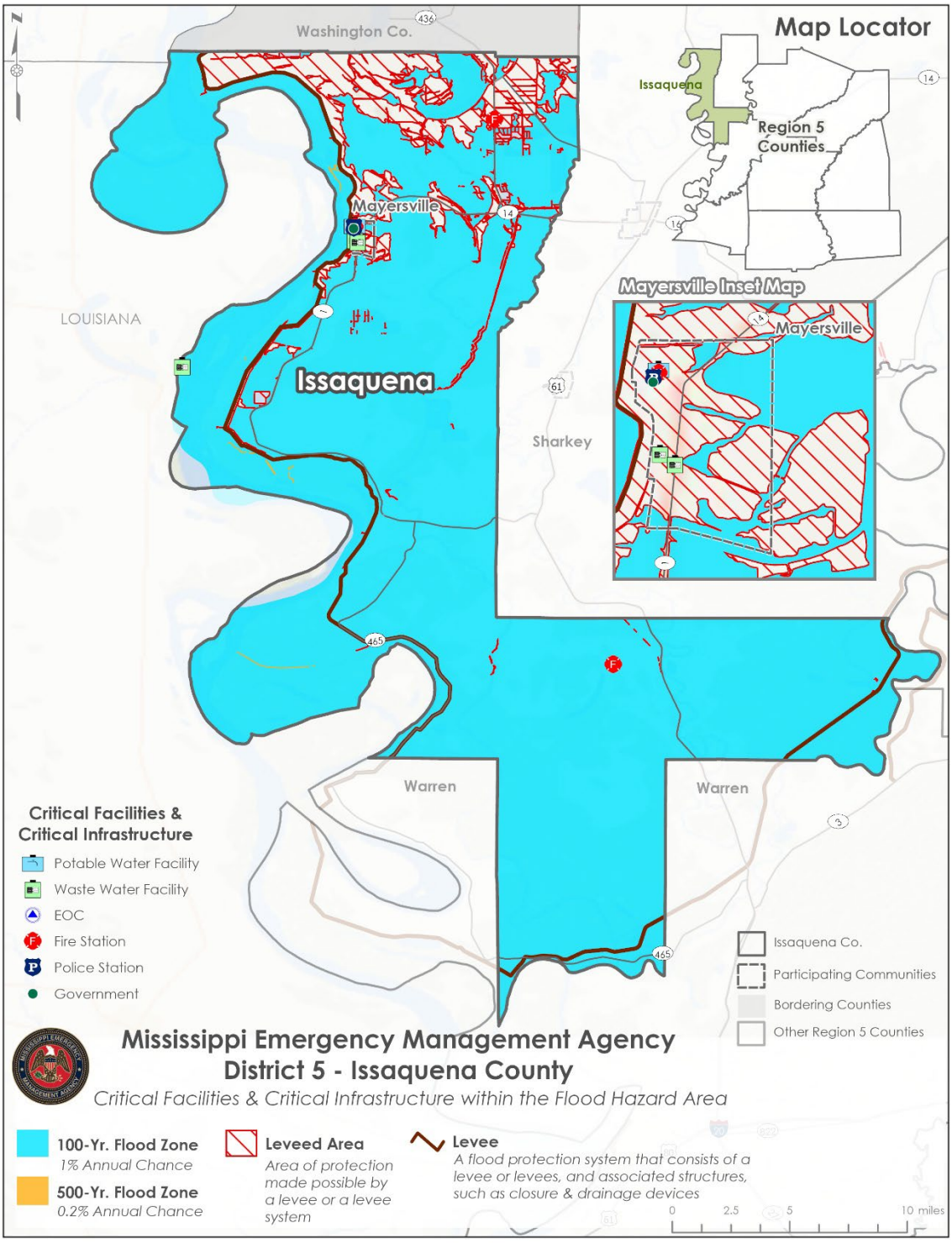


TABLE 22: CRITICAL FACILITIES IN THE FLOODPLAINS OF ISSAQUENA COUNTY

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
Valley Park	Fire Station	Valley Park Fire Department	N	Y
Lake Providence	Waste Water Facility	Lake Providence - North Pond	N	Y

4.5.5.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Flooding can adversely impact cultural, historic, and natural resources in Claiborne County by causing erosion, structural damage, and long-term degradation of sensitive sites and landscapes. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be damaged by prolonged inundation, saturated soils, or repeated flood events, particularly where foundations, grave markers, or unreinforced masonry are exposed to water and shifting ground conditions. Floodwaters can erode soil and displace or destroy archeological materials, resulting in irreversible loss of cultural resources. Natural resources are also vulnerable, as flooding can alter stream channels, degrade wetlands, reduce water quality, damage vegetation, and disrupt wildlife habitats. While some ecosystems may recover over time, repeated or severe flooding can permanently alter natural and cultural landscapes.

4.5.5.4. PEOPLE

Some populations may face greater risk to flooding--the relatively short warning time typically provided for flooding means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations most vulnerable to flooding include older adults, low-income households, and individuals without access to flood insurance or dependable transportation. These factors can limit a person's ability to evacuate when warnings are issued. These populations can experience disproportionate impacts to floods and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5.

4.5.5.5. STRUCTURES AND SYSTEMS

Flooding poses a significant risk to structures and critical systems in Issaquena County by causing physical damage, inundation, and operational disruptions. Floodwaters can damage building foundations, walls, and interiors, particularly in structures located in low-lying areas or flood-prone zones, leading to costly repairs and long-term structural degradation. Electrical, mechanical, and HVAC systems are especially vulnerable to water damage, which can result in power outages and prolonged service interruptions. Flooding may also impair transportation networks, water distribution, wastewater treatment, and drainage systems, reducing access to essential services and facilities. These impacts can disrupt emergency responses, government operations, and community recovery efforts, especially when flood events are recurrent or severe. Based on previous occurrences, there has been one flood event causing $9,000 in damage.

4.5.5.6. NFIP INSURED STRUCTURES

The National Flood Insurance Program (NFIP) is a federal program managed by FEMA that provides flood insurance to property owners, renters, and businesses in participating communities. It aims to reduce flood damage by restricting floodplain development and offering affordable insurance, as standard homeowners insurance typically does not cover flood damage. Issaquena County and its jurisdictions are a participating in the NFIP. For more information about the NFIP, reference **Section 5.8.6.3** in the base plan.

According to current data from the NFIP, there are seven Repetitive Loss properties in Issaquena County as of 2025. Of these, six are single-family residences and one is a non-residential commercial business. Due to the repetitive nature of these losses, structures meeting the NFIP definitions of repetitive loss and severe repetitive loss should be prioritized for mitigation measures, as these measures are likely to be relatively cost effective. **Table 23** lists the properties that are repetitive loss or severe repetitive loss in the County.

TABLE 23: REPETITIVE LOSS AND SEVERE REPETITIVE LOSS PROPERTIES IN ISSAQUENA COUNTY

Jurisdiction	Number of Repetitive Loss Properties (2025)	Number of Severe Repetitive Loss Properties (2025)	Total Number of Flood Claims	Total Amount ($) of Flood Claims
Issaquena County	7	--	--	--
Town of Mayersville	--	--	--	--

4.5.5.7. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Issaquena County may lead to lower impacts of flooding. A decrease in the number of structures in the floodplain allows for more permeable surface to absorb floodwater, along with lower strain on stormwater management systems that can contribute to an overall reduction in the severity of flood events.

4.6. SEVERE STORMS

4.6.1. LOCATION AND EXTENT

Severe storms are a region-wide hazard in the Mississippi Delta and are not confined to specific locations. Severe storms affect the entire planning area equally; Issaquena County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. More information on severe storms across the District, refer to the base plan.

4.6.2. PREVIOUS OCCURRENCES

Recent events highlight the destructive potential of these storms. Since 2020, the following events have taken place in Issaquena County:

- 12 thunderstorms, causing $60,000 in property damage
- Zero reported occurrences of severe lightning
- Zero reported occurrences of high wind events
- Two hailstorms, causing $55,000 in property damage

Figure 13 and **Figure 14** below show historic wind and hail events in Issaquena County since 1955.

FIGURE 13: ISSAQUENA COUNTY HISTORIC WIND EVENTS 1955-2024

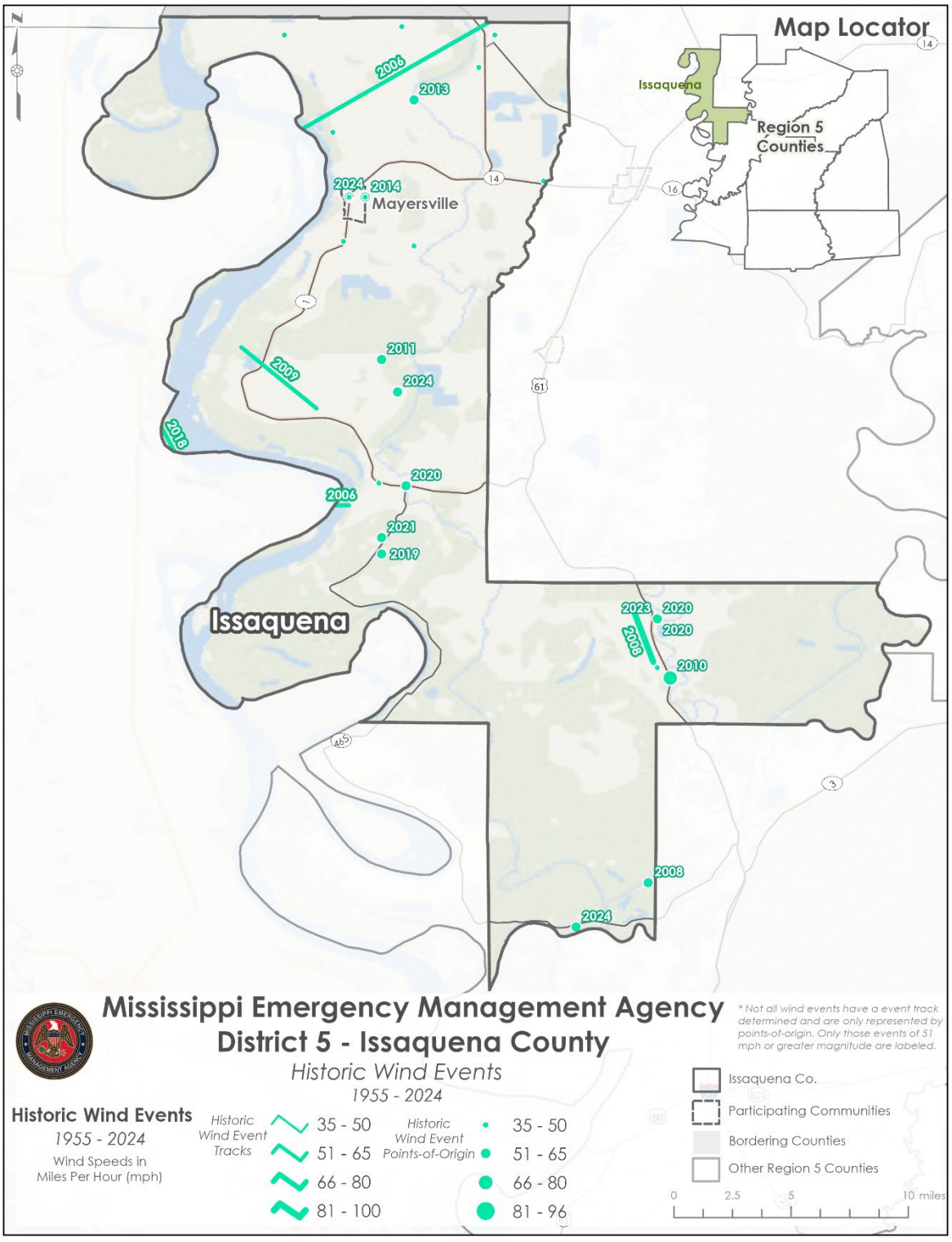
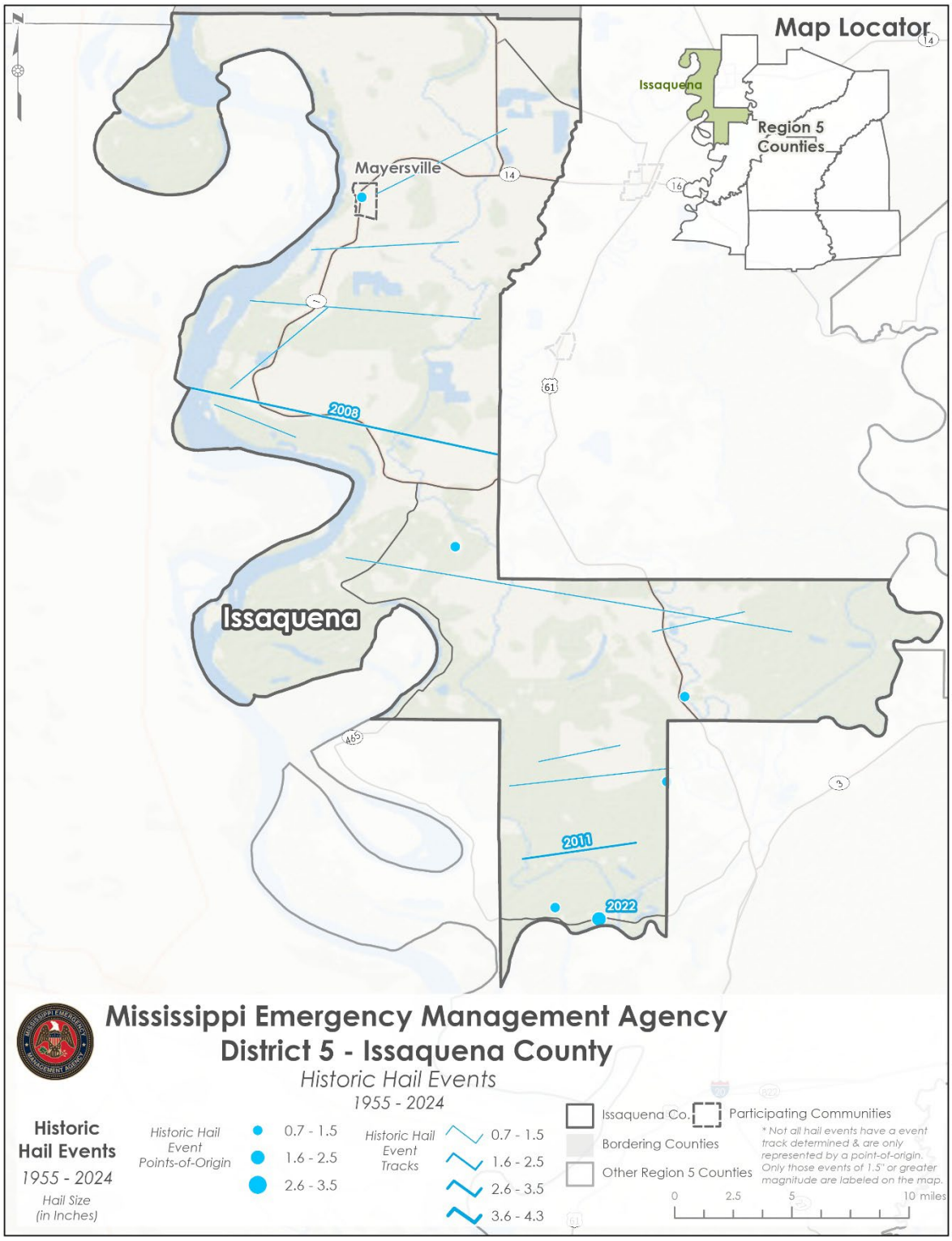


FIGURE 14: ISSAQUENA COUNTY HISTORIC HAIL EVENTS 1955-2024



4.6.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 14 severe storm events in the past five years, which equates to 2-3 events occurring per year. The probability of future occurrences of severe storms in Issaquena County and Mayersville is **Extremely Likely**, especially during peak storm seasons. These storms are expected to occur multiple times per year.

4.6.4. LOCALIZED VULNERABILITY ASSESSMENT

4.6.4.1. OVERALL VULNERABILITY

As noted above, the risk of severe storms (due to the frequency and ubiquity of these events) is largely equal across the entire planning area, posing risks to natural and cultural resources and community lifelines, as discussed in the base plan. However, demographic and development factors can cause variation in vulnerability to this risk. Based on the frequency and the extent of damage that severe storms can cause the risk of severe storms is **High** for Issaquena County and Mayersville. This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to flooding events.

4.6.4.2. CRITICAL FACILITIES

Severe storms affect the entire planning area, putting all critical facilities in Issaquena County at risk. Thunderstorms with high winds, heavy rain, hail, and lightning can damage essential buildings such as hospitals, emergency services, schools, and government facilities. These storms may cause roof failures, broken windows, and damage from flying debris, posing ongoing threats to critical infrastructure.

4.6.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Severe storms can damage cultural, historic, and natural resources in the County through high winds, heavy rain, flooding, hail, and lightning. Historic buildings, cemeteries, monuments, and archeological sites are vulnerable to wind-driven debris, roof or structural failure, fallen trees, erosion, and extended moisture exposure—especially where structures are older or lack protective reinforcement. Heavy rainfall can erode soils and displace archeological materials, diminishing historic context and site integrity. Natural resources may also be affected, with storms capable of damaging forests, altering stream channels, degrading wetlands, and reducing water quality through increased runoff and sedimentation.

4.6.4.4. PEOPLE

The wind, hail, lightning, and flooding often produced by severe storms can lead to injury or death. Some populations may face greater risk to severe storms--the relatively short warning time typically provided for severe storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.6.4.5. STRUCTURES AND SYSTEMS

Aging infrastructure and limited emergency resources without redundancies increase the vulnerability of structures and systems in Issaquena County to the impacts of severe storms. However, this

vulnerability is not markedly higher or lower in the County than the rest of the District; the vulnerability of structures and systems across D5 is described in more detail in the base plan. Based on previous occurrences, there have been over $100,000 in damages in the past 10 years, which is minimal compares to other jurisdictions across the District. It is expected that in the next several years, similar damage from severe storms will continue to occur.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Issaquena County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.6.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Issaquena County means fewer people and structures for storms to damage. Additionally, lower strain on stormwater management systems can contribute to an overall reduction in the likelihood of severe storms to lead to flooding.

4.7. SEVERE WINTER WEATHER

4.7.1. LOCATION AND EXTENT

Severe winter weather is a region-wide hazard in the Mississippi Delta and is not confined to specific locations. Winter storms affect the entire planning area equally; Issaquena County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. More information on the extent of the threat posed by these storms is provided in the base plan. However, the extent of these storms is limited, with an average amount of annual snowfall in the county of 0-1 inches. For more information on severe winter weather across the District, refer to the base plan.

4.7.2. PREVIOUS OCCURRENCES

Several impactful severe winter weather events have occurred in Issaquena County over the past two decades. The most significant of these in recent years include:

- The January 2018 cold snap that led to challenges like burst pipes, increased heating demands, and risk to seniors and other vulnerable populations
- The February 2021 freezing rain, sleet, and snow event that led to widespread power outages due to ice accumulation
- The January 2014 snowstorm led to significant travel hazards

Between 2015 and 2020, there were two severe winter weather events in Issaquena County, causing $10,000 in property damage. Since the 2020 plan update, there have been four such events, causing $60,000 in damage.

4.7.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been six severe winter weather events in the past 10 years, which is equates to an event occurring every 1-2 years. Winter weather events in Issaquena County are considered occasional but increasing in frequency and severity. The probability of a severe winter storm occurring in the County is **Likely** and **Low** for Mayersville.

4.7.4. LOCALIZED VULNERABILITY ASSESSMENT

4.7.4.1. OVERALL VULNERABILITY

All counties within District 5 are vulnerable to the impact of severe winter storms. While the County is closer to the Northern portion of the region, winter weather in Issaquena County is less severe than other jurisdictions across the District. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the County's natural, historic, and cultural assets, as discussed in the base plan. Based on the frequency and the severity of severe winter storms, the risk to the County and Mayersville is **Medium**. Severe winter storms can disrupt utility and critical infrastructure which can significantly disrupt the communities of Issaquena County. This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to severe winter storms.

4.7.4.2. CRITICAL FACILITIES

Severe winter weather, including freezing temperatures, ice, and occasional snow, can disrupt critical facilities in Issaquena County by causing power outages, damaging water and wastewater systems, and limiting transportation access. Freezing conditions may result in broken pipes, equipment failures, and interruptions to essential services at hospitals, emergency response facilities, schools, and government buildings.

4.7.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Although severe winter weather occurs infrequently, its effects can result in lasting damage to sensitive cultural, historic, and natural resources. Severe winter weather can adversely affect cultural, historic, and natural resources in the County by causing structural stress, moisture damage, and ecological disruption. Historic buildings, cemeteries, and monuments may experience cracking, spalling, or material deterioration due to freeze–thaw cycles, while ice accumulation and fallen trees can damage structures and cultural landscapes. Natural resources are also vulnerable, as winter weather can damage vegetation, alter wildlife habitats, and degrade water quality through increased runoff and erosion.

4.7.4.4. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations. As with other hazards, those who are elderly, disabled, or economically disadvantaged are at heightened risk due to limited access to reliable heating, transportation, and emergency services, and a reduced ability to physically withstand cold temperatures. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe winter weather and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.7.4.5. STRUCTURES AND SYSTEMS

Rural communities may be more vulnerable to isolation during winter storms, especially if roads become impassable. These areas often face greater challenges in road treatment and utility restoration due to limited access to resources and longer emergency response times. Because Issaquena County is relatively more rural than District 5 overall, people in the County and its municipalities are at slightly higher risk.

Urban centers are more likely to experience infrastructure strain, including power outages, traffic disruptions, and increased demand for emergency services and shelters. While these areas may experience slightly milder winter conditions, the potential impacts are magnified due to the higher number of residents, aging utility systems, and limited access to alternate heating sources.

4.7.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Population reduction in Issaquena County reduces the strain on electrical and other utility systems, reducing the likelihood that these systems experience failure during significant events.

4.8. TORNADO

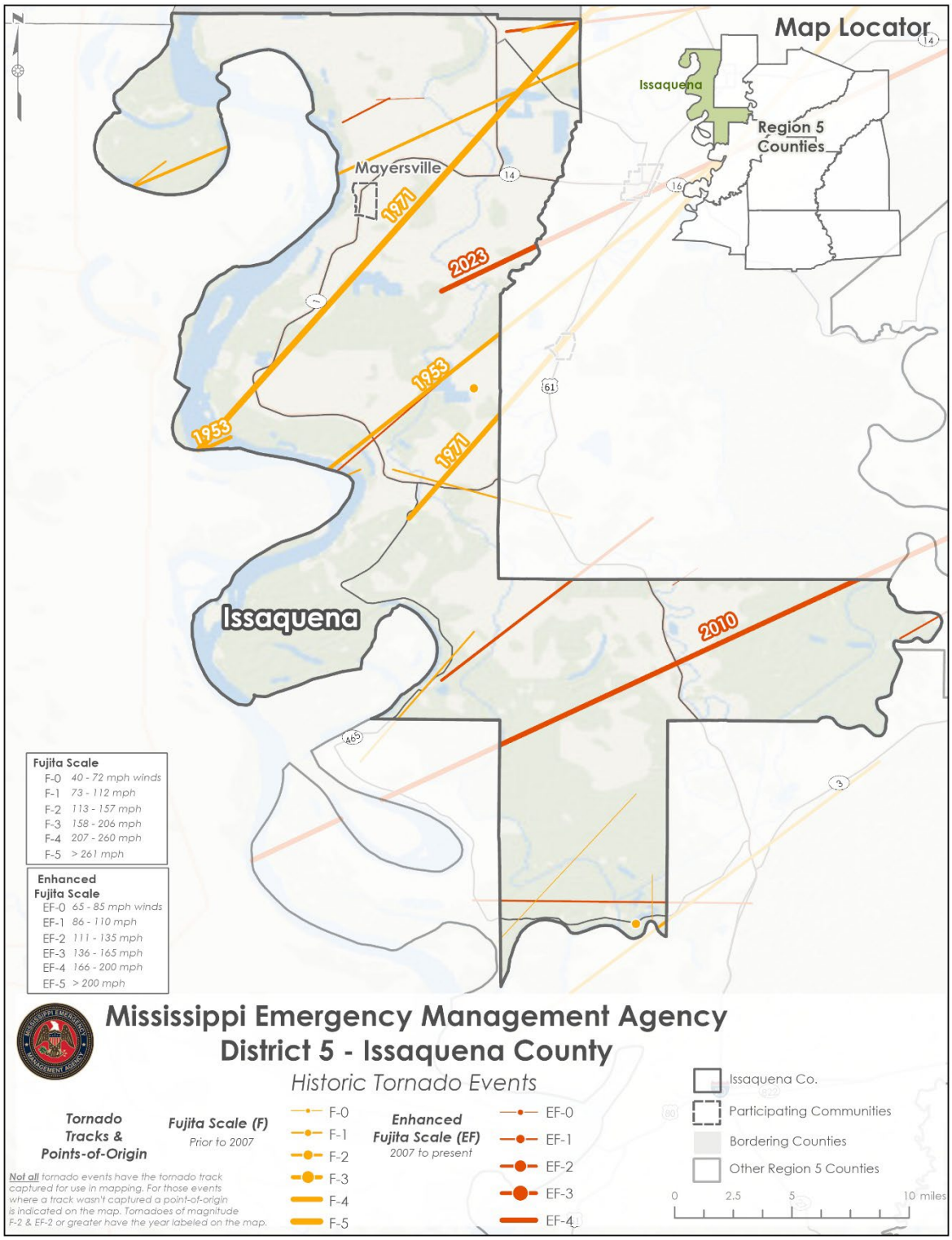
4.8.1. LOCATION AND EXTENT

Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments. Due to the unpredictable nature of tornado formation and the ability for the entire planning area to be impacted by severe storms, the entirety of Issaquena County is equally likely to experience a tornado of any magnitude. Tornados of any strength on the Enhanced Fujita (EF) scale are possible throughout the county. For more information on tornadoes across the District, refer to the base plan. For more information on tornadoes across the District, refer to the base plan.

4.8.2. PREVIOUS OCCURRENCES

Between 1950 and 2022, there were 22 tornadoes reported in Issaquena County, causing a total of $3,800,000 in property damage. **Figure 15** below shows the historic tornado events throughout the County.

FIGURE 15: ISSAQUENA COUNTY HISTORIC TORNADO EVENTS



4.8.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 22 tornadoes in the past 72 years. Tornados occur every 3-4 years. Historical data spanning 72 years indicates a consistent pattern of tornado activity across the County, indicating that tornadoes is **Highly Likely** to recur at some point in the future. However, tornadoes are **Extremely Likely** to reoccur in the Town of Mayersville.

4.8.4. LOCALIZED VULNERABILITY ASSESSMENT

4.8.4.1. OVERALL VULNERABILITY

More rural and less densely populated counties like Issaquena County may have older housing stock, limited access to safe shelters, and fewer emergency response resources. These factors can increase the severity of tornado impacts despite lower exposure levels. Additionally, mobile homes are extremely susceptible to high winds and may sustain more damage or be flipped over during a strong tornado. Tornadoes cause flying debris which can be dangerous for people in the surrounding areas and other buildings, infrastructure, and critical facilities. Due to the severity tornadoes can cause, they pose a **High** risk to Issaquena County and Mayersville. This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to tornadoes.

4.8.4.2. CRITICAL FACILITIES

Tornadoes pose a significant threat to Issaquena County's critical facilities, as extreme winds and airborne debris can cause rapid and severe structural damage. Hospitals, emergency services buildings, schools, and water or wastewater systems may experience roof loss, wall failure, or utility disruptions that lead to immediate service outages. Tornadoes often cause widespread power and communication failures, and debris-cluttered roads can limit access to essential facilities and slow emergency response efforts.

4.8.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tornadoes can significantly impact cultural, historic, and natural resources in the County through extreme winds, flying debris, and associated storm damage. Historic structures, cemeteries, monuments, and archeological sites may sustain damage or complete loss due to building collapse, fallen trees, or debris impacts, particularly where resources are older or lack structural reinforcement. Cultural landscapes and historic settings can also be altered by the destruction of surrounding features such as fences, vegetation, and access paths. Natural resources may be affected through forest damage, habitat loss, soil erosion, and disruption of wildlife caused by wind and debris.

4.8.4.4. PEOPLE

Some populations may face greater risk to tornadoes--the relatively short warning time typically provided for tornadoes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. 265 (30.2%) of the residents of Issaquena County reside in mobile or manufactured homes, placing them at increased risk. These populations can experience disproportionate impacts to tornadoes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5.

4.8.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that do not have safe rooms or have not been retrofitted for extreme winds are vulnerable to the impacts of tornados, including in Issaquena County, as described in the base plan. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of tornadoes. Issaquena County may be at slightly lower risk of these impacts simply because it is less developed than other counties in the district, and there are more such facilities to be impacted.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. Issaquena County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.8.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Issaquena County means fewer people and structures for tornado damages. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tornadoes.

4.9. TROPICAL STORM/HURRICANE

4.9.1. LOCATION AND EXTENT

Like the rest of District 5, Issaquena County is inland but is still vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. This risk is not measurably varied across the County or planning area, except for low-lying and flood-prone areas that might be more subject to flash flooding or riverine flooding during heavy rain events. For more information on tropical storms and hurricanes across the District, refer to the base plan.

The extent of the impacts of tropical storm typically includes sustained winds of 30-60 MPH with higher gusts, heavy rainfalls of six or more inches in a 24-hour period, and occasional tornadoes.

4.9.2. PREVIOUS OCCURRENCES

Issaquena County is inland but has experienced the direct impacts of tropical storms in the past. The tracks of the following storms have passed directly through the county, producing damaging wind, heavy rainfall, power outages, and occasional tornadoes:

- Tropical Storm Delta (2020)

4.9.3. PROBABILITY OF FUTURE OCCURRENCES

Although Issaquena County and Mayerville is located inland, the probability of experiencing hurricane-related impacts remains **Low** due to the district's proximity to the Gulf Coast and historical storm tracks. The County can expect to experience the effects of a tropical storm or hurricane approximately every 5 to 10 years, although climate trends and increased storm intensity may elevate risk.

4.9.4. LOCALIZED VULNERABILITY ASSESSMENT

4.9.4.1. OVERALL VULNERABILITY

Being in the Northern half of the district, Issaquena County is likely to experience slightly less frequent and intense tropical storm impacts than the district overall. Due to the low frequency, geography, and potential damage from tropical storms and hurricanes, they pose a **Medium** risk to Issaquena County and Mayersville. This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to tropical storms and hurricanes.

4.9.4.2. CRITICAL FACILITIES

Even after weakening inland, tropical storms and hurricanes can impact critical facilities in Issaquena County by bringing heavy rainfall, strong winds, and localized flooding that strain infrastructure and interrupt essential services. Hospitals, emergency response buildings, schools, government offices, and water or wastewater systems may face structural damage, loss of power or communications, and flooding of mechanical or electrical equipment. Intense rainfall can also overwhelm drainage systems and flood roadways, limiting access to critical facilities and slowing emergency response efforts.

4.9.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tropical storms and hurricanes can adversely impact cultural, historic, and natural resources in the County through heavy rainfall, strong winds, localized flooding, and prolonged soil saturation. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, flooding, or erosion, particularly where structures and sites are older or not designed to withstand prolonged moisture exposure. Excessive rainfall can erode soils and displace archeological materials, while flooding may degrade cultural landscapes and historic settings. Natural resources are also vulnerable, as tropical storm impacts can damage forested areas, alter stream channels, degrade wetlands, and reduce water quality due to increased runoff and sedimentation.

4.9.4.4. PEOPLE

Some populations may face greater risk to tropical storms--the relatively short warning time typically provided for tropical storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. These factors increase risk to the population in the County to tropical storms and may have difficulty in preparing and recovering from them. These populations can experience disproportionate impacts to tropical storms and hurricanes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5.

4.9.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storms like high winds. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of these storms across the planning area, including in Issaquena County, as described in the base plan. The County may be at slightly lower risk of these impacts simply because it is less developed than other counties in the district, and there are more such facilities to be impacted. As noted above, low-lying and flood-prone areas are more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. Issaquena County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.9.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Issaquena County means fewer people and structures for these storms to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tropical storms.

4.10. WILD/URBAN INTERFACE (WUI) FIRE

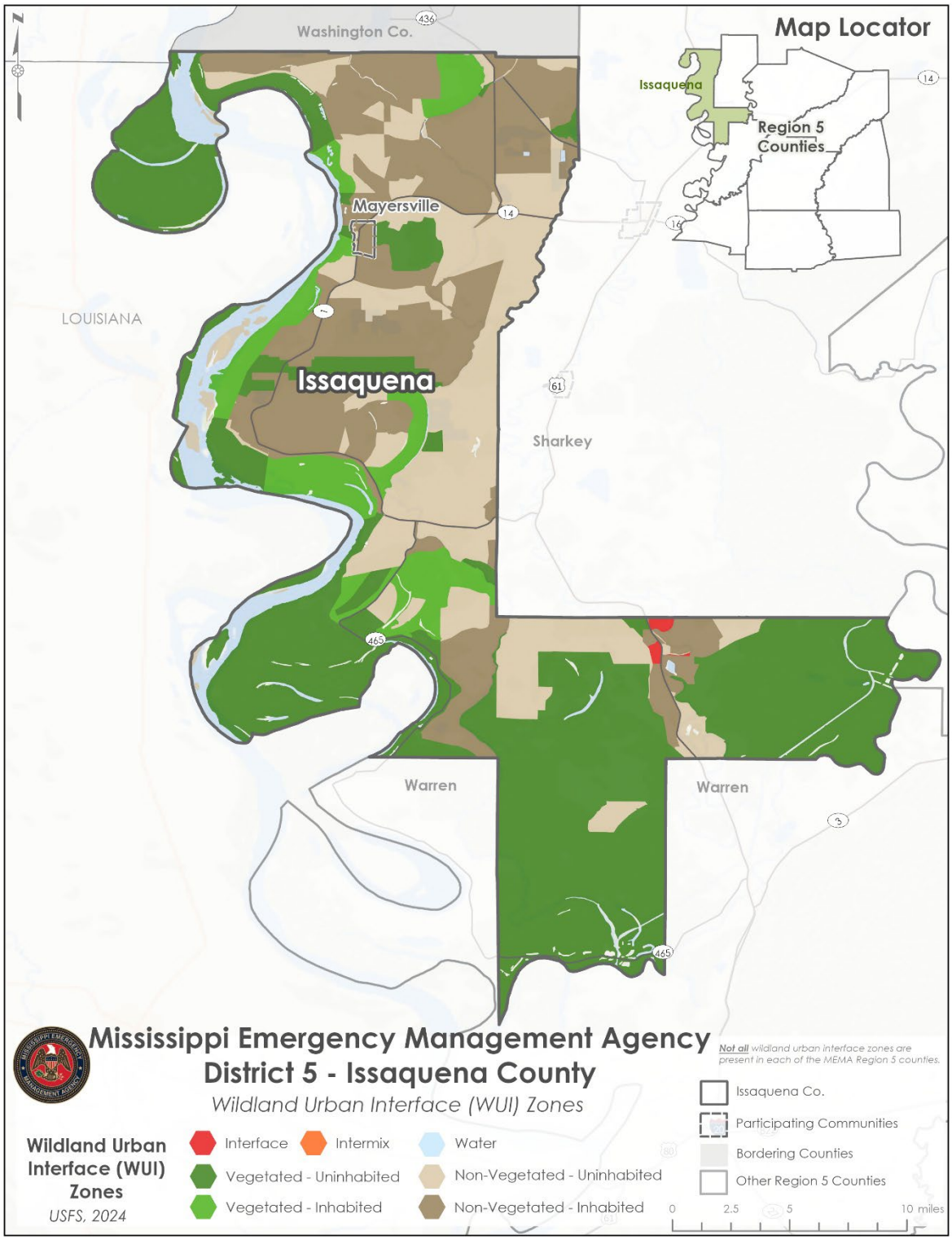
4.10.1. LOCATION AND EXTENT

Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas. There are two types of WUI Zones, and they are briefly described below. For more information on urban and WUI fires across the District, refer to the base plan.

- **Interface:** Development is bordered by wildlands on at least one side.
- **Intermix:** Development is surrounded on two or more sides by wildlands.

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. **Figure 16** is a map showing the areas where this hazard is most significant in Issaquena County. Most of the County is in the Vegetated and Non-Vegetated areas with a small WUI Interface area located along U.S. Highway 61, West of the Delta National Forest.

FIGURE 16: WILDLAND URBAN INTERFACE (WUI) AREA IN ISSAQUENA COUNTY



The extent of a potential WUI fire impact in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development, but is not substantively different in Issaquena County than in the District overall. This extent is described further in the base plan.

4.10.2. PREVIOUS OCCURRENCES

Recent fire activity in Issaquena County has been limited, with only one documented wildfire from 1992-2020. A 14-acre incident on October 3, 2025, caused minor damage to privately owned land but did not threaten or destroy any structures. No recent urban or structural fire incidents have been reported in the County. It is also important to note that some District 3 participating communities provided anecdotal information that previous fire events have not been captured using state level data. Due to this data limitation, it is possible that the number of previous occurrences could be more than reported.

4.10.3. PROBABILITY OF FUTURE OCCURRENCES

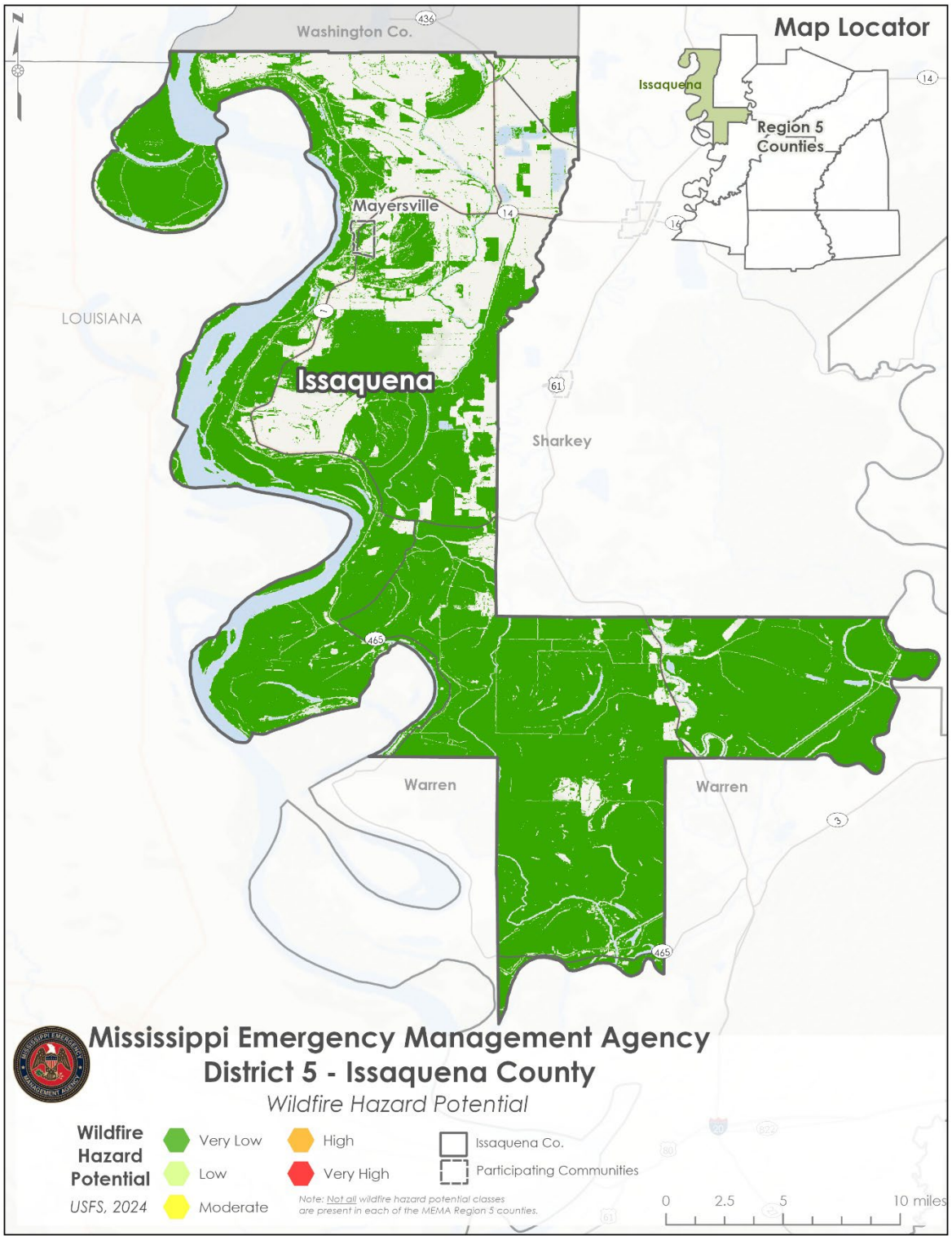
Hundreds of wildfires occur in Mississippi each year, indicating that such fires may occur in the County. However, based on the lack of historical fires and local capacity to respond to such fires, the impact on the County is low. The probability of the County responding to a severe fire is **Low**.

4.10.4. LOCALIZED VULNERABILITY ASSESSMENT

4.10.4.1. OVERALL VULNERABILITY

Counties like Issaquena County in the western part of the district, due to a variety of geographic factors like wetter climate and soils and trends in development, are less susceptible to both WUI and urban fire. Wildfire hazard potential is generally very low across the County. **Figure 17** below for a visual of the wildfire hazard potential throughout the County. While the frequency of fires occurring in the County is low, the impact is low since the County has the capacity to respond effectively to most incidents. Therefore, the risk of wildfires is **Low** for Issaquena County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to wildfires.

FIGURE 17: ISSAQUENA COUNTY WILDFIRE HAZARD POTENTIAL



4.10.4.2. CRITICAL FACILITIES

There are zero critical facilities in Issaquena County that are in the WUI zones.

4.10.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Urban and wildland fires can cause significant damage to cultural, historic, and natural resources in the County through flame exposure, extreme heat, smoke, and post-fire environmental degradation. Historic structures, cemeteries, monuments, and archeological sites may be damaged or lost because of direct fire contact, structural weakening from heat, falling trees, or fire-suppression activities.

4.10.4.4. PEOPLE

For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Issaquena and Sharkey Counties and the City of Madison, thus putting those populations at a slightly lower risk than the rest of the District.

Populations most at risk of the impacts of fires include older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate when these fires occur. These populations can experience disproportionate impacts to hazardous materials incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. Because it is more rural than the district, people in the County may be at slightly higher risk from wildfire, as the lower access to road infrastructure and warning systems may make evacuation more difficult.

4.10.4.5. STRUCTURES AND SYSTEMS

Issaquena County contains limited areas of direct exposure to wildfire risk, as shown in the Wildfire Risk Reduction Zones map in the base plan. In these areas, homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk and complicating suppression efforts. Issaquena County does not have a Community Wildfire Protection Plan (CWPP) in place, which could help address and reduce risk in the future.

4.10.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like Issaquena County, population decline can lead to reduced access to emergency services and increased response times, which can increase risk even though additional structures are not being placed in harm's way.

4.11. HAZARDOUS MATERIAL INCIDENTS

4.11.1. LOCATION AND EXTENT

Hazardous materials incidents can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, agricultural operations, and facilities that store or use chemicals. In Issaquena County, these include:

- U.S. Highway 61
- State Highways 1, 14 and 465

As noted in the base plan, the severity of the impact from HazMat incidents depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures. Because Issaquena County is more rural, impacts of a release on the surrounding population might be less significant due to population density, although longer emergency crew response times may impact the severity of an incident.

Figure 18 below shows the gas transmission pipelines and hazardous liquid pipelines while **Figure 19** below displays the ground transportation throughout the County. For more information on hazardous material incidents across the District, refer to the base plan.

FIGURE 18: PIPELINES IN ISSAQUENA COUNTY

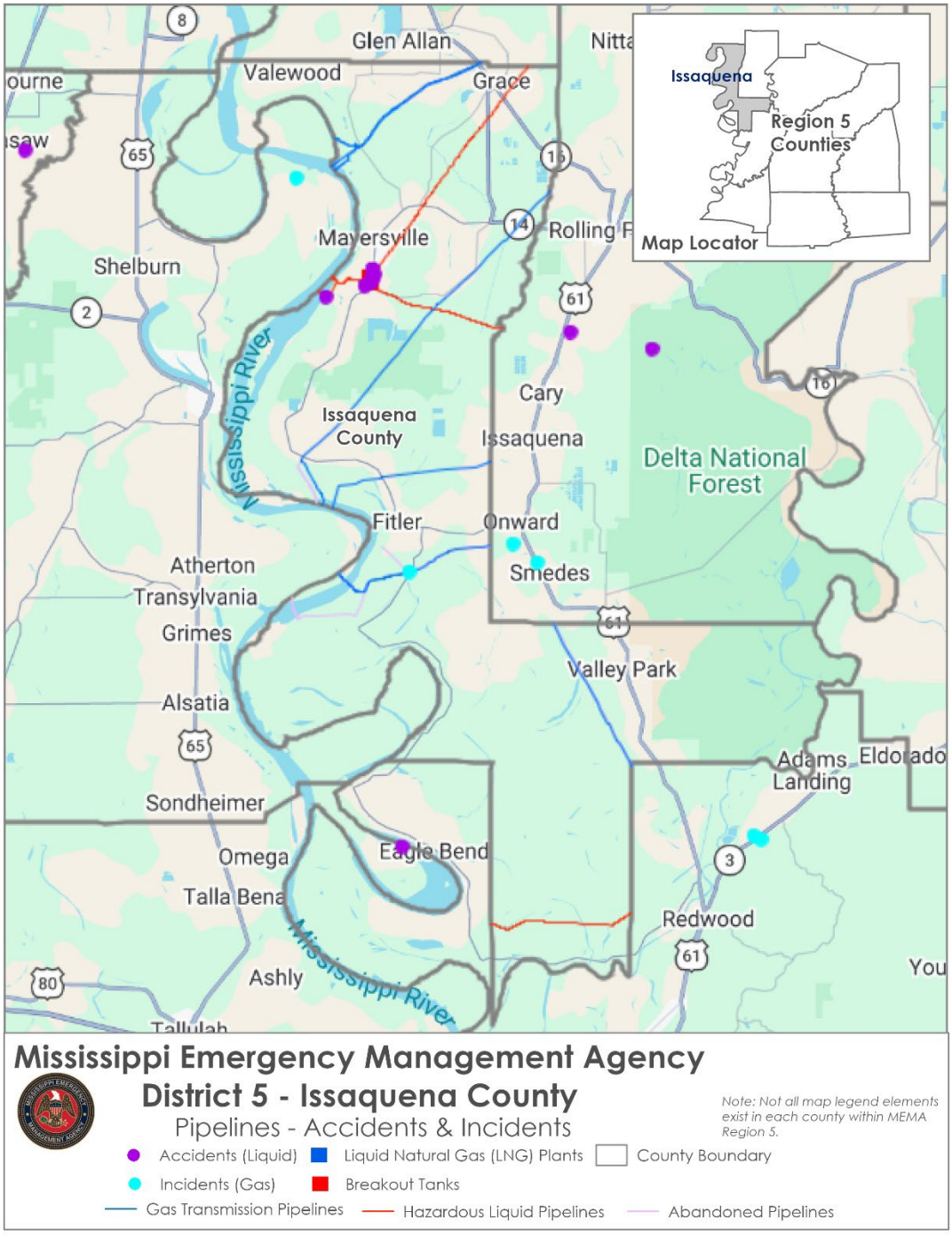
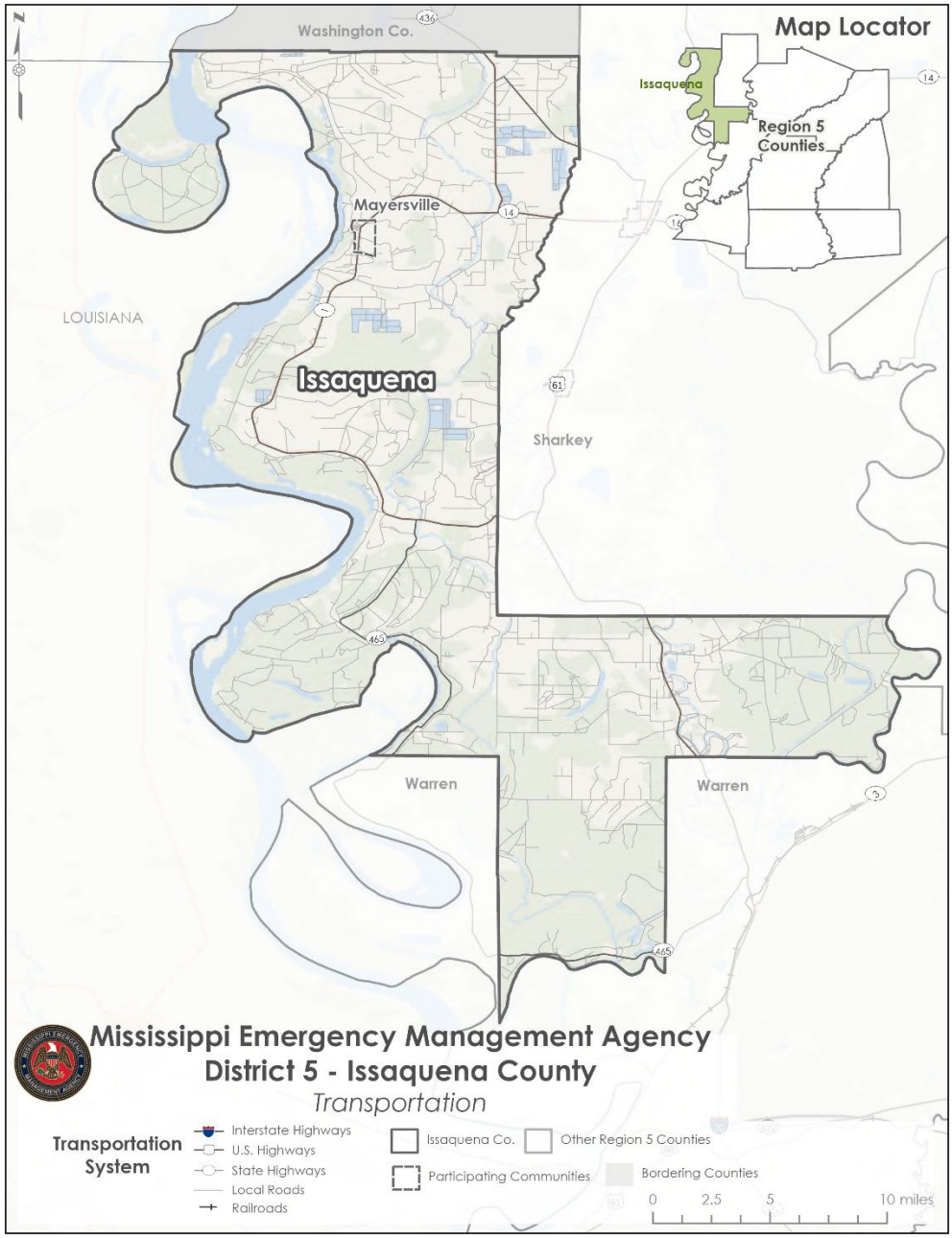


FIGURE 19: GROUND TRANSPORTATION IN ISSAQUENA COUNTY



4.11.2. PREVIOUS OCCURRENCES

In Issaquena County, there have been zero hazardous materials releases reported to the EPA since 2014.

4.11.3. PROBABILITY OF FUTURE OCCURRENCES

Since hazardous materials incidents are not considered “natural hazards”, the jurisdictions are not required to evaluate the overall risk to the County. Therefore the probability of future occurrence is **Unrated**.

4.11.4. LOCALIZED VULNERABILITY ASSESSMENT

4.11.4.1. OVERALL VULNERABILITY

More rural and less densely populated counties like Issaquena County may have limited access to safe shelters, and fewer emergency response resources. These factors can increase the severity of HazMat impacts despite lower exposure levels. Since hazardous materials incidents are not considered “natural hazards”, the jurisdictions are not required to evaluate the probability of future events to the County. Therefore, the overall risk of a hazardous material incident in Issaquena County is **Unrated**. This section provides further contextualization for the anticipated vulnerability of the communities within Issaquena County to hazardous material incidents.

4.11.4.2. CRITICAL FACILITIES

Hazardous materials incidents can pose significant risks to critical facilities in Issaquena County by causing contamination, toxic exposure, or fire and explosion hazards that may require evacuations or temporary shutdowns.

4.11.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Hazardous materials incidents can negatively affect cultural, historic, and natural resources in the County through contamination of soil, water, vegetation, and sensitive sites.

4.11.4.4. PEOPLE

Populations most at risk of the impacts of hazardous materials incidents are those living near transportation corridors, industrial facilities, and storage sites, who are more likely to be lower income. This population is also less likely to have reliable access to transportation, complicating evacuation efforts. Other vulnerable populations include older adults, children, and those with respiratory conditions, who may face challenges during shelter-in-place orders. These populations can experience disproportionate impacts to hazardous materials incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.11.4.5. STRUCTURES AND SYSTEMS

Because it is more rural than the rest of the district, people in Issaquena County may be at slightly lower risk from HazMat incidents due to the relative number of facilities that might cause releases. However, lower access to road infrastructure and warning systems may make evacuation more difficult than in other areas, as would lower emergency response capability. Impacts on lifelines and to natural, cultural, and historic resources are generally consistent across the planning area and are described in the base plan. There have been no previous occurrences of reported damages structures and systems since 2014.

4.11.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like Issaquena County, population decline can lead to reduced access to emergency services and increased response times, which can increase risk from hazardous materials incidents.

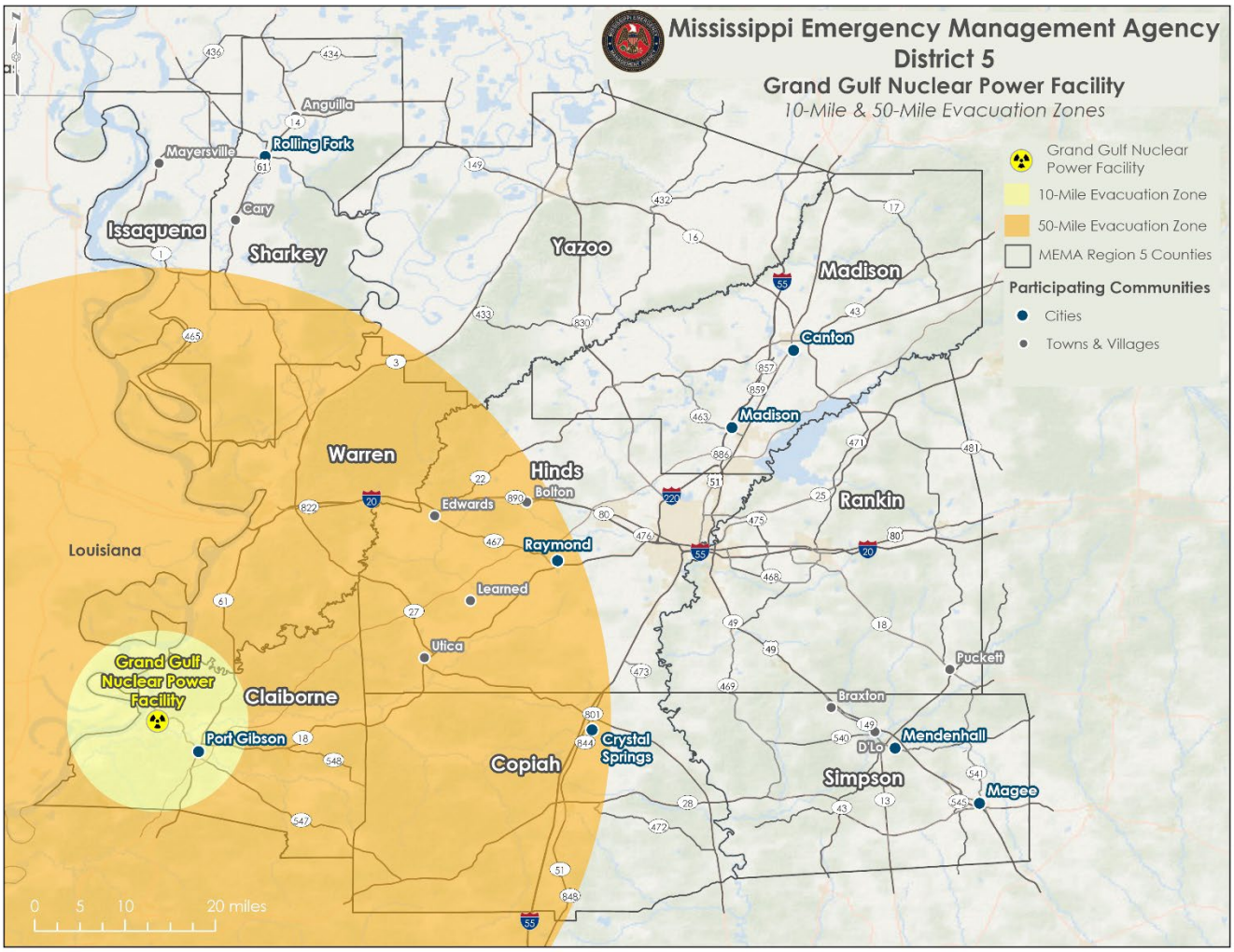
4.12. NUCLEAR POWER PLANT INCIDENTS

4.12.1. LOCATION AND EXTENT

A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies. For more information on nuclear power plant incidents across the District, refer to the base plan.

Grand Gulf Nuclear Station (GGNS) is the only nuclear power plant in Mississippi. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP), includes a 50-mile radius from the facility, shown in **Figure 20**. Issaquena County is partially located on the Northern edge of the 50-mile IEP area, which encompasses the Southern half of the County. For more information on nuclear power plant incidents across the District, refer to the base plan.

FIGURE 20: GRAND GULF 10-MILE AND 50-MILE EVACUATION ZONES



4.12.2. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. However, historical examples such as Three Mile Island (1979), Chernobyl (1986), and Fukushima Daiichi (2011) demonstrate the potential severity of such events. Grand Gulf Nuclear Station has maintained a strong safety record, but minor operational alerts have occurred in the past without offsite consequences. More information about previous occurrences can be found in the base plan.

4.12.3. PROBABILITY OF FUTURE OCCURRENCES

Based on historical events, the probability of a major nuclear incident is **unlikely** for Issaquena County and Mayersville. Natural hazards such as severe storms, flooding, or seismic activity could increase risk factors. The Fukushima Daiichi nuclear accident in 2011 is the most recent major nuclear event, and it was primarily caused by a M_w 9.0-9.1 earthquake and subsequent tsunami causing extensive damage to nearly all the facility's backup power sources. According to an NRC report, the estimated risk each year of an earthquake is intense enough to cause damage to the reactor core at Grand Gulf Nuclear Station, 1 in 83,333.

4.12.4. LOCALIZED VULNERABILITY ASSESSMENT

4.12.4.1. OVERALL VULNERABILITY

To understand how vulnerable the County is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. Since nuclear incidents are not considered "natural hazards", jurisdictions are not required to evaluate the overall risk of this hazard to the same extent as natural hazards profiled in this plan, and the vulnerability of Issaquena County and its communities to this hazard is **unrated.** Natural hazards such as severe storms, flooding, or seismic activity could increase risk factors. Broadly, the southern portion of Issaquena County, which is within the 50-mile Ingestion Exposure Pathway Zone, has a higher relative risk than the northern parts of the county, which includes Mayersville. This section provides further contextualization for the anticipated vulnerability of the communities within the County to nuclear power plant incidents.

4.12.4.2. CRITICAL FACILITIES

Critical facilities are unlikely to sustain direct physical damage from a nuclear power plant incident, but the operations of these facilities and the services they provide could still be significantly disrupted. If radioactive materials are released and contaminate portions of Issaquena County, any impacted facilities may need to close temporarily while safety inspections are conducted and conditions are verified as safe. Additionally, protective measures—such as evacuation orders, shelter-in-place instructions, or restricted-access zones—could limit staff access and impede normal operations. Even without radioactive contamination, critical facilities and services can be disrupted if evacuation orders prevent normal operations at these facilities.

4.12.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Within the 50-mile Ingestion Exposure Pathway Zone, contamination of crops, livestock, and soil could result in restrictions on the production, distribution, and consumption of agricultural products, leading to economic losses and supply chain disruptions. Depending on the severity of the event, it may be necessary to destroy contaminated products, and contaminated land may require years or remediation before it can safely be used for agricultural purposes. Cultural and historic sites are not uniquely vulnerable to this hazard, although historic structures sometimes require frequent or specialized maintenance which may no longer be possible if they are within areas that are unsafe for humans after a nuclear incident.

4.12.4.4. PEOPLE

As mentioned above, the Southern parts of the County are in the designated 50-mile Ingestion Exposure Pathway Zone. Individuals in this zone will receive official notifications through sirens, tone-alert radios, and broadcast media, and may be instructed to take specific protective steps depending on the severity of the event. Populations with access and functional needs may be disproportionately affected by a nuclear power plant incident. This includes elderly individuals and young children, individuals with disabilities, individuals who are physically isolated and lack internet and cell phone connectivity, and low-income populations.

Vulnerable populations may have trouble receiving or understanding warnings and instructions, lack access to protective equipment and emergency supplies, and require assistance evacuating to a safe location. According to the CDC Social Vulnerability Index (SVI), the Issaquena County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Because it is more rural than the district, residents in the southern parts of Issaquena County may be at slightly higher risk from a nuclear power plant incident, as the lower access to road infrastructure and

warning systems may make evacuation more difficult. Tailored mitigation strategies and coordinated emergency planning are essential to reduce these risks and protect vulnerable populations across the district. Mayersville is outside of the 50-mile zone, but the community may face an influx of residents from southern portions of Issaquena County in the event of a nuclear power plant incident.

4.12.4.5. STRUCTURES AND SYSTEMS

Overall, the impacts of a nuclear incident would be driven by contamination and disruption to the normal function of structures and systems rather than physical destruction. In the event of a significant release, radioactive materials could be transported by wind and deposited on buildings, infrastructure, soil, and surface water. While most structures would remain intact, contamination of rooftops, ventilation systems, and exterior surfaces could limit their use and require decontamination.

Residential and commercial structures are not expected to be physically damaged, but they may need to be abandoned if they are in areas that are deemed unsafe, which could significantly reduce property values and leave residents homeless. If the contamination is severe, it may take years before affected homes can be occupied and businesses can reopen. A prolonged period without routine maintenance and care can cause structures to become dilapidated, potentially adding an economic burden on the owners.

An outage at Grand Gulf Nuclear Station would place immediate pressure on the regional energy grid, increasing demand on other power producers. If the shutdown were prolonged, energy-intensive services such as water treatment, healthcare, education, and data centers could face operational disruptions. Individuals evacuating from the southern parts of Issaquena County may arrive in Mayersville, which could stress medical services, transportation networks, and other systems that the community relies on.

4.12.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Census data for Issaquena County and Mayersville shows that these populations have declined in recent years. If this continues, the area is likely to remain relatively rural in nature, and the number of people living in the portion of Issaquena County that is within the 50-mile Ingestion Exposure Pathway Zone will largely remain the same. Currently, there is no indication that recent development trends in Issaquena County and Mayersville have appreciably increased or decreased the vulnerability of these populations.

4.13. CRITICAL FACILITIES VULNERABILITY SUMMARY

Table 24 below notes the individual critical facilities in Issaquena County that were identified by the Mitigation Council and provides information on the relative risk these facilities face from various hazards.

TABLE 24: ISSAQUENA COUNTY CRITICAL FACILITIES VULNERABILITY SUMMARY

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
EOC	Issaquena County EOC	Mayersville	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Fire Station	Grace Fire Department	Grace	OUT	OUT	IN	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Fire Station	Mayersville Fire Department	Mayersville	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Fire Station	Valley Park Fire Department	Valley Park	IN	OUT	OUT	IN	Non-Vegetated - Uninhabited	WTZ: Non-Vegetated	N/A - WHP Undetermined
Government	Mayersville Town Hall	Mayersville	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Police Station	ISSAQUENA COUNTY SHERIFFS DEPARTMENT	Mayersville	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Mayersville Water System - Potable Water	Mayersville	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	LAKE PROVIDENCE,	LAKE PROVIDENCE	IN	OUT	OUT	OUT	Vegetated - Inhabited	WTZ: Tree	Very Low

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
	TOWN OF-NORTH POND								
Waste Water Facility	MAYERSVILLE POTW	Mayersville	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	WTZ: Grass	Very Low
Waste Water Facility	Mayersville Water System - Waste Water	Mayersville	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	WTZ: Non-Vegetated	N/A - WHP Undetermined

5. MITIGATION STRATEGY

The Mitigation Strategy section of the base plan provides an overall blueprint for all participating jurisdictions in MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Regional Hazard Mitigation Council (RHMC) and the findings and conclusions of the Capability and Risk Assessments. The goals of the MEMA District 5 can be found in Section 6 of the base plan.

This section provides community-specific strategies for the participating jurisdictions within Issaquena County, including the status of actions that were included in the previous plan and actions to be considered or pursued over the next five years. As noted in the base plan, the participants are not committing to undertaking every action suggested in this list but rather are proposing an extensive list of *potential* actions that they may wish to pursue, depending on the availability of funding.

The following information is provided in the table below, as well as in the mitigation action tables within each annex in this plan:

Project Number: Each action is assigned a project number for organizational purposes.

Action Description: This is the description of the mitigation action. Actions descriptions are intended to be actionable and specific.

Responsible Agency or Department: actions assign primary responsibility to agencies or departments for implementation. The responsible entities were determined by jurisdictional representatives on the Mitigation Council, and they reflect the representatives' assessment of the entity that would be most capable of facilitating successful implementation of the action. Other agencies, departments, organizations, etc. may assist the responsible agency or department, if necessary.

Hazards Addressed: For each mitigation action, the hazard(s) that are being addressed are listed. Some hazards are considered "multi-hazard" because the action, when implemented, is designed to mitigate impacts of all disasters profiled in this plan. Other mitigation actions are specific to individual hazards.

Estimated Cost: This is the estimate cost of the action; these costs were determined through general discussions of the resources, personnel, and time needed, and the estimates are not intended to stand in for a full, detailed benefit-cost analysis.

Action Status (D/R/N/C): FEMA's guidance for local mitigation plans requires a status update for existing mitigation actions. The statuses of previous actions were assessed throughout the planning process. The four categories used by the Mitigation Council are:

> Deleted (D): action is no longer appropriate or desired, and the community does not intend to pursue the action.
>
> Retained (R): action is still desired by the community, but implementation has not been completed. The community will continue to implement the action as time and resources allow.
>
> New (N): action is new for the 2026 District 5 plan.
>
> Completed (C): action has been completed by the community.

Status Notes: Includes any information that the community provided for additional context to the action status.

Expected Time Frame for Completion: Participating jurisdictions anticipated the amount of time it will take to carry out the action. The expected time frames for actions from the previous plan were updated to reflect the expected time frame for completion from when communities adopt this plan.

Corresponding Goals: The plan goals addressed by each action item are included to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. Each action is linked to one more of the Plan's goals:

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

Priority: The priority of each of the mitigation action items is ranked either Low, Medium, or High. This prioritization allows Mitigation Council members to quickly compare actions based on a qualitative assessment of the anticipated benefits of actions. The process utilized by the Mitigation Council to prioritize actions is described in Section 6.4 of the base plan.

Potential Funding Sources: Potential sources for funding are listed for each action and encompass a range of sources including operating budget/general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), State grants, private funding, Capital Improvement Plan, and others. It is important to acknowledge that the identified funding sources are not exhaustive or definitive. The current funding landscape is undergoing significant change, and existing funding sources may not be available in the future, while new sources may emerge. If/when a community has the opportunity to implement an action, available funding sources will be re-examined to determine which source is most appropriate.

TABLE 25: UPDATED 2026 ISSAQUENA COUNTY MITIGATION ACTIONS

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
1-Issaquena County	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Issaquena County Emergency Management, Board of Supervisors	All hazards	$45,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Issaquena County	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, county Facebook and other social media accounts, websites, etc.)	Issaquena County Emergency Management, Board of Supervisors	All hazards	$50,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Issaquena County	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the county with advanced warning of approaching weather conditions	Issaquena County Emergency management, National Weather Service	Tornado, severe storms	$50,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Issaquena County	Purchase and maintain emergency generators for use by key critical facilities throughout the county.	Issaquena County Board of Supervisors	All hazards	$500,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, HMGP
5-Issaquena County	As future updates are made to the county's existing policies and regulations, and as the county adopts new policies and regulation in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Issaquena County Board of Supervisors	All hazards	$100,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Appendix F: Issaquena County

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
6-Issaquena County	Seek funding to assist with the construction of a community shelter	Issaquena County Emergency Management, Board of Supervisors	All hazards	$1,600,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC
7-Issaquena County	Encourage residents to construct individual safe rooms	Issaquena County Emergency Management	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
8-Issaquena County	Maintain an effective warning system that can be used to warn county residents during emergencies of approaching weather conditions and other hazards	Issaquena County Emergency Management, Board of Supervisors	All hazards	$400,000	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund
9-Issaquena County	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Issaquena County Floodplain Manager, Board of Supervisors	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
10-Issaquena County	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Issaquena County Floodplain Manager, Board of Supervisors	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General fund, staff time

Appendix F: Issaquena County

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
11-Issaquena County	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties.	Issaquena County Floodplain Manager, Board of Supervisors	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
12-Issaquena County	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	Issaquena County Administrator	All hazards	$1,000,000	R	No progress since last update	10 years	3, 5	Medium	General Fund, CDBG, HMGP, USDA Rural Development
13-Issaquena County	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan	Issaquena County Board of Supervisors, Emergency Management	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund
14-Issaquena County	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic.	Issaquena County Emergency Management, Board of Supervisors	Public health emergencies	$100,000	R	No progress since last update	On-going annually	3	High	General Fund
15-Issaquena County	Improve cellular tower capability throughout the County to upgrade communication efficiency	Issaquena County Board of Supervisors	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund
16-Issaquena County	Seek funding assistance to improve high-speed internet capabilities throughout the County	Issaquena County Board of Supervisors	All hazards	$1,500,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
17-Issaquena County	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Issaquena County Emergency Management, Board of Supervisors	All hazards	$50,000	R	No progress since last update	On-going annually	3	High	General Fund

Appendix F: Issaquena County

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
1-Mayersville	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Mayersville Board of Alderman, Mayor's Office	All hazards	$5,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Mayersville	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Mayersville Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Mayersville	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the town with advanced warning of approaching weather conditions	Mayersville Police and Fire Departments, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Mayersville	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	Mayersville Board of Alderman, Public Works	All hazards	$500,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, HMGP
5-Mayersville	As future updates are made to the town's existing policies and regulations, and as the town adopts new policies and regulation in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Mayersville Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
6-Mayersville	Seek funding to assist with the construction of a community shelter.	Mayersville Mayor's Office	All hazards	$1,200,000	R	No progress since last update	On-going annually	3	Medium	General Fund, HMGP, BRIC
7-Mayersville	Encourage residents to construct individual safe rooms.	Mayersville Police and Fire Departments	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
8-Mayersville	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	Mayersville Board of Alderman, Mayor's Office	All hazards	$400,000	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund
9-Mayersville	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Mayersville Floodplain Manager, Board of Alderman	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
10-Mayersville	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Mayersville Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
11-Mayersville	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties.	Mayersville Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
12-Mayersville	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	Mayersville Town Clerk	All hazards	$500,000	R	No progress since last update	10 years	3, 5	Medium	General Fund, CDBG, USDA Rural Development
13-Mayersville	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan	Mayersville Board of Alderman	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund
14-Mayersville	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic.	Mayersville Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
15-Mayersville	Improve cellular tower capability throughout the town to upgrade communication efficiency	Mayersville Board of Alderman, Town Clerk	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC
16-Mayersville	Seek funding assistance to improve high-speed internet capabilities throughout the town	Mayersville Board of Alderman, Town Clerk	All hazards	$200,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC
17-Mayersville	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Mayersville Board of Alderman, Town Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC

1. INTRODUCTION

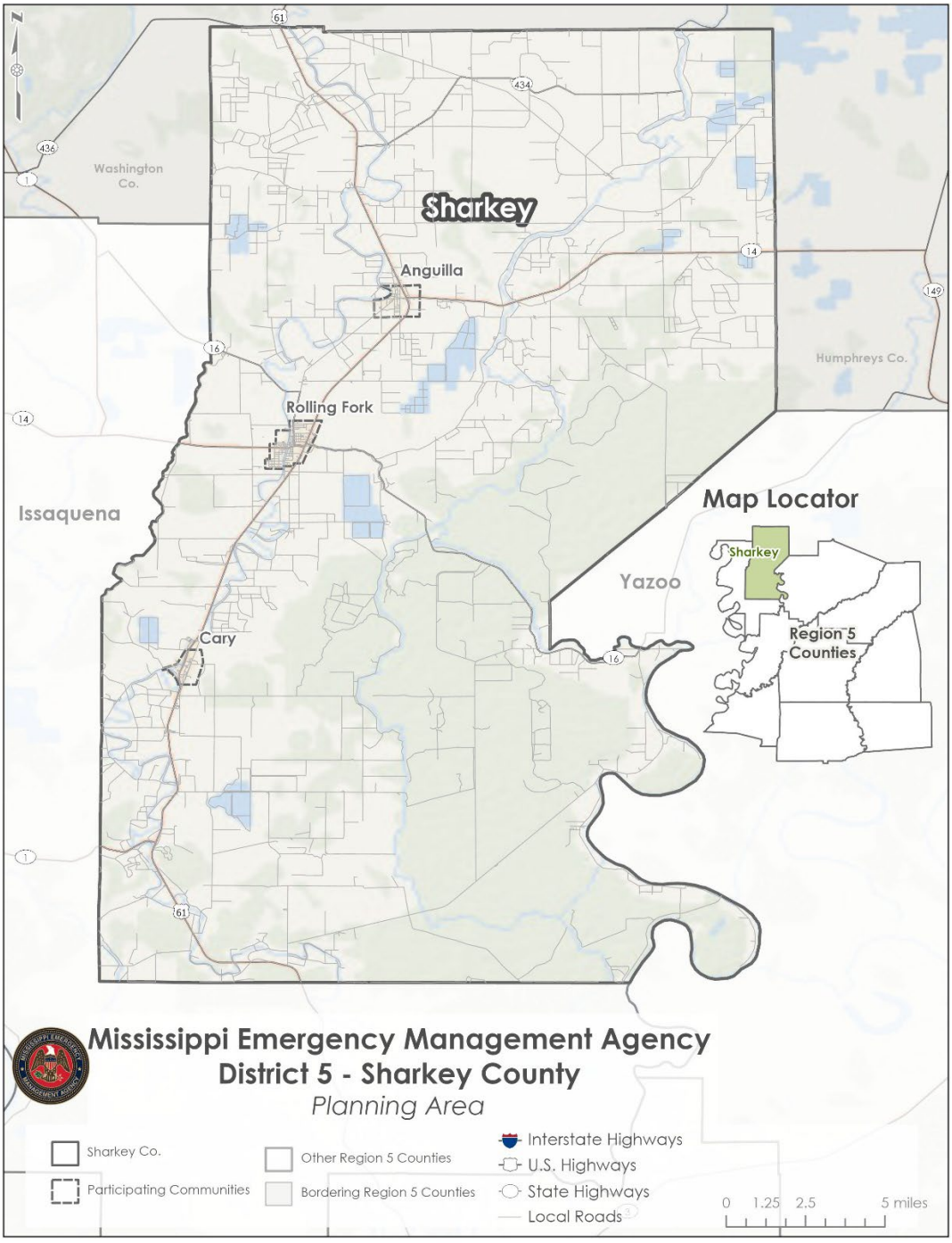
This annex provides more detailed information about Sharkey County and the participants within it. It includes:

- A more localized community profile, including more detailed mapping, population and demographic information, and critical facilities information
- County-level Hazard Identification and Risk Assessment (HIRA) information, including some more localized hazard maps and conclusions related to hazard risk and how it varies across the planning area
- A localized vulnerability assessment, including the likely impact of profiled hazards on critical facilities in Sharkey County
- A detailed capability assessment, describing resource and tools available to the county and municipalities to participate in hazard mitigation and reduce hazard risk
- A mitigation strategy, describing a variety of actions the county and municipalities may opt to take to reduce the risk associated with profiled hazards over the useful life of this plan

2. COMMUNITY PROFILE

This section provides a more detailed profile of Sharkey County and the jurisdictions within it. The County is in the Northwestern part of the planning area and **Figure 1** below shows the planning area for Sharkey County. The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey—such as poverty, lack of transportation, crowded housing, and minority status—to quantify a community's relative vulnerability. This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). According to the 2022 CDC Social Vulnerability Index, Sharkey County has an overall **High** (0.9383) level of vulnerability. The County has the highest level of vulnerability in the entire planning area.

FIGURE 1: SHARKEY COUNTY



2.1. POPULATION AND DEMOGRAPHICS

Population information from the last three Census counts for each participant in Sharkey County is summarized below, showing trends since the year 2010. A summary of population trends is summarized in **Table 1**. Since 2010, there have been a decrease in population within the County and across its jurisdictions. The race and ethnicity demographic data of the plan participants within Sharkey County are shown in **Table 2**. The majority of the population within Sharkey County and its jurisdictions are African-American.

TABLE 1: POPULATION TRENDS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2010 Census	2020 Census	2023 Census	Percent Change 2020-2023
Sharkey County	4,797	4,427	3,848	-13.1%
City of Rolling Fork	2,173	2,334	2,001	-14.3%
Town of Anguilla	732	608	707	+16.3%
Town of Cary	416	473	370	-21.8%

TABLE 2: DEMOGRAPHICS IN PERCENT | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
Sharkey County	25.6%	73.7%	0.5%	0%	0%	0.2%
City of Rolling Fork	21.2%	78.8%	0%	0%	0%	0%
Town of Anguilla	9.5%	89.3%	0%	0%	0%	1.3%
Town of Cary	16.2%	78.4%	5.4%	0%	0%	0%

Table 3 summarizes what percentage of the population of the jurisdictions within Sharkey County belong to certain vulnerable populations measured in the Census. **Table 4** provides annual estimates of housing units in Sharkey County and its jurisdictions.

TABLE 3: VULNERABLE POPULATIONS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
Sharkey County	31.8%	217	722	577
City of Rolling Fork	26.3%	127	423	245
Town of Anguilla	63.6%	16	117	92
Town of Cary	40.8%	28	52	64

TABLE 4: ANNUAL ESTIMATES OF HOUSING UNITS IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023
Sharkey County	2,160	1,723	1,705	1,673
City of Rolling Fork	1,026	867	893	900
Town of Anguilla	290	272	275	278
Town of Cary	179	131	113	112

While there is a large agricultural economic segment in Sharkey County, several other large industries are located within the County. Employment information from the 2023 Census counts for each participant in the County is summarized below in **Table 5**.

TABLE 5: EMPLOYMENT IN SHARKEY COUNTY | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Sharkey County	City of Rolling Fork	Town of Anguilla	Town of Cary
Management, business, science and arts occupations	277	111	52	50
Service occupations	255	141	77	16
Sales and office occupations	438	285	36	7
Natural resources, construction and maintenance occupations	287	152	0	30
Production, transportation and material moving occupations	249	105	42	55

2.2. INFRASTRUCTURE, CRITICAL FACILITIES AND ENERGY ASSETS

2.2.1. CRITICAL FACILITIES AND INFRASTRUCTURE

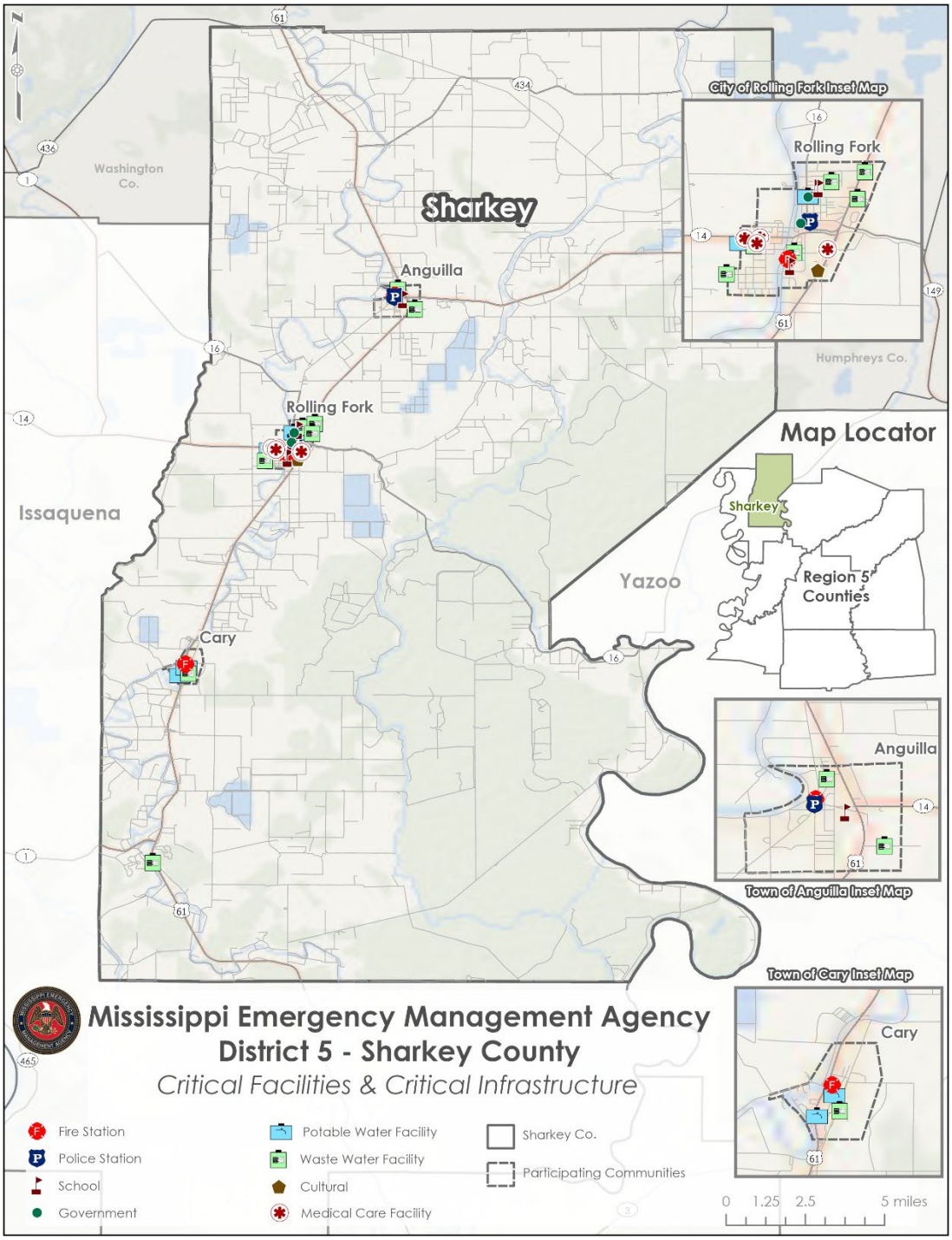
Certain assets and facilities are considered as being of importance for Sharkey County and the jurisdictions. **Table 6** below is a list of the critical facilities within Sharkey County and its jurisdictions. **Figure 2** below displays a map showing the locations of these critical facilities and infrastructure located within the County. The table below consists of facilities identified in the previous plan for each community as well as facilities identified by HAZUS. These facilities were sent to each community representative of the Mitigation Council for review and given a chance to provide changes.

TABLE 6: SHARKEY COUNTY CRITICAL FACILITIES AND INFRASTRUCTURE

Facility Type	Facility Name	Facility Location
Cultural	Rolling Fork Civic Center	Rolling Fork
EOC	Sharkey County Emergency Operations Center	Rolling Fork
Fire Station	Anguilla Volunteer Fire Department	Anguilla
Fire Station	Cary Fire Department	Cary
Fire Station	Rolling Fork Fire Department	Rolling Fork
Government	Rolling Fork City Hall	Rolling Fork
Government	Rolling Fork Public Works	Rolling Fork
Medical Care Facility	Health Department	Rolling Fork
Medical Care Facility	RGC Kidney Care Center	Rolling Fork
Medical Care Facility	Sharkey-Issaquena Community Hospital	Rolling Fork
Medical Care Facility - Residential	Heritage Manor Nursing Home	Rolling Fork
Police Station	Anguilla Police Department	Anguilla
Police Station	Rolling Fork Police Department	Rolling Fork
Police Station	Sharkey County Sheriffs' Department	Rolling Fork
Potable Water	Elevated Water Tank - Race St	Rolling Fork
Potable Water	Elevated Water Tank - Walnut St	Rolling Fork
Potable Water	Water Well 1	Cary
Potable Water	Water Well 2	Cary
School	South Delta Elementary School	Rolling Fork
School	South Delta High School	Rolling Fork
School	South Delta Middle School	Anguilla
School	South Delta Vocational Complex	Rolling Fork
Waste Water Facility	Anguilla POTW	Anguilla

Facility Type	Facility Name	Facility Location
Waste Water Facility	Lift Station 1	Rolling Fork
Waste Water Facility	Lift Station 2	Rolling Fork
Waste Water Facility	Lift Station 3	Rolling Fork
Waste Water Facility	Lift Station 4	Rolling Fork
Waste Water Facility	Lift Station 5	Rolling Fork
Waste Water Facility	Lift Station 6	Rolling Fork
Waste Water Facility	Onward	Onward
Waste Water Facility	Rolling Fork POTW - East	Rolling Fork
Waste Water Facility	Rolling Fork POTW - West	Rolling Fork
Waste Water Facility	Treatment Plant	Cary
Waste Water Facility	W&S Facility	Anguilla

FIGURE 2: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE

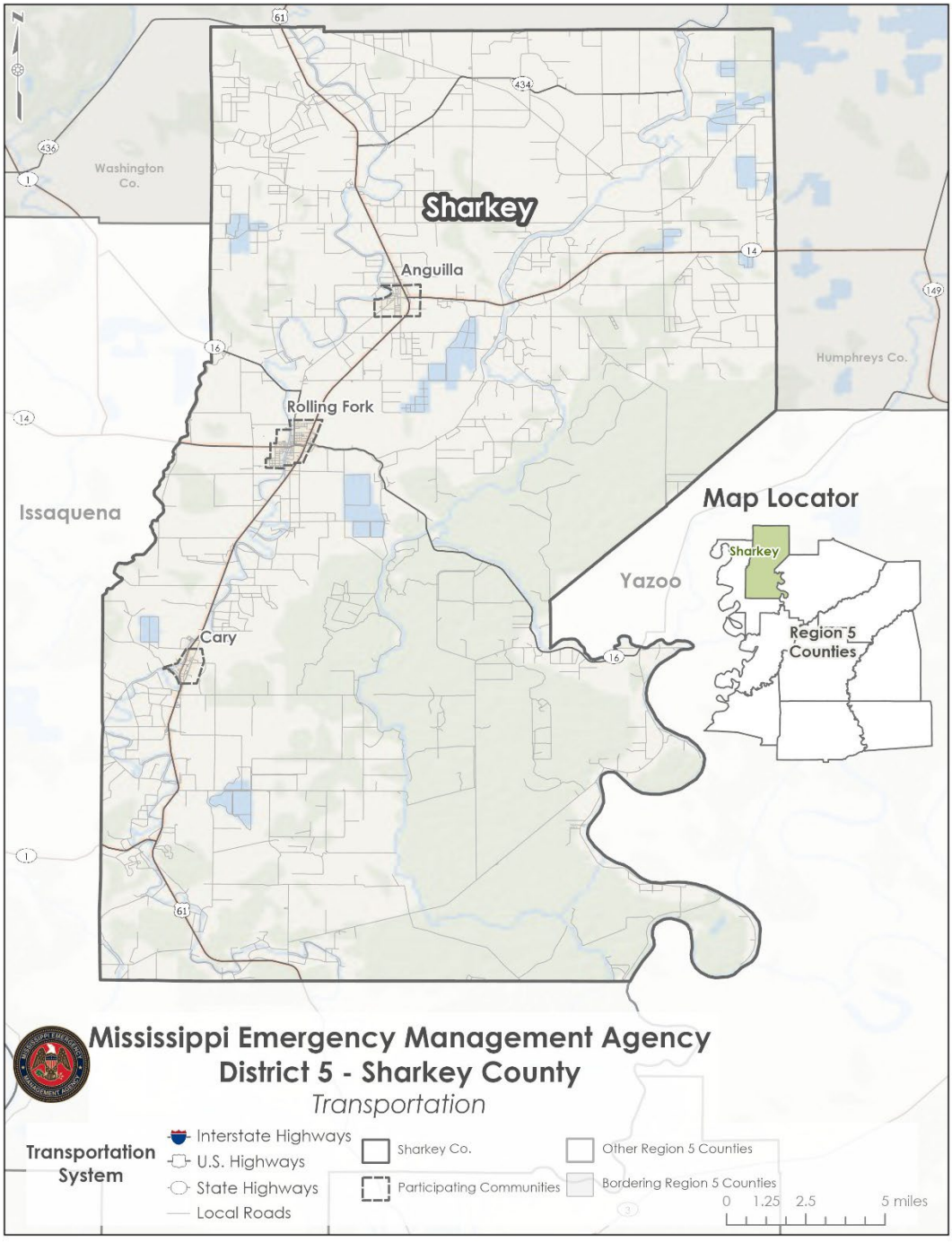


2.2.2. TRANSPORTATION

Transportation in Sharkey County includes the list below and **Figure 3** displays them on a map.

- U.S. Highway 61
- State Highways 1, 14, 16 and 434

FIGURE 3: TRANSPORTATION IN SHARKEY COUNTY



2.2.3. ENERGY ASSETS

Oil, natural gas pipelines and electric transmission lines traverse the County. The list below breaks down the energy infrastructure within the county.

- **Power Plant:** No utility-scale power plants are in Sharkey County
- **Substation:** Rolling Fork 115 kV Substation

- **Transmission:** Entergy Mississippi Overhead AC Lines
- **Pipelines:** NPMS-Mapped Pipelines

2.3. LAND USE AND DEVELOPMENT

Sharkey County encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, Delta National Forest and growing residential development near population centers such as the City of Rolling Fork. **Figure 4** displays the land use and development throughout the County while **Figure 5** shows the topography of the County.

FIGURE 4: SHARKEY COUNTY LAND USE AND DEVELOPMENT

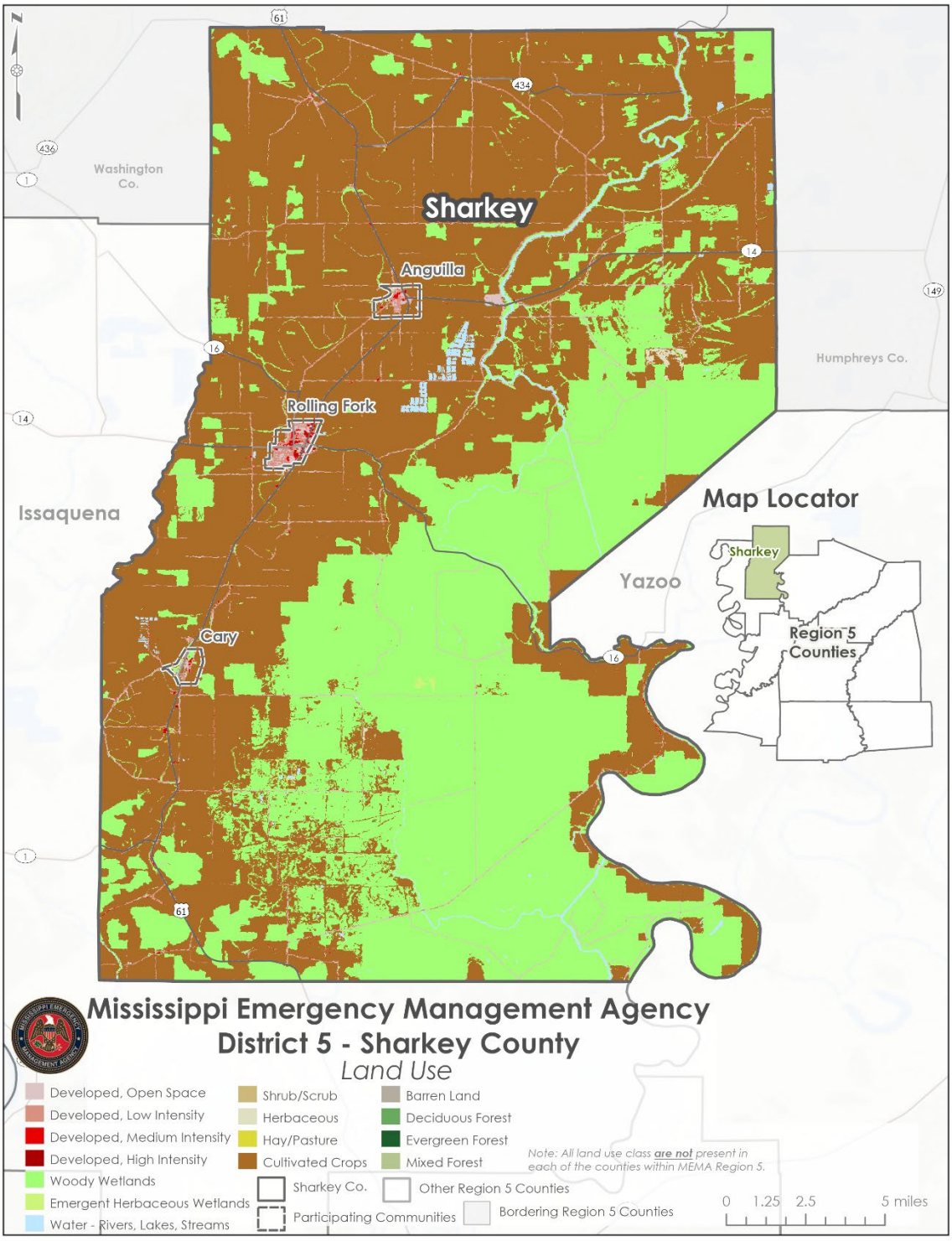
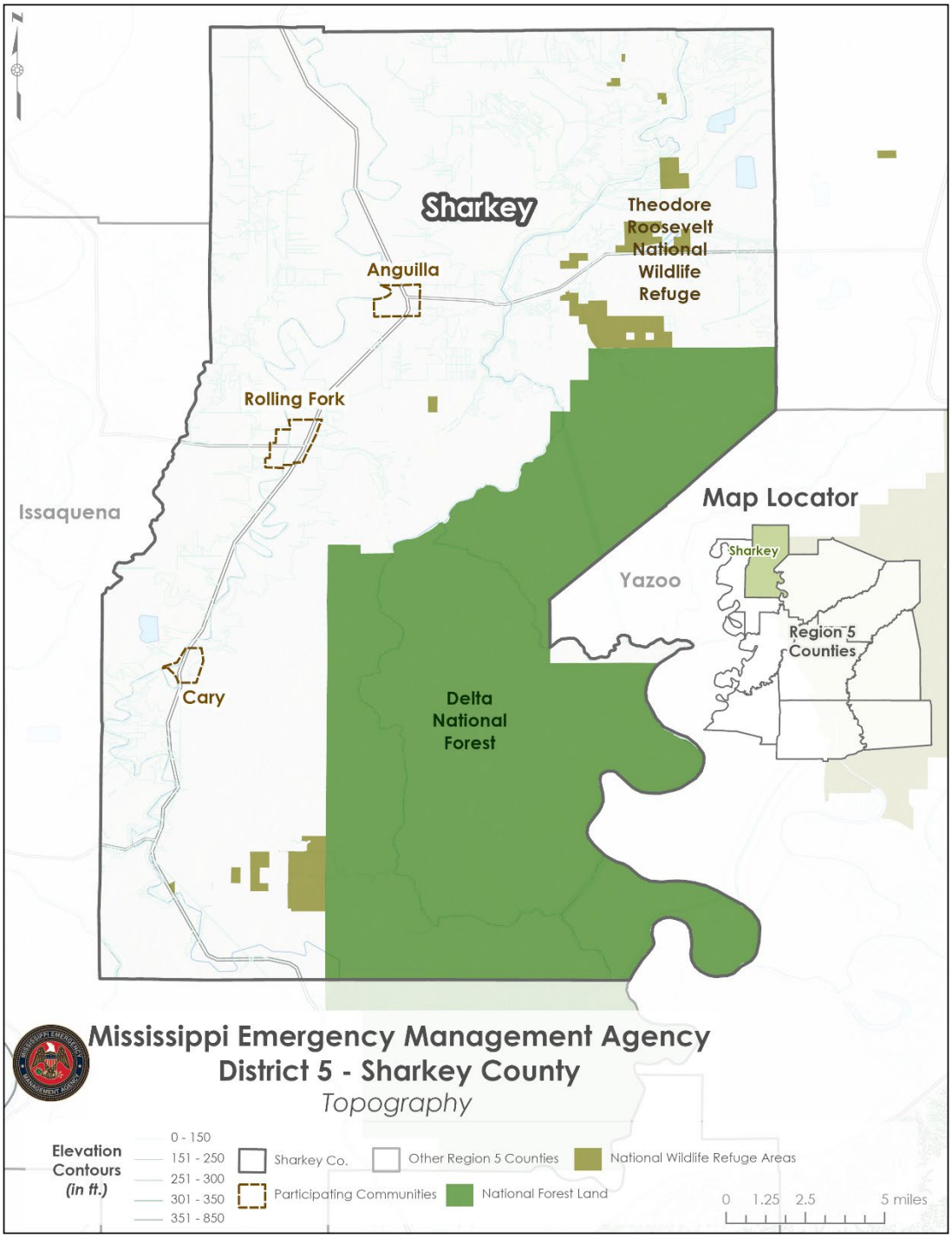


FIGURE 5: SHARKEY COUNTY TOPOGRAPHY



2.4. HISTORIC AND CULTURAL RESOURCES

Cultural resources and historical assets are generally unique or irreplaceable in nature due to their age or unique properties or characteristics. **Table 7** below provides a list of known cultural resources and historic assets in Sharkey County.

TABLE 7: HISTORIC AND CULTURAL RESOURCES IN SHARKEY COUNTY

Cultural Resource	General Location	Resource Type
Rolling Fork Mounds	Sharkey County	Site

2.5. CHANGES IN DEVELOPMENT AND PRIORITIES

This section outlines recent and anticipated changes in development and priorities within Sharkey County and its jurisdictions. **Table 8** lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment.

TABLE 8: SHARKEY COUNTY CHANGES IN DEVELOPMENT AND PRIORITIES

Jurisdiction	Changes in Development in the Past Five Years	Changes in Development Anticipated in the Next Five Years	Changes in Community Priorities over the Past Five Years
Sharkey County	Major tornado destruction in county in 2023 and since then homes have been rebuilt to higher standards, business rebuilt, residents have installed personal shelters.	More installations of safe rooms.	Priorities have shifted to focus on safety, mitigation, and weather altering.
City of Rolling Fork	N/A	N/A	N/A
Town of Anguilla	N/A	N/A	N/A
Town of Cary	N/A	N/A	N/A

3. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. More generalized information about the goals of the capability assessment, including the process and methodology, is presented in the Capability Assessment portion of the base plan.

This section articulates specific information about the capabilities of Sharkey County and the plan participants within it.

3.1. SHARKEY COUNTY CAPABILITIES AND RESOURCES

3.1.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Sharkey County to support hazard mitigation.

TABLE 9: SHARKEY COUNTY STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Emergency	
Engineering	Y		The County has an engineer through a contractor
Procurement	N	Purchasing	
Floodplain Management	Y	County Administrator	
Land Use, Land Management, or Development Planning	N		
Grant-writing	N		
Geographic Information Systems (GIS)	N		
Other reported staff and technical capabilities:			

3.1.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Sharkey County that might support hazard mitigation efforts.

TABLE 10: SHARKEY COUNTY PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)	X			
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan	X			
Continuity of Operations Plan (COOP)		X		
Disaster Recovery Plan	X			
Economic Development Plan		X		
Emergency Operations Plan (EOP)		X		
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan	X			
Natural Resource Protection Plan (NRPP)	X			
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)		X		

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.1.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Sharkey County in the NFIP program, including how development in the floodplain is regulated.

TABLE 11: SHARKEY COUNTY FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	County Administrator
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	N/A
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	N/A
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	N/A
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	N/A

3.1.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Sharkey County's hazard mitigation efforts.

TABLE 12: SHARKEY COUNTY FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	No
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	No
Do you have a land use or development ordinance?	No
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	N/A

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	N/A

3.2. ROLLING FORK CAPABILITIES AND RESOURCES

3.2.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Rolling Fork to support hazard mitigation.

TABLE 13: ROLLING FORK STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y		Sharkey County
Engineering	Y	Christian Gardner	
Procurement	Y	Ebony Gryer	
Floodplain Management	Y	Code Enforcer	
Land Use, Land Management, or Development Planning			
Grant-writing	Y	SDPDD	South Delta Planning Development District
Geographic Information Systems (GIS)	Y	Engineer	
Other reported staff and technical capabilities:			

3.2.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Rolling Fork that might support hazard mitigation efforts.

TABLE 14: ROLLING FORK PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)				
Community Wildfire Protection Plan (CWPP)				
General Plan / Community Development Plan				
Continuity of Operations Plan (COOP)				
Disaster Recovery Plan		Yes		Jan 2025
Economic Development Plan				
Emergency Operations Plan (EOP)				
Floodplain Management Plan / Flood Mitigation Plan				
Historic Preservation Plan				
Natural Resource Protection Plan (NRPP)				
Open Space Management Plan (Parks & Rec/Green Plan)				
Threat Hazard Identification and Risk Assessment (THIRA)				

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.2.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Rolling Fork in the NFIP program, including how development in the floodplain is regulated.

TABLE 15: ROLLING FORK FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes, Current effective map date 3/2/2012
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Building inspector, Wayne Williams
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	Code Enforcement
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	Code Enforcement
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	No
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes

3.2.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Rolling Fork's hazard mitigation efforts.

TABLE 16: ROLLING FORK FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	Yes
Do you have a land use or development ordinance?	Yes
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	Under Investigation

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	N/A

3.3. ANGUILLA CAPABILITIES AND RESOURCES

3.3.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Anguilla to support hazard mitigation.

TABLE 17: ANGUILLA STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Sharkey County	Provided by County
Engineering	Y	Hooker Engineering	
Procurement	Y	Town Clerk	
Floodplain Management	Y	Alfonzo Myles	Provided by County
Land Use, Land Management, or Development Planning	Y	Alfonzo Myles	Provided by County
Grant-writing	Y	South Delta Planning	
Geographic Information Systems (GIS)	Y	Hooker Engineering	

3.3.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Anguilla that might support hazard mitigation efforts.

TABLE 18: ANGUILLA PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	
Community Wildfire Protection Plan (CWPP)			X	
General Plan / Community Development Plan			X	
Continuity of Operations Plan (COOP)			X	
Disaster Recovery Plan			X	
Economic Development Plan			X	
Emergency Operations Plan (EOP)			X	
Floodplain Management Plan / Flood Mitigation Plan			X	
Historic Preservation Plan			X	
Natural Resource Protection Plan (NRPP)			X	
Open Space Management Plan (Parks & Rec/Green Plan)			X	
Threat Hazard Identification and Risk Assessment (THIRA)			X	

3.3.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further details regarding the participation of Anguilla in the NFIP program, including how development in the floodplain is regulated.

TABLE 19: ANGUILLA FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	N/A
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	N/A
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	N/A
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	N/A
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	N/A
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	N/A
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	N/A

3.3.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Anguilla's hazard mitigation efforts.

TABLE 20: ANGUILLA FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	N/A
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	N/A
Do you have a land use or development ordinance?	N/A
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	N/A
Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	N/A

3.4. CARY CAPABILITIES AND RESOURCES

3.4.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Cary to support hazard mitigation.

TABLE 21: CARY STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	Sharkey County EMA	
Engineering	Y	Engineering Service	
Procurement	Y	Town of Cary Clerk	
Floodplain Management	Y	Randy Scott	
Land Use, Land Management, or Development Planning	Y	SDPDD	
Grant-writing	Y	SDPDD	
Geographic Information Systems (GIS)	Y	Engineering Service	
Other reported staff and technical capabilities:			

3.4.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Cary that might support hazard mitigation efforts.

TABLE 22: CARY PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	
Community Wildfire Protection Plan (CWPP)	X			
General Plan / Community Development Plan			X	
Continuity of Operations Plan (COOP)		X		2025
Disaster Recovery Plan			X	
Economic Development Plan		X		
Emergency Operations Plan (EOP)		X		
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan		X		
Natural Resource Protection Plan (NRPP)		X		
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)		X		

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.4.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further details regarding the participation of Cary in the NFIP program, including how development in the floodplain is regulated.

TABLE 23: CARY FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Floodplain Manager, Randy Scott
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	See Sharkey County's exploitation
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	Explained in base plan
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	No
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	March 2012

3.4.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Cary's hazard mitigation efforts.

TABLE 24: CARY FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	N/A
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	N/A
Do you have a land use or development ordinance?	N/A
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	N/A

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	N/A

3.5. ABILITY TO EXPAND CAPABILTIES

As part of the capability assessment process, each jurisdiction was asked to discuss their ability to expand upon the capabilities discussed earlier in this section. Below is a summary of the information provided by each participant regarding how they can strengthen their ability to conduct hazard mitigation measures in the future. **Table 25** below lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment.

TABLE 25: SHARKEY COUNTY'S ABILITY TO EXPAND CAPABILITIES

Jurisdiction	Self-Reported Information Regarding Ability to Expand Capabilities
Sharkey County	Identify funding sources to upgrade facilities and hire personnel to assist outreach and implementation of hazard mitigation policies
City of Rolling Fork	N/A
Town of Anguilla	N/A
Town of Cary	N/A

4. HAZARD IDENTIFICATION & RISK ASSESSMENT

The Hazard Identification and Risk Assessment (HIRA) process, described in more detail in the HIRA section of the base plan, involves identifying potential hazards, evaluating their likelihood and potential consequences, and estimating and describing the level of risk these hazards present to a community.

Since 1971, Sharkey County has been included in 26 federal disaster declarations, of which 9 occurred since this plan was last updated. **Table 26** describes these events.

TABLE 26: SHARKEY COUNTY FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4697	Severe Storm, Straight-line Winds, Tornadoes	Sharkey	3/26/2023
DR-4626	Hurricane	Sharkey, Copiah, Simpson	10/22/2021
EM-3569	Hurricane	Sharkey, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
DR-4598	Severe Winter Storms	Sharkey, Copiah, Hinds, Rankin, Simpson, Warren, Yazoo	5/4/2021
EM-3548	Hurricane	Sharkey, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020
DR-4551	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Sharkey, Simpson	7/9/2020
DR-4538	Severe Storm, Flooding and Mudslides	Sharkey, Copiah, Hinds, Issaquena, Sharkey, Warren, Yazoo	4/23/2020
DR-4528	Covid-19 Pandemic	Sharkey, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Sharkey, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4314	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Sharkey, Yazoo	5/22/2017
DR-4268	Severe Storm, Flooding	Sharkey, Issaquena	3/25/2016
DR-4081	Hurricane	Sharkey, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1983	Flooding	Sharkey, Issaquena, Sharkey, Warren, Yazoo	5/11/2011
EM-3320	Flooding	Sharkey, Issaquena, Sharkey, Warren, Yazoo	5/4/2011
DR-1794	Hurricane	Sharkey, Copiah, Issaquena	9/22/2008
DR-1604	Hurricane	Sharkey, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-1360	Severe Storm, Flooding, Tornado	Sharkey, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Warren, Yazoo	2/23/2001
DR-1398	Severe Storm, Tornado	Hinds, Madison, Sharkey	12/7/2001
DR-1265	Severe Winter Weather	Issaquena, Sharkey, Warren, Yazoo	1/25/1999
DR-939	Severe Storm, Tornado	Sharkey	3/20/1992
DR-906	Severe Storm, Tornado	Sharkey, Issaquena, Madison, Sharkey, Warren, Yazoo	5/17/1991
DR-683	Flooding, Severe Storm, Tornado	Sharkey, Hinds, Madison, Rankin, Warren, Yazoo	6/1/1983
DR-577	Severe Storm, Tornado	Sharkey, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Sharkey, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-368	Severe Storm, Tornado	Sharkey, Issaquena, Sharkey, Simpson, Warren, Yazoo	3/27/1973
DR-302	Severe Storm, Tornado	Hinds, Issaquena, Sharkey, Warren, Yazoo	2/22/1971

As described in the "HIRA Methodology" section of the base plan, participants in this plan update reconsidered the relative risk posed by the profiled hazards by conducting a hazard ranking process. **Table 27** below provides a summary of how those hazards were ranked in Sharkey County and by the jurisdictions within it.

TABLE 27: HAZARD RANKING BY JURISDICTION IN SHARKEY COUNTY

Jurisdiction	Dam/Levee Failure	Drought	Earthquake	Expansive Soils	Flood	Severe Storms	Severe Winter Weather	Tornado	Tropical Storm / Hurricane	Wil/Urban Interface (WUI) Fire	Hazardous Material Incidents	Nuclear Power Plant Incidents
Sharkey County	Med	Med	Low	Low	High	High	High	High	Med	Low	Low	Low
City of Rolling Fork	Low	Med	Low	Low	Med	High	Med	High	Med	Low	N/A	N/A
Town of Anguilla	Low	Med	Low	Low	Med	High	High	High	Med	Low	Low	Low
Town of Cary	Med	Med	Low	Low	High	High	High	High	Med	Low	Low	Low

Each of the 12 natural and manmade hazards discussed in this section are described in more detail in the HIRA section of the base plan. **Table 28** below shows the hazard scores for Sharkey County and the jurisdictions within the County. This section endeavors to provide more detailed, local-level information, mapping, and conclusions for these hazards wherever relevant.

TABLE 28: HAZARD RISK SCORES

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption e	Probability	Hazard Risk Score
Sharkey County							
Dam/Levee Failure	4	3	4	2	4	1	**17**
Drought	4	1	1	1	2	3	**27**
Earthquake	2	2	3	1	3	1	**11**
Expansive Soils	1	1	1	1	1	1	**5**
Flood	4	1	2	2	3	3	**36**
Severe Storms	3	1	2	1	1	5	**40**
Severe Winter Weather	4	2	3	2	2	3	**39**
Tornado	4	2	3	2	4	5	**75**
Tropical Storms	3	1	1	1	3	2	**18**
Wild/Urban Interface Fire	1	0	1	1	1	3	**12**
Hazardous Material Incidents	2	1	1	1	1	2	**12**
Nuclear Power Plant Incident	2	2	1	2	3	1	**10**
City of Rolling Fork							
Dam/Levee Failure	0	0	0	0	0	1	**0**
Drought	4	1	1	2	2	3	**30**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	1	1	**4**
Flood	1	1	1	2	2	3	**21**
Severe Storms	4	1	2	2	2	5	**55**
Severe Winter Weather	4	1	1	1	2	3	**27**
Tornado	4	3	4	2	3	3	**48**
Tropical Storms	4	1	1	1	2	2	**18**
Wild/Urban Interface Fire	1	1	1	1	1	2	**10**
Hazardous Material Incidents	-	-	-	-	-	-	-
Nuclear Power Plant Incident	-	-	-	-	-	-	-
Town of Anguilla							
Dam/Levee Failure	1	3	2	1	4	1	**11**

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption e	Probability	Hazard Risk Score
Drought	4	2	1	1	2	2	**20**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	1	1	1	1	1	**5**
Flood	3	2	2	2	2	2	**22**
Severe Storms	4	2	2	1	2	5	**55**
Severe Winter Weather	4	2	3	2	2	3	**39**
Tornado	4	3	4	2	4	5	**85**
Tropical Storms	4	1	1	1	2	3	**27**
Wild/Urban Interface Fire	1	1	1	1	1	2	**10**
Hazardous Material Incidents	2	1	1	1	1	1	**6**
Nuclear Power Plant Incident	1	1	1	1	3	1	**7**
Town of Cary							
Dam/Levee Failure	4	3	4	4	4	1	**19**
Drought	4	2	1	1	2	3	**30**
Earthquake	2	1	1	1	3	1	**8**
Expansive Soils	1	1	1	1	1	2	**10**
Flood	4	3	4	2	4	2	**34**
Severe Storms	3	2	2	1	3	5	**55**
Severe Winter Weather	4	2	4	3	4	3	**51**
Tornado	4	3	4	3	4	5	**90**
Tropical Storms	3	2	1	1	3	2	**20**
Wild/Urban Interface Fire	1	0	0	0	0	2	**2**
Hazardous Material Incidents	2	2	1	2	1	1	**8**
Nuclear Power Plant Incident	2	1	1	2	3	1	**9**

4.1. DAM/LEVEE FAILURE

4.1.1. LOCATION AND EXTENT

As noted in the base plan, dam or levee failures are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. Sharkey County and its jurisdictions do have a levee system

There is a large levee system called the Yazoo-Mississippi Delta Levee District. The levee protects areas in Sharkey County from overflow from the Yazoo River. The Yazoo-Mississippi Delta is an alluvial flood plain formed by flooding of the Mississippi River over thousands of years. The first attempt to control this seasonal flooding was in 1819, just two years after Mississippi became a state, when the General Assembly adopted an act to erect a levee in Warren County. The District is responsible for 98 miles of mainline Mississippi River levee starting just south of Memphis to the Bolivar County line, 18 miles of backwater protection levee on the Yazoo River in Yazoo/Warren Counties, and 320 miles of interior rivers and streams.

4.1.2. PREVIOUS OCCURRENCES

Sharkey County and its jurisdictions do not have any dams or levees in the planning area.

4.1.3. PROBABILITY OF FUTURE OCCURRENCES

Sharkey County and its jurisdictions do not have any dams. However, there is a levee system that impacts the Northern portion of the County. While there has not been a reported levee failure impacting Sharkey County and its jurisdictions, the risk of failure is present. Therefore, the probability of a levee failure occurring in the future is **Unlikely**.

4.1.4. LOCALIZED VULNERABILITY ASSESSMENT

4.1.4.1. OVERALL VULNERABILITY

Levee failures can cause significant damage to communities from rapid flooding to critical infrastructure, structures, and residents. Large scale evacuations would need to be implemented to save as many people as possible. Levee failures can cause a large number of casualties and fatalities as well as leading to long-term displacement of people from damaged residences. While there have been no reported failures, the rare occurrence of a levee failure would be catastrophic to the County. While there are no dams located in Sharkey County, there is a large levee system within the County and a large area that would be at risk of flooding in the event of a levee failure. The risk of dams or levee failure is **Low** for the County and jurisdictions due to the low probability of occurrence.

4.1.4.2. CRITICAL FACILITIES

There are several critical facilities located in the levee protected area and include facilities such as portable water facilities, wastewater facilities, fire stations, schools, government, police stations, and medical care facilities.

Levee failures are a high-consequence, low-probability hazard due to the potential for sudden, fast-moving floodwaters downstream. A rapid breach could impact hospitals, fire stations, law enforcement centers, emergency operations centers, schools, water and wastewater treatment facilities, and government buildings located within the inundation zone, leading to structural damage and loss of function. Flooding may also damage electrical and mechanical systems, contaminate drinking-water supplies, overload wastewater infrastructure, and cause widespread power and communications disruptions.

4.1.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Levee failures have the potential to cause severe and sudden impacts to cultural, historic, and natural resources in the County due to rapid downstream flooding, high-velocity flows, and extensive erosion. Historic structures, cemeteries, archeological sites, and culturally significant landscapes located within the levee protected area or along rivers and creeks may be damaged or destroyed by inundation, scour, or debris impacts associated with a dam breach. Floodwaters can erode soils and displace archeological materials, resulting in irreversible loss of cultural resources and historic context. Natural resources may also experience significant impacts, including stream channel alteration, sediment deposition, destruction of wetlands and riparian habitats, reduced water quality, and displacement or loss of wildlife. All cultural, historic, and natural resources within the levee protected area are vulnerable to impacting from flooding in the event of a levee failure.

4.1.4.4. PEOPLE

The primary impact of levee failure is flooding, which is more likely to impact older adults, low-income families, and individuals without access to reliable transportation. As with many other hazards, vulnerable populations—such as low-income households, the elderly, and individuals with disabilities—may face compounded risks due to limited mobility, lack of resources, or inadequate shelter options. In the County, individuals living in poverty are very high at 33%, the second highest in the planning area. These populations can experience disproportionate impacts to dam failures and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.1.4.5. STRUCTURES AND SYSTEMS

levee failures can result in sudden and severe impacts to structures and systems in the County due to rapid flooding, high-velocity water flow, and debris transport downstream of a breached dam. Residential, commercial, and public structures located within the leveed protected areas may experience extensive structural damage or complete destruction as foundations, walls, and load-bearing components are undermined by erosion and scour. Utility systems such as water, wastewater, electrical, and communications infrastructure may also be damaged or disabled by floodwaters, resulting in service interruptions, contamination risks, and prolonged outages. All structures within the leveed protected areas would be at risk of flooding and damage. Transportation systems, including roads, bridges, and culverts, are particularly vulnerable to washouts and structural failure, which can isolate communities and impede emergency response and recovery efforts.

4.1.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Any new development within the leveed protected area would be vulnerable to flooding in the event of a levee failure. However Sharkey County and the majority of its jurisdictions have experienced a significant population decrease over the decades as well as a decrease in the number of housing units. The decrease in population growth could decrease the number of people and structures vulnerable to flood risk from a levee failure.

4.2. DROUGHT

4.2.1. LOCATION AND EXTENT

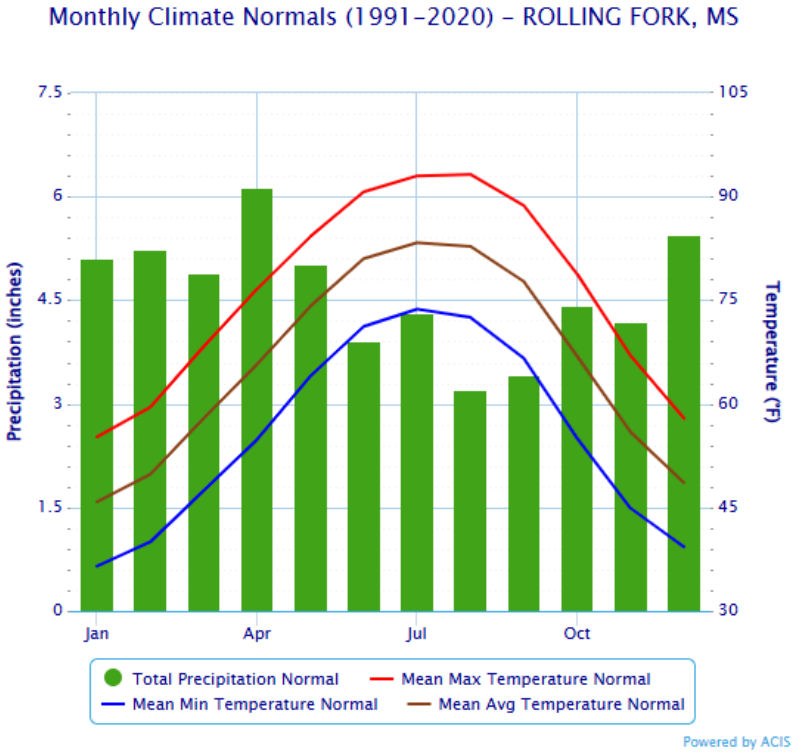
Drought affects the entire planning area equally; Sharkey County and its jurisdictions are not more or less susceptible to drought than other communities in District 5. For more information on droughts across the District, refer to the base plan.

Figure 6 and **Figure 7** below display the monthly precipitation and temperature normals for the area surrounding the Rolling Fork, MS National Weather Service (NWS) station. According to the data, the County experiences about 55 inches of precipitation annually with an average mean temperature of 66 degrees. The hottest months are June through August while the wettest month is April.

FIGURE 6: MONTHLY NORMAL PRECIPITATION AND TEMPERATURE – ROLLING FORK, MS | SOURCE: NWS

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	5.10	55.2	36.5	45.8
February	5.23	59.5	40.0	49.8
March	4.90	68.3	47.4	57.9
April	6.13	76.6	54.8	65.7
May	5.02	84.2	64.0	74.1
June	3.91	90.7	71.2	81.0
July	4.31	93.0	73.7	83.3
August	3.21	93.2	72.5	82.8
September	3.41	88.7	66.6	77.7
October	4.42	78.8	55.0	66.9
November	4.19	67.0	44.9	55.9
December	5.45	57.9	39.3	48.6
Annual	55.28	76.1	55.5	65.8

FIGURE 7: MONTHLY CLIMATE NORMALS – ROLLING FORK, MS | SOURCE: NWS



4.2.2. PREVIOUS OCCURRENCES

Between the 2015 and 2020 plans, four droughts occurred in Sharkey County and its jurisdictions, causing zero reported property damage and $501,200 in crop damages. Between the 2020 and 2025 plans, there were three droughts causing zero reported property damage and $50,000 in crop damage.

4.2.1. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been seven drought events that have occurred in the past 10 years. This equates to a drought occurring every 1-2 years. The probability of drought occurring in the future in Sharkey County and its municipalities is **Low,** with the exception of Rolling Rock which is **Likely**. This probability is consistent across District 5, even though any given drought will likely cause uneven impacts across the planning area.

4.2.2. LOCALIZED VULNERABILITY ASSESSMENT

4.2.2.1. OVERALL VULNERABILITY

The drought vulnerability assessment in the base plan highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Within Sharkey County and its jurisdictions, drought poses a **Medium** risk due to potential impacts, largely to public health, agriculture, and the local economy. Potential impacts on Community Lifelines and historic and cultural resources are consistent across the District 5 planning area and are described in the base plan. This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to drought.

4.2.2.2. CRITICAL FACILITIES

Drought poses a slow-onset but significant risk to critical facilities in Sharkey County and its jurisdictions by stressing water supply systems, increasing wildfire risk, and disrupting essential services. Prolonged dry conditions can reduce groundwater and surface water availability needed for drinking water, sanitation, medical care, and fire suppression, potentially affecting facilities such as hospitals, emergency services, schools, and government buildings. Drought conditions also elevate wildfire danger, which can strain fire response capabilities and threaten nearby infrastructure, while increased heat and energy demand may place additional stress on electrical systems supporting critical operations.

4.2.2.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Drought can damage cultural, historic, and natural resources in the County and its jurisdictions by reducing soil moisture and water levels needed for their preservation. Prolonged dry conditions may harm historic sites, stress forests and wetlands, increase wildfire risk, and degrade ecosystems and culturally important water resources, potentially leading to long-term loss.

4.2.2.4. PEOPLE

Drought, as outlined in the base plan, presents a serious risk to public health and safety—especially when it limits access to clean, reliable water supplies. These impacts are often more severe for vulnerable populations, including low-income households, older adults, and individuals with disabilities, who may face additional challenges such as reduced mobility, limited financial resources, or insufficient access to safe shelter. These populations can experience disproportionate impacts to droughts and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.2.2.5. STRUCTURES AND SYSTEMS

Although drought doesn't typically cause direct physical damage to buildings or infrastructure, systems reliant on water (particularly those supporting agricultural operations) are the most vulnerable. Sharkey County has a total approximate land area of 276,301 acres, of which 64.1% is farmland (112 farms totaling 117,028 acres of farmland). These portions of the county and their structures and systems are more vulnerable to impact than others. Based on previous occurrences, there have been over $500,000 in crop damage since 2015 within the County. It is expected that similar damage will occur again in the future. Non-agricultural critical facilities such as transportation infrastructure, utility infrastructure, and public buildings are unlikely to be affected by drought across the planning area, including in Sharkey County.

4.2.2.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Sharkey County and its jurisdictions may lead to lower strain on water systems during times of drought in the future.

4.3. EARTHQUAKE

4.3.1. LOCATION AND EXTENT

The earthquake seismic risk in MEMA District 5 varies from low to very high. Sharkey County and its jurisdictions is more susceptible to earthquakes than other communities in District 5 due to high liquefaction zones and soils susceptible to ground shaking. Within Sharkey County, all areas have very high liquefaction zones. If a strong earthquake were to occur, the County may experience greater shaking and damage compared to other counties such as Copiah and Simpson Counties. For more information on earthquakes across the District, refer to the base plan.

4.3.2. PREVIOUS OCCURRENCES

As noted in the base plan, Mississippi experiences relatively low seismic activity, although there have been some minor earthquakes producing light shaking felt in District 5 in recent history. Since 2000, there have been eight earthquakes in MEMA District 5. The strongest was a magnitude 3.2 that occurred in Madison County in 2015. The majority of the earthquakes occur in Madison County and occurred in 2015. While there have been no earthquakes that have occurred in the County, the earthquakes within the District, could be felt.

4.3.3. PROBABILITY OF FUTURE OCCURRENCES

As noted in the base plan, Mississippi MEMA District 5 is unlikely to experience damaging earthquakes, but it is not entirely free from seismic risk. While strong earthquakes are **Unlikely**, minor to moderate shaking could occur in Sharkey County and its jurisdictions, especially from distant seismic sources like the New Madrid Seismic Zone (NMSZ).

4.3.4. LOCALIZED VULNERABILITY ASSESSMENT

4.3.4.1. OVERALL VULNERABILITY

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. Sharkey County contains very high liquefaction susceptibility zones. It also contains earthquake soil classification F (soils requiring site-specific evaluation, such as liquefiable soils, peats, or certain clays). While these factors increase ground shaking, the County and its jurisdictions is at a **Low** risk of strong earthquake impacts. This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to earthquakes.

Figure 8 and **Figure 9** show both the liquefaction susceptibility zones and the earthquake soils throughout the County.

FIGURE 8: SHARKEY COUNTY LIQUEFACTION SUSCEPTIBILITY ZONES

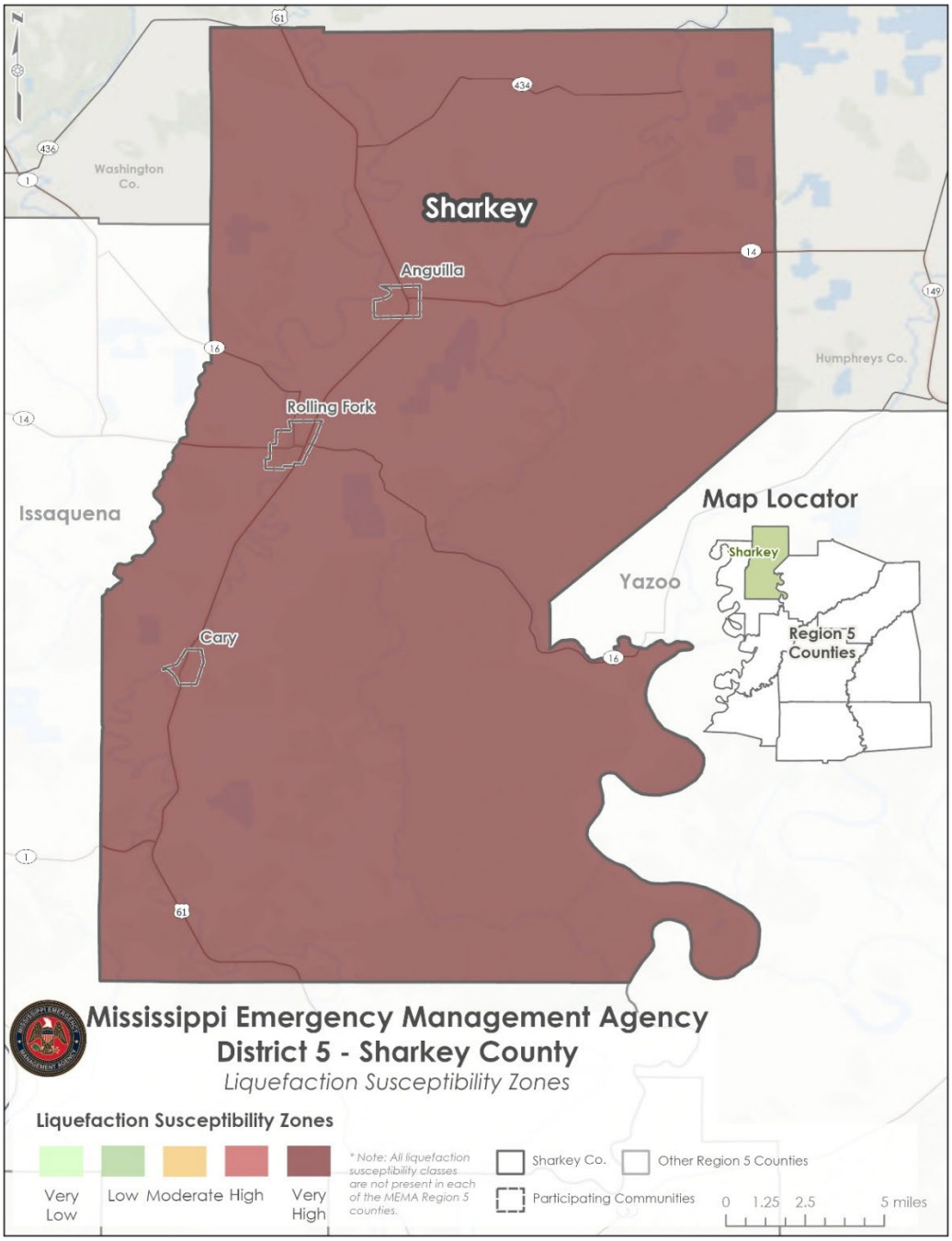
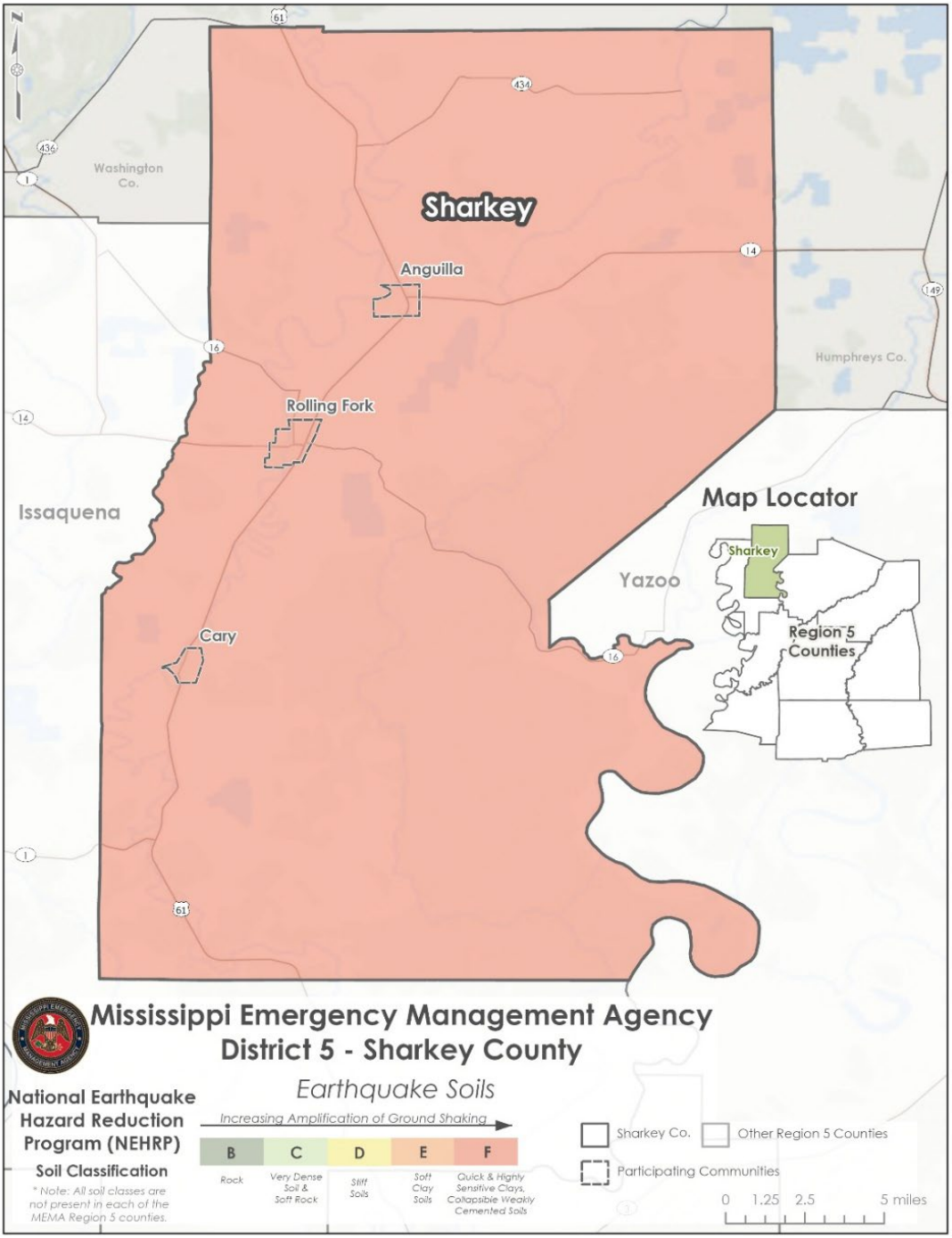


FIGURE 9: SHARKEY COUNTY EARTHQUAKE SOILS



4.3.4.2. CRITICAL FACILITIES

Although earthquakes occur infrequently in Sharkey County and its jurisdictions, seismic activity associated with the New Madrid Seismic Zone could result in ground shaking that damages critical facilities and infrastructure. Earthquake impacts may disrupt essential services and utilities and damage transportation routes, potentially limiting access to critical facilities and hindering emergency response and recovery efforts. In the event of a rare strong earthquake, critical facilities within high liquefaction

susceptibility zones and moderate seismic risk are most at risk of earthquake impacts. Because the County has soils and geography that put it at higher risk of earthquake impacts, the impacts of earthquakes on critical facilities, community lifelines and infrastructure within the planning areas are likely to be slightly higher than the rest of the District.

4.3.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Earthquakes have the potential to damage cultural, historic, and natural resources through ground shaking and ground deformation associated with regional seismic activity such as the New Madrid Seismic Zone. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be particularly vulnerable due to age, unreinforced masonry construction, or shallow foundations that are susceptible to cracking or collapse during seismic events. Natural resources may be affected through soil instability, slope failure, altered drainage patterns, and damage to wetlands, streams, or wildlife habitats. In the event of a rare strong earthquake, resources within high liquefaction susceptibility zones and moderate seismic risk are the most at risk of earthquake impacts.

4.3.4.4. PEOPLE

Some populations may face greater risk to earthquakes--the relatively short warning time typically provided for earthquakes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

As outlined in the base plan, earthquakes are infrequent, but rural communities face elevated risk due to limited access to emergency services and the potential for infrastructure disruptions. These risks are further magnified for vulnerable populations. These populations can experience disproportionate impacts to earthquakes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5..

4.3.4.5. STRUCTURES AND SYSTEMS

Structures and infrastructure across the County and its jurisdictions are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking.

4.3.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Sharkey County and its jurisdictions may lead to lower impacts of earthquakes on its residents in the future.

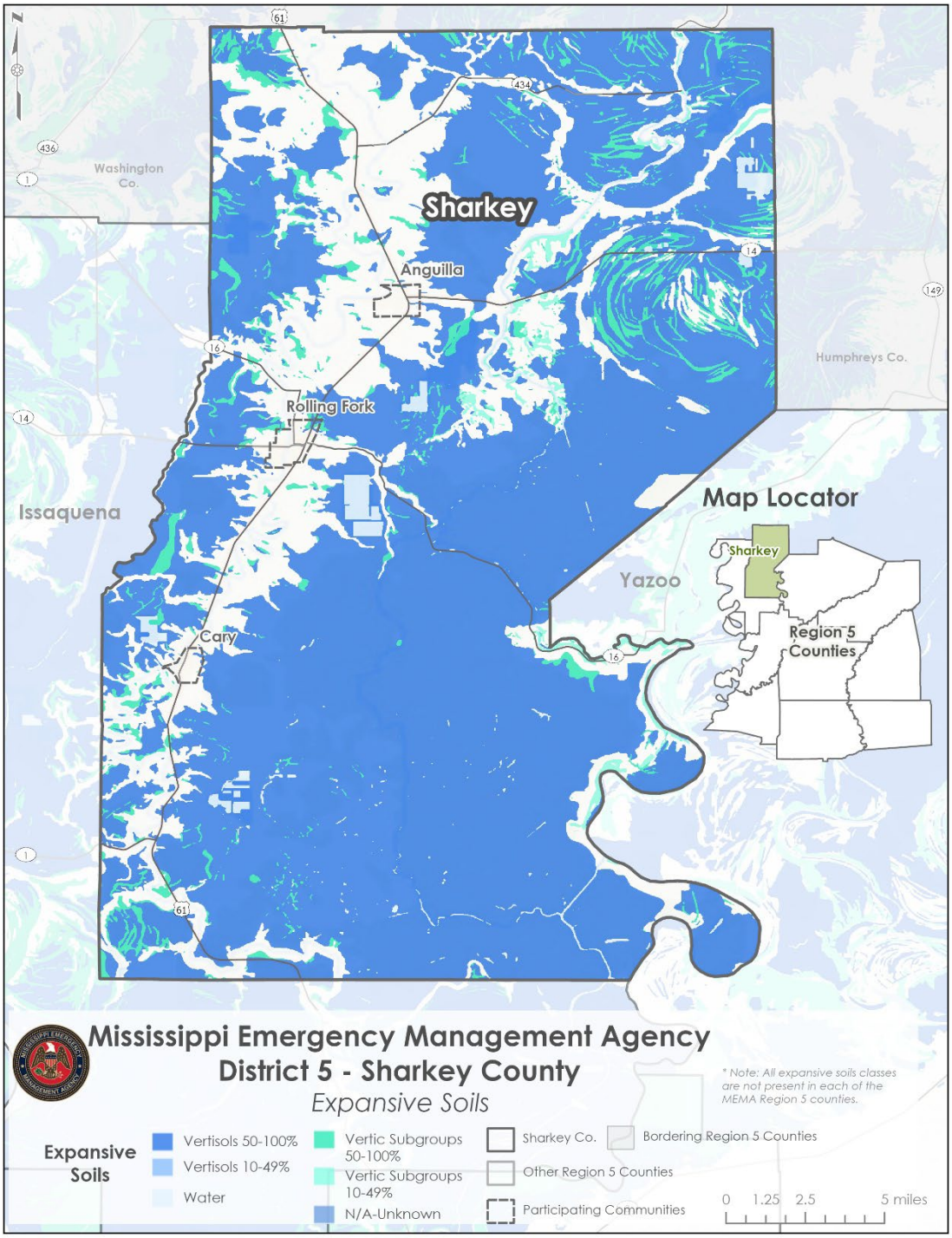
4.4. EXPANSIVE SOILS

4.4.1. LOCATION AND EXTENT

As noted in the base plan, expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure.

Sharkey County and its jurisdictions have areas in the Vertisols (50-100%) and Vertic Subgroups (50-100%) which puts these communities at higher risk than the district overall. More information about location and extent is provided in the base plan and can be visually seen in **Figure 10** below. For more information on expansive soils across the District, refer to the base plan.

FIGURE 10: SHARKEY COUNTY EXPANSIVE SOILS



4.4.2. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the D5 Region, including in Sharkey County.

4.4.3. PROBABILITY OF FUTURE OCCURRENCES

The probability of future damage from expansive soils in the County and its jurisdictions is considered **Unlikely** due to the District's geologic makeup and historical patterns of soil movement. Because Sharkey County and the communities within it do contain areas with high vertisols or vertic subgroups, they are at a higher risk of future occurrences than the District overall.

4.4.4. LOCALIZED VULNERABILITY ASSESSMENT

4.4.4.1. OVERALL VULNERABILITY

Assets vulnerable to the impacts of expansive soils include residential housing, schools, emergency services facilities, and aging infrastructure, especially those constructed without geotechnical assessments or soil stabilization measures. Sharkey County and its jurisdictions have an overall **Low** risk to expansive soils than the rest of the district. This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to expansive soils.

4.4.4.2. CRITICAL FACILITIES

Clay-rich, expansive soils in Sharkey County and its jurisdictions can swell when wet and shrink when dry, which may cause building slabs and foundations to heave, crack, or shift. These ground movements can lead to structural distortion, misaligned doors or equipment, and damage to buried utilities such as water or wastewater lines. USDA soil datasets provide shrink–swell ratings that help identify areas where facilities may face higher risk from these conditions.

4.4.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Expansive soils can threaten cultural, natural, and historic resources in Sharkey County and its jurisdictions by causing ground movement that leads to cracking, shifting, and structural distortion. Clay-rich soils that swell when wet and contract when dry can damage historic buildings, monuments, cemeteries, and archeological features, leading to foundation heave, wall cracking, or displacement of markers and artifacts. These soils can also disturb natural landscapes, causing soil fissures, changes in surface drainage, and stress on vegetation.

4.4.4.4. PEOPLE

The risk factors for expansive soils are structural and not demographic in nature. As with many other hazards, vulnerable populations—such as low-income households, the elderly, and individuals with disabilities—may face compounded risks of expansive soils. These populations can experience disproportionate impacts to expansive soils and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.4.4.5. STRUCTURES AND SYSTEMS

Because the geography of Sharkey County and its jurisdictions puts it at higher relative risk of this hazard, the structures and systems (including critical facilities, community lifelines, and natural, historic, and cultural resources) in the county and its municipalities are at higher relative risk as well. The potential impacts to these structures and systems are described in more detail in the base plan.

4.4.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Sharkey County and its jurisdictions may lead to lower impacts of expansive on its residents in the future, although this risk can be significantly

mitigated with smart planning and zoning decisions, including restricting or regulating development in high-risk areas. The County has zero active and inactive surface mines in the planning area.

4.5. FLOOD

4.5.1. LOCATION

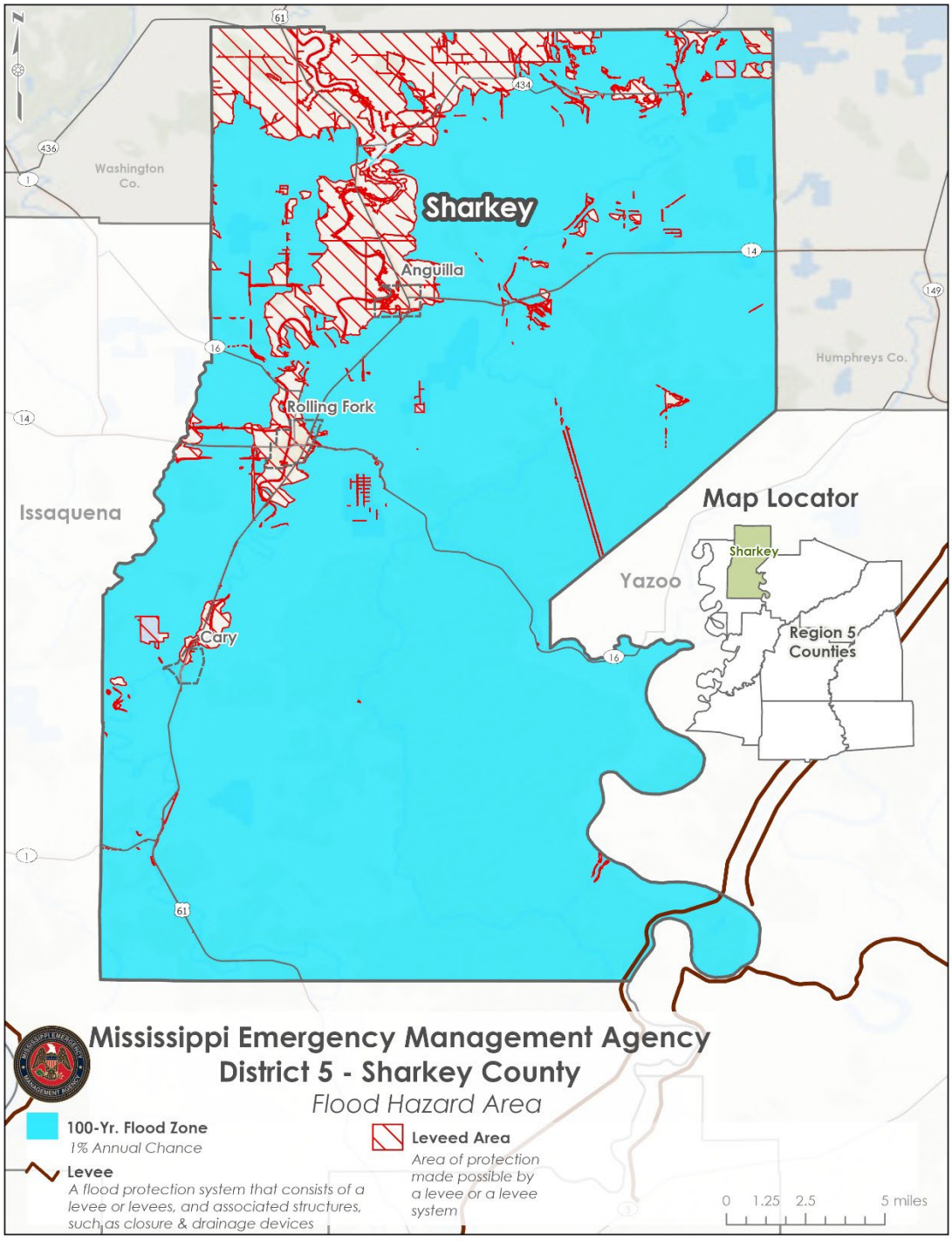
Floods are the most common type of natural disaster, occurring when water overflows onto land that is typically dry after heavy rainfall, storm surges, or rapid snowmelt. Flooding often leads to significant impacts on both human life and the environment. This section provides detailed information about the location, extent, previous occurrences, and overall vulnerability of communities within Sharkey County to flooding than is provided in the base plan.

For purposes of this hazard profile and vulnerability analysis, the geographic location/extent for river flooding will be primarily considered as those areas at risk to the 100-year flood (also known as the 1% annual chance flood). The 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. However, the accompanying maps also show the 500-year floodplains (also known as the 0.2% annual chance floodplains) for two major reasons. First, climate models suggest that the planning area should anticipate rain events with increasing intensity in the coming years and decades. Second, any future population growth may result in new development within or near 500-year floodplains.

Figure 11 below shows that the entire County is in the 100-Year Flood Zone except for some Northern and Northwestern parts protected by leveed areas. The leveed protected area does contain areas within the 100-year floodplain. In the event of a levee failure, the levee protected area may be flooded.

The main waterway in Sharkey County is the Big Sunflower River in the Western part of the County. The Yazoo River flows in parts of the Eastern and Southern of the County. Other key water features include the Deer Creek and Steele Bayou. The County also features smaller, localized lakes and dams used for flood control and recreation.

FIGURE 11: SHARKEY COUNTY FLOOD HAZARD AREAS



4.5.2. EXTENT

Riverine flooding is among the most significant hazards in the planning area due to its ability to impact large geographic areas, threatening a significant number of people and properties, the relatively small amount of flood water that it takes to cause significant injury or property damage, and the ability of flood water to linger for days, causing extensive damage. Because variations in geography, elevation, and

building design mean that the same flood can cause a wide variety of extents of damage to different structures, the variation in extent across the County is most accurately captured by the flood zone mapping provided above under “location.”

The most significant recorded flooding event in the State’s history, indicating the potential extent of the threat of the flood hazard, was in 1927, when persistent heavy rainfall and run-off inundated 27,000 square miles. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

4.5.3. PREVIOUS OCCURRENCES

Since 2011 there have been three federal disaster declarations pertaining to flooding in Sharkey County, details of which are provided below in **Table 29**.

The most significant recorded flooding event in Sharkey County in the past five years, indicating the potential extent of the threat of the flood hazard, was in 2020. A passing disturbance and anomalous moisture supported numerous thunderstorms and heavy rainfall that produced widespread rainfall between two and six inches with the heaviest falling in the corridor right across the central portion of the forecast area. This resulted in widespread flash flooding across the region as this additional rain fell on very saturated conditions. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

TABLE 29: FLOODING-RELATED MAJOR DISASTER DECLARATIONS IN SHARKEY COUNTY

Disaster Number	Description	(Declaration Date) and Incident Period	Individual Assistance	Public Assistance
DR-4538	Severe Storm, Flooding and Mudslides	(4/23/2020) 2/10/2020-2/18/2020	N	Y
DR-1983	Flooding	(5/11/2011) 5/3/2011-6/17-2011	Y	Y
EM-3320	Flooding	(5/4/2011) 4/27/2011-6/17/2011	N	Y

Between the 2015 and 2020 plans, there were three flooding events in Sharkey County, causing $33,000 in property damage. Since the 2020 plan, there have been three such events, causing $11,000 in damages, no fatalities, and no injuries according to information provided by the NCEI. Additional information on these events is provided in **Table 30.**

Table 30. Individual Flood Events 2020-2025

Date	Time (CST-6)	Event Description	Assessed Damages	Estimated Flood Depth
01/14/2020	06:00	Water surrounded several buildings in Rolling Fork. Multiple roads were flooded including Sidney Alexander Street.	$5,000	6 inches
01/14/2020	07:15	Water surrounded a house in Anguilla.	$3,000	6 inches
09/17/2021	21:15	A few streets were flooded in Rolling Fork.	$3,000	6 inches

4.5.4. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, representatives for Sharkey County and Rolling Fork concluded that the probability of future flooding events impacting their jurisdictions is **Likely**, while representatives for

Cary and Anguilla assessed the probability to be **Low**. As climate change increases the intensity and unpredictability of rainfall, the likelihood of flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience.

4.5.5. LOCALIZED VULNERABILITY ASSESSMENT

4.5.5.1. OVERALL VULNERABILITY

As noted in the base plan, flooding can cause widespread damage to buildings, roads, utilities, and public infrastructure, and can significantly impact all eight community lifelines as well as natural, historical, and cultural resources. Areas such as Issaquena and Sharkey Counties are in the Delta region, characterized by flat terrain and proximity to major rivers. These areas have a history of repetitive flood losses and are frequently within FEMA-designated 100-year floodplains. Vulnerability is heightened by aging infrastructure, limited drainage capacity, and socioeconomic challenges. Members of the Mitigation Council considered multiple factors when quantifying their overall vulnerability to flooding. This includes the number of recorded events; the potential area exposed to flooding; economic and environmental impacts; and the risk to human safety. In consideration of these factors, representatives for Sharkey County and Cary assessed their vulnerability to be **High**, while representatives for Rolling Fork and Anguilla assessed their vulnerability to be **Medium.** This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to flooding events.

4.5.5.2. CRITICAL FACILITIES

Flooding poses a significant risk to critical facilities in Sharkey County by causing structural damage, inundating mechanical and electrical systems, and disrupting essential services. Flood events can impact hospitals, fire stations, law enforcement facilities, schools, emergency operations centers, and water and wastewater infrastructure, particularly those located in low-lying areas or within Special Flood Hazard Areas. Inundation of utility systems may contaminate drinking water supplies, impair wastewater treatment, and result in power and communications outages that hinder emergency response and continuity of government. Flooded roads and bridges can also restrict access to critical facilities, delaying emergency services, evacuation, and recovery efforts.

Figure 12 displays the critical facilities and infrastructure in the flood hazard areas.

Table 31 below lists the critical facilities in Sharkey County that are in the 1% annual chance and 0.2% annual chance floodplains.

FIGURE 12: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE FLOOD HAZARD AREAS

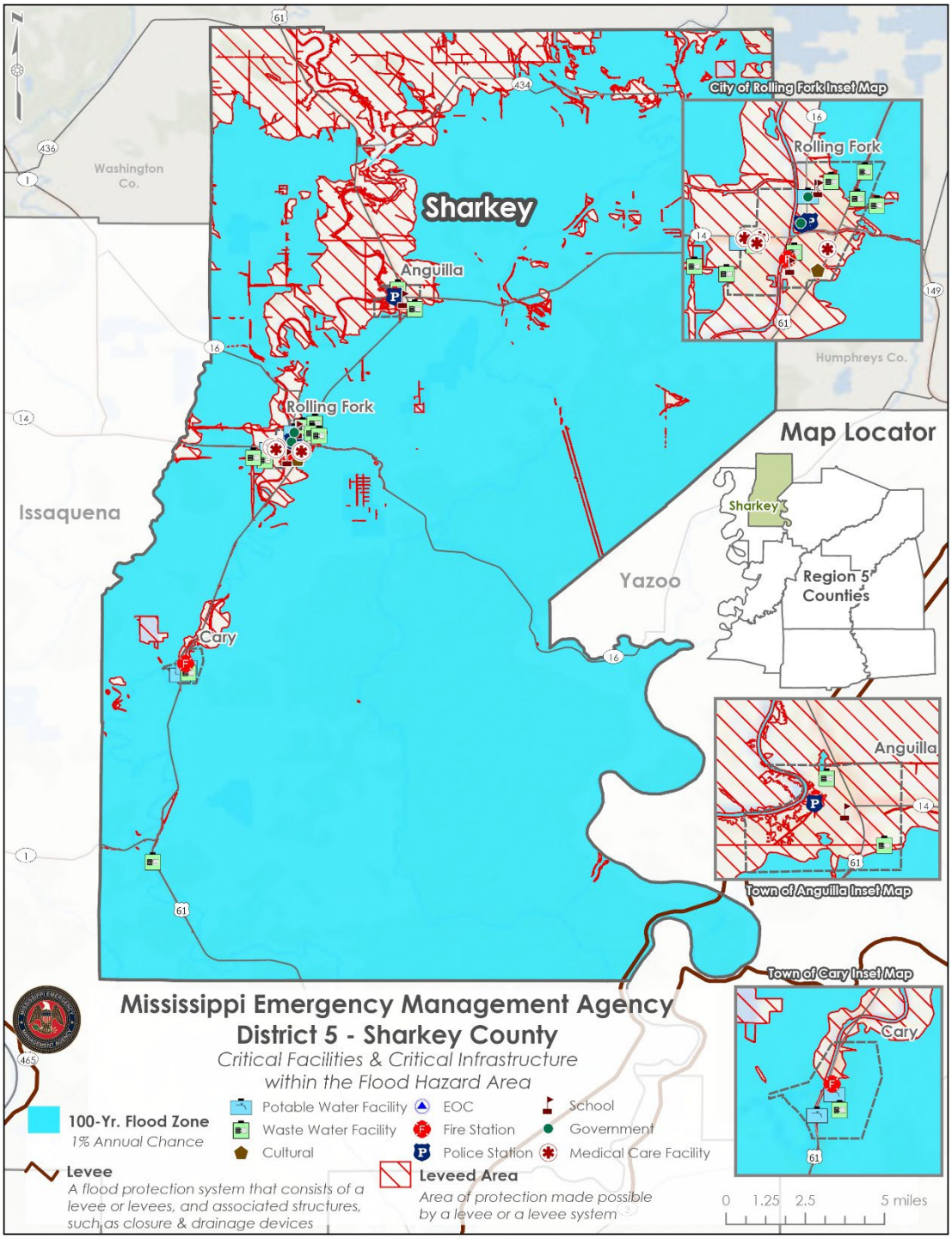


TABLE 31: CRITICAL FACILITIES IN THE FLOODPLAINS OF SHARKEY COUNTY

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
Cary	Potable Water	Water Well 1	N	Y
Cary	Potable Water	Water Well 2	N	Y
Rolling Fork	Waste Water Facility	Lift Station 4	N	Y
Rolling Fork	Waste Water Facility	Lift Station 5	N	Y
Rolling Fork	Waste Water Facility	Lift Station 6	N	Y
Onward	Waste Water Facility	Onward	N	Y
Rolling Fork	Waste Water Facility	Rolling Fork POTW - East	N	Y
Rolling Fork	Waste Water Facility	Rolling Fork POTW - West	N	Y
Cary	Waste Water Facility	Treatment Plant	N	Y
Anguilla	Waste Water Facility	W&S Facility	N	Y

4.5.5.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Flooding can adversely impact cultural, historic, and natural resources in Sharkey County by causing erosion, structural damage, and long-term degradation of sensitive sites and landscapes. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be damaged by prolonged inundation, saturated soils, or repeated flood events, particularly where foundations, grave markers, or unreinforced masonry are exposed to water and shifting ground conditions. Floodwaters can erode soil and displace or destroy archeological materials, resulting in irreversible loss of cultural resources. Natural resources are also vulnerable, as flooding can alter stream channels, degrade wetlands, reduce water quality, damage vegetation, and disrupt wildlife habitats. While some ecosystems may recover over time, repeated or severe flooding can permanently alter natural and cultural landscapes.

4.5.5.4. PEOPLE

Some populations may face greater risk to flooding--the relatively short warning time typically provided for flooding means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations most vulnerable to flooding include older adults, low-income households, and individuals without access to flood insurance or dependable transportation. These factors can limit a person's ability to evacuate when warnings are issued. These populations can experience disproportionate impacts to floods and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5.

4.5.5.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, flooding has caused over $44,000 in damage in the past 10 years within the County and is expected to continue in the future. Flooding poses a significant risk to structures and critical systems in Sharkey County by causing physical damage, inundation, and

operational disruptions. Floodwaters can damage building foundations, walls, and interiors, particularly in structures located in low-lying areas or flood-prone zones, leading to costly repairs and long-term structural degradation. Electrical, mechanical, and HVAC systems are especially vulnerable to water damage, which can result in power outages and prolonged service interruptions. Flooding may also impair transportation networks, water distribution, wastewater treatment, and drainage systems, reducing access to essential services and facilities.

4.5.5.6. NFIP INSURED STRUCTURES

The National Flood Insurance Program (NFIP) is a federal program managed by FEMA that provides flood insurance to property owners, renters, and businesses in participating communities. It aims to reduce flood damage by restricting floodplain development and offering affordable insurance, as standard homeowners insurance typically does not cover flood damage. Sharkey County and its jurisdictions are a participating in the NFIP. For more information about the NFIP, reference **Section 5.8.6.3** in the base plan.

According to current data from the NFIP, there are 27 Repetitive Loss properties in Sharkey County as of 2025. Of these, 18 are single-family residences, six are non-residential commercial business, two are a non-business non-residential structures and one is listed as other residential. Due to the repetitive nature of these losses, structures meeting the NFIP definitions of repetitive loss and severe repetitive loss should be prioritized for mitigation measures, as these measures are likely to be relatively cost effective. **Table 32** lists the properties that are repetitive loss or severe repetitive loss in the County.

TABLE 32: REPETITIVE LOSS AND SEVERE REPETITIVE LOSS PROPERTIES IN SHARKEY COUNTY

Jurisdiction	Number of Repetitive Loss Properties (2025)	Number of Severe Repetitive Loss Properties (2025)	Total Number of Flood Claims	Total Amount ($) of Flood Claims
Sharkey County	27	--	--	--

4.5.5.7. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Sharkey County may lead to lower impacts of flooding. A decrease in the number of structures in the floodplain allows for more permeable surface to absorb floodwater, along with lower strain on stormwater management systems that can contribute to an overall reduction in the severity of flood events. Since most of the County is either within a floodplain or levee protected area, any new development could be at risk and subjected to damage in the event of a flood event or levee failure.

4.6. SEVERE STORMS

4.6.1. LOCATION AND EXTENT

Severe storms are a region-wide hazard in the Mississippi Delta and are not confined to specific locations. Severe storms affect the entire planning area equally; Sharkey County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. For more information on severe storms across the District, refer to the base plan.

4.6.2. PREVIOUS OCCURRENCES

Recent events highlight the destructive potential of these storms. Since 2020, the following events have taken place in Sharkey County:

- 18 thunderstorms, causing $203,000 in property damage
- Zero reported occurrences of severe lightning
- One high wind event, causing $7,000 in property damage
- Two hailstorms, causing $20,000 in property damage

Figure 13 and **Figure 14** below show historic wind and hail events in Sharkey County since 1955.

FIGURE 13: SHARKEY COUNTY HISTORIC WIND EVENTS 1955-2024

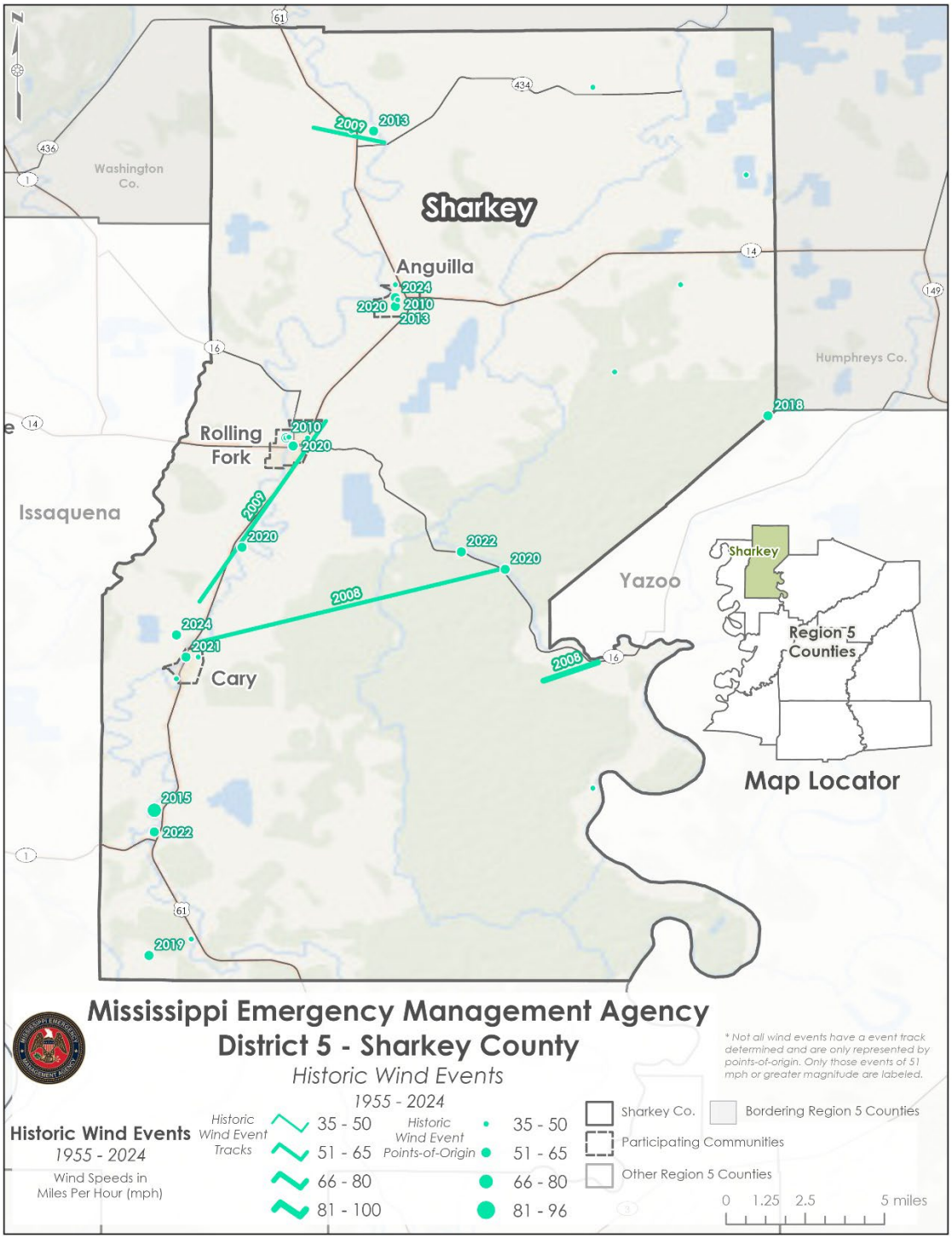
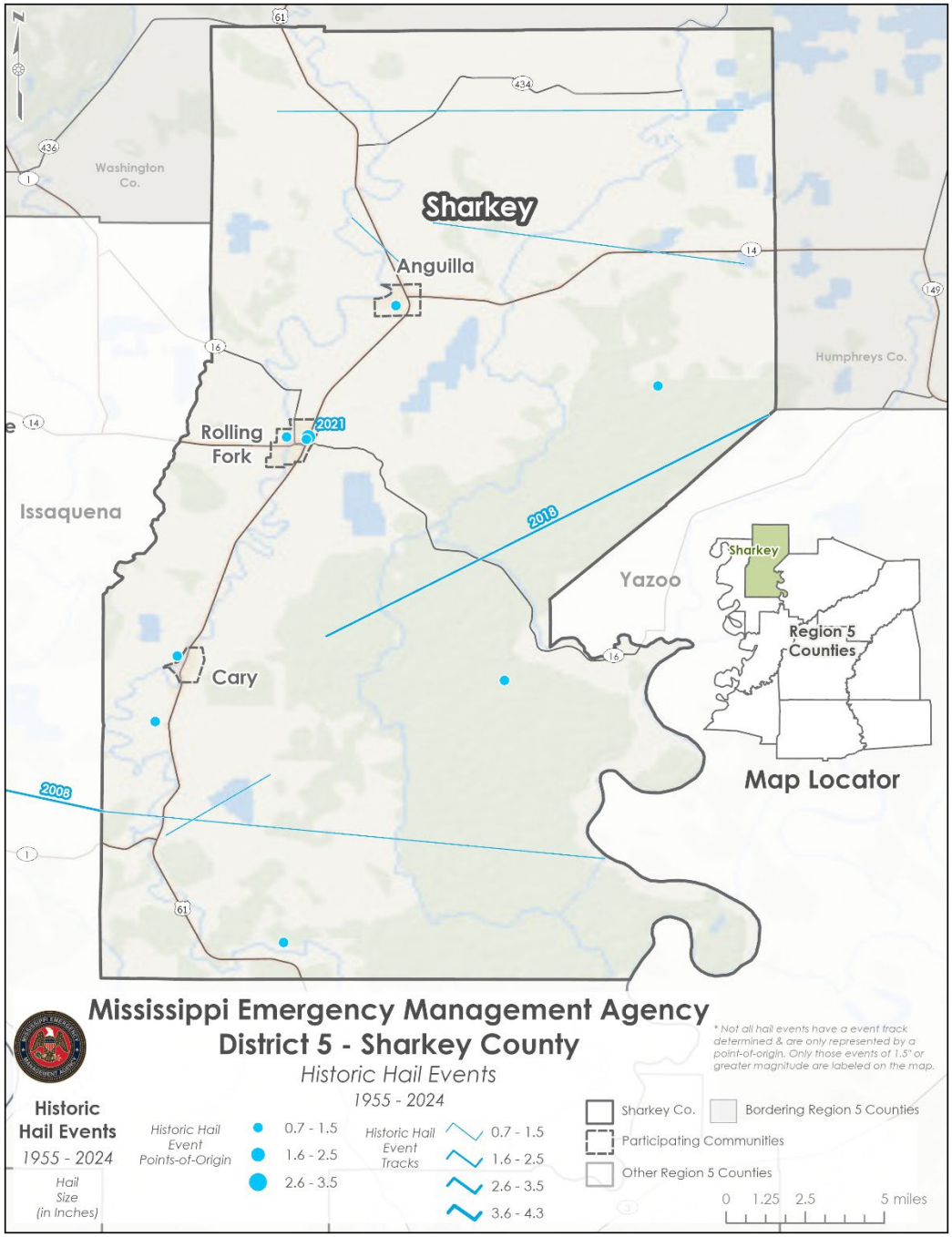


FIGURE 14: SHARKEY COUNTY HISTORIC HAIL EVENTS 1955-2024



4.6.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 21 severe storm events in the past five years. The County and its jurisdictions can expect to see severe storm events occur twice a year. Therefore, the probability of future occurrences of severe storms in Sharkey County and its jurisdictions is **Extremely Likely**, especially during peak storm seasons. These storms are expected to occur multiple times per year.

4.6.4. LOCALIZED VULNERABILITY ASSESSMENT

4.6.4.1. OVERALL VULNERABILITY

As noted above, the risk of severe storms (due to the frequency and ubiquity of these events) is largely equal across the entire planning area, posing risks to natural and cultural resources and community lifelines, as discussed in the base plan. However, demographic and development factors can cause variation in vulnerability to this risk. Based on the frequency and the extent of damage that severe storms can cause the risk of severe storms is **High** for Shakey County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to flooding events.

4.6.4.2. CRITICAL FACILITIES

Severe storms pose a countywide hazard, placing all critical facilities in Sharkey County at risk. Thunderstorms producing strong winds, heavy rainfall, hail, and lightning can damage key structures including hospitals, emergency response buildings, schools, and government facilities. These events can lead to roof failures, shattered windows, and impacts from wind-blown debris, creating ongoing vulnerabilities for essential infrastructure.

4.6.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Severe storms can harm cultural, historic, and natural resources throughout the County through high winds, heavy rainfall, flooding, hail, and lightning. Historic structures, cemeteries, monuments, and archaeological sites are particularly susceptible to wind-driven debris, roof or structural damage, fallen trees, erosion, and prolonged moisture exposure—especially where aging facilities lack protective reinforcement. Intense rainfall can erode soils and disturb archaeological materials, reducing historic context and compromising site integrity. Natural resources face risks as well, with storms capable of damaging forests, altering stream channels, degrading wetlands, and diminishing water quality through increased runoff and sedimentation.

4.6.4.4. PEOPLE

The wind, hail, lightning, and flooding often produced by severe storms can lead to injury or death. Some populations may face greater risk to severe storms--the relatively short warning time typically provided for severe storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.6.4.5. STRUCTURES AND SYSTEMS

Aging infrastructure and limited emergency resources without redundancies increase the vulnerability of structures and systems in Sharkey County to the impacts of severe storms. However, this vulnerability is not markedly higher or lower in the County than the rest of the District; the vulnerability of structures and systems across D5 is described in more detail in the base plan. Based on previous occurrences, there have been over $200,000 in damage from severe storm events. It is expected that in the next several years, similar damage from severe storms will continue to occur.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Sharkey County follows Mississippi's statewide building

standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.6.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Sharkey County means fewer people and structures for storms to damage. Additionally, lower strain on stormwater management systems can contribute to an overall reduction in the likelihood of severe storms to lead to flooding.

4.7. SEVERE WINTER WEATHER

4.7.1. LOCATION AND EXTENT

Severe winter weather is a region-wide hazard in the Mississippi Delta and is not confined to specific locations. Winter storms affect the entire planning area equally; Sharkey County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. More information on the extent of the threat posed by these storms is provided in the base plan. However, the extent of these storms is limited, with an average amount of annual snowfall in the county of 0-1 inches. For more information on severe winter weather across the District, refer to the base plan.

4.7.2. PREVIOUS OCCURRENCES

Several impactful severe winter weather events have occurred in Sharkey County over the past two decades. The most significant of these in recent years include:

- The January 2018 cold snap that led to challenges like burst pipes, increased heating demands, and risk to seniors and other vulnerable populations
- The February 2021 freezing rain, sleet, and snow event that led to widespread power outages due to ice accumulation
- The January 2014 snowstorm led to significant road hazards and injuries and fatalities across District 5. (blurb on injuries/fatalities in this county)

Between 2015 and 2020, there were two severe winter weather events in Sharkey County, causing $55,000 in property damage. Since the 2020 plan update, there have been four such events, causing zero reported damage.

4.7.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been six severe winter weather events in the past 10 years. It is expected that a severe winter weather event will occur every 1-2 years. The probability of severe winter weather events occurring in the future within Sharkey County and its jurisdictions is **Likely** but increasing in frequency and severity based on climate variations.

4.7.4. LOCALIZED VULNERABILITY ASSESSMENT

4.7.4.1. OVERALL VULNERABILITY

All counties within District 5 are vulnerable to the impact of severe winter storms. Because it is closer to the Northern portion of the region, winter weather in Sharkey County may be slightly more severe than across the region. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the County's natural, historic, and cultural assets, as discussed in the base plan. Based on the frequency and the severity of severe winter storms, the risk to the County and its jurisdictions is **Medium**. Severe winter storms can disrupt utility and critical infrastructure which can significantly disrupt the communities of Sharkey County. This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to severe winter storms.

4.7.4.2. CRITICAL FACILITIES

All counties within District 5 are vulnerable to the impact of severe winter storms. Because it is closer to the Northern portion of the region, winter weather in Sharkey County may be slightly more severe than across the region. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the County's natural, historic, and cultural assets, as discussed in the base plan.

4.7.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Although severe winter weather occurs infrequently, its effects can result in lasting damage to sensitive cultural, historic, and natural resources. Severe winter weather can adversely affect cultural, historic, and natural resources in the County by causing structural stress, moisture damage, and ecological disruption. Historic buildings, cemeteries, and monuments may experience cracking, spalling, or material deterioration due to freeze–thaw cycles, while ice accumulation and fallen trees can damage structures and cultural landscapes. Natural resources are also vulnerable, as winter weather can damage vegetation, alter wildlife habitats, and degrade water quality through increased runoff and erosion.

4.7.4.4. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations. As with other hazards, those who are elderly, disabled, or economically disadvantaged are at heightened risk due to limited access to reliable heating, transportation, and emergency services, and a reduced ability to physically withstand cold temperatures. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe winter weather and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.7.4.5. STRUCTURES AND SYSTEMS

Urban centers are more likely to experience infrastructure strain, including power outages, traffic disruptions, and increased demand for emergency services and shelters. Counties like Issaquena and Sharky, located in the Mississippi Delta region, are more densely populated and have greater concentrations of critical infrastructure. While these areas may experience slightly milder winter conditions, the potential impacts are magnified due to the higher number of residents, aging utility systems, and limited access to alternate heating sources.

Rural communities may be more vulnerable to isolation during winter storms, especially if roads become impassable. These areas often face greater challenges in road treatment and utility restoration due to limited access to resources and longer emergency response times. Because Sharkey County is relatively more rural than District 5 overall, people in the County and its municipalities are at slightly higher risk.

4.7.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Stagnant population growth and population reduction in Sharkey County reduce the strain on electrical and other utility systems, reducing the likelihood that these systems experience failure during significant events. However, this may also contribute to slower emergency response times, increasing risk.

4.8. TORNADO

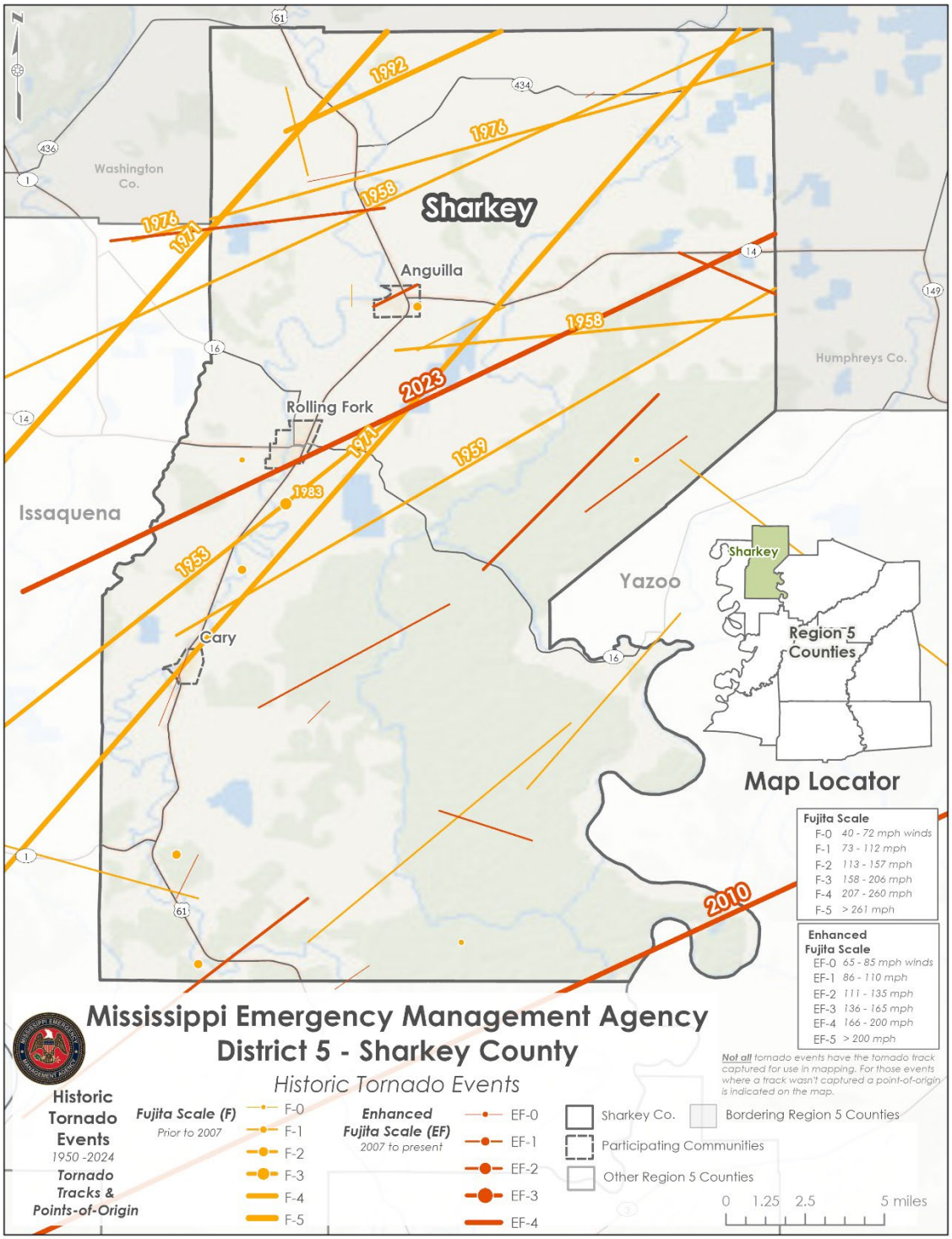
4.8.1. LOCATION AND EXTENT

Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments. Due to the unpredictable nature of tornado formation and the ability for the entire planning area to be impacted by severe storms, the entirety of Sharkey County is equally likely to experience a tornado of any magnitude. Tornados of any strength on the Enhanced Fujita (EF) scale are possible throughout the county. For more information on tornadoes across the District, refer to the base plan.

4.8.2. PREVIOUS OCCURRENCES

Between 1950 and 2022, there were 33 tornadoes reported in Sharkey County, causing a total of $28,299,000 in property damage. **Figure 15** below shows the historic tornado events throughout the County. The most notable recent tornado event was in Rolling Rock on March 24, 2023. The EF4 tornado killed 17 people, caused $83 million dollars in property damage, and 1$36,000 in crop damage. The majority of the fatalities occurred at mobile or trailer homes.

FIGURE 15: SHARKEY COUNTY HISTORIC TORNADO EVENTS



4.8.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 33 tornadoes in the past 72 years. Sharkey County and its jurisdictions can expect a tornado to occur once every two years. Historical data spanning 72

years indicates a consistent pattern of tornado activity across the County, indicating that tornadoes pose a **Highly Likely** probability of recurring at some point in the future. The probability is **Likely** for Rolling and Anguilla and **Low** for Cary.

4.8.4. LOCALIZED VULNERABILITY ASSESSMENT

4.8.4.1. OVERALL VULNERABILITY

More rural and less densely populated counties like Sharkey County may have older housing stock, limited access to safe shelters, and fewer emergency response resources. These factors can increase the severity of tornado impacts despite lower exposure levels. Additionally, mobile homes are extremely susceptible to high winds and may sustain more damage or be flipped over during a strong tornado. Tornadoes cause flying debris which can be dangerous for people in the surrounding areas and other buildings, infrastructure, and critical facilities. Due to the severity tornadoes can cause and the probability of occurrences, they pose a **High** risk to Sharkey County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to tornadoes.

4.8.4.2. CRITICAL FACILITIES

Tornadoes pose a significant threat to Sharkey County's critical facilities, as extreme winds and airborne debris can cause rapid and severe structural damage. Hospitals, emergency services buildings, schools, and water or wastewater systems may experience roof loss, wall failure, or utility disruptions that lead to immediate service outages. Tornadoes often cause widespread power and communication failures, and debris-cluttered roads can limit access to essential facilities and slow emergency response efforts.

4.8.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tornadoes can significantly impact cultural, historic, and natural resources in the County through extreme winds, flying debris, and associated storm damage. Historic structures, cemeteries, monuments, and archeological sites may sustain damage or complete loss due to building collapse, fallen trees, or debris impacts, particularly where resources are older or lack structural reinforcement. Cultural landscapes and historic settings can also be altered by the destruction of surrounding features such as fences, vegetation, and access paths. Natural resources may be affected through forest damage, habitat loss, soil erosion, and disruption of wildlife caused by wind and debris.

4.8.4.4. PEOPLE

Some populations may face greater risk to tornadoes--the relatively short warning time typically provided for tornadoes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. 547 (22.6%) of the residents of Sharkey County reside in mobile or manufactured homes, placing them at increased risk. These populations can experience disproportionate impacts to tornadoes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5.

During the last strong tornado, 17 people were killed and many more injured. The majority of the fatalities occurred at mobile and trailer homes.

4.8.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that do not have safe rooms or have not been retrofitted for extreme winds are vulnerable to the impacts of tornados, including in Sharkey County, as described in the base plan. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of tornadoes. The County may be at slightly lower risk of these impacts simply because it is less developed than other counties in the district, and there are more such facilities to be impacted. Based on previous occurrences, tornadoes have caused over $28,000,000 in damage over the past 72 years, which is about $388,888 per year. It is expected that tornadoes will cause similar damage in the future.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. Sharkey County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.8.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Sharkey County means fewer people and structures for tornadoes damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tornadoes.

4.9. TROPICAL STORM/HURRICANE

4.9.1. LOCATION AND EXTENT

Like the rest of District 5, Sharkey County is inland but is still vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. This risk is not measurably varied across the County or planning area, except for low-lying and flood-prone areas that might be more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

The extent of the impacts of tropical storm typically includes sustained winds of 30-60 MPH with higher gusts, heavy rainfalls of six or more inches in a 24-hour period, and occasional tornadoes. For more information on tropical storms and hurricanes across the District, refer to the base plan.

4.9.2. PREVIOUS OCCURRENCES

Sharkey County is inland but has experienced the direct impacts of tropical storms in the past. The tracks of the following storms have passed directly through the county, producing damaging wind, heavy rainfall, power outages, and occasional tornadoes:

- Tropical Depression Gordon (2018)
- Tropical Storm Delta (2020)

4.9.3. PROBABILITY OF FUTURE OCCURRENCES

Although Sharkey County and its jurisdictions is located inland, the probability of experiencing hurricane-related impacts remains **Low** due to the district's proximity to the Gulf Coast and historical storm tracks. The County and its jurisdictions can expect to experience the effects of a tropical storm or hurricane approximately every 5 to 10 years, although climate trends and increased storm intensity may elevate risk.

4.9.4. LOCALIZED VULNERABILITY ASSESSMENT

4.9.4.1. OVERALL VULNERABILITY

Being in the Northern half of the district, Sharkey County is likely to experience slightly less frequent and intense tropical storm impacts than the district overall. Due to the low frequency, geography, and potential damage from tropical storms and hurricanes, they pose a **Medium** risk to Sharkey County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to tropical storms and hurricanes.

4.9.4.2. CRITICAL FACILITIES

Even after losing strength inland, tropical storms and hurricanes can still affect critical facilities in Sharkey County by producing heavy rainfall, strong winds, and localized flooding that strain infrastructure and disrupt essential services. Hospitals, emergency response centers, schools, government offices, and water and wastewater systems may experience structural damage, power or communication outages, and flooding of mechanical or electrical components. Intense rainfall can also overwhelm drainage networks and inundate roadways, reducing access to critical facilities and slowing emergency response operations.

4.9.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tropical storms and hurricanes can adversely impact cultural, historic, and natural resources in the County through heavy rainfall, strong winds, localized flooding, and prolonged soil saturation. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, flooding, or erosion, particularly where structures and sites are older or not designed to

withstand prolonged moisture exposure. Excessive rainfall can erode soils and displace archeological materials, while flooding may degrade cultural landscapes and historic settings. Natural resources are also vulnerable, as tropical storm impacts can damage forested areas, alter stream channels, degrade wetlands, and reduce water quality due to increased runoff and sedimentation.

4.9.4.4. PEOPLE

Some populations may face greater risk to tropical storms--the relatively short warning time typically provided for tropical storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. These factors increase risk to the population in the County to tropical storms and may have difficulty in preparing and recovering from them. These populations can experience disproportionate impacts to tropical storms and hurricanes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5.

4.9.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storms like high winds. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of these storms across the planning area, including in Sharkey County, as described in the base plan. The County may be at slightly lower risk of these impacts simply because it is less developed than other counties in the district, and there are more such facilities to be impacted. As noted above, low-lying and flood-prone areas are more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. Sharkey County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.9.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Sharkey County means fewer people and structures for these storms to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tropical storms.

4.10. WILD/URBAN INTERFACE (WUI) FIRE

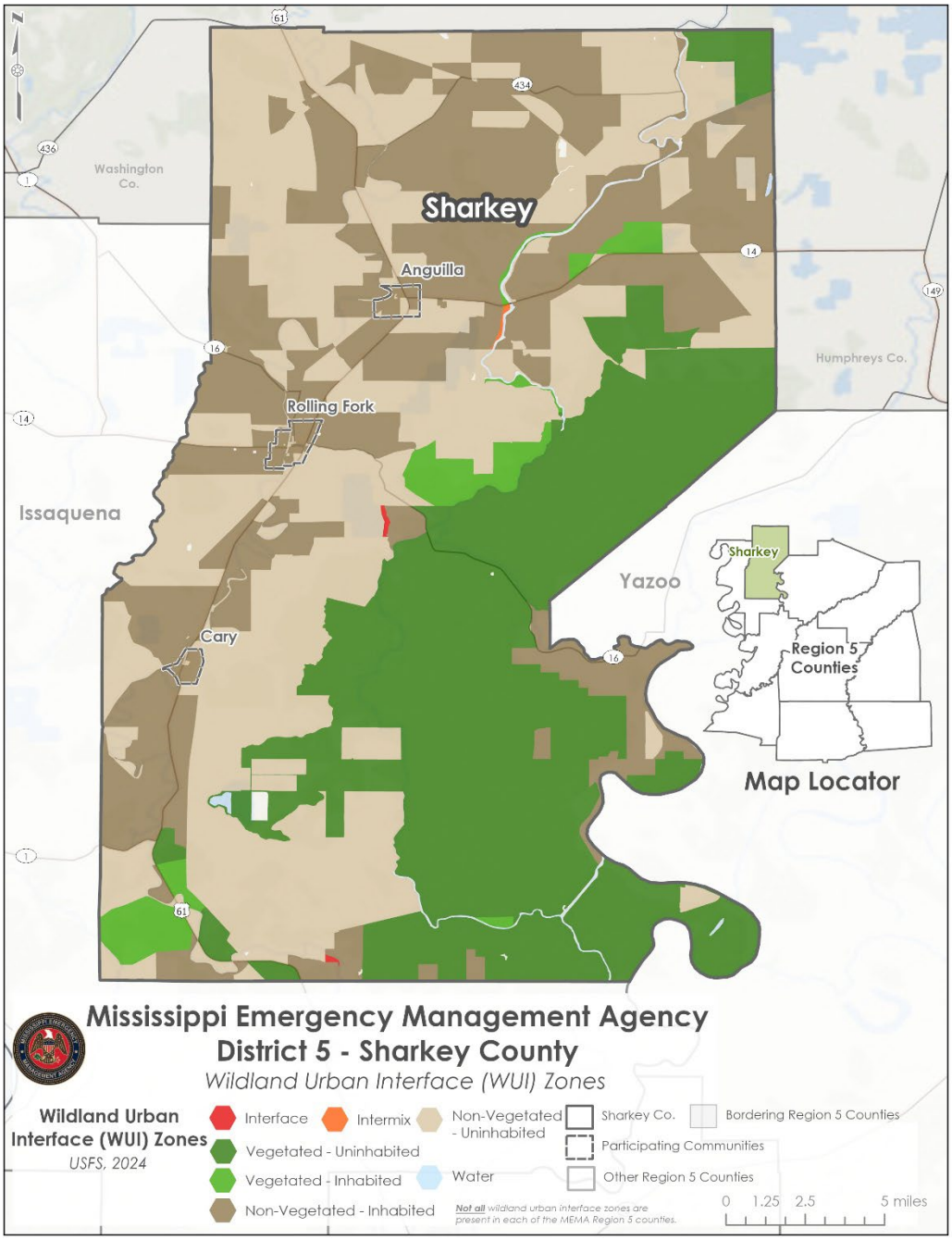
4.10.1. LOCATION AND EXTENT

Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas. There are two types of WUI Zones, and they are briefly described below.

- **Interface:** Development is bordered by wildlands on at least one side.
- **Intermix:** Development is surrounded on two or more sides by wildlands.

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. **Figure 16** is a map showing the area where this hazard is most significant in Sharkey County. Most of the County is in the Vegetated and Non-Vegetated areas with two small WUI Interface areas located in the center and Southern part of the County. There is also a small sliver of WUI Intermix East of Anguilla, West of the Delta National Forest. For more information on urban and WUI fires across the District, refer to the base plan.

FIGURE 16: WILDLAND URBAN INTERFACE (WUI) AREA IN SHARKEY COUNTY



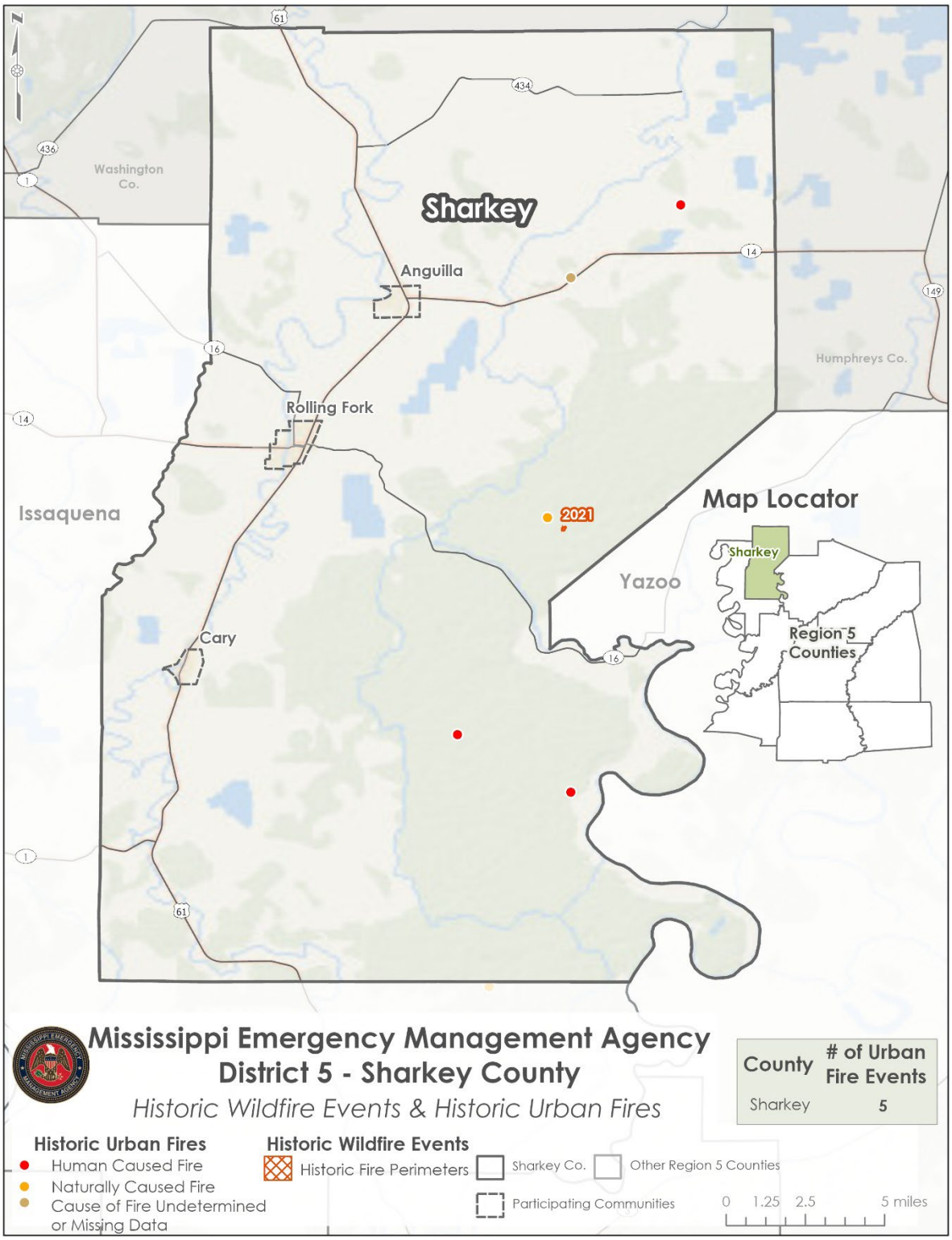
The extent of a potential WUI fire impact in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development, but is not substantively different in Sharkey County than in the District overall. This extent is described further in the base plan.

4.10.2. PREVIOUS OCCURRENCES

Recent wildfire activity in Sharkey County has been limited but not absent, with the most recent documented event being the Pipeline Fire, detected on December 28, 2025, which burned 29 acres before containment. There have been five historical fires in the Sharkey County from 1992-2020. No

additional significant wildfires or urban fire incidents have been reported in the County during recent years. It is also important to note that some District 3 participating communities provided anecdotal information that previous fire events have not been captured using state level data. Due to this data limitation, it is possible that the number of previous occurrences could be more than reported.

FIGURE 17: SHARKEY COUNTY HISTORIC FIRE EVENTS



4.10.3. PROBABILITY OF FUTURE OCCURRENCES

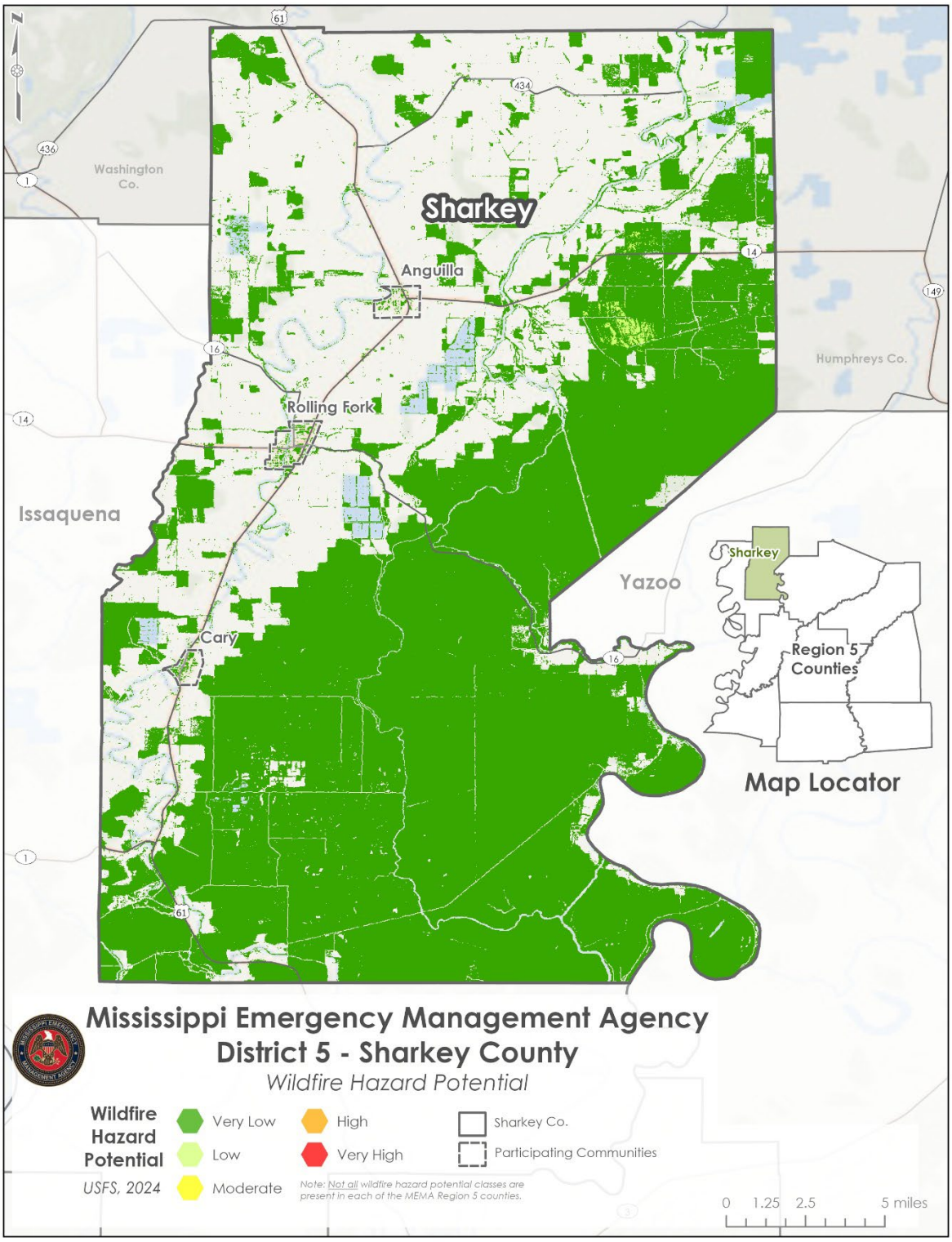
Wildland/Urban Interface (WUI) fires are expected to remain a recurring hazard in Sharkey County. Hundreds of wildfires occur in Mississippi each year, indicating that such fires may occur in the county likely to occur in the County. However, based on local capacity to respond to such fires, the probability of the County and its jurisdictions responding to a severe fire is **Low**.

4.10.4. LOCALIZED VULNERABILITY ASSESSMENT

4.10.4.1. OVERALL VULNERABILITY

Sharkey County in the western part of the district, due to a variety of geographic factors like wetter climate and soils and trends in development, are less susceptible to both WUI and urban fire. Wildfire hazard potential is generally very low across the County. **Figure 18** below for a visual of the wildfire hazard potential throughout the County. While the frequency of fires occurring in the County is low, the impact is low since the County has the capacity to respond effectively to most incidents. Therefore, the risk of wildfires is **Low** for Sharkey County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to wildfires.

FIGURE 18: SHARKEY COUNTY WILDFIRE HAZARD POTENTIAL



4.10.4.2. CRITICAL FACILITIES

There are zero critical facilities in Sharkey County that are in the WUI zones.

4.10.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Urban and wildland fires can cause significant damage to cultural, historic, and natural resources in the County through flame exposure, extreme heat, smoke, and post-fire environmental degradation. Historic structures, cemeteries, monuments, and archeological sites may be damaged or lost because of direct fire contact, structural weakening from heat, falling trees, or fire-suppression activities.

4.10.4.4. PEOPLE

For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Sharkey Counties and its jurisdictions, thus putting those populations at a slightly lower risk than the rest of the District.

Populations most at risk of the impacts of fires include older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate when these fires occur. These populations can experience disproportionate impacts to urban and WUI fires and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. Because it is more rural than the district, people in the County may be at slightly higher risk from wildfire, as the lower access to road infrastructure and warning systems may make evacuation more difficult.

4.10.4.5. STRUCTURES AND SYSTEMS

Sharkey County contains limited areas of direct exposure to wildfire risk, as shown in the Wildfire Risk Reduction Zones map in the base plan. In these areas, homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk and complicating suppression efforts. Sharkey County does not have a Community Wildfire Protection Plan (CWPP) in place, which could help address and reduce risk in the future.

4.10.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like Sharkey County, population decline can lead to reduced access to emergency services and increased response times, which can increase risk even though additional structures are not being placed in harm’s way.

4.11. HAZARDOUS MATERIAL INCIDENTS

4.11.1. LOCATION AND EXTENT

Hazardous materials incidents can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, agricultural operations, and facilities that store or use chemicals. In Sharkey County, these include:

- U.S. Highway 61
- State Highways 1, 14, 16 and 434

As noted in the base plan, the severity of the impact from HazMat incidents depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures. Because Sharkey County is more rural, impacts of a release on the surrounding population might be less significant due to population density, although longer emergency crew response times may impact the severity of an incident.

Figure 19 below shows the gas transmission pipelines and hazardous liquid pipelines while **Figure 20** below displays the ground transportation throughout the County. For more information on hazardous material incidents across the District, refer to the base plan.

FIGURE 19: PIPELINES IN SHARKEY COUNTY

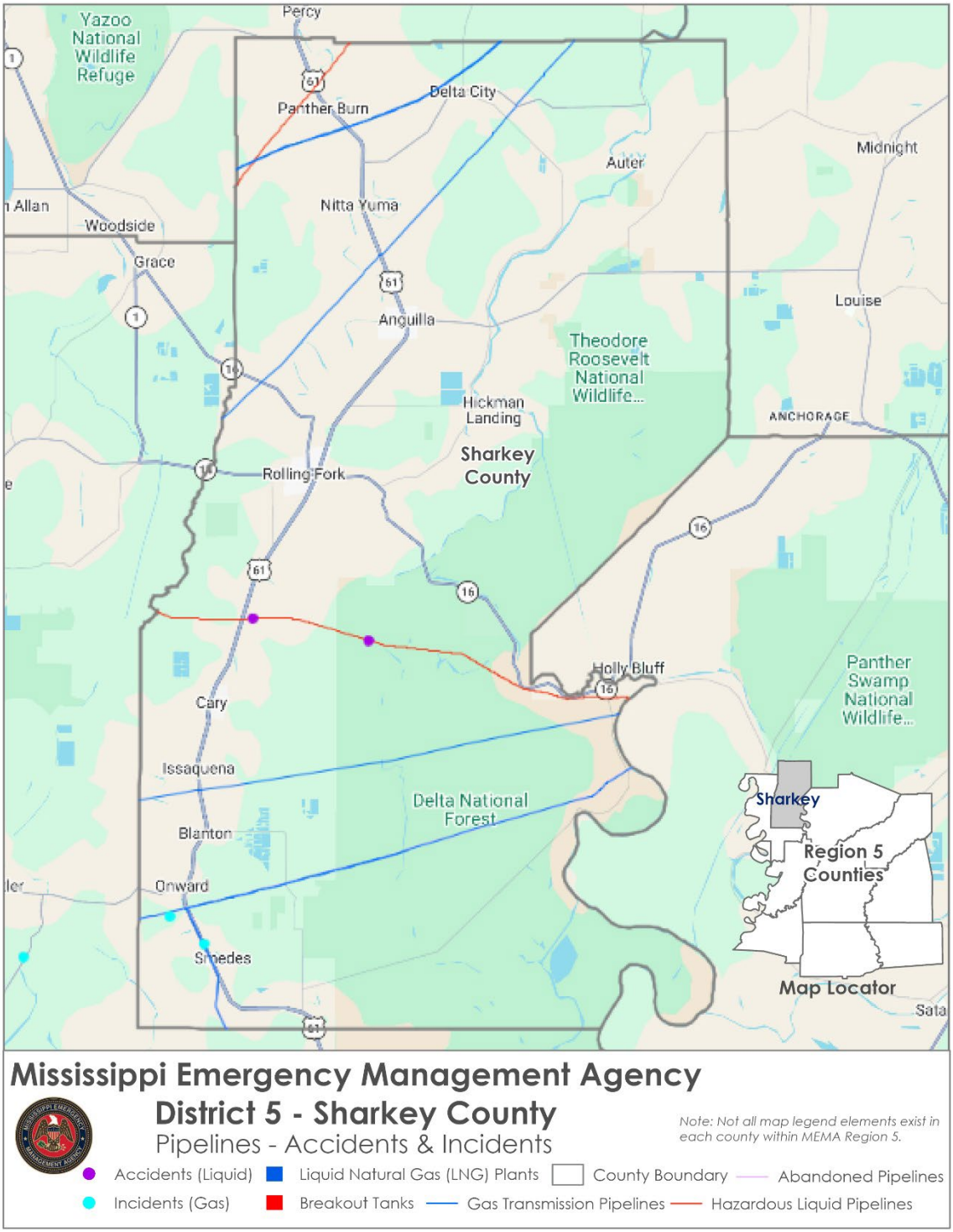
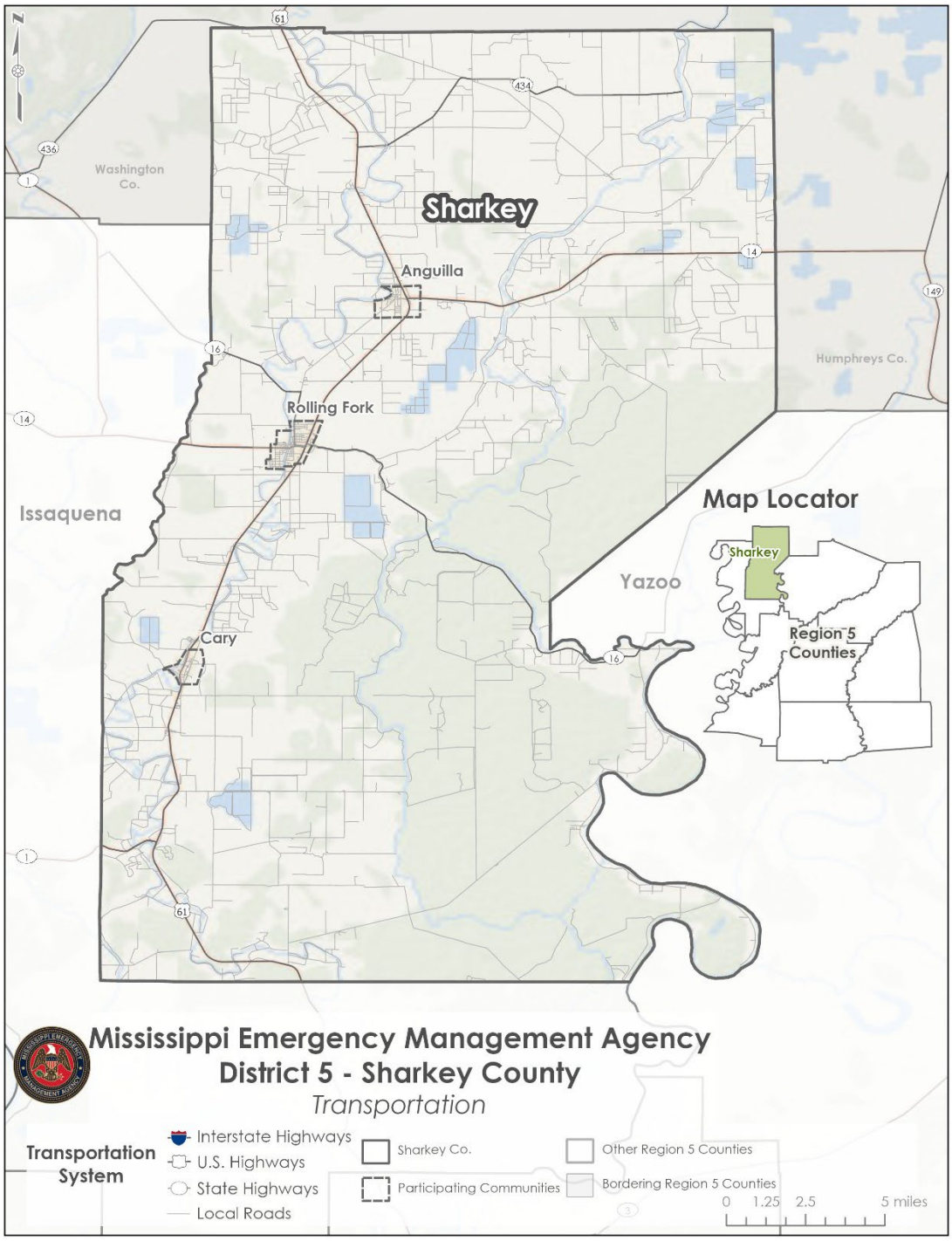


FIGURE 20: GROUND TRANSPORTATION IN SHARKEY COUNTY



4.11.2. PREVIOUS OCCURRENCES

In Sharkey County, there have been zero hazardous materials releases reported to the EPA since 2014.

4.11.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been zero reported hazardous materials releases since 2014. Since hazardous materials incidents are not considered “natural hazards”, the jurisdictions are

not required to evaluate the probability of future occurrences to the County. Therefore, the provability is **Unrated**.

4.11.4. LOCALIZED VULNERABILITY ASSESSMENT

4.11.4.1. OVERALL VULNERABILITY

More rural and less densely populated counties like Sharkey County may have limited access to safe shelters, and fewer emergency response resources. Since hazardous materials incidents are not considered “natural hazards”, the jurisdictions are not required to evaluate the overall risk to the County. Therefore, the overall risk is **Unrated**. This section provides further contextualization for the anticipated vulnerability of the communities within Sharkey County to hazardous material incidents.

4.11.4.2. CRITICAL FACILITIES

Hazardous materials incidents can pose significant risks to critical facilities in Sharkey County by causing contamination, toxic exposure, or fire and explosion hazards that may require evacuations or temporary shutdowns.

4.11.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Hazardous materials incidents can negatively affect cultural, historic, and natural resources in the County through contamination of soil, water, vegetation, and sensitive sites.

4.11.4.4. PEOPLE

Populations most at risk of the impacts of hazardous materials incidents are those living near transportation corridors, industrial facilities, and storage sites, who are more likely to be lower income. This population is also less likely to have reliable access to transportation, complicating evacuation efforts. Other vulnerable populations include older adults, children, and those with respiratory conditions, who may face challenges during shelter-in-place orders. These populations can experience disproportionate impacts to hazardous materials incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Sharkey County has a high SVI score and therefore may recover slower than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.11.4.5. STRUCTURES AND SYSTEMS

Because it is more rural than the rest of the district, people in Sharkey County may be at slightly lower risk from HazMat incidents due to the relative number of facilities that might cause releases. However, lower access to road infrastructure and warning systems may make evacuation more difficult than in other areas, as would lower emergency response capability. Impacts on lifelines and to natural, cultural, and historic resources are generally consistent across the planning area and are described in the base plan. There have been no previous occurrences of reported damages structures and systems since 2014.

4.11.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like Sharkey County, population decline can lead to reduced access to emergency services and increased response times, which can increase risk from hazardous materials incidents.

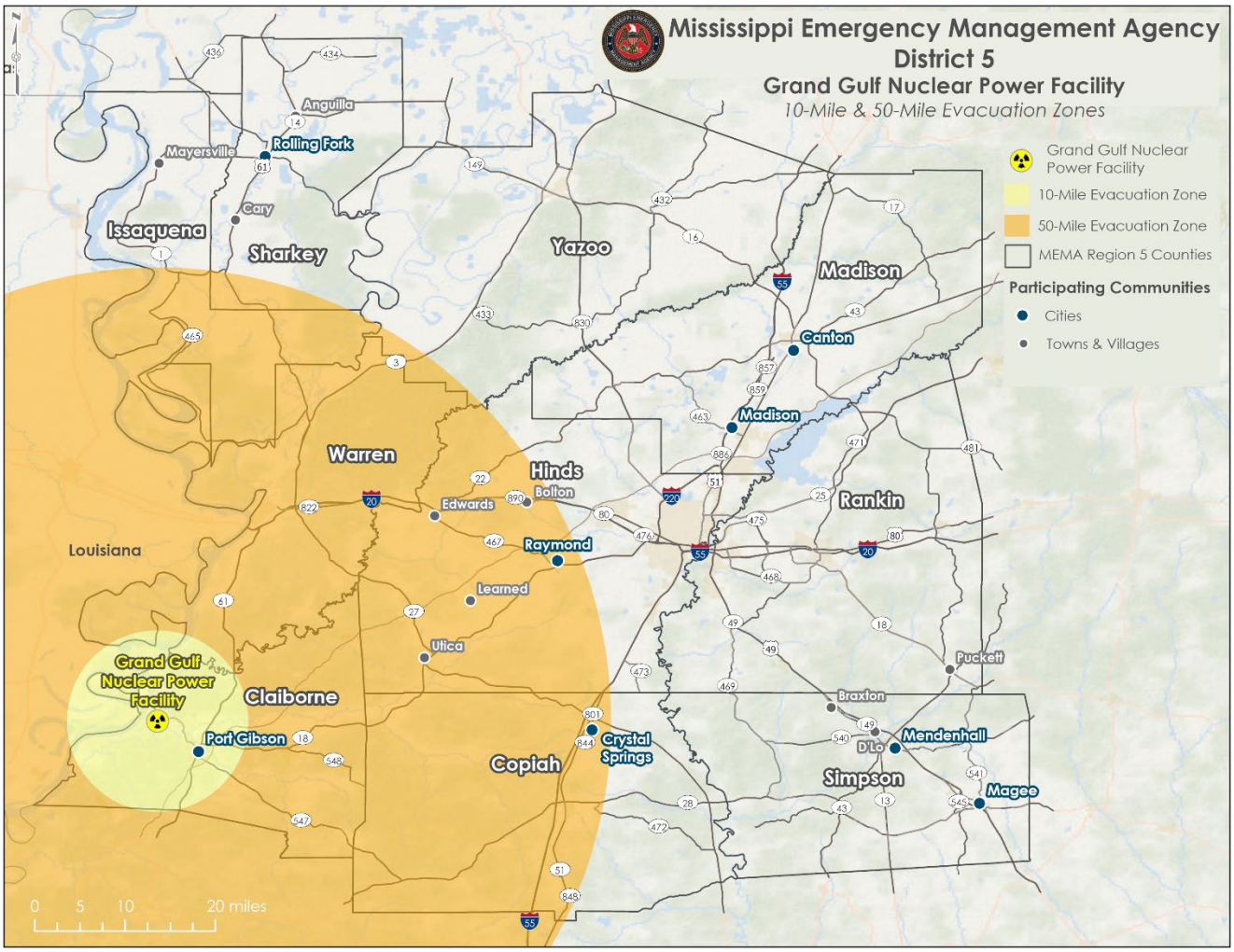
4.12. NUCLEAR POWER PLANT INCIDENTS

4.12.1. LOCATION AND EXTENT

A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies. For more information on nuclear power plant incidents across the District, refer to the base plan.

Grand Gulf Nuclear Station (GGNS) is the only nuclear power plant in Mississippi. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP), includes a 50-mile radius from the facility, shown in **Figure 21**. Sharkey County is partially located on the Northern edge of the 50-mile IEP area, which encompasses the Southwestern part of the County. For more information on nuclear power plant incidents across the District, refer to the base plan.

FIGURE 21: GRAND GULF 10-MILE AND 50-MILE EVACUATION ZONES



4.12.2. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. However, historical examples such as Three Mile Island (1979), Chernobyl (1986), and Fukushima Daiichi (2011) demonstrate the potential severity of such events. Grand Gulf Nuclear Station has maintained a strong safety record, but minor operational alerts have occurred in the past without offsite consequences. More information about previous occurrences can be found in the base plan.

4.12.3. PROBABILITY OF FUTURE OCCURRENCES

The probability of a major nuclear incident is **unlikely**, given strict regulatory oversight and safety protocols. However, the potential consequences are high, making this a low-probability, high-impact hazard. Natural hazards such as severe storms, flooding, or seismic activity could increase risk factors. The Fukushima Daiichi nuclear accident in 2011 is the most recent major nuclear event, and it was primarily caused by a M_w 9.0-9.1 earthquake and subsequent tsunami causing extensive damage to nearly all the facility's backup power sources. According to an NRC report, the estimated risk each year of an earthquake is intense enough to cause damage to the reactor core at Grand Gulf Nuclear Station, 1 in 83,333.

4.12.4. LOCALIZED VULNERABILITY ASSESSMENT

4.12.4.1. OVERALL VULNERABILITY

To understand how vulnerable the County is to the profiled hazards, an assessment was conducted for people, structures and systems, and critical facilities. Since nuclear incidents are not considered "natural hazards", jurisdictions are not required to evaluate the overall risk of this hazard to the same extent as natural hazards profiled in this plan. Some communities opted to evaluate nuclear power plant incidents in a manner consistent with other hazards, but other communities did not wish to attempt to quantify the area impacted, health and safety consequences, property damage, environmental damage, and economic disruption of nuclear power plant incidents. For Sharkey County and its communities, the overall risk is **Unrated**. Broadly, the vulnerability in the southwest portion of Sharkey County, which is inside the 50-mile Ingestion Exposure Pathway Zone, is more vulnerable that the rest of the county, including Anguilla, Cary, and Rolling Fork. Additionally, natural hazards such as severe storms, flooding, or seismic activity could increase risk. This section provides further contextualization for the anticipated vulnerability of the communities within the County to nuclear power plant incidents.

4.12.4.2. CRITICAL FACILITIES

Critical facilities are unlikely to sustain direct physical damage from a nuclear power plant incident, but the operations of these facilities and the services they provide could still be significantly disrupted. Most of Sharkey County, including the communities of Anguilla, Cary, and Rolling Fork, are outside of the 50-mile Ingestion Exposure Pathway Zone, and therefore are not expected to be directly contaminated in the event of an incident at the Grand Gulf Nuclear Station. The southwest portion of Sharkey County, however, is within this zone, and critical facilities in this part of the county may need to close temporarily while safety inspections are conducted and conditions are verified as safe. Additionally, protective measures—such as evacuation orders, shelter-in-place instructions, or restricted-access zones—could limit staff access and impede normal operations.

4.12.4.3. CULTURAL, HISTORIC, AN NATURAL RESOURCES

Within the 50-mile Ingestion Exposure Pathway Zone, contamination of crops, livestock, and soil could result in restrictions on the production, distribution, and consumption of agricultural products, leading to economic losses and supply chain disruptions. Depending on the severity of the event, it may be necessary to destroy contaminated products, and contaminated land may require years or remediation before it can safely be used for agricultural purposes. Cultural and historic sites are not uniquely vulnerable to this hazard, although historic structures sometimes require frequent or specialized maintenance which may no longer be possible if they are within areas that are unsafe for humans after a nuclear incident.

4.12.4.4. PEOPLE

As mentioned above, the Southern edge of the County is in the designated 50-mile Ingestion Exposure Pathway Zone. Individuals in this zone will receive official notifications through sirens, tone-alert radios, and broadcast media, and may be instructed to take specific protective steps depending on the severity of the event. Populations with access and functional needs may be disproportionately affected by a nuclear power plant incident. This includes elderly individuals and young children, individuals with disabilities, individuals who are physically isolated and lack internet and cell phone connectivity, and low-income populations.

Vulnerable populations may have trouble receiving or understanding warnings and instructions, lack access to protective equipment and emergency supplies, and require assistance evacuating to a safe location. According to the CDC Social Vulnerability Index (SVI), the Sharkey County and its communities have a high SVI score, which indicates that they may be more vulnerable to disasters,

including nuclear power plant incidents, than the average Mississippi community Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Because it is more rural than the district, people in the County may be at slightly higher risk from a nuclear power plant incident, as the lower access to road infrastructure and warning systems may make evacuation more difficult. Tailored mitigation strategies and coordinated emergency planning are essential to reduce these risks and protect vulnerable populations across the district.

4.12.4.5. STRUCTURES AND SYSTEMS

Overall, the impacts of a nuclear incident would be driven by contamination and disruption to the normal function of structures and systems rather than physical destruction. In the event of a significant release, radioactive materials could be transported by wind and deposited on buildings, infrastructure, soil, and surface water. While most structures would remain intact, contamination of rooftops, ventilation systems, and exterior surfaces could limit their use and require decontamination.

Residential and commercial structures are not expected to be physically damaged, but they may need to be abandoned if they are in areas that are deemed unsafe, which could significantly reduce property values and leave residents homeless. If the contamination is severe, it may take years before affected homes can be occupied and businesses can reopen. A prolonged period without routine maintenance and care can cause structures to become dilapidated, potentially adding an economic burden on the owners.

Grand Gulf operates the most powerful single nuclear reactor in the United States, generating an average of 957,725 megawatt-hours per month in 2025—enough electricity to power more than one million homes. An outage at this facility would place immediate pressure on the regional energy grid, increasing demand on other power producers. If the shutdown were prolonged, energy-intensive services such as water treatment, healthcare, education, and data centers could face operational disruptions.

4.12.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Census data for Sharkey County, Anguilla, Cary, and Rolling Fork shows that these populations have declined in recent years. Overall, there is no indication that recent development trends have appreciably increased or decreased vulnerability in Sharkey County or its communities, although future trends could change. In particular, growth in the southwestern portion of Sharkey County would increase the number of people in the 50-mile Ingestion Exposure Pathway Zone, potentially increasing vulnerability in that portion of the county.

4.13. CRITICAL FACILITIES VULNERABILITY SUMMARY

Table 33 below notes the individual critical facilities in Sharkey County that were identified by the Mitigation Council and provides information on the relative risk these facilities face from various hazards.

TABLE 33: SHARKEY COUNTY CRITICAL FACILITIES VULNERABILITY SUMMARY

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Cultural	Rolling Fork Civic Center	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Minimal Exposure	N/A - WHP Undetermined
EOC	Sharkey County Emergency Operations Center	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Minimal Exposure	N/A - WHP Undetermined
Fire Station	Anguilla Volunteer Fire Department	Anguilla	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Minimal Exposure	N/A - WHP Undetermined
Fire Station	Cary Fire Department	Cary	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Fire Station	Rolling Fork Fire Department	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Minimal Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Government	Rolling Fork City Hall	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Minimal Exposure	N/A - WHP Undetermined
Government	Rolling Fork Public Works	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Medical Care Facility	Health Department	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Medical Care Facility	RGC Kidney Care Center	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Medical Care Facility	SHARKEY-ISSAQUENA COMMUNITY HOSPITAL	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Medical Care Facility - Residential	Heritage Manor Nursing Home	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	WTZ: Non-Vegetated	N/A - WHP Undetermined
Police Station	ANGUILLA POLICE DEPARTMENT	Anguilla	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Minimal Exposure	N/A - WHP Undetermined
Police Station	ROLLING FORK POLICE DEPARTMENT	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated -	Minimal Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
							Uninhabited		
Police Station	SHARKEY COUNTY SHERIFFS DEPARTMENT	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Minimal Exposure	N/A - WHP Undetermined
Potable Water	Elevated Water Tank - Race St	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Potable Water	Elevated Water Tank - Walnut St	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Low Density	WTZ: Non-Vegetated	N/A - WHP Undetermined
Potable Water	Water Well 1	Cary	IN	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Water Well 2	Cary	IN	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
School	SOUTH DELTA ELEMENTARY SCHOOL	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
School	SOUTH DELTA HIGH SCHOOL	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
School	SOUTH DELTA MIDDLE SCHOOL	Anguilla	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	Minimal Exposure	N/A - WHP Undetermined
School	SOUTH DELTA VOCATIONAL COMPLEX	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Waste Water Facility	ANGUILLA POTW	Anguilla	OUT	OUT	IN	OUT	Non-Vegetated - Uninhabited	WTZ: Agriculture	Very Low
Waste Water Facility	Lift Station 1	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 2	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 3	Rolling Fork	OUT	OUT	IN	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 4	Rolling Fork	IN	OUT	OUT	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station 5	Rolling Fork	IN	OUT	OUT	OUT	Non-Vegetated	WTZ: Agriculture	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	Leveed Area	Nuclear Plant 50-mile Radius	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
							- Low Density		
Waste Water Facility	Lift Station 6	Rolling Fork	IN	OUT	OUT	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined
Waste Water Facility	ONWARD	ONWARD	IN	OUT	OUT	IN	Non-Vegetated - Uninhabited	Direct Exposure	Very Low
Waste Water Facility	ROLLING FORK POTW - EAST	Rolling Fork	IN	OUT	OUT	OUT	Non-Vegetated - Very Low Density	Direct Exposure	Very Low
Waste Water Facility	ROLLING FORK POTW - WEST	Rolling Fork	IN	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Treatment Plant	Cary	IN	OUT	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	W&S Facility	Anguilla	IN	OUT	OUT	OUT	Non-Vegetated - Medium Density	Minimal Exposure	N/A - WHP Undetermined

5. MITIGATION STRATEGY

The Mitigation Strategy section of the base plan provides an overall blueprint for all participating jurisdictions in MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Regional Hazard Mitigation Council (RHMC) and the findings and conclusions of the Capability and Risk Assessments. The goals of the MEMA District 5 can be found in **Section 6** of the base plan.

This section provides community-specific strategies for the participating jurisdictions within Sharkey County, including the status of actions that were included in the previous plan and actions to be considered or pursued over the next five years. As noted in the base plan, the participants are not committing to undertaking every action suggested in this list but rather are proposing an extensive list of *potential* actions that they may wish to pursue, depending in the availability of funding.

The following information is provided in the table below, as well as in the mitigation action tables within each annex in this plan:

Project Number: Each action is assigned a project number for organizational purposes.

Action Description: This is the description of the mitigation action. Actions descriptions are intended to be actionable and specific.

Responsible Agency or Department: actions assign primary responsibility to agencies or departments for implementation. The responsible entities were determined by jurisdictional representatives on the Mitigation Council, and they reflect the representatives' assessment of the entity that would be most capable of facilitating successful implementation of the action. Other agencies, departments, organizations, etc. may assist the responsible agency or department, if necessary.

Hazards Addressed: For each mitigation action, the hazard(s) that are being addressed are listed. Some hazards are considered "multi-hazard" because the action, when implemented, is designed to mitigate impacts of all disasters profiled in this plan. Other mitigation actions are specific to individual hazards.

Estimated Cost: This is the estimate cost of the action; these costs were determined through general discussions of the resources, personnel, and time needed, and the estimates are not intended to stand in for a full, detailed benefit-cost analysis.

Action Status (D/R/N/C): FEMA's guidance for local mitigation plans requires a status update for existing mitigation actions. The statuses of previous actions were assessed throughout the planning process. The four categories used by the Mitigation Council are:

> Deleted (D): action is no longer appropriate or desired, and the community does not intend to pursue the action.
>
> Retained (R): action is still desired by the community, but implementation has not been completed. The community will continue to implement the action as time and resources allow.
>
> New (N): action is new for the 2026 District 5 plan.
>
> Completed (C): action has been completed by the community.

Status Notes: Includes any information that the community provided for additional context to the action status.

Expected Time Frame for Completion: Participating jurisdictions anticipated the amount of time it will take to carry out the action. The expected time frames for actions from the previous plan were updated to reflect the expected time frame for completion from when communities adopt this plan.

Corresponding Goals: The plan goals addressed by each action item are included to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. Each action is linked to one more of the Plan's goals:

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

- Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

- Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

- Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

- Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

Priority: The priority of each of the mitigation action items is ranked either Low, Medium, or High. This prioritization allows Mitigation Council members to quickly compare actions based on a qualitative assessment of the anticipated benefits of actions. The process utilized by the Mitigation Council to prioritize actions is described in Section 6.4 of the base plan.

Potential Funding Sources: Potential sources for funding are listed for each action and encompass a range of sources including operating budget/general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), State grants, private funding, Capital Improvement Plan, and others. It is important to acknowledge that the identified funding sources are not exhaustive or definitive. The current funding landscape is undergoing significant change, and existing funding sources may not be available in the future, while new sources may emerge. If/when a community has the opportunity to implement an action, available funding sources will be re-examined to determine which source is most appropriate.

TABLE 34: UPDATED 2026 SHARKEY COUNTY MITIGATION ACTIONS

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
1-Sharkey County	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid minimizing those risks.	Emergency Management, Board of Supervisors	All hazards	$45,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Sharkey County	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Emergency Management, Board of Supervisors	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Sharkey County	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the county with advanced warning of approaching weather conditions	Emergency Management, with support from National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Sharkey County	Purchase and maintain emergency generators for use by key critical facilities throughout the county.	Board of Supervisors	All hazards	$250,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, MEMA Statewide Grant Program, State Homeland Security Program, HMGP

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
5-sharkey County	As future updates are made to the county's existing policies and regulations, and as the county adopts new polices and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure	Board of Supervisors	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
6-Sharkey County	Encourage residents to construct individual safe rooms.	Emergency Management	Tornado, severe storms	$10,000	R	Residents currently applying for these funds	On-going annually	3, 4	High	General Fund
7-Sharkey County	Maintain an effective warning system that can be used to warn county residents during emergencies of approaching weather conditions and other hazards	Emergency Management	All hazards	$5,000	R	Siren installation complete, upkeep and maintenance ongoing	On-going annually	3, 4	High	General Fund, Statewide Grant Program, State Homeland Security Program
8-Sharkey County	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain,	Floodplain Manager, Board of Supervisors	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
	and educating residents about flood insurance									
9-Sharkey County	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Floodplain Manager, Board of Supervisors, Mississippi Levee Board	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Sharkey County	Assist residents who want to participate in the “Buy-Out” program for repetitive loss properties.	Floodplain Manager, Board of Supervisors	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
11-Sharkey County	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	County Administrator	All hazards	$1,000,000	R	No progress since last update	10 years	3, 5	Low	General Fund, USDA Rural Development, HMGP
12-Sharkey County	Seek funding assistance to maintain District 5’s regional Hazard Mitigation Plan.	Board of Supervisors, Emergency Management	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1, 5	High	General Fund
13-Sharkey County	Seek funding assistance to support and maintain community shelter	Board of Supervisors, Emergency Management	All hazards	$8,000,000	R	No progress since last update	On-going annually	3, 5	High	SAFE room Grant, CDBG, General Fund
14-Sharkey County	Seek funding assistance to consult with engineers in the development of flood control structures	Floodplain Manager, Board of Supervisors	Flooding	$50,000	R	No progress since last update	On-going annually	1, 2, 3, 5	Medium	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
15-Sharkey County	Maintain and support County E-911 system to inform residents of natural hazards	Emergency Management, 911 coordinator	All hazards	$250,000	R	No progress since last update	On-going annually	3	High	General Fund, Statewide Grant Program, State Homeland Security Program
16-Sharkey County	Seek funding assistance to retrofit community facilities to act as community shelters.	Emergency Management, Board of Supervisors	All hazards	$500,000	R	No progress since last update	5 years	3	Medium	General Fund, CDBG, USDA Rural Development
17-Sharkey County	Seek funding assistance to improve capacity of “personal Protective Equipment” (PPE) and develop a protocol to make supplies available to the public during a pandemic	Board of Supervisors, Emergency Management	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	Low	General Fund
18-Sharkey County	Improve cellular tower capability throughout the County to upgrade communication efficiency	Board of Supervisors, Emergency Management	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, BRIC, HMGP
19-Sharkey County	Seek funding assistance to improve high-speed internet capabilities throughout the County	Board of Supervisors, Emergency Management	All hazards	$1,500,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
20-Sharkey County	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Board of Supervisors, Emergency Management	All hazards	$50,000	R	No progress since last update	On-going annually	3	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
1-Rolling Fork	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Mayor's Office, Police and Fire Departments	All hazards	$45,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Rolling Fork	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Rolling Fork	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the county with advanced warning of approaching weather conditions	Police and Fire Departments, with support from National Weather Service	Tornado, Severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Rolling Fork	Purchase and maintain emergency generators for use by key critical facilities throughout the City	Public Works	All hazards	$500,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, MEMA Statewide Grant Program, State Homeland Security Program
5-Rolling Fork	As future updates are made to the City's existing policies and regulations, and as the city adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to	Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
	reduce the effect of natural hazards on existing infrastructure and buildings.									
6-Rolling Fork	Encourage residents to construct individual safe rooms	Police and Fire Departments	Tornado, Severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
7-Rolling Fork	Maintain an effective warning system that can be used to warn county residents during emergencies of approaching weather conditions and other hazards	Emergency Management	All hazards	$175,000	R	No progress since last update	On-going annually	3, 4, 5	High	General Funds, MEMA Statewide Grant Program, State Homeland Security Program
8-Rolling Fork	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Floodplain Manager, Board of Alderman	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
9-Rolling Fork	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Rolling Fork	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties	Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
11-Rolling Fork	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	Rolling Fork Public Works	All hazards	$500,000	R	No progress since last update	10 years	3, 5	Low	General Fund, CDBG, USDA Rural Development
12-Rolling Fork	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan	Rolling Fork Board of Alderman	All hazards	$1,500 annually / $100,000 every 5 years	R	Plan update in progress	On-going annually	1	High	General Fund
13-Rolling Fork	Seek funding assistance to consult with engineers in the development of flood control structures	Rolling Fork Board of Alderman, Floodplain Manager	Flooding	$50,000	R	No progress since last update	On-going annually	1, 2, 3, 5	Medium	General Fund
14-Rolling Fork	Maintain and support County E-911 system to inform residents of natural hazards	Rolling Fork Emergency Management	All hazards	$25,000	R	No progress since last update	On-going annually	3	Medium	General Fund, MEMA Statewide Grant Program, State Homeland Security Program

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
15-Rolling Fork	Seek funding assistance to retrofit community facilities to act as community shelters	Rolling Fork Board of Alderman, Emergency Management	All hazards	$500,000	R	No progress since last update	5 years	3	Medium	General Fund, CDBG, USDA Rural Development
16-Rolling Fork	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Rolling Fork Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
17-Rolling Fork	Seek funding assistance to improve high-speed internet capabilities throughout the City	Rolling Fork Mayor's Office, City Clerk	All hazards	$1,000,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
18-Rolling Fork	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Rolling Fork Mayor's Office, City Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund
1-Cary	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid minimizing those risks.	Cary Mayor's Office	All hazards	$5,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Cary	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Cary Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
3-Cary	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the community with advanced warning of approaching weather conditions	Cary Fire Department, with support from National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Cary	Purchase and maintain emergency generators for use by key critical facilities throughout the City.	Cary Board of Alderman, Public Works	All hazards	$500,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, HMGP, State Homeland Security Program
5-Cary	As future updates are made to the City's existing policies and regulations, and as the City adopts new polices and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure	Cary Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
6-Cary	Encourage residents to construct individual safe rooms.	Cary Mayor's Office	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
7-Cary	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	Cary Board of Alderman	All hazards	$10,000	R	Additional funds needed for upkeep	On-going annually	3, 4, 5	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
8-Cary	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance	Cary Board of Alderman, Floodplain Manager	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time, HMGP
9-Cary	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Cary Board of Alderman, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Cary	Assist residents who want to participate in the “Buy-Out” program for repetitive loss properties.	Cary Board of Alderman, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
11-Cary	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	Cary Mayor’s Office, Public Works	All hazards	$500,000	R	No progress since last update	10 years	3, 5	Low	General Fund, HMGP, CDBG, USDA Rural Development
12-Cary	Seek funding assistance to maintain District 5’s regional Hazard Mitigation Plan.	Cary Board of Alderman	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund, HMGP

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
13-Cary	Seek funding assistance to consult with engineers in the development of flood control structures	Cary Board of Alderman, Floodplain Manager	Flooding	$50,000	R	No progress since last update	On-going annually	1, 2, 3, 5	Medium	General Fund, HMGP
14-Cary	Maintain and support County E-911 system to inform residents of natural hazards	Cary Emergency Management	All hazards	$25,000	R	No progress since last update	On-going annually	3	Medium	General Fund, State Homeland Security Program
15-Cary	Seek funding assistance to retrofit community facilities to act as community shelters.	Cary Board of Alderman, Emergency Management	All hazards	$500,000	R	No progress since last update	5 years	3, 5	Medium	General Fund, CDBG, USDA Rural Development, HMGP
16-Cary	Seek funding assistance to improve capacity of “personal Protective Equipment” (PPE) and develop a protocol to make supplies available to the public during a pandemic	Cary Mayor’s Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
17-Cary	Improve cellular tower capability throughout the City to upgrade communication efficiency	Cary Board of Alderman, Town Clerk	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC
18-Cary	Seek funding assistance to improve high-speed internet capabilities throughout the City	Cary Board of Alderman, Town Clerk	All hazards	$500,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA, HMGP
19-Cary	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Cary Board of Alderman, Town Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
1-Anguilla	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid minimizing those risks.	Mayor's Office	All hazards	$5,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Anguilla	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Anguilla	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the community with advanced warning of approaching weather conditions	Emergency Management, with support from National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Anguilla	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	Board of Alderman	All hazards	$500,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, State Homeland Security Program, HMGP
5-Anguilla	As future updates are made to the City's existing policies and regulations, and as the City adopts new polices and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural	Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
	hazards on new and existing infrastructure									
6-Anguilla	Encourage residents to construct individual safe rooms.	Police and Fire Departments	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
7-Anguilla	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	Board of Alderman, Emergency Management	All hazards	$10,000	R	Need funding for upkeep	On-going annually	3, 4	High	General Fund, HMGP, State Homeland Security Program
8-Anguilla	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance	Board of Alderman, Floodplain Manager	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, FMA
9-Anguilla	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Board of Alderman, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
10-Anguilla	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties.	Board of Alderman, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
11-Anguilla	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	Mayor's Office	All hazards	$500,000	R	No progress since last update	10 years	3, 5	Low	General Fund, CDBG, USDA Rural Development
12-Anguilla	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	Board of Alderman	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund, HMGP
13-Anguilla	Seek funding assistance to consult with engineers in the development of flood control structures	Board of Alderman, Floodplain Manager	Flooding	$50,000	R	No progress since last update	On-going annually	1, 2, 3, 5	Medium	General Fund, HMGP
14-Anguilla	Maintain and support County E-911 system to inform residents of natural hazards	Emergency Management	All hazards	$25,000	R	No progress since last update	On-going annually	3	Medium	General Fund, HMGP, State Homeland Security Program
15-Anguilla	Seek funding assistance to retrofit community facilities to act as community shelters.	Board of Aderman, Emergency Management	All hazards	$500,000	R	No progress since last update	5 years	3	Medium	General Fund, CDBG, HMGP, USDA Rural Development
16-Anguilla	Seek funding assistance to improve capacity of "personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Board of Alderman, Floodplain manager	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority	Potential Funding Sources
17-Anguilla	Improve cellular tower capability throughout the City to upgrade communication efficiency	Board of Alderman, Floodplain Manager	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC
18-Anguilla	Seek funding assistance to improve high-speed internet capabilities throughout the City	Board of Alderman	All hazards	$1,000,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA, HMGP
19-Anguilla	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Board of Alderman	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP

1. INTRODUCTION

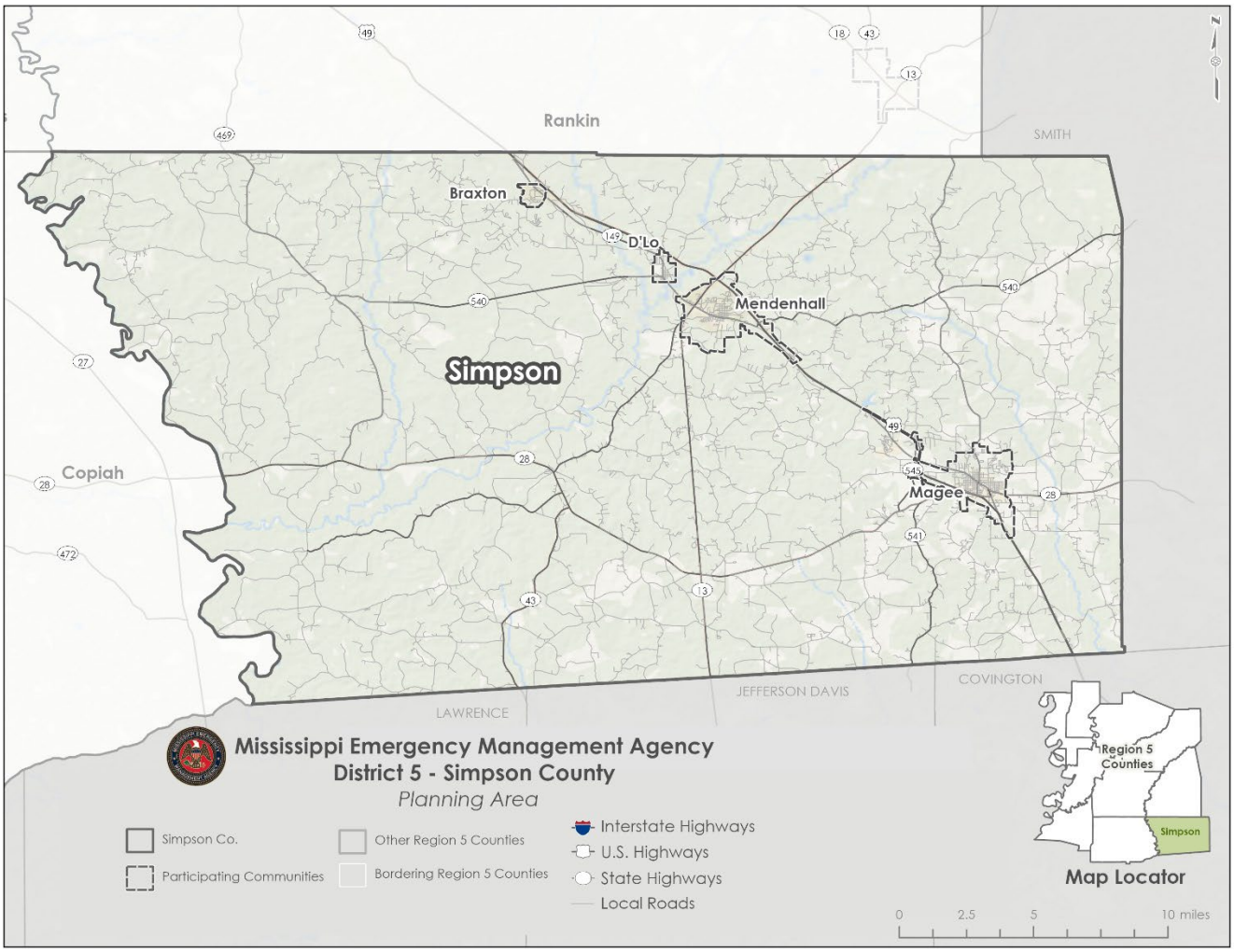
This annex provides more detailed information about Simpson County and the participants within it. It includes:

- A more localized community profile, including more detailed mapping, population and demographic information, and critical facilities information
- County-level Hazard Identification and Risk Assessment (HIRA) information, including some more localized hazard maps and conclusions related to hazard risk and how it varies across the planning area
- A localized vulnerability assessment, including the likely impact of profiled hazards on critical facilities in Simpson County
- A detailed capability assessment, describing resource and tools available to the county and municipalities to participate in hazard mitigation and reduce hazard risk
- A mitigation strategy, describing a variety of actions the county and municipalities may opt to take to reduce the risk associated with profiled hazards over the useful life of this plan

2. COMMUNITY PROFILE

This section provides a more detailed profile of Simpson County and the jurisdictions within it. The County is in the Southwestern part of the planning area and **Figure 1** below shows the planning area for Simpson County. The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey—such as poverty, lack of transportation, crowded housing, and minority status—to quantify a community's relative vulnerability. This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). According to the 2022 CDC Social Vulnerability Index, Simpson County has an overall **low to medium** (0.2963) level of vulnerability.

FIGURE 1: SIMPSON COUNTY



2.1. POPULATION AND DEMOGRAPHICS

Population information from the last three Census counts for each participant in Simpson County is summarized below, showing trends since the year 2010. A summary of population trends is summarized in **Table 1**. Since 2010, the population has decreased across the County and among its jurisdictions. However, the Village of Braxton has seen a large increase in population (28.9%). The race and ethnicity demographic data of the plan participants within Simpson County are shown in **Table 2**. The majority of the residents in the County and its jurisdictions are African-American and White.

TABLE 1: POPULATION TRENDS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2010 Census	2020 Census	2023 Census	Percent Change 2020-2023
Simpson County	27,575	26,818	25,817	-3.7%
City of Magee	3,977	4,174	3,977	-4.7%
City of Mendenhall	2,397	3,003	2,397	-20.2%
Town of D'Lo	479	600	445	-25.8%
Village of Braxton	181	190	245	+28.9%

TABLE 2: DEMOGRAPHICS IN PERCENT | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
Simpson County	61.2%	35.5%	1.7%	0.6%	0.5%	1.9%
City of Magee	43.7%	49.2%	8%	0%	0%	4.2%
City of Mendenhall	54%	44%	0.7%	0%	0.2%	1.8%
Town of D'Lo	54.8%	40.7%	2.2%	0%	0.7%	3.8%
Village of Braxton	95.1%	1.6%	0%	0%	0%	3.3%

Table 3 summarizes what percentage of the population of the jurisdictions within Simpson County belong to certain special populations measured in the Census. **Table 4** provides annual estimates of housing units in Simpson County and its jurisdictions.

TABLE 3: VULNERABLE POPULATIONS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
Simpson County	19.4%	1,523	4,823	5,347
City of Magee	28%	218	625	1,110

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
City of Mendenhall	28.9%	180	619	588
Town of D'Lo	34.2%	9	114	93
Village of Braxton	42.4%	27	20	28

TABLE 4: ANNUAL ESTIMATES OF HOUSING UNITS IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023
Simpson County	12,195	11,618	11,643	11,661
City of Magee	1,674	1,583	1,636	1,655
City of Mendenhall	1,181	1,142	1,132	1,121
Town of D'Lo	198	190	201	194
Village of Braxton	65	77	80	87

While there is a large agricultural economic segment in Simpson County, several other large industries are located within the County. Employment information from the 2023 Census counts for each participant in the County is summarized below in **Table 5**.

TABLE 5: EMPLOYMENT IN SIMPSON COUNTY | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Simpson County	City of Magee	City of Mendenhall	Town of D'Lo	Village of Braxton
Management, business, science and arts occupations	2,824	276	246	34	18
Service occupations	2,325	451	263	39	17
Sales and office occupations	2,312	496	254	21	26
Natural resources, construction and maintenance occupations	1,402	335	69	12	17
Production, transportation and material	1,409	247	90	20	20

Employment Categories	Simpson County	City of Magee	City of Mendenhall	Town of D'Lo	Village of Braxton
moving occupations					

2.2. INFRASTRUCTURE, CRITICAL FACILITIES AND ENERGY ASSETS

2.2.1. CRITICAL FACILITIES AND INFRASTRUCTURE

Certain assets and facilities are considered as being of importance for Simpson County and the jurisdictions. **Table 6** below is a list of the critical facilities within Simpson County and its jurisdictions. **Figure 2** and **Figure 3** below displays maps of the County and participating jurisdictions showing the locations of these critical facilities and infrastructure located within the County. The table below consists of facilities identified in the previous plan for each community as well as facilities identified by HAZUS. These facilities were sent to each community representative of the Mitigation Council for review and given a chance to provide changes.

TABLE 6: SIMPSON COUNTY CRITICAL FACILITIES AND INFRASTRUCTURE

Facility Type	Facility Name	Facility Location
Airport	Magee Muni	Magee
Communications	AT&T Cell Tower	Magee
Communications	Bell South	Magee
Communications	Cellular South Tower	Magee
Communications	WSJC 810	Magee
Electrical Power Facility	Entergy	Magee
Electrical Power Facility	Southern Pine Substation	Magee
Electrical Power Facility	Substation Hwy 149	Magee
EOC	Simpson County Emergency Operations Center	Mendenhall
Fire Station	Braxton Fire Rescue	Braxton
Fire Station	Harrisville Volunteer Fire Department	Harrisville
Fire Station	Magee Volunteer Fire Department	Magee
Fire Station	Mendenhall Volunteer Fire Department	Mendenhall
Fire Station	Old Pearl Volunteer Fire Department	Florence
Fire Station	Pinola Volunteer Fire Department Station 1	Pinola
Fire Station	Pinola Volunteer Fire Department Station 2	Mendenhall
Fire Station	Station 7 Fire Department	Mendenhall
Government	Braxton Post Office	Braxton
Government	Braxton Town Hall	Braxton
Government	Magee - City Hall	Magee
Government	Mendenhall - City Hall	Mendenhall
Government	Mendenhall City Barn (Response Supplies)	Mendenhall
Government	Public Works (Warehouse)	Magee
Government - Residential	MS Dept. of Corrections	Magee

Facility Type	Facility Name	Facility Location
Hazardous Materials	Lampton Love (Bulk storage of Propane gas)	Magee
Hazardous Materials	Magee Co-op (Farm supplies/bulk storage)	Magee
Medical Care Facility	AMR	Magee
Medical Care Facility	Central Dialysis	Magee
Medical Care Facility	Magee General Hospital	Magee
Medical Care Facility	Simpson General Hospital	Mendenhall
Medical Care Facility - Residential	Conva-Rest of Mendenhall	Mendenhall
Medical Care Facility - Residential	Harper Village	Mendenhall
Medical Care Facility - Residential	Hillcrest Nursing Home	Magee
Medical Care Facility - Residential	Lakeview Place - Assisted Living	Magee
Medical Care Facility - Residential	Millcreek	Magee
Medical Care Facility - Residential	Strong River Villa - Assisted Living	Mendenhall
Natural Gas Facility	Harrisville #1 - Recip	Florence
Natural Gas Facility	Harrisville #2 - Turbine	Florence
Natural Gas Facility	Magee Gas Plant	Magee
Natural Gas Facility	Wilmut Gas	Magee
Police Station	D'Lo Police Department	Mendenhall
Police Station	Magee Police Department	Magee
Police Station	Mendenhall Police Department	Mendenhall
Police Station	Sheriff's Department	Mendenhall
Police Station	Simpson County Sheriffs' Department / Simpson County Jail	Mendenhall

Facility Type	Facility Name	Facility Location
Potable Water	Braxton Water Well - Main Street	Braxton
Potable Water	Braxton Water Well - Willow Street	Braxton
Potable Water	D'Lo Water Well 1	D'Lo
Potable Water	D'Lo Water Well 2	D'Lo
Potable Water	McNair Springs	Magee
Potable Water	School Water Tank	Mendenhall
Potable Water	Water Well #1	Mendenhall
Potable Water	Water Well #2	Mendenhall
Potable Water	Water Well #3	Mendenhall
Potable Water Facility	Mendenhall Water Tank #1	Mendenhall
Potable Water Facility	Mendenhall Water Tank #2	Mendenhall
Potable Water Facility	Mountain Pure Water Plant	Magee
Potable Water Facility	Water Plant	Mendenhall
Potable Water Facility	Water Plant #1	Magee
Potable Water Facility	Water Plant #2	Magee
Potable Water Facility	Well #3	Magee
Potable Water Facility	Well #4	Magee
Potable Water Facility	Well #5	Magee
Potable Water Facility	Well #6	Magee
Potable Water Facility	Well #7	Magee
Railway Facility	Tyson Foods	Magee
School	Copiah-Lincoln Community College - Simpson County Center	Mendenhall
School	Genesis One Christian School	Mendenhall
School	Magee Elementary School	Magee
School	Magee High School	Magee
School	Magee Middle School	Magee
School	Mendenhall Elementary School	Mendenhall
School	Mendenhall High School	Mendenhall
School	Mendenhall Junior High School	Mendenhall

Facility Type	Facility Name	Facility Location
School	Millcreek School	Magee
School	Simpson Central School	Pinola
School	Simpson Co Technical Center	Mendenhall
School	Simpson County Academy	Mendenhall
School	Simpson County Achievement Center	Magee
School	Victory Christian School	Harrisville
Shelter	Braxton Community Center	Braxton
Shelter	First Baptist Church of Magee Family Life Center	Magee
Staging	Guard Armory	Magee
Waste Water Facility	Broadhead Pump Station	Mendenhall
Waste Water Facility	Church Street Pump Station	Mendenhall
Waste Water Facility	D'Lo POTW	D'Lo
Waste Water Facility	Feed it - Tutor Funeral	Mendenhall
Waste Water Facility	Grinder Station - Station #1	Mendenhall
Waste Water Facility	Grinder Station - Station #2	Mendenhall
Waste Water Facility	Grinder Station - Station #3	Mendenhall
Waste Water Facility	Hwy 13-Cox Pump Station	Mendenhall
Waste Water Facility	Lagoon	Mendenhall
Waste Water Facility	Lagoon Pump Station	Mendenhall
Waste Water Facility	Lift Station #1	Magee
Waste Water Facility	Lift Station #2	Magee
Waste Water Facility	Lift Station #3	Magee
Waste Water Facility	Lift Station #4	Magee
Waste Water Facility	Magee POTW	Magee
Waste Water Facility	Mendenhall POTW	Mendenhall

Facility Type	Facility Name	Facility Location
Waste Water Facility	Morehead Pump Station	Mendenhall
Waste Water Facility	Polly Ave. Pump Station	Mendenhall
Waste Water Facility	Ross Dr. Pump Station	Mendenhall
Waste Water Facility	Subway Pump Station	Mendenhall
Waste Water Facility	Taylor Pump Station	Mendenhall
Waste Water Facility	Votech-Lowery Pump Station	Mendenhall
Waste Water Facility	Weathersby #1	Mendenhall
Waste Water Facility	Weathersby #2	Mendenhall

FIGURE 2: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE

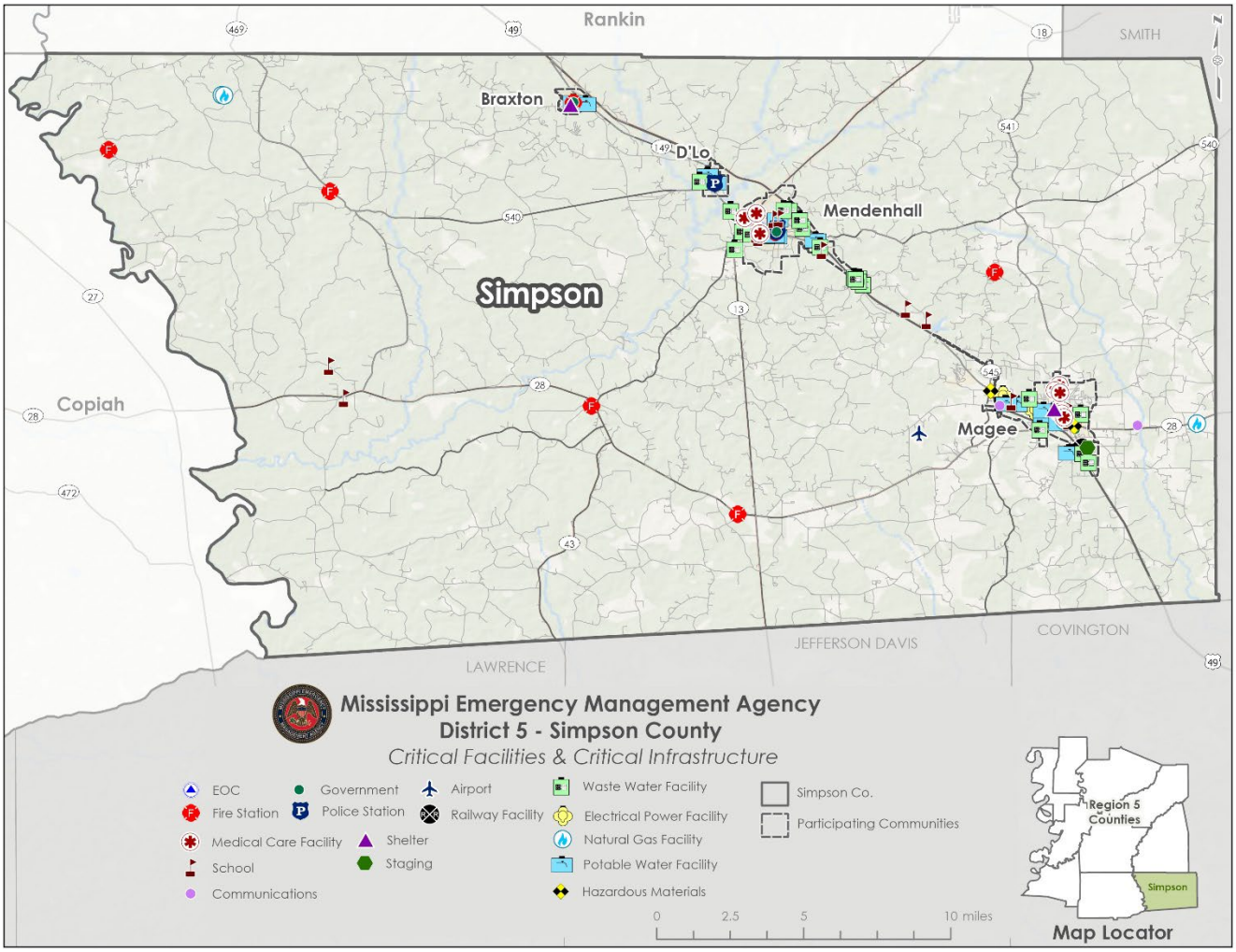
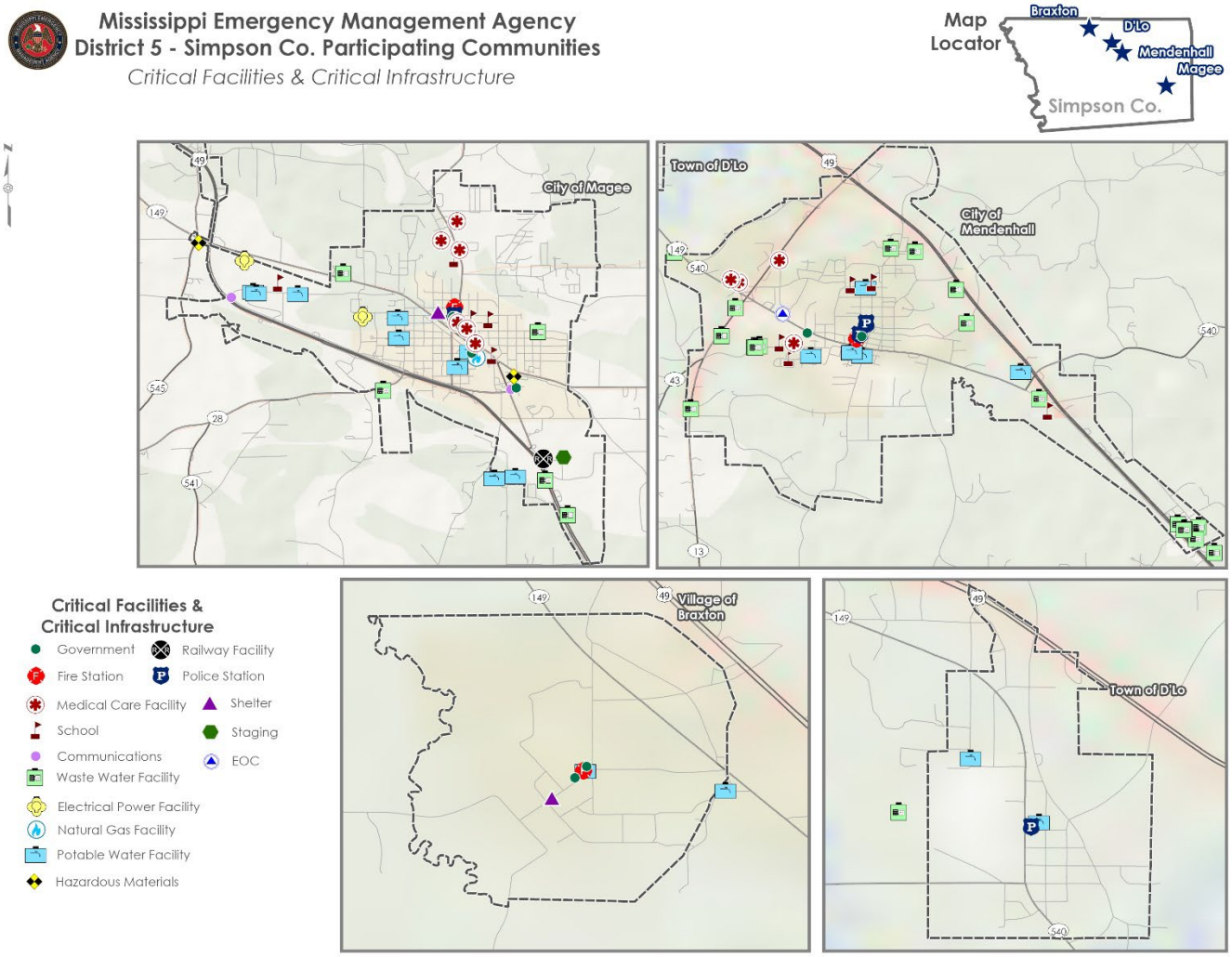


FIGURE 3: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE

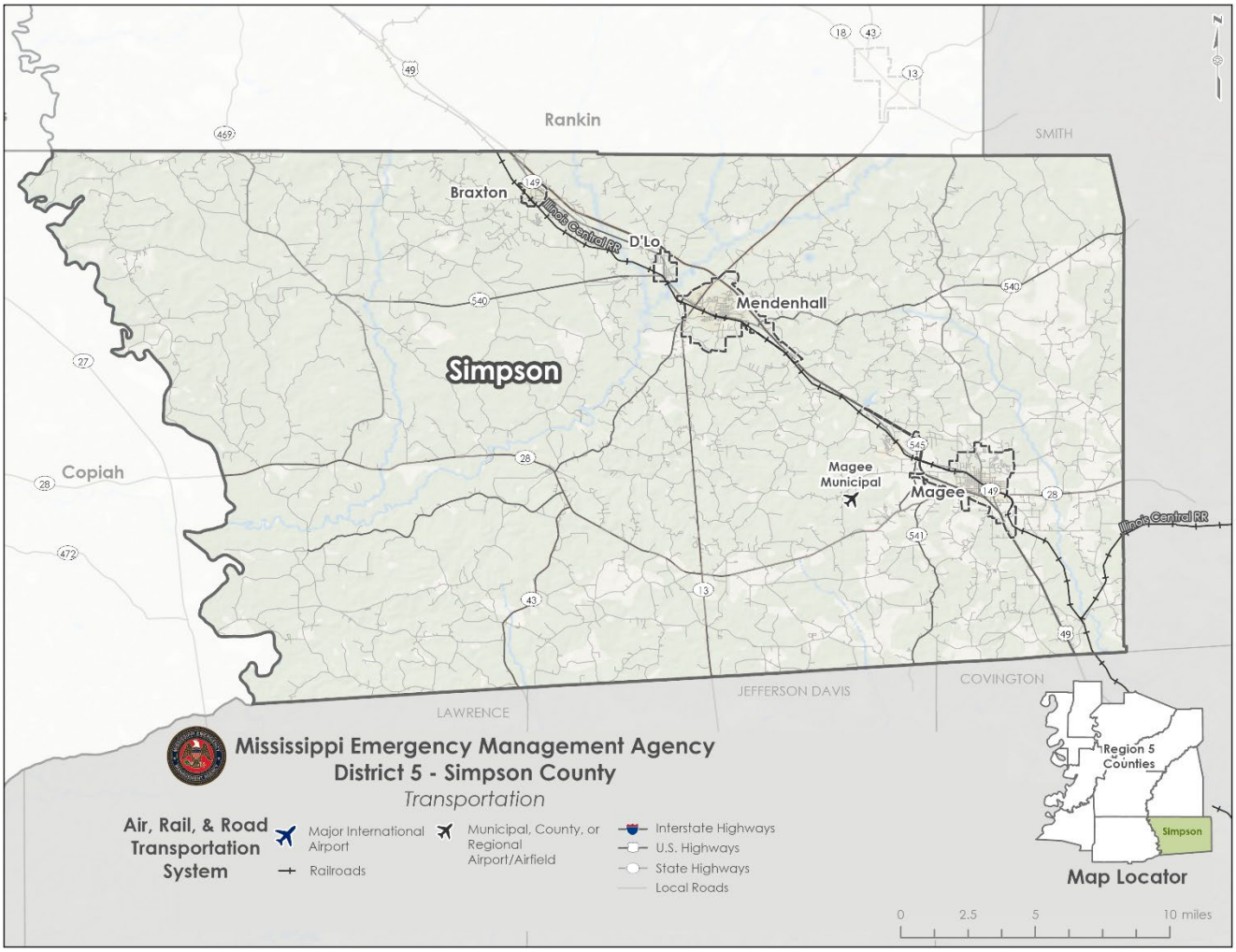


2.2.2. TRANSPORTATION

Transportation in Simpson County includes the list below **Figure 4** and displays them on a map.

- U.S. Route 49
- State Highways 13, 28, 43, 149, 472, 540, 541 and 545
- Illinois Central Railroad
- Magee Municipal Airport

FIGURE 4: TRANSPORTATION IN SIMPSON COUNTY



2.2.3. ENERGY ASSETS

Oil, natural gas pipelines and electric transmission lines traverse the County. The list below breaks down the energy infrastructure within the county.

- **Power Plant:** N/A
- **Substation:** Mississippi Hub Electrical Substation
- **Transmission:** N/A
- **Pipelines:** N/A

2.3. LAND USE AND DEVELOPMENT

Simpson County encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, and growing residential development near population centers such as the Cities of Magee and Mendenhall. **Figure 5** displays the land use and development throughout the County while **Figure 6** shows the topography of the County.

FIGURE 5: SIMPSON COUNTY LAND USE AND DEVELOPMENT

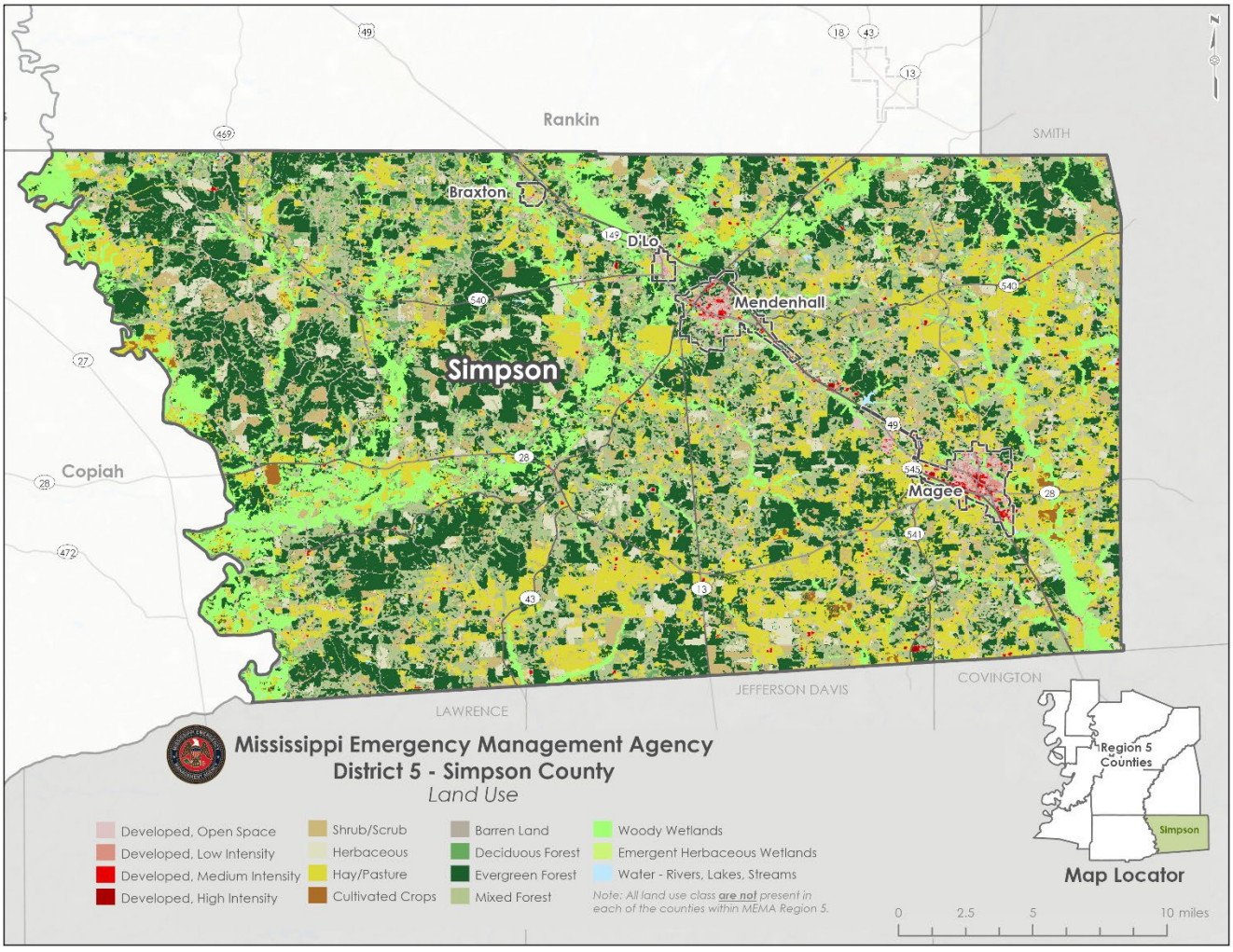
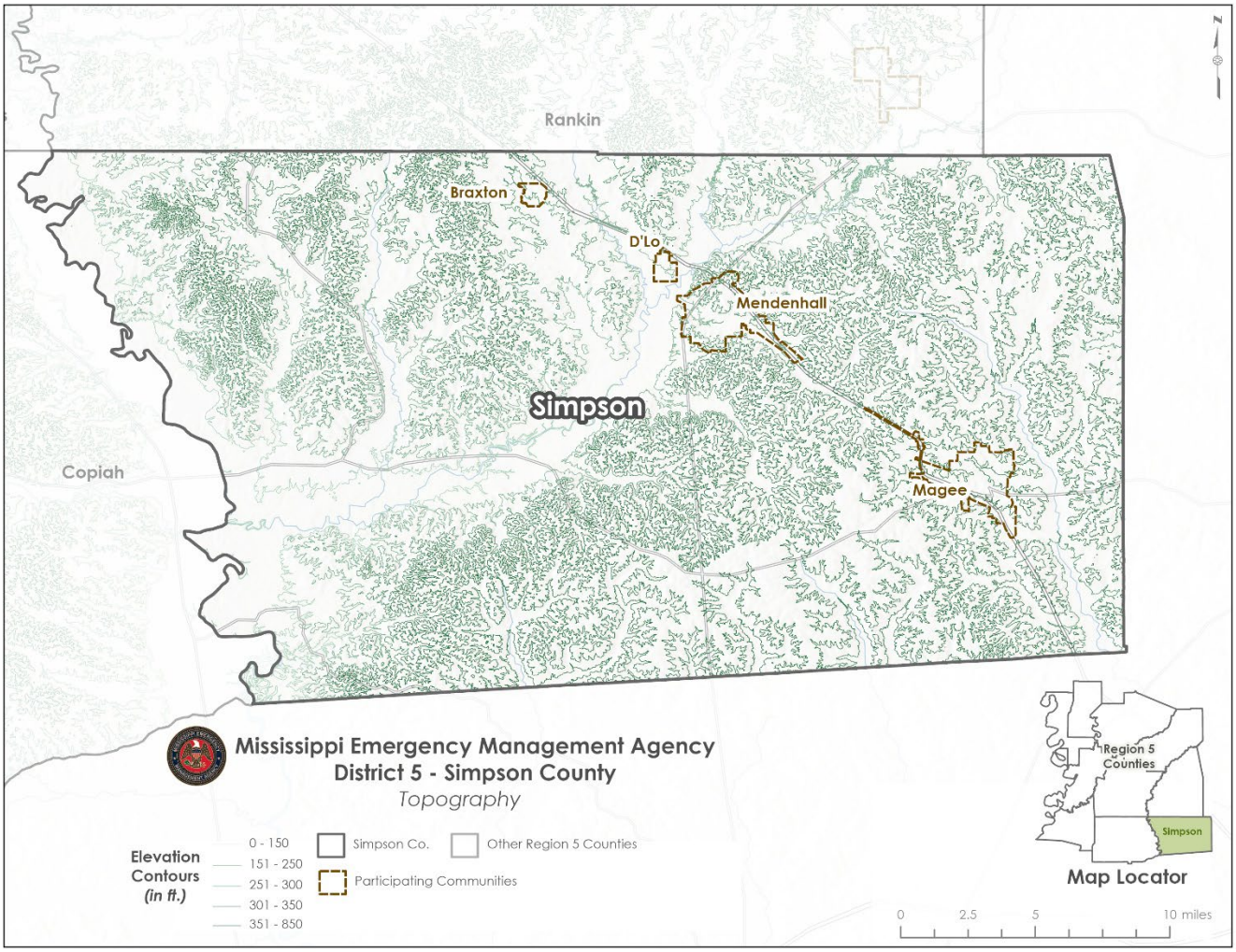


FIGURE 6: SIMPSON COUNTY TOPOGRAPHY



2.4. HISTORIC AND CULTURAL RESOURCES

Cultural resources and historical assets are generally unique or irreplaceable in nature due to their age or unique properties or characteristics. **Table 7** below provides a list of known cultural resources and historic assets in Simpson County.

TABLE 7: HISTORIC AND CULTURAL RESOURCES IN SIMPSON COUNTY

Cultural Resource	General Location	Resource Type
Simpson County Courthouse	Mendenhall	Building
Gatesville Bridge	County	Structure
Pearl River Bridge Highway 28	County	Structure

2.5. CHANGES IN DEVELOPMENT AND PRIORITIES

This section outlines recent and anticipated changes in development and priorities within Simpson County and its jurisdictions. **Table 8** lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment.

TABLE 8: SIMPSON COUNTY CHANGES IN DEVELOPMENT AND PRIORITIES

Jurisdiction	Changes in Development in the Past Five Years	Changes in Development Anticipated in the Next Five Years	Changes in Community Priorities over the Past Five Years
Simpson County	New ordinances, new buildings codes adopted.	Deep dive in land use maps.	N/A
City of Magee			
City of Mendenhall	New ordinances, new buildings codes adopted.	Deep dive in land use maps.	N/A
Town of D'Lo	New ordinances, new buildings codes adopted.	Deep dive in land use maps.	N/A
Village of Braxton	New ordinances, new buildings codes adopted.	Deep dive in land use maps.	N/A

3. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. More generalized information about the goals of the capability assessment, including the process and methodology, is presented in the Capability Assessment portion of the base plan.

This section articulates specific information about the capabilities of Simpson County and the plan participants within it.

3.1. SIMPSON COUNTY CAPABILITIES AND RESOURCES

3.1.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Simpson County to support hazard mitigation.

TABLE 9: SIMPSON COUNTY STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	County EMA	
Engineering	N	Contract	
Procurement	Y	County COMP	
Floodplain Management	Y	County EMA	
Land Use, Land Management, or Development Planning	Y	Community Development	
Grant-writing	N	Contracted	
Geographic Information Systems (GIS)	Y	County IT	
Other reported staff and technical capabilities:			

3.1.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Simpson County that might support hazard mitigation efforts.

TABLE 10: SIMPSON COUNTY PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	
Community Wildfire Protection Plan (CWPP)		X		10/2025
General Plan / Community Development Plan			X	
Continuity of Operations Plan (COOP)		X		10/2025
Disaster Recovery Plan		X		10/2025
Economic Development Plan			X	
Emergency Operations Plan (EOP)		X		10/2025
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan				
Natural Resource Protection Plan (NRPP)				
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)		X		10/2025

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.1.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Simpson County in the NFIP program, including how development in the floodplain is regulated.

TABLE 11: SIMPSON COUNTY FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	EMA Director
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	We follow NFIP guidelines
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	We follow NFIP guidelines
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes

3.1.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Simpson County's hazard mitigation efforts.

TABLE 12: SIMPSON COUNTY FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes 2018
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	No
Do you have a land use or development ordinance?	Yes (parts of County)
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	EMPC

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	

3.2. MAGEE CAPABILITIES AND RESOURCES

3.2.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Magee to support hazard mitigation.

TABLE 13: MAGEE STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management			
Engineering			
Procurement			
Floodplain Management			
Land Use, Land Management, or Development Planning			
Grant-writing			
Geographic Information Systems (GIS)			

Other reported staff and technical capabilities:

To be listed here:

- Anything they wrote in for the "other" fields in the Staff and Technical Assistance table in the capability assessment form
- Any of the following capabilities described in the previous plan, if they reported having them in the last plan:
  - Planning commission
  - LEPC
  - Maintenance programs (Tree trimming, drainage, etc)
  - Mutual aid compacts
  - Building inspection
  - Warning systems or services (reverse 911, sirens, etc)

3.2.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Magee that might support hazard mitigation efforts.

TABLE 14: MAGEE PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)				
Community Wildfire Protection Plan (CWPP)				
General Plan / Community Development Plan				
Continuity of Operations Plan (COOP)				
Disaster Recovery Plan				
Economic Development Plan				
Emergency Operations Plan (EOP)				

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Floodplain Management Plan / Flood Mitigation Plan				
Historic Preservation Plan				
Natural Resource Protection Plan (NRPP)				
Open Space Management Plan (Parks & Rec/Green Plan)				
Threat Hazard Identification and Risk Assessment (THIRA)				

Other reported planning and regulatory mechanisms:
To be listed here:

- Anything they wrote in for the "other" fields in the Planning Mechanisms table in the capability assessment form
- Any of the following capabilities described in the previous plan, if they reported having them in the last plan:
  - Transportation plan
  - Stormwater management plan
  - Site plan review requirements
  - Zoning
  - Subdivision regulations
  - Flood insurance study

3.2.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Magee in the NFIP program, including how development in the floodplain is regulated.

TABLE 15: MAGEE FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	

3.2.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Magee's hazard mitigation efforts.

TABLE 16: MAGEE FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	
Do you have a land use or development ordinance?	

What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	To be listed here:
	• Anything they wrote in for this field
	• Any of the following funding sources described in the previous plan's "fiscal capability" table, if they reported having/using them in the last plan:
	  ○ Capital improvement funding
	  ○ Fees for water, sewer, gas, or electric services
	  ○ Impact fees for new development
	  ○ Stormwater utility fees
	  ○ CDBG
	  ○ Other federal funding programs
	  ○ State funding programs

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	To be listed here:
	• Anything they wrote in for this field
	• Any of the following capabilities described in the previous plan's "fiscal capability" table, if they reported having them in the last plan:
	  ○ Authority to levy taxes for specific purposes
	  ○ Ability to incur debt through general obligation bonds
	  ○ Ability to incur debt through private activities

3.3. MENDENHALL CAPABILITIES AND RESOURCES

3.3.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Mendenhall to support hazard mitigation.

TABLE 17: MENDENHALL STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	County EMA	
Engineering	N	Contract	
Procurement	Y	City Clerk	
Floodplain Management	Y	City of Mendenhall	
Land Use, Land Management, or Development Planning	Y	Community Development	
Grant-writing	N	Contracted	
Geographic Information Systems (GIS)	Y	County IT	
Other reported staff and technical capabilities:			

3.3.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Mendenhall that might support hazard mitigation efforts.

TABLE 18: MENDENHALL PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	
Community Wildfire Protection Plan (CWPP)		X		10/2025
General Plan / Community Development Plan			X	
Continuity of Operations Plan (COOP)		X		10/2025
Disaster Recovery Plan		X		10/2025
Economic Development Plan			X	
Emergency Operations Plan (EOP)		X		10/2025
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan				
Natural Resource Protection Plan (NRPP)				
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)		X		10/2025

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.3.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Mendenhall in the NFIP program, including how development in the floodplain is regulated.

TABLE 19: MENDENHALL FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	City floodplain manager
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	We follow NFIP guidelines
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	We follow NFIP guidelines
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes

3.3.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Mendenhall's hazard mitigation efforts.

TABLE 20: MENDENHALL FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes 2018
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	No
Do you have a land use or development ordinance?	Yes (part of the County)
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	EMPC

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	

3.4. D'LO CAPABILITIES AND RESOURCES

3.4.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to D'Lo to support hazard mitigation.

TABLE 21: D'LO STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	County EMA	
Engineering	N	Contract	
Procurement	Y	Town Clerk	
Floodplain Management	Y	Town of D'Lo	
Land Use, Land Management, or Development Planning	Y	Community Development	
Grant-writing	N	Contracted	
Geographic Information Systems (GIS)	Y	County IT	
Other reported staff and technical capabilities:			

3.4.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in D'Lo that might support hazard mitigation efforts.

TABLE 22: D'LO PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	
Community Wildfire Protection Plan (CWPP)		X		10/2025
General Plan / Community Development Plan			X	
Continuity of Operations Plan (COOP)		X		10/2025
Disaster Recovery Plan		X		10/2025
Economic Development Plan			X	
Emergency Operations Plan (EOP)		X		10/2025
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan				
Natural Resource Protection Plan (NRPP)				
Open Space Management Plan (Parks & Rec/Green Plan)	X			
Threat Hazard Identification and Risk Assessment (THIRA)		X		10/2025

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.4.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of D'Lo in the NFIP program, including how development in the floodplain is regulated.

TABLE 23: D'LO FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	Town Floodplain Manager
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	We follow NFIP guidelines
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	We follow NFIP guidelines
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes

3.4.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support D'Lo's hazard mitigation efforts.

TABLE 24: D'LO FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes 2018
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	No
Do you have a land use or development ordinance?	Yes (part of County)
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	EMPC

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	

3.5. BRAXTON CAPABILITIES AND RESOURCES

3.5.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Braxton to support hazard mitigation.

TABLE 25: BRAXTON STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management	Y	County EMA	
Engineering	N	Contract	
Procurement	Y	Village Creek	
Floodplain Management	Y	County EMA	
Land Use, Land Management, or Development Planning	Y	Community Development	
Grant-writing	N	Contracted	
Geographic Information Systems (GIS)	Y	County IT	
Other reported staff and technical capabilities:			

3.5.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Braxton that might support hazard mitigation efforts.

TABLE 26: BRAXTON PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)			X	
Community Wildfire Protection Plan (CWPP)		X		10/2025
General Plan / Community Development Plan			X	
Continuity of Operations Plan (COOP)		X		10/2025
Disaster Recovery Plan		X		10/2025
Economic Development Plan			X	
Emergency Operations Plan (EOP)		X		10/2025
Floodplain Management Plan / Flood Mitigation Plan		X		
Historic Preservation Plan				
Natural Resource Protection Plan (NRPP)				
Open Space Management Plan (Parks & Rec/Green Plan)		X		10/2025
Threat Hazard Identification and Risk Assessment (THIRA)			X	

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Other reported planning and regulatory mechanisms:				

3.5.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further detail regarding the participation of Braxton in the NFIP program, including how development in the floodplain is regulated.

TABLE 27: BRAXTON FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	Yes
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	Yes
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	EMA Director
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	We follow NFIP guidelines
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	We follow NFIP guidelines
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	Yes

3.5.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Braxton's hazard mitigation efforts.

TABLE 28: BRAXTON FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	Yes 2018	
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	No	
Do you have a land use or development ordinance?	Yes (Part of the County)	
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	EMPC	

Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	

3.6. ABILITY TO EXPAND CAPABILTIES

As part of the capability assessment process, each jurisdiction was asked to discuss their ability to expand upon the capabilities discussed earlier in this section. Below is a summary of the information provided by each participant regarding how they can strengthen their ability to conduct hazard mitigation measures in the future. **Table 29** below lists the participating jurisdictions and their respective responses to these questions in the Capability Assessment.

TABLE 29: SIMPSON COUNTY'S ABILITY TO EXPAND CAPABILITIES

Jurisdiction	Self-Reported Information Regarding Ability to Expand Capabilities
Simpson County	We are currently working to update land use maps. We have hired a director for community development
City of Magee	
City of Mendenhall	We are currently working to update land use maps. We have hired a director for community development
Town of D'Lo	We are currently working to update land use maps. We have hired a director for community development
Village of Braxton	We are currently working to update land use maps. We have hired a director for community development

4. HAZARD IDENTIFICATION & RISK ASSESSMENT

The Hazard Identification and Risk Assessment (HIRA) process, described in more detail in the HIRA section of the base plan, involves identifying potential hazards, evaluating their likelihood and potential consequences, and estimating and describing the level of risk these hazards present to a community.

Since 1971, Simpson County has been included in 28 federal disaster declarations, of which 8 occurred since this plan was last updated. **Table 30** describes these events.

TABLE 30: SIMPSON COUNTY FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4626	Hurricane	Simpson, Copiah, Simpson	10/22/2021
EM-3569	Hurricane	Simpson, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
DR-4598	Severe Winter Storms	Simpson, Copiah, Hinds, Rankin, Simpson, Warren, Yazoo	5/4/2021
EM-3548	Hurricane	Simpson, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020
DR-4551	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Simpson, Simpson	7/9/2020
DR-4538	Severe Storm, Flooding and Mudslides	Simpson, Copiah, Hinds, Issaquena, Sharkey, Warren, Yazoo	4/23/2020
DR-4528	Covid-19 Pandemic	Simpson, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Simpson, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4314	Severe Storm, Tornadoes, Straight-line Winds, Flooding	Simpson, Yazoo	5/22/2017
DR-4268	Severe Storm, Flooding	Simpson, Issaquena	3/25/2016
DR-4175	Severe Storm, Tornado, Flooding	Rankin, Simpson, Warren	4/30/2014
DR-4081	Hurricane	Simpson, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1983	Flooding	Simpson, Issaquena, Sharkey, Warren, Yazoo	5/11/2011
EM-3320	Flooding	Simpson, Issaquena, Sharkey, Warren, Yazoo	5/4/2011
DR-1837	Severe Storm, Tornado, Flooding	Simpson	5/12/2009
DR-1794	Hurricane	Simpson, Copiah, Issaquena	9/22/2008
DR-1604	Hurricane	Simpson, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-1360	Severe Storm, Flooding, Tornado	Simpson, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Warren, Yazoo	2/23/2001
DR-906	Severe Storm, Tornado	Simpson, Issaquena, Madison, Sharkey, Warren, Yazoo	5/17/1991
DR-888	Flooding, Severe Storm, Tornado	Madison, Simpson	1/3/1991
DR-895	Flooding, Severe Storm, Tornado	Copiah, Madison, Simpson	3/5/1991
DR-683	Flooding, Severe Storm, Tornado	Simpson, Hinds, Madison, Rankin, Warren, Yazoo	6/1/1983
DR-577	Severe Storm, Tornado	Simpson, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Simpson, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-499	Flooding, Severe Storm, Tornado	Copiah, Madison, Simpson	4/1/1976
DR-430	Heavy Rains, Flooding	Copiah, Rankin, Simpson	4/18/1974
DR-368	Severe Storm, Tornado	Simpson, Issaquena, Sharkey, Simpson, Warren, Yazoo	3/27/1973
DR-271	Hurricane	Copiah, Hinds, Madison, Rankin, Simpson	8/18/1969

As described in the "HIRA Methodology" section of the base plan, participants in this plan update reconsidered the relative risk posed by the profiled hazards by conducting a hazard ranking process. **Table 31** below provides a summary of how those hazards were ranked in Simpson County and by the jurisdictions within it.

TABLE 31: HAZARD RANKING BY JURISDICTION IN SIMPSON COUNTY

Jurisdiction	Dam/Levee Failure	Drought	Earthquake	Expansive Soils	Flood	Severe Storms	Severe Winter Weather	Tornado	Tropical Storm / Hurricane	Wil/Urban Interface (WUI) Fire	Hazardous Material Incidents	Nuclear Power Plant Incidents
Simpson County	Low	High	Low	Low	High	High	High	High	High	High	Low	Med
City of Magee	Low	Med	Low	Low	High	High	High	High	Med	High	N/A	N/A
City of Mendenhall	Low	High	Low	Low	High	High	High	High	High	High	Low	Med
Town of D'Lo	Low	High	Low	Low	High	High	High	High	High	High	Low	Med
Village of Braxton	Low	High	Low	Low	High	High	High	High	High	High	Low	Med

Each of the 12 natural and manmade hazards discussed in this section are described in more detail in the HIRA section of the base plan. **Table 32** below shows the hazard scores for Simpson County and the jurisdictions within the County. This section endeavors to provide more detailed, local-level information, mapping, and conclusions for these hazards wherever relevant.

TABLE 32: HAZARD RISK SCORES

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption e	Probability	Hazard Risk Score
Simpson County							
Dam/Levee Failure	1	1	1	1	1	1	**5**
Drought	4	1	2	2	3	3	**36**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	2	1	**5**
Flood	4	2	3	2	3	4	**56**
Severe Storms	4	2	3	2	4	5	**75**
Severe Winter Weather	4	3	2	2	3	3	**42**
Tornado	4	4	4	3	3	5	**90**
Tropical Storms	4	2	2	3	2	3	**39**
Wild/Urban Interface Fire	4	3	3	3	2	5	**75**
Hazardous Material Incidents	3	4	4	4	2	1	**17**
Nuclear Power Plant Incident	1	1	1	1	1	1	**5**
City of Magee							
Dam/Levee Failure	1	1	2	1	2	1	**7**
Drought	4	1	1	2	2	2	**20**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	1	1	**4**
Flood	4	3	2	1	2	5	**60**
Severe Storms	4	1	3	1	1	5	**50**
Severe Winter Weather	4	3	1	1	3	3	**36**
Tornado	4	3	4	2	4	5	**85**
Tropical Storms	4	1	2	1	2	2	**20**
Wild/Urban Interface Fire	4	1	2	2	2	5	**55**

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption e	Probability	Hazard Risk Score
Hazardous Material Incidents	-	-	-	-	-	-	-
Nuclear Power Plant Incident	-	-	-	-	-	-	-
City of Mendenhall							
Dam/Levee Failure	1	1	1	1	1	1	**5**
Drought	4	1	2	2	3	3	**36**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	2	1	**5**
Flood	4	2	3	2	3	4	**56**
Severe Storms	4	2	3	2	4	5	**75**
Severe Winter Weather	4	3	2	2	3	3	**42**
Tornado	4	4	4	3	3	5	**90**
Tropical Storms	4	2	2	3	2	3	**39**
Wild/Urban Interface Fire	4	3	3	3	2	5	**75**
Hazardous Material Incidents	3	4	4	4	2	1	**17**
Nuclear Power Plant Incident	1	1	1	1	1	1	**5**
Town of D'Lo							
Dam/Levee Failure	1	1	1	1	1	1	**5**
Drought	4	1	2	2	3	3	**36**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	2	1	**5**
Flood	4	2	3	2	3	4	**56**
Severe Storms	4	2	3	2	4	5	**75**
Severe Winter Weather	4	3	2	2	3	3	**42**
Tornado	4	4	4	3	3	5	**90**
Tropical Storms	4	2	2	3	2	3	**39**
Wild/Urban Interface Fire	4	3	3	3	2	5	**75**
Hazardous Material Incidents	1	1	1	1	1	1	**5**
Nuclear Power Plant Incident	3	4	4	4	2	1	**17**
Village of Braxton							

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption e	Probability	Hazard Risk Score
Dam/Levee Failure	1	1	1	1	1	1	**5**
Drought	4	1	2	2	3	3	**36**
Earthquake	4	1	1	1	1	1	**8**
Expansive Soils	1	0	1	1	2	1	**5**
Flood	4	2	3	2	3	4	**56**
Severe Storms	4	2	3	3	4	5	**75**
Severe Winter Weather	4	3	2	2	3	3	**42**
Tornado	4	4	4	3	3	5	**90**
Tropical Storms	4	2	2	3	2	3	**39**
Wild/Urban Interface Fire	4	3	3	3	2	5	**75**
Hazardous Material Incidents	3	4	4	4	2	1	**17**
Nuclear Power Plant Incident	1	1	1	1	1	1	**5**

4.1. DAM/LEVEE FAILURE

4.1.1. LOCATION AND EXTENT

There are 65 dams in Simpson County, of which two are High Hazard, 47 are Low Hazard, and 16 are of undetermined hazard level.

Dam classifications were designed based on the potential impacts of failure. The potential impacts from each dam classification are detailed below in the event of a dam failure.

- **Low Hazard Dam**: In the event of the failure of a high-hazard dam, loss of life is probable, as are economic, environmental, and lifeline impacts.
- **Significant Hazard Dam**: In the event of the failure of a significant hazard dam, loss of life is not expected, but economic, environmental, and lifeline impacts are expected.
- **High Hazard Dam**: In the event of the failure of a low-hazard dam, there is no anticipated loss of life, and economic, environmental, and lifeline impacts are expected to be minimal, with losses principally limited to the owner's property.

Figure 7 below shows the location of these dams within Simpson County while **Figure 8** displays the location of the 2 high hazard dams. For more information on dam and levee failures across the District, refer to the base plan.

FIGURE 7: MAP OF DAMS IN SIMPSON COUNTY

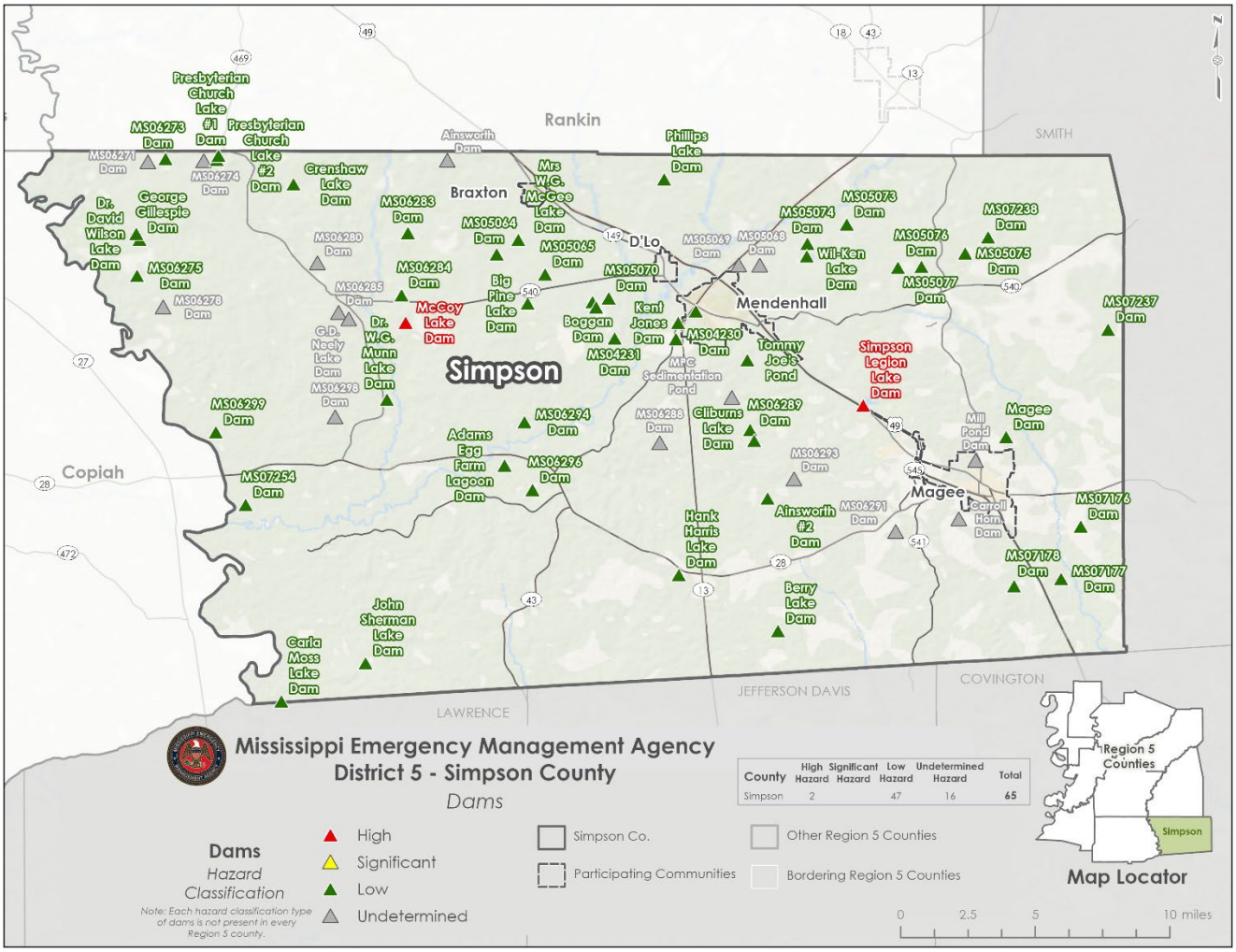
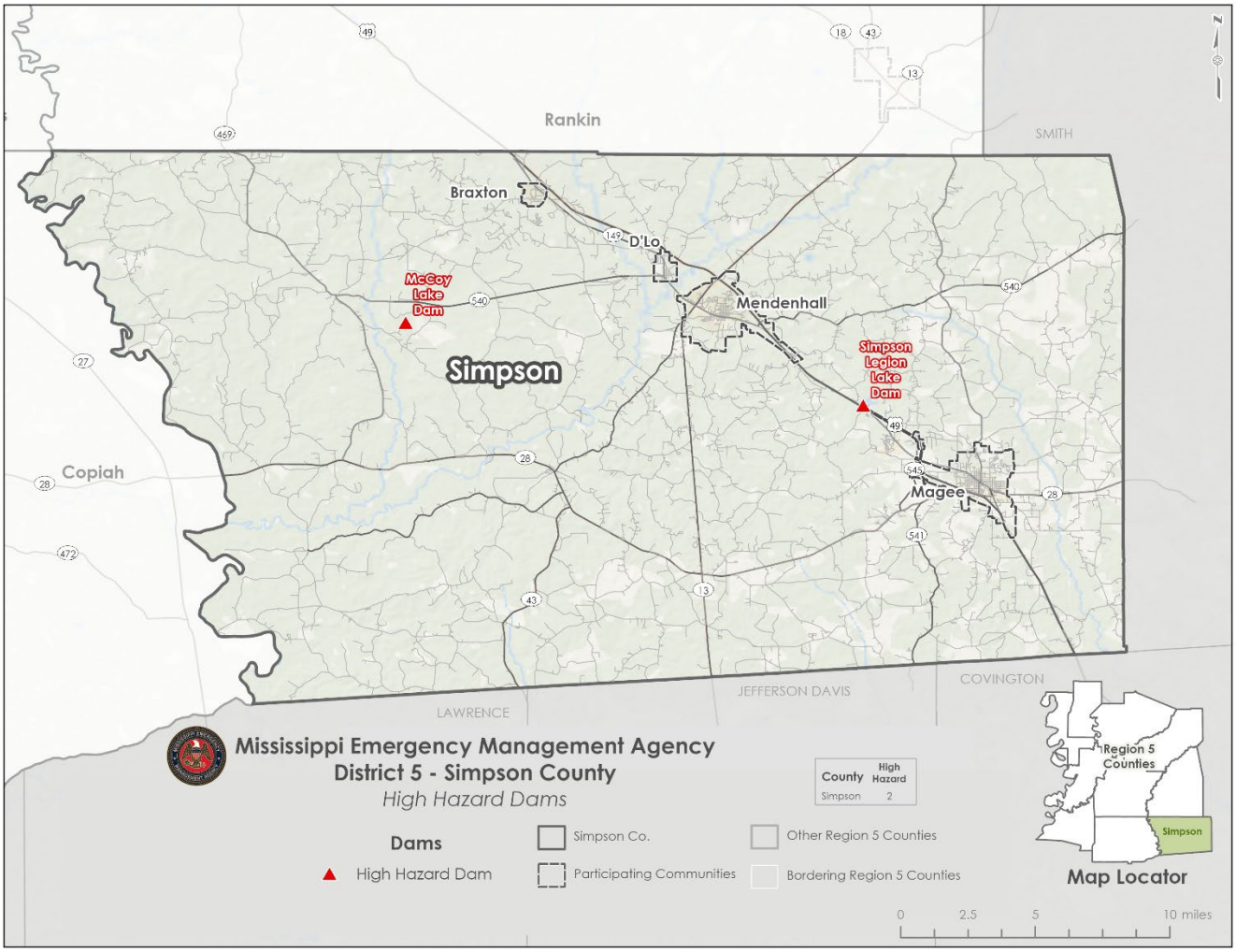


FIGURE 8: HIGH HAZARD DAMS IN SIMPSON COUNTY



There are two High Hazard Potential Dams (HHPD) in Simpson County, and the majority are in the center of the County. These dams are rated high due to the catastrophic damage a dam breach or failure could cause. Due to the extent of impact, HHPDs are required to develop an Emergency Response Plan (ERP) that details how the dam will respond in the event of a breach or failure. Within the ERPs inundations maps are required to be developed to understand which areas would be impacted in the event of a breach or failure.

There are five critical facilities within the inundation area of the Simpson Legion Lake Dam and there are several essential transportation roadways located in the inundation areas. **Figure 9** and **Figure 10** show the location and inundation areas of the two high hazard dams impacting Simpson County.

FIGURE 9: LOCATION AND INUNDATION AREAS OF MCCOY LAKE DAM

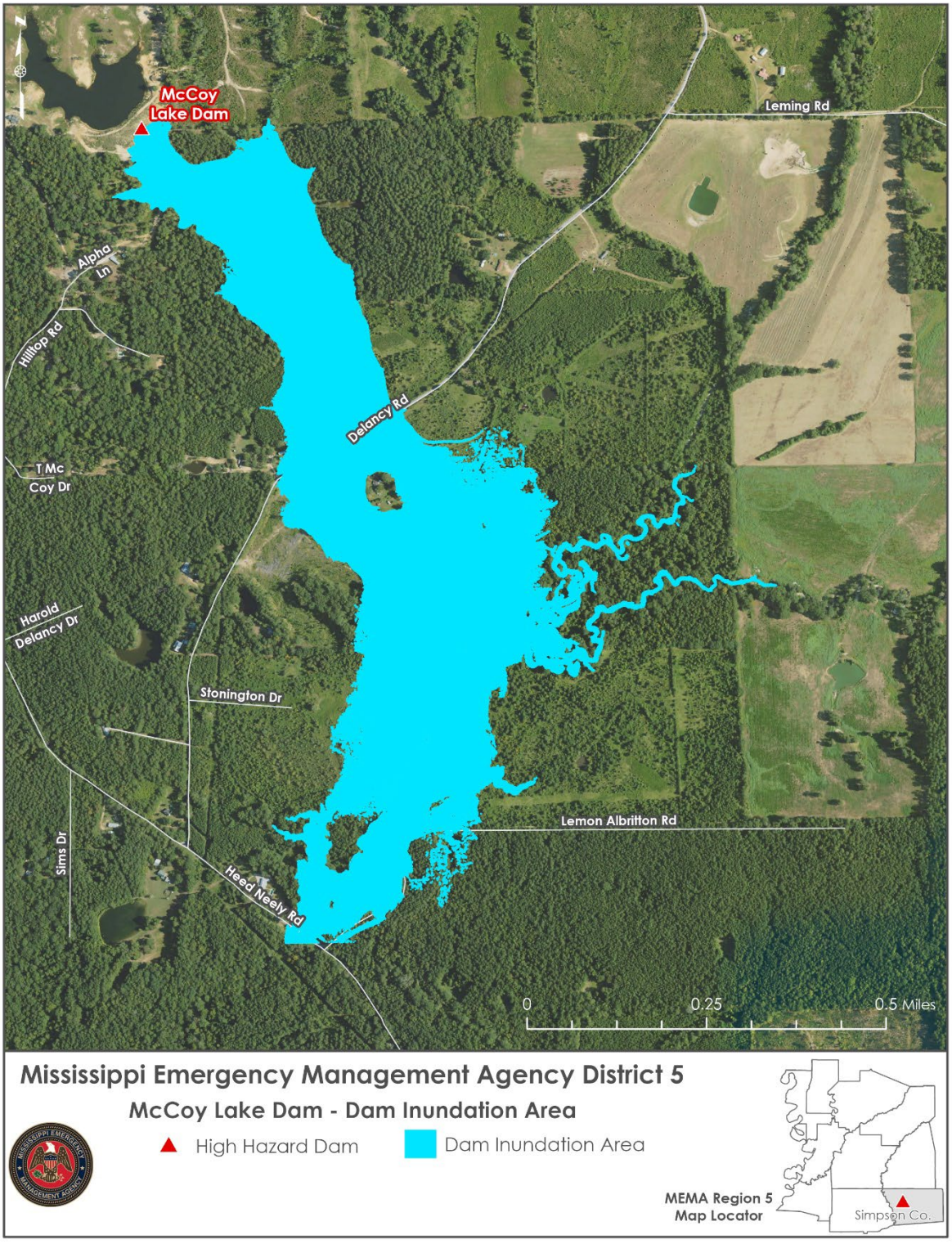
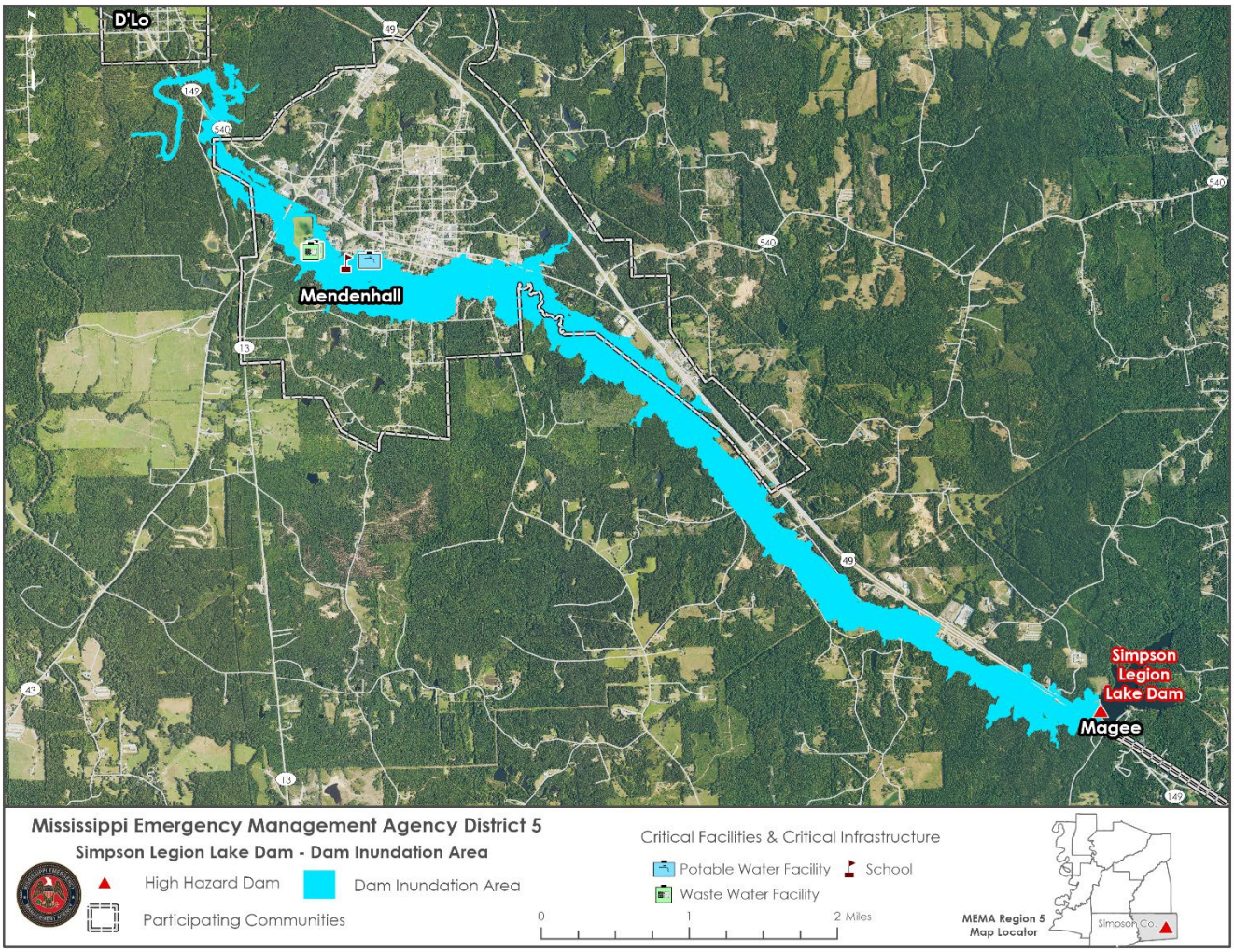


FIGURE 10: LOCATION AND INUNDATION AREAS OF SIMPSON LEGION LAKE DAM



Based on the information above, the residents of Simpson County are vulnerable to the potential failure of McCoy Lake Dam and the Simpson Legion Lake Dam. These classifications were designed based on the potential impacts of failure of said dams. In the event of the failure of a high-hazard dam, loss of life is probable, as are economic, environmental, and lifeline impacts. In the event of the failure of a significant hazard dam, loss of life is not expected, but economic, environmental, and lifeline impacts are expected. In the event of the failure of a low-hazard dam, there is no anticipated loss of life, and economic, environmental, and lifeline impacts are expected to be minimal, with losses principally limited to the owner's property.

4.1.2. PREVIOUS OCCURRENCES

Since the last plan update, MDEQ Dam Safety Division has recorded zero breaches in Simpson County. It is important to note that some failures may not have been detected and reported.

4.1.3. PROBABILITY OF FUTURE OCCURRENCES

Structural weaknesses in dams may be visible during routine external inspections, yet failures can still occur without warning—even under clear, calm weather conditions. Earthen dams may experience sudden breaches that trigger rapid and dangerous flooding. Consequently, all dams located within the

County should be considered at risk of breach at any time. The probability of future failure is classified as **Unlikely**, indicating a persistent potential for occurrence and the extent of inundation areas within the County and its jurisdictions.

4.1.4. LOCALIZED VULNERABILITY ASSESSMENT

4.1.4.1. OVERALL VULNERABILITY

All dams and levees within Simpson County are considered susceptible to breach at any time. Breaches may lead to impacts across community lifelines, as described in the base plan, particularly to the Communications, Transportation, and Water & Wastewater lifelines, as well as impacts to natural, historic, and cultural resources in the inundation zone. The risk of dam failure occurring in Simpson County and its jurisdictions is **Low** due to zero history of previous occurrences and low number of dams and high hazard potential dams. However, dam failures at any class could cause damage. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to dam failures.

4.1.4.2. CRITICAL FACILITIES

There are five critical facilities in Simpson County within the mapped inundation area of an upstream dam, as described in the **Table 33** below. However, inundation mapping is not required or available for all dam classifications, and this should not be considered an exhaustive list of the facilities that might be impacted by this hazard. All structures located downstream of a dam are at some level of risk.

TABLE 33: CRITICAL FACILITIES IN DAM INUNDATION AREAS IN SIMPSON COUNTY

Jurisdiction	Facility Type	Facility	Dam
City of Mendenhall	School	Genesis One Christian School	Simpson Legion Lake Dam
City of Mendenhall	Potable Water	Lagoon	Simpson Legion Lake Dam
City of Mendenhall	Waste Water Facility	Lagoon Pump Station	Simpson Legion Lake Dam
City of Mendenhall	Waste Water Facility	Mendenhall POTW	Simpson Legion Lake Dam
City of Mendenhall	Waste Water Facility	Water Well #2	Simpson Legion Lake Dam

4.1.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Dam failure has the potential to cause severe and sudden impacts to cultural, historic, and natural resources in the County due to rapid downstream flooding, high-velocity flows, and extensive erosion. Historic structures, cemeteries, archeological sites, and culturally significant landscapes located downstream of dams or along rivers and creeks may be damaged or destroyed by inundation, scour, or debris impacts associated with a dam breach. Floodwaters can erode soils and displace archeological materials, resulting in irreversible loss of cultural resources and historic context. Natural resources may also experience significant impacts, including stream channel alteration, sediment deposition, destruction of wetlands and riparian habitats, reduced water quality, and displacement or loss of wildlife. All structures located downstream of a dam are at some level of risk.

4.1.4.4. PEOPLE

The primary impact of dam failure is flooding, which is more likely to impact older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to

evacuate and harder to recover. As with many other hazards, vulnerable populations—such as low-income households, the elderly, and individuals with disabilities—may face compounded risks due to limited mobility, lack of resources, or inadequate shelter options. In the County, individuals living in poverty are high at 20%. These populations can experience disproportionate impacts to dam failures and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Simpson County has a low to medium SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.1.4.5. STRUCTURES AND SYSTEMS

Dam failure can result in sudden and severe impacts to structures and systems in the County due to rapid flooding, high-velocity water flow, and debris transport downstream of a breached dam. Residential, commercial, and public structures located within dam-inundation areas may experience extensive structural damage or complete destruction as foundations, walls, and load-bearing components are undermined by erosion and scour. Utility systems such as water, wastewater, electrical, and communications infrastructure may also be damaged or disabled by floodwaters, resulting in service interruptions, contamination risks, and prolonged outages. Transportation systems, including roads, bridges, and culverts, are particularly vulnerable to washouts and structural failure, which can isolate communities and impede emergency response and recovery efforts. Transportation infrastructure in the mapped inundation areas of the two high hazard dams is listed in **Table 34**. All structures within dam inundation areas would be at risk of flooding and damage.

TABLE 34: TRANSPORTATION SYSTEMS IN INUNDATION AREAS

Dam Name	Roadways Impacted
McCoy Lake Dam	Delancy Road Lemon Albritton Road Heed Neely Road
Simpson Legion Lake Dam	U.S. Route 49 Frontage Road State Highway 13 State Highway 149 State Highway 540 Numerous Unnamed Roads

4.1.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Simpson County may lead to a decrease in the populations in the inundation zone of each dam. A related decrease in the number of impervious surfaces from urbanization can reduce runoff and strain on existing drainage systems, potentially decreasing the likelihood of overtopping or erosion near dam and levee sites.

4.2. DROUGHT

4.2.1. LOCATION AND EXTENT

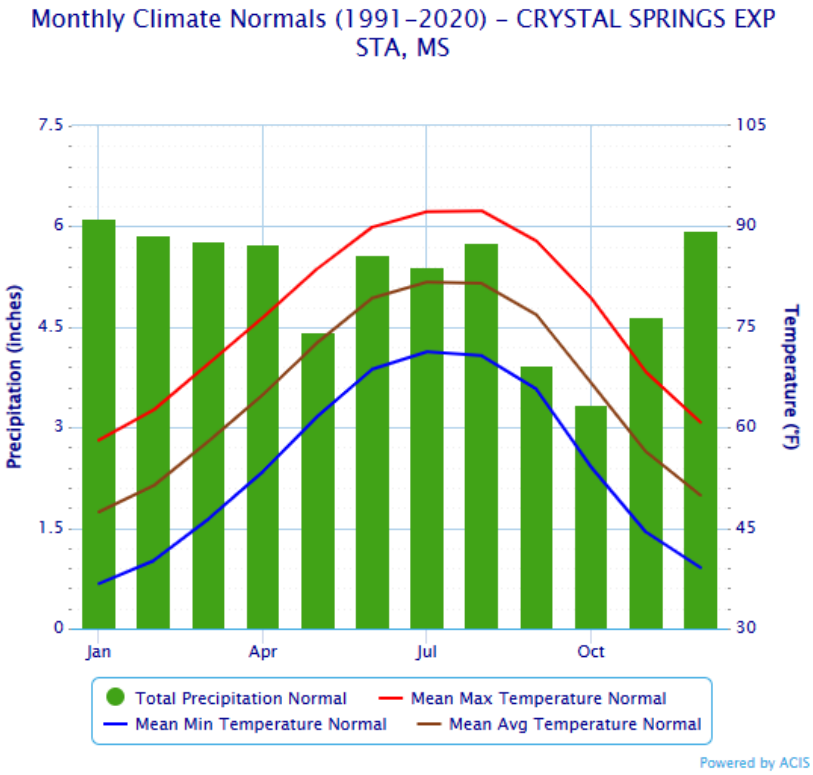
Drought affects the entire planning area equally; Simpson County and its jurisdictions are not more or less susceptible to drought than other communities in District 5. For more information on drought across the District, refer to the base plan.

Figure 11 and **Figure 12** below display the monthly precipitation and temperature normals for the area surrounding the Crystal Springs EXP STA, MS National Weather Service (NWS) station. According to the data, the County experiences about 63 inches of precipitation annually with an average mean temperature of 66 degrees. The hottest months are June through September while the wettest months are January and February.

FIGURE 11: MONTHLY NORMAL PRECIPITATION AND TEMPERATURE – CRYSTAL SPRINGS EXP STA, MS | SOURCE: NWS

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	6.12	58.1	36.7	47.4
February	5.87	62.6	40.1	51.3
March	5.79	69.5	46.3	57.9
April	5.73	76.4	53.4	64.9
May	4.42	83.7	61.7	72.7
June	5.57	89.9	68.7	79.3
July	5.39	92.2	71.3	81.7
August	5.76	92.3	70.7	81.5
September	3.93	87.8	65.7	76.8
October	3.35	79.3	54.1	66.7
November	4.65	68.3	44.4	56.4
December	5.93	60.8	39.1	49.9
Annual	62.51	76.7	54.4	65.5

FIGURE 12: MONTHLY CLIMATE NORMALS – CRYSTAL SPRINGS EXP STA, MS | SOURCE: NWS



4.2.2. PREVIOUS OCCURRENCES

Between the 2015 and 2020 plans, five droughts occurred in Simpson County, causing $50,000 in property damage and $481,200 in crop damage. Between the 2020 and 2025 plans, there were three droughts causing zero reported property damage and $533,000 in crop damage.

4.2.1. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been eight drought events in the past 10 years. Therefore, the probability of future drought conditions in Simpson County and its jurisdictions is **Low**. This probability is consistent across District 5, even though any given drought will likely cause uneven impacts across the planning area.

4.2.2. LOCALIZED VULNERABILITY ASSESSMENT

4.2.2.1. OVERALL VULNERABILITY

The drought vulnerability assessment in the base plan highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Within Simpson County and its jurisdictions, drought poses a **Medium** risk due to potential impacts, largely to public health, agriculture, and the local economy. Potential impacts on Community Lifelines and historic and cultural resources are consistent across the District 5 planning area and are described in the base plan. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to drought.

4.2.2.2. CRITICAL FACILITIES

Drought poses a slow-onset but significant risk to critical facilities in Simpson County by stressing water supply systems, increasing wildfire risk, and disrupting essential services. Prolonged dry conditions can reduce groundwater and surface water availability needed for drinking water, sanitation, medical care, and fire suppression, potentially affecting facilities such as hospitals, emergency services, schools, and government buildings. Drought conditions also elevate wildfire danger, which can strain fire response capabilities and threaten nearby infrastructure, while increased heat and energy demand may place additional stress on electrical systems supporting critical operations.

4.2.2.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Drought can damage cultural, historic, and natural resources in the County by reducing soil moisture and water levels needed for their preservation. Prolonged dry conditions may harm historic sites, stress forests and wetlands, increase wildfire risk, and degrade ecosystems and culturally important water resources, potentially leading to long-term loss.

4.2.2.4. PEOPLE

As noted in the base plan, drought poses a significant threat to public health and safety, particularly when it disrupts access to clean and sufficient water supplies, and particularly for vulnerable populations—such as low-income households, the elderly, and individuals with disabilities. These populations can experience disproportionate impacts to droughts and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Simpson County has a low to medium SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.2.2.5. STRUCTURES AND SYSTEMS

Although drought doesn't typically cause direct physical damage to buildings or infrastructure, systems reliant on water (particularly those supporting agricultural operations) are the most vulnerable. Simpson County has a total approximate land area of 377,066 acres, of which 25.8% is farmland (437 farms totaling 97,311 acres of farmland). These portions of the county and their structures and systems are more vulnerable to impact than others. Based on previous occurrences, $1,000,000 in crop damages since 2015. Non-agricultural critical facilities such as transportation infrastructure, utility infrastructure, and public buildings are unlikely to be affected by drought across the planning area, including in Simpson County.

4.2.2.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Simpson County may lead to lower strain on water systems during times of drought in the future. The Village of Braxton is experiencing an increase in population and may need to plan for increased water usage during a drought to combat decreasing water supplies.

4.3. EARTHQUAKE

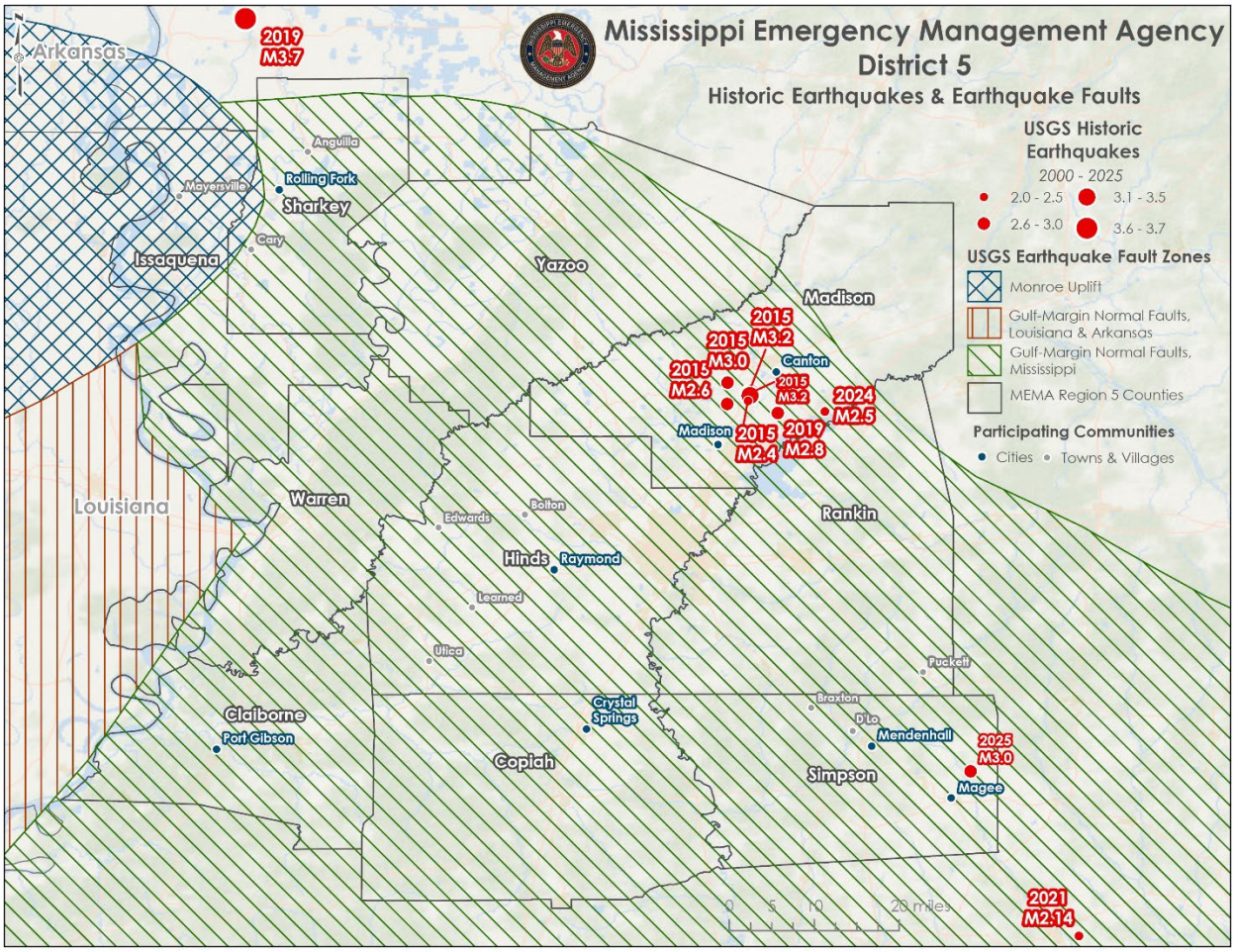
4.3.1. LOCATION AND EXTENT

The earthquake seismic risk in MEMA District 5 varies from low to very high. Simpson County is less susceptible to earthquakes than other communities in District 5. Simpson County has areas where the earthquake seismic risk is low and very high. Ground shaking can be exacerbated by liquefaction zones. Within Simpson County, areas in the center portion of the County have high liquefaction zones. The liquefaction zone runs through the middle part of the County. If a strong earthquake were to occur, This area could experience increase ground shaking.

4.3.2. PREVIOUS OCCURRENCES

As noted in the base plan, Mississippi experiences relatively low seismic activity, although there have been some minor earthquakes producing light shaking felt in District 5 in recent history. Since 2000, there have been eight earthquakes in MEMA District 5. The strongest was a magnitude 3.2 that occurred in Madison County in 2015. Many of the earthquakes occur in Madison County and occurred in 2015. **Figure 13** below shows the historic earthquakes in the District since the last plan update.

FIGURE 13: MEMA DISTRICT 5 HISTORIC EARTHQUAKES 2000-2025



4.3.3. PROBABILITY OF FUTURE OCCURRENCES

As noted in the base plan, Mississippi MEMA District 5 is unlikely to experience damaging earthquakes, but it is not entirely free from seismic risk. While strong earthquakes are **Unlikely**, minor to moderate shaking could occur in Simpson County and its jurisdictions, especially from distant seismic sources like the New Madrid Seismic Zone (NMSZ).

4.3.4. LOCALIZED VULNERABILITY ASSESSMENT

4.3.4.1. OVERALL VULNERABILITY

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. Claiborne County contains a mixture of low and very high liquefaction susceptibility zones. The County also contains earthquake soil classifications of E (soft soil) and F (soils requiring site-specific evaluation, such as liquefiable soils, peats, or certain clays). While these factors increase ground shaking, strong earthquakes put the County and its jurisdictions at a relatively **Low** risk. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to earthquakes. Additionally, the entire County has areas of soft clay soils and quick and highly sensitive clay soils which can increase the ground shaking as well.

Figure 14 and **Figure 15** show both the liquefaction susceptibility zones and the earthquake soils throughout the County.

FIGURE 14: SIMPSON COUNTY LIQUEFACTION SUSCEPTIBILITY ZONES

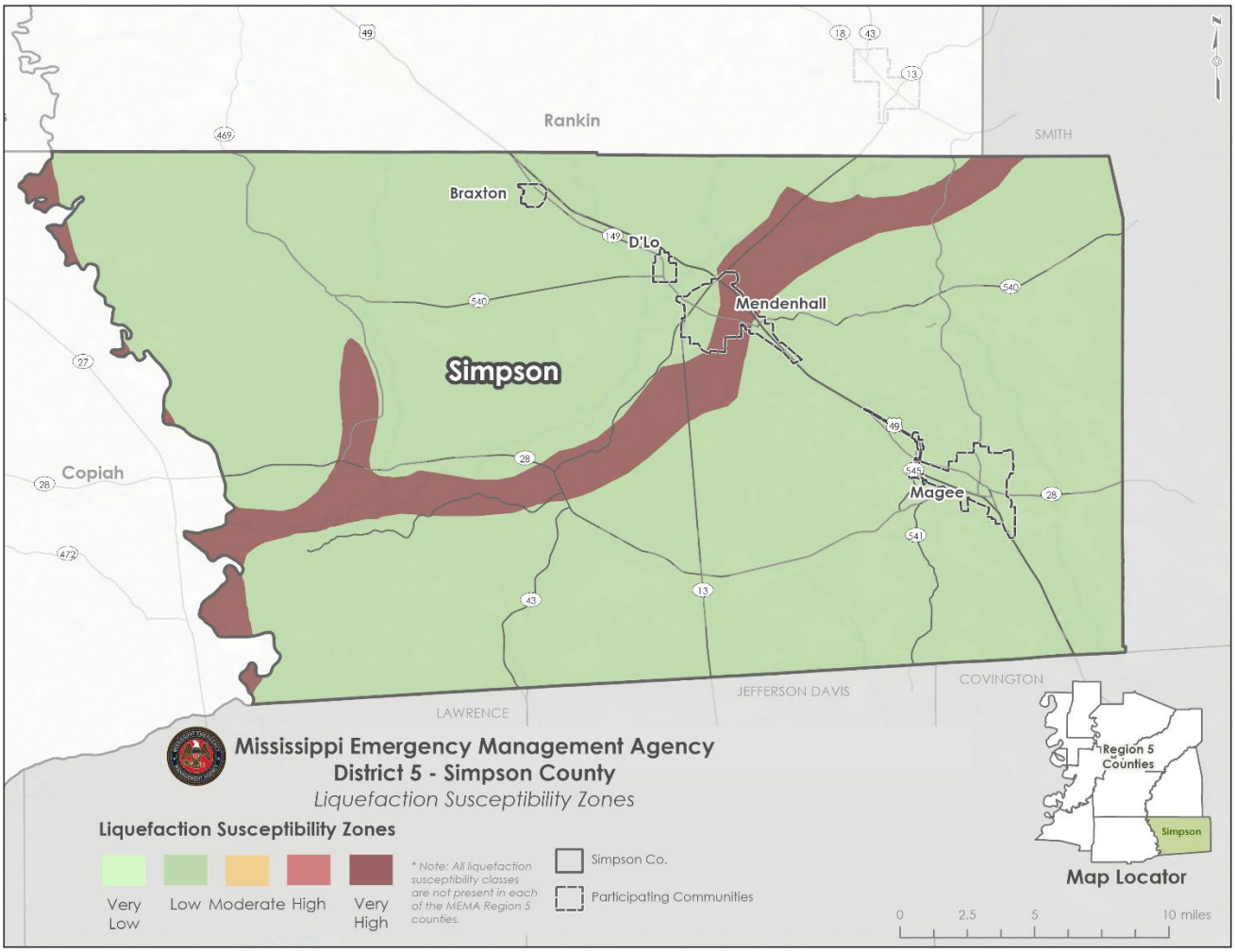
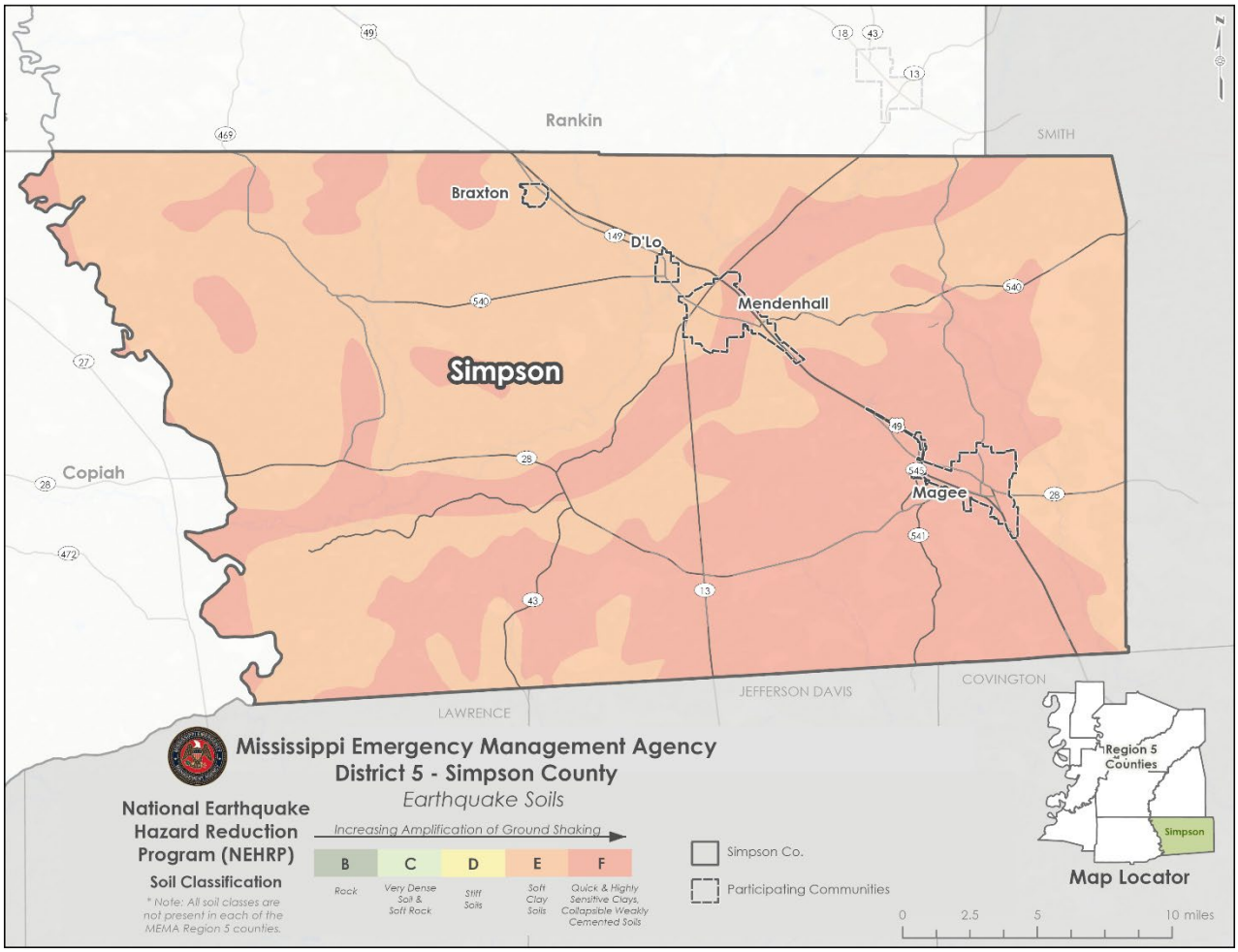


FIGURE 15: SIMPSON COUNTY EARTHQUAKE SOILS



4.3.4.2. CRITICAL FACILITIES

Although earthquakes occur infrequently in Simpson County, seismic activity associated with the New Madrid Seismic Zone could result in ground shaking that damages critical facilities and infrastructure. Earthquake impacts may disrupt essential services and utilities and damage transportation routes, potentially limiting access to critical facilities and hindering emergency response and recovery efforts. In the event of a rare strong earthquake, critical facilities within high liquefaction susceptibility zones and moderate seismic risk are most at risk of earthquake impacts.

4.3.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Earthquakes have the potential to damage cultural, historic, and natural resources through ground shaking and ground deformation associated with regional seismic activity such as the New Madrid Seismic Zone. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be particularly vulnerable due to age, unreinforced masonry construction, or shallow foundations that are susceptible to cracking or collapse during seismic events. Natural resources may be affected through soil instability, slope failure, altered drainage patterns, and damage to wetlands, streams, or wildlife habitats. In the event of a rare strong earthquake, resources within high liquefaction susceptibility zones and moderate seismic risk are the most at risk of earthquake impacts.

4.3.4.4. PEOPLE

Some populations may face greater risk to earthquakes--the relatively short warning time typically provided for earthquakes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

As noted in the base plan, although earthquakes are rare, rural communities with limited access to emergency services and infrastructure that may be disrupted by the impacts of an earthquake are at increased risk, as are vulnerable populations. Even though the residents of Simpson County are less socially vulnerable than other residents of District 5, Simpson County experienced a 3.0 magnitude earthquake in 2025, thus putting people in the County and its municipalities at a slightly higher risk of impacts of earthquakes than the rest of the District.

4.3.4.5. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking. Because Simpson County has soils and geography that put it at higher risk of earthquake impacts, the impacts of earthquake on critical facilities, community lifelines, natural and cultural resources, and infrastructure within Simpson County and its jurisdictions are likely to be higher than the rest of the District.

4.3.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

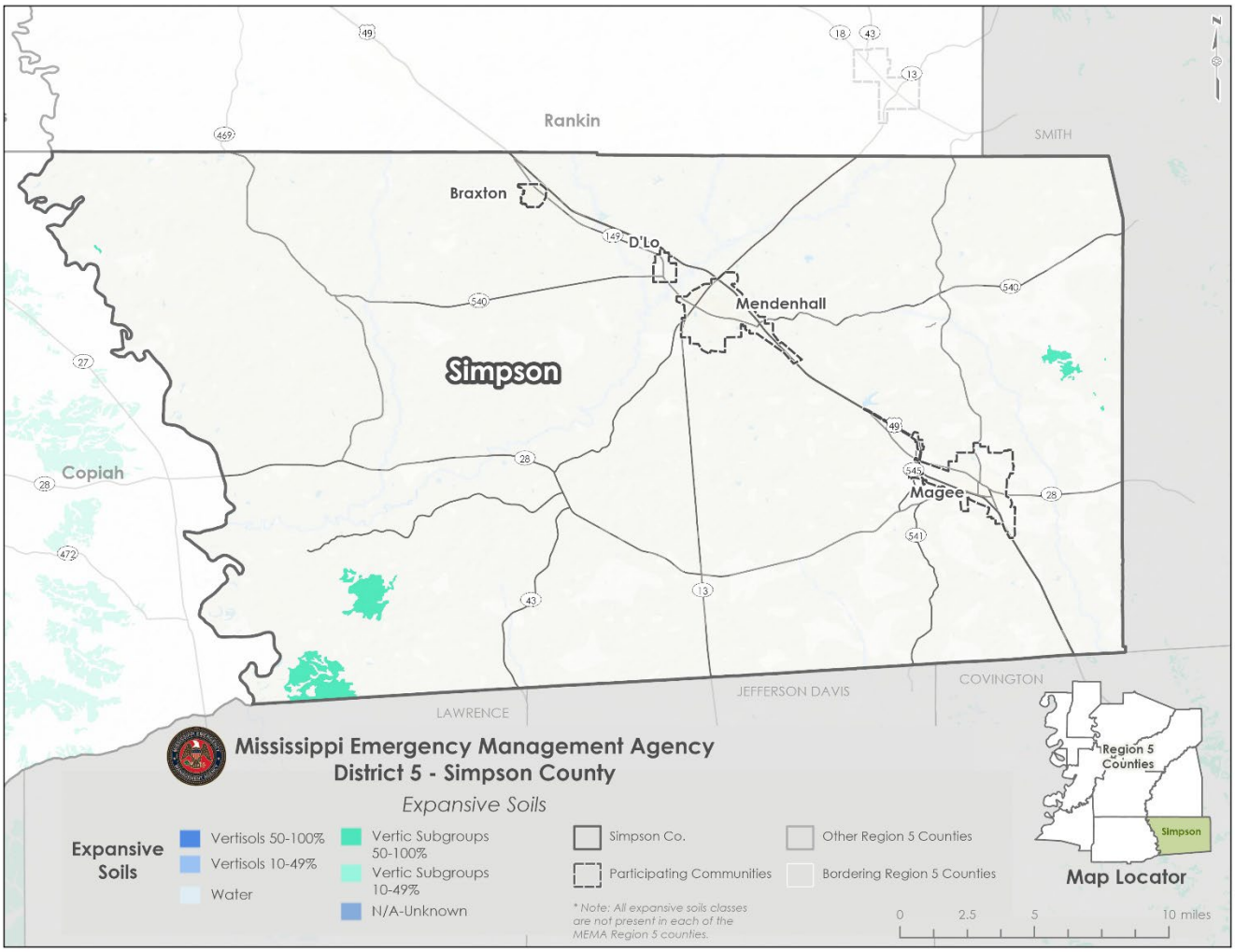
The overall decrease in development and population in Simpson County may lead to lower impacts of earthquakes on its residents in the future. However, the Village of Braxton has seen an increase in population and potentially development.

4.4. EXPANSIVE SOILS

4.4.1. LOCATION AND EXTENT

As noted in the base plan, expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. Simpson County and its jurisdictions have minimal areas in the Vertic Subgroups (50-100%) which puts these communities at lower risk than the district overall. More information about location and extent is provided in the base plan and can be visually seen in **Figure 16** below. For more information on expansive soils across the District, refer to the base plan.

FIGURE 16: SIMPSON COUNTY EXPANSIVE SOILS



4.4.2. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the D5 Region, including in Simpson County.

4.4.3. PROBABILITY OF FUTURE OCCURRENCES

The probability of future damage from expansive soils is considered **Unlikley** due to the District's geologic makeup and historical patterns of soil movement. Because Simpson County and the

communities within it contain limited areas with high vertic subgroups, they are at a lower risk of future occurrences than the District overall.

4.4.4. LOCALIZED VULNERABILITY ASSESSMENT

4.4.4.1. OVERALL VULNERABILITY

Facilities and infrastructures sensitive to expansive soil movement include residential homes, schools, emergency service buildings, and older systems—particularly those built without geotechnical evaluation or soil stabilization practices. Because this hazard is less likely to occur in Simpson County compared to other parts of the district, the County's overall vulnerability to expansive soils is considered **Low**. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to expansive soils.

4.4.4.2. CRITICAL FACILITIES

Expansive soil does not pose a significant risk to Simpson County; therefore, no critical facilities are impacted or vulnerable.

4.4.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Expansive soil does not pose a significant risk to Simpson County, therefore no cultural, historic, or natural resources are impacted or vulnerable.

4.4.4.4. PEOPLE

The risk factors for expansive soils are structural and not demographic in nature. The people of Simpson County are at overall lower relative risk than the rest of the county, due to the soil and geographic factors described above. If expansive soils were to cause significant structural damage, individuals may be impacted by needing to pay for repairing damages of their homes or needing to relocate from their current residences.

4.4.4.5. STRUCTURES AND SYSTEMS

Because the geography of Simpson County puts it at lower relative risk of this hazard, the structures and systems (including critical facilities, community lifelines, and natural, historic, and cultural resources) in the county and its municipalities are at lower relative risk as well. The potential impacts to these structures and systems are described in more detail in the base plan.

4.4.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Simpson County may lead to lower impacts on its residents in the future, although this risk can be significantly mitigated with smart planning and zoning decisions, including restricting or regulating development in high-risk areas. Careful management of the two active and three inactive surface mines in the county can also impact this risk.

4.5. FLOOD

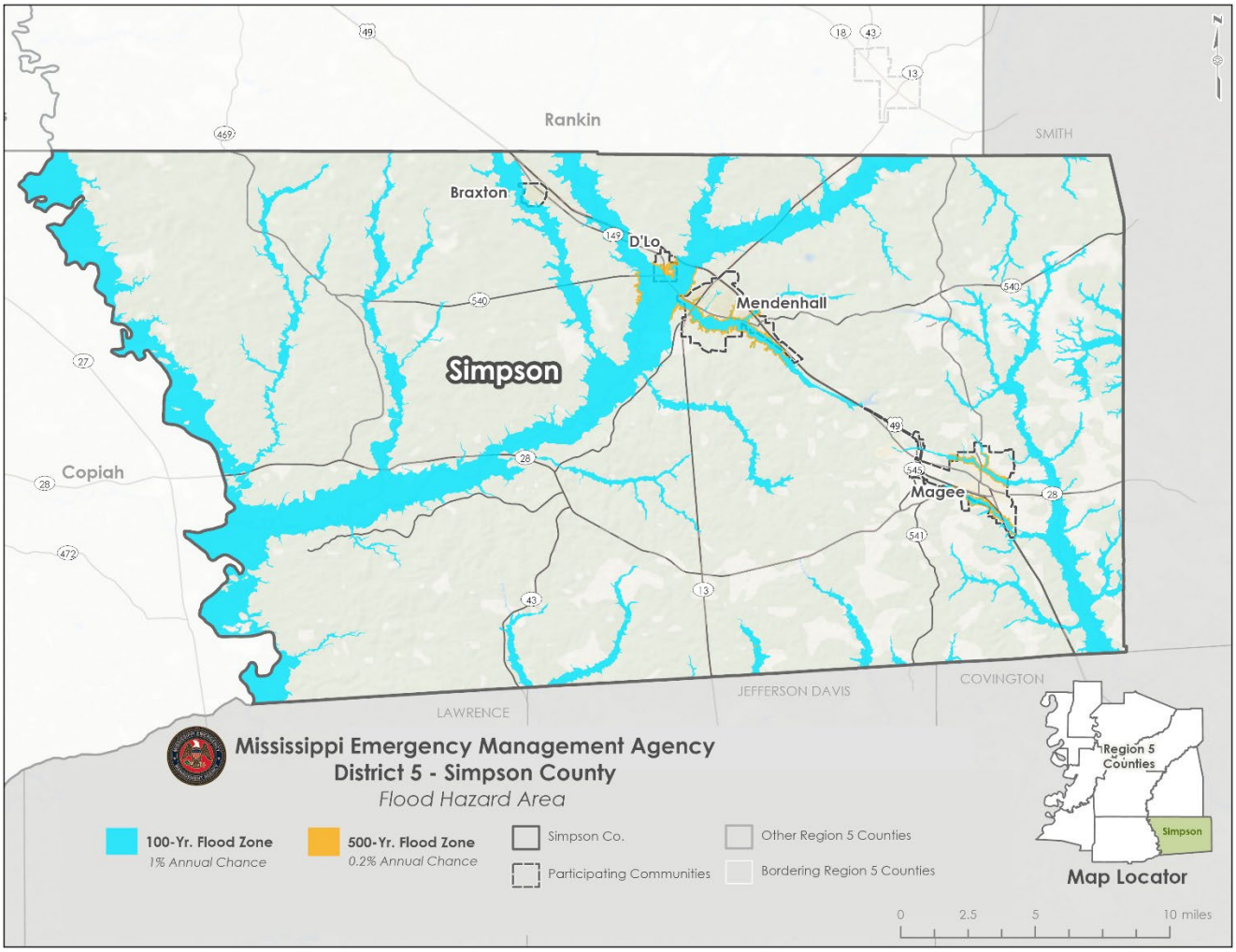
4.5.1. LOCATION

Floods are the most common type of natural disaster, occurring when water overflows onto land that is typically dry after heavy rainfall, storm surges, or rapid snowmelt. Flooding often leads to significant impacts on both human life and the environment. This section provides detailed information about the location, extent, previous occurrences, and overall vulnerability of communities within Simpson County to flooding than is provided in the base plan. For more information on floods across the District, refer to the base plan.

For purposes of this hazard profile and vulnerability analysis, the geographic location/extent for river flooding will be primarily considered as those areas at risk to the 100-year flood (also known as the 1% annual chance flood). The 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. However, the accompanying maps also show the 500-year floodplains (also known as the 0.2% annual chance floodplains) for two major reasons. First, climate models suggest that the planning area should anticipate rain events with increasing intensity in the coming years and decades. Second, any future population growth may result in new development within or near 500-year floodplains.

Figure 17 below shows the location of flood hazard areas within Simpson County. The main waterway in Simpson County is the Pearl River that forms the Western boundary of the County. The Strong River through the County passes near Mendenhall and D'Lo. Other key water features include the Bouie River in the Southern part of the County and Silver Creek. The County also features smaller, localized lakes and dams used for flood control and recreation.

FIGURE 17: SIMPSON COUNTY FLOOD HAZARD AREAS



4.5.2. EXTENT

Riverine flooding is among the most significant hazards in the planning area due to its ability to impact large geographic areas, threatening a significant number of people and properties, the relatively small amount of flood water that it takes to cause significant injury or property damage, and the ability of flood water to linger for days, causing extensive damage. Because variations in geography, elevation, and building design mean that the same flood can cause a wide variety of extents of damage to different structures, the variation in extent across the County is most accurately captured by the flood zone mapping provided above under “location.”

The most significant recorded flooding event in the State’s history, indicating the potential extent of the threat of the flood hazard, was in 1927, when persistent heavy rainfall and run-off inundated 27,000 square miles. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

4.5.3. PREVIOUS OCCURRENCES

Since 1974, there have been six federal disaster declarations pertaining to flooding in Simpson County, details of which are provided below in **Table 35**. The most significant recorded flooding event in

Simpson County in the past five years, indicating the potential extent of the threat of the flood hazard, was in 2022, when a low-pressure system spinning over Northern Louisiana and Southern Arkansas brought several rounds of showers and thunderstorms producing heavy rain. This resulted in widespread flooding of roads, homes, and businesses around the state. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

TABLE 35: FLOODING-RELATED MAJOR DISASTER DECLARATIONS IN SIMPSON COUNTY

Disaster Number	Description	(Declaration Date) and Incident Period	Individual Assistance	Public Assistance
DR-4175	Severe Storm, Tornado, Flooding	(4/30/2014) 4/28/2014-5/3/2014	Y	N
DR-1837	Severe Storm, Tornado, Flooding	(5/12/2009) 3/25/2009-3/28/2009	N	Y
DR-895	Flooding, Severe Storm, Tornado	(3/5/1991) 2/17/2001-3/21/1991	Y	N
DR-888	Flooding, Severe Storm, Tornado	(1/3/1991) 12/19/1990-1/14/1991	Y	N
DR-499	Flooding, Severe Storm, Tornado	(4/1/1976) 4/1/1976	Y	Y
DR-430	Heavy Rains, Flooding	94/18/1974) 4/18/1974	Y	Y

Between the 2015 and 2020 plans, there were eight flooding events in Simpson County, causing $114,000 in property damage. Since the 2020 plan, there have been 13 such events, causing $53,000 in damages, no fatalities, and no injuries according to information provided by the NCEI. Additional information on these events is provided in **Table 36.**

Table 36. Individual Flood Events 2020-2025

Date	Time (CST-6)	Event Description	Assessed Damages	Estimated Flood Depth
08/25/2020	12:45	Flooding occurred in Magee.	$2,000	4 inches
03/25/2021	13:00	Rodney Sullivan Road was flooded.	$1,000	4 inches
04/10/2021	02:00	Water was over roads in Magee.	$2,000	6 inches
06/06/2021	10:00	Several creeks near the Saratoga community overspread their banks into nearby fields.	$15,000	6 inches
08/30/2021	08:06	Heavy rainfall from Tropical Storm Ida resulted in several instances of flash flooding on roadways in the city of Magee.	$7,000	8 inches
08/24/2022	11:40	Several roads were flooded across the northwest portions of the county.	$5,000	6 inches
08/25/2022	23:45	A long section of Ponder Mason Road near the intersection with Everett Church Road was inundated by floodwaters from the nearby Strong River.	$5,000	6 inches

01/24/2024	10:15	MS Highway 540 was flooded with water across the roadway, and MS Highway 43 was flooded over in three locations.	$5,000	8 inches
01/24/2024	11:15	Hwy 43 flooded in 3 locations with water across the roadway.	$1,000	8 inches
05/17/2024	06:25	Water covered a portion of Bridgeport Road.	$1,000	4 inches
05/17/2024	06:55	A portion of Hopewell Road was flooded.	$1,000	4 inches
05/17/2024	07:10	A portion of Strong River Road was flooded, and the Strong River Bridge at Highway 13 was flooded.	$5,000	6 inches
09/12/2024	04:30	Heavy rain associated with Tropical Storm Francine flooded a few roads in Simpson County.	$3,000	6 inches

4.5.4. PROBABILITY OF FUTURE OCCURRENCES

Based on NCEI records, there have been 21 flooding events in Simpson County over the past 10 years. The County and its jurisdictions can expect to see a flooding event occur once or twice a year. Based on previously recorded events and their own experiences with flooding, representatives for Simpson County, Braxton, D'Lo, and Mendenhall determined the future probability of flooding impacting their jurisdictions to be **Highly Likely,** while representatives for the community of Magee considered the future probability to be **Extremely Likely.** As climate change increases the intensity and unpredictability of rainfall, the likelihood of flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience.

4.5.5. LOCALIZED VULNERABILITY ASSESSMENT

4.5.5.1. OVERALL VULNERABILITY

As noted in the base plan, flooding can cause widespread damage to buildings, roads, utilities, and public infrastructure, and can significantly impact all eight community lifelines as well as natural, historical, and cultural resources. The Mitigation Council considered multiple factors when quantifying jurisdictional vulnerability to flooding. These factors include the number of recorded events; potential area exposed to flooding; economic and environmental impacts; and the risk to human safety. Through careful consideration of these factors, representatives for Simpson County, D'Lo, Magee, Braxton, and Mendenhall determined that their overall vulnerability to flooding events is **High**. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to flooding events.

4.5.5.2. CRITICAL FACILITIES

Flooding poses a significant risk to critical facilities in Simpson County by causing structural damage, inundating mechanical and electrical systems, and disrupting essential services. Flood events can impact hospitals, fire stations, law enforcement facilities, schools, emergency operations centers, and water and wastewater infrastructure, particularly those located in low-lying areas or within Special Flood Hazard Areas. Inundation of utility systems may contaminate drinking water supplies, impair wastewater treatment, and result in power and communications outages that hinder emergency response and continuity of government. Flooded roads and bridges can also restrict access to critical facilities, delaying emergency services, evacuation, and recovery efforts.

Figure 18 and **Figure 19** displays the critical facilities and infrastructure in the flood hazard areas for Simpson County and the participating jurisdictions.

FIGURE 18: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE FLOOD HAZARD AREAS

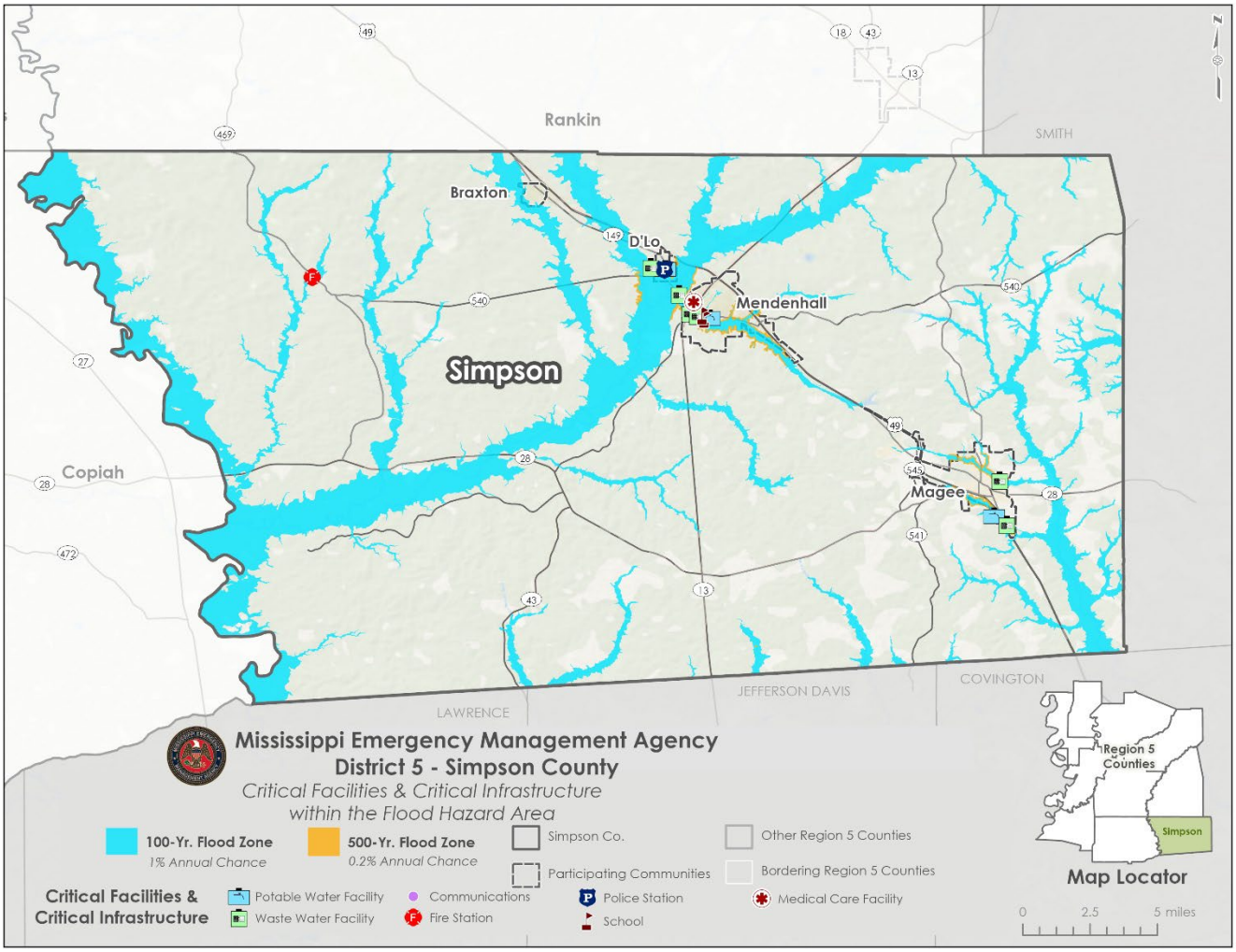


FIGURE 19: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE FLOOD HAZARD AREAS

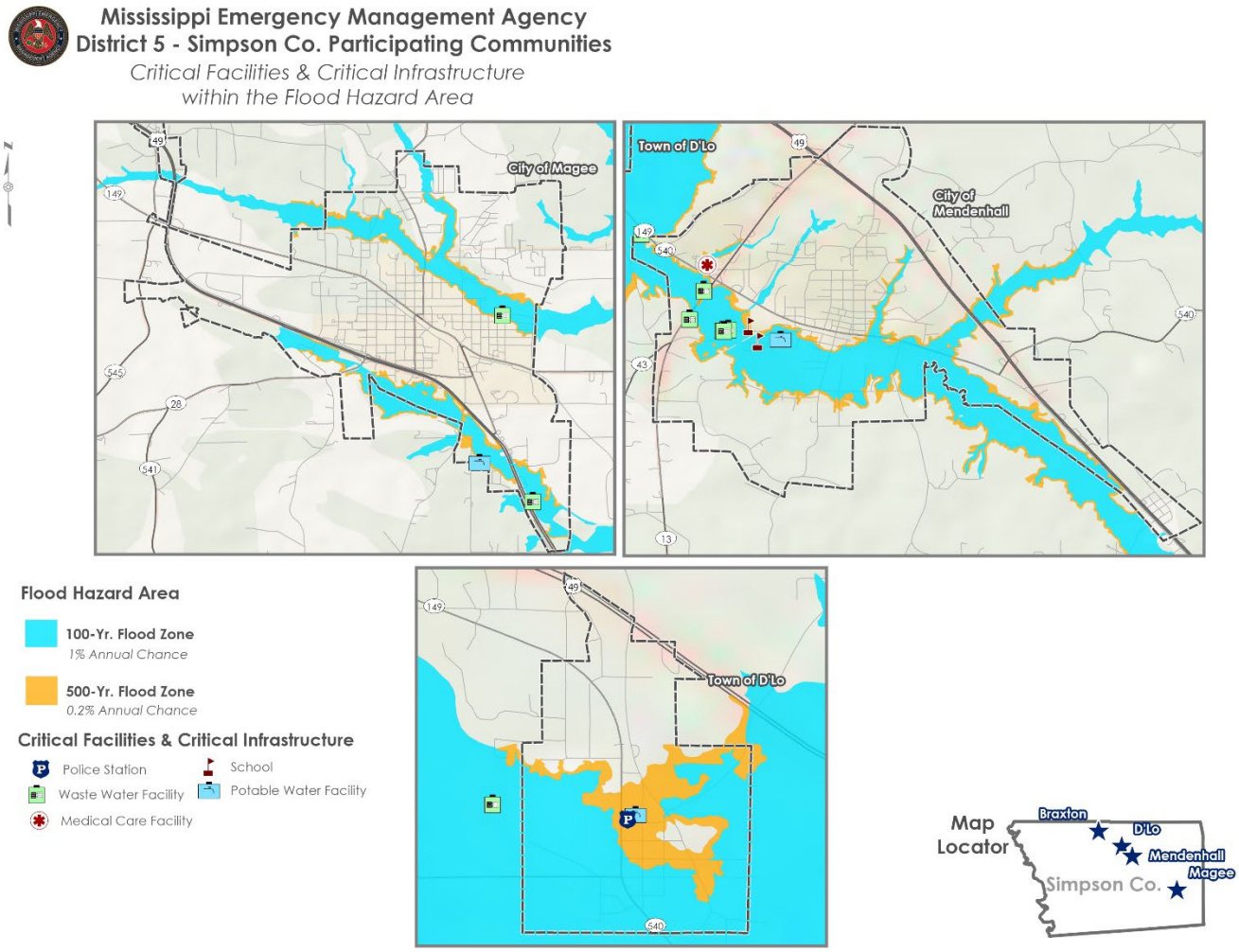


Table 37 below lists the critical facilities in Simpson County that are in the 1% annual chance and 0.2% annual chance floodplains.

TABLE 37: CRITICAL FACILITIES IN THE FLOODPLAINS OF SIMPSON COUNTY

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
Magee	Communications	WSJC 810	N	Y
Harrisville	Fire Station	Harrisville Volunteer Fire Department	N	Y
Mendenhall	Medical Care Facility - Residential	Conva-Rest of Mendenhall	N	Y
Mendenhall	Police Station	D'Lo Police Department	Y	N

Jurisdiction	Facility Type	Facility	0.2% Annual Chance Floodplain	1% Annual Chance Floodplain
D'Lo	Potable Water	D'Lo Water Well 1	Y	N
Magee	Potable Water	McNair Springs	N	Y
Mendenhall	Potable Water	Water Well #2	N	Y
Mendenhall	School	Genesis One Christian School	N	Y
Mendenhall	School	Mendenhall Junior High School	Y	N
Mendenhall	Waste Water Facility	Broadhead Pump Station	N	Y
D'Lo	Waste Water Facility	D'Lo POTW	N	Y
Mendenhall	Waste Water Facility	Hwy 13-Cox Pump Station	N	Y
Mendenhall	Waste Water Facility	Lagoon	N	Y
Mendenhall	Waste Water Facility	Lagoon Pump Station	N	Y
Magee	Waste Water Facility	Lift Station #1	N	Y
Magee	Waste Water Facility	Magee POTW	N	Y
Mendenhall	Waste Water Facility	Mendenhall POTW	N	Y
Mendenhall	Waste Water Facility	Morehead Pump Station	Y	N

4.5.5.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Flooding can adversely impact cultural, historic, and natural resources in Simpson County by causing erosion, structural damage, and long-term degradation of sensitive sites and landscapes. Historic buildings, cemeteries, archeological sites, and culturally significant structures may be damaged by prolonged inundation, saturated soils, or repeated flood events, particularly where foundations, grave markers, or unreinforced masonry are exposed to water and shifting ground conditions. Floodwaters can erode soil and displace or destroy archeological materials, resulting in irreversible loss of cultural resources. Natural resources are also vulnerable, as flooding can alter stream channels, degrade wetlands, reduce water quality, damage vegetation, and disrupt wildlife habitats. While some ecosystems may recover over time, repeated or severe flooding can permanently alter natural and cultural landscapes.

4.5.5.4. PEOPLE

Some populations may face greater risk to flooding--the relatively short warning time typically provided for flooding means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations most at risk of the impacts of flooding include older adults, low-income families, and individuals without access to flood insurance or reliable transportation, as these can make it more difficult to evacuate when flood warnings occur, and it is harder to recover from the impacts of a flood. These populations can experience disproportionate impacts to floods and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Simpson County has a low to medium SVI score and therefore may recover faster than other residents of District 5.

4.5.5.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, flooding has caused over $100,000 in damage in the past 10 years within the County and is expected to continue in the future. Flooding poses a significant risk to structures and critical systems in Simpson County by causing physical damage, inundation, and operational disruptions. Floodwaters can damage building foundations, walls, and interiors, particularly in structures located in low-lying areas or flood-prone zones, leading to costly repairs and long-term structural degradation. Electrical, mechanical, and HVAC systems are especially vulnerable to water damage, which can result in power outages and prolonged service interruptions. Flooding may also impair transportation networks, water distribution, wastewater treatment, and drainage systems, reducing access to essential services and facilities. These impacts can disrupt emergency responses, government operations, and community recovery efforts, especially when flood events are recurrent or severe.

4.5.5.6. NFIP INSURED STRUCTURES

The National Flood Insurance Program (NFIP) is a federal program managed by FEMA that provides flood insurance to property owners, renters, and businesses in participating communities. It aims to reduce flood damage by restricting floodplain development and offering affordable insurance, as standard homeowners insurance typically does not cover flood damage. Simpson County and its jurisdictions are a participating in the NFIP. For more information about the NFIP, reference **Section 5.8.6.3** in the base plan.

According to current data from the NFIP, there is one Repetitive Loss property in Simpson County as of 2025 and it is a single-family residence. Due to the repetitive nature of these losses, structures meeting the NFIP definitions of repetitive loss and severe repetitive loss should be prioritized for mitigation measures, as these measures are likely to be relatively cost effective. **Table 38** lists the properties that are repetitive loss or severe repetitive loss in the County.

TABLE 38: REPETITIVE LOSS AND SEVERE REPETITIVE LOSS PROPERTIES IN SIMPSON COUNTY

Jurisdiction	Number of Repetitive Loss Properties (2025)	Number of Severe Repetitive Loss Properties (2025)	Total Number of Flood Claims	Total Amount ($) of Flood Claims
City of Mendenhall	1	--	--	--

4.5.5.7. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Simpson County may lead to lower impacts of flooding. A decrease in the number of structures in the floodplain allows for more permeable surface to absorb floodwater, along with lower strain on stormwater management systems that can contribute to an overall reduction in the severity of flood events.

4.6. SEVERE STORMS

4.6.1. LOCATION AND EXTENT

Severe storms are a region-wide hazard in the Mississippi Delta and are not confined to specific locations. Severe storms affect the entire planning area equally; Simpson County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. More information on the extent of the threat posed by severe storms is provided in the base plan.

4.6.2. PREVIOUS OCCURRENCES

Recent events highlight the destructive potential of these storms. Since 2020, the following events have taken place in Simpson County:

- 34 thunderstorms, causing $1,145,000 in property damage
- Zero reported occurrences of severe lightning
- Two high wind events, causing $15,000 in property damage
- 10 hailstorms, causing $175,000 in property damage

Figure 20 and **Figure 21** below show historic wind and hail events in Simpson County since 1955.

FIGURE 20: SIMPSON COUNTY HISTORIC WIND EVENTS 1955-2024

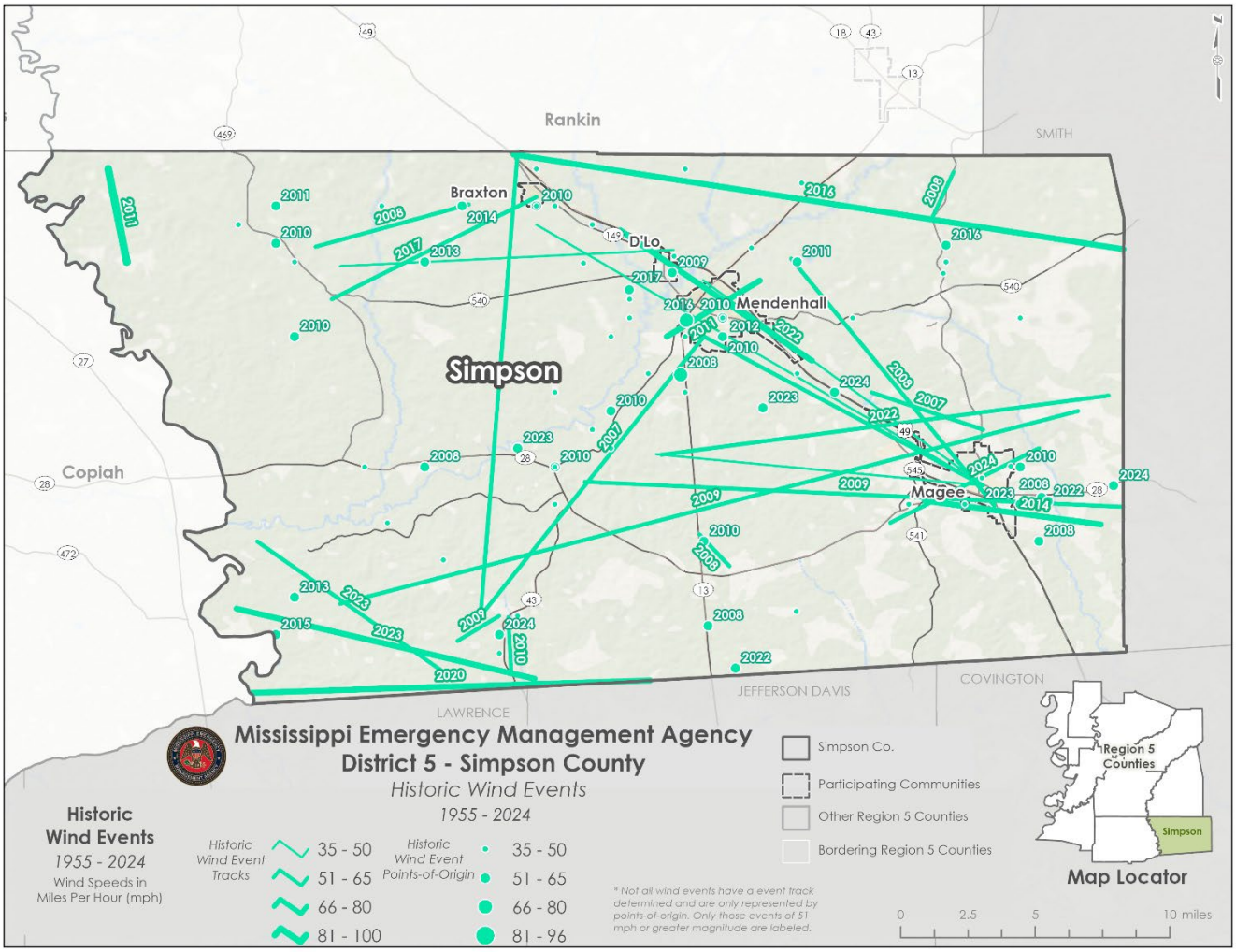
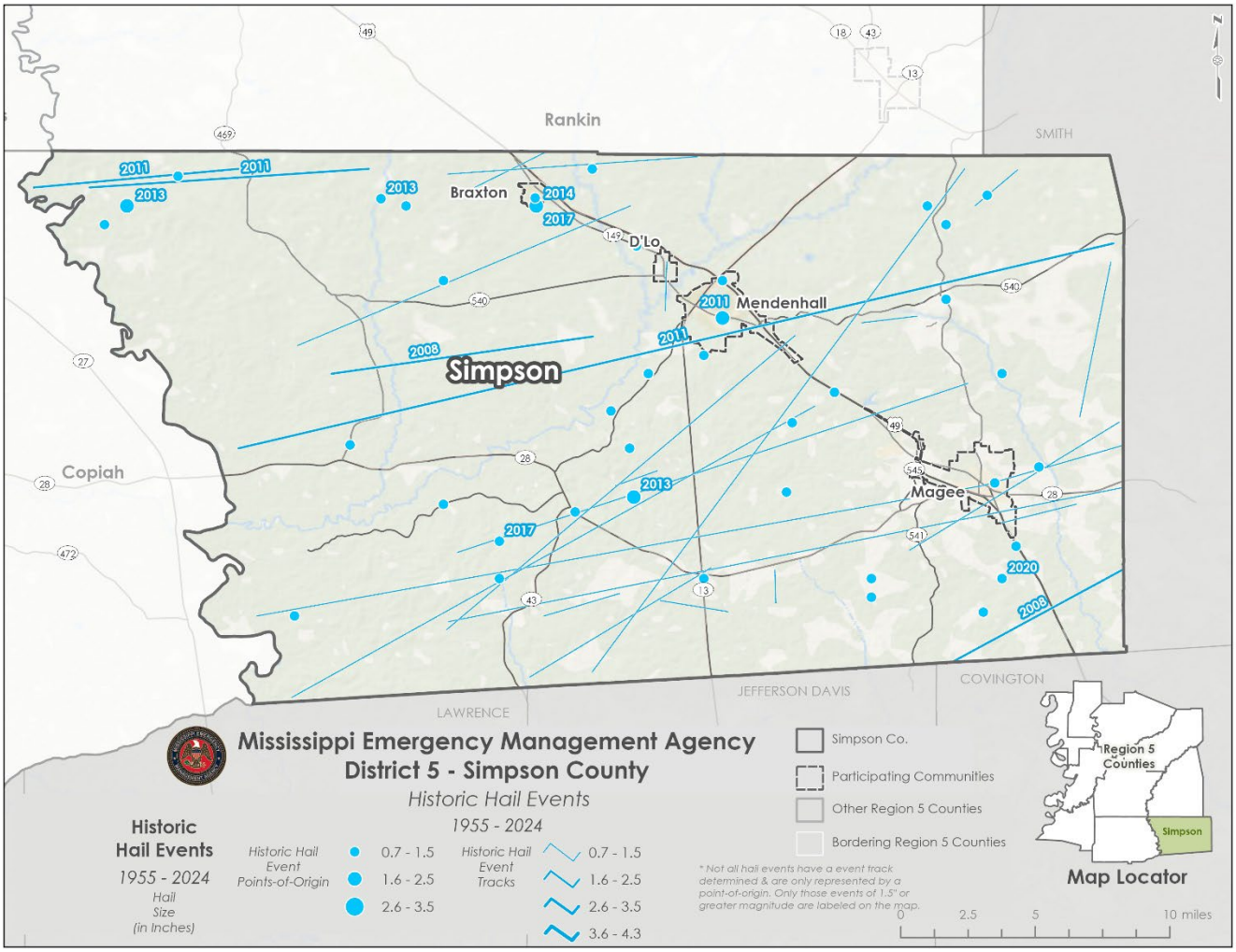


FIGURE 21: SIMPSON COUNTY HISTORIC HAIL EVENTS 1955-2024



4.6.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 46 severe storm events in the past five years. The County and its jurisdictions can expect to see 9-10 severe storm events per year. Therefore, the probability of future occurrences of severe storms in Simpson County is **Extremely Likely**, especially during peak storm seasons. These storms are expected to occur multiple times per year.

4.6.4. LOCALIZED VULNERABILITY ASSESSMENT

4.6.4.1. OVERALL VULNERABILITY

As noted above, the risk of severe storms (due to the frequency and ubiquity of these events) is largely equal across the entire planning area, posing risks to natural and cultural resources and community lifelines, as discussed in the base plan. However, demographic and development factors can cause variation in vulnerability to this risk. Based on the frequency and the extent of damage that severe storms can cause the risk of severe storms is **High** for Simpson County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to flooding events.

4.6.4.2. CRITICAL FACILITIES

Since severe storms impact the planning area equally, all critical facilities are at risk of severe storm impacts. Severe storm events, including strong thunderstorms accompanied by high winds, heavy rainfall, hail, and lightning, present an ongoing risk to critical facilities in Claiborne County. These storms can cause damage to essential buildings such as hospitals, emergency response facilities, schools, government offices, roof failure, shattered windows, and impacts of debris.

4.6.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Severe storm events can adversely affect cultural, historic, and natural resources in the County through high winds, heavy rainfall, flooding, hail, and lightning. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, falling trees, erosion, or prolonged moisture exposure, particularly where resources are older or lack protective reinforcement. Intense rainfall can erode soils and displace archeological materials, leading to the loss of historic context and integrity. Natural resources may also be impacted by severe storms that could damage forests, alter stream channels, degrade wetlands, and reduce water quality through increased sedimentation and runoff.

4.6.4.4. PEOPLE

The wind, hail, lightning, and flooding often produced by severe storms can lead to injury or death. Some populations may face greater risk to severe storms--the relatively short warning time typically provided for severe storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Simpson County has a low to medium SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.6.4.5. STRUCTURES AND SYSTEMS

Aging infrastructure and limited emergency resources without redundancies increase the vulnerability of structures and systems in Simpson County to the impacts of severe storms. However, this vulnerability is not markedly higher or lower in the County than the rest of the District; the vulnerability of structures and systems across D5 is described in more detail in the base plan. Based on the previous occurrences, there has been over $1,000,000 in damage in the past five years. It is expected that similar damage will occur in the future.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Simpson County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.6.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Simpson County means fewer people and structures for storms to damage. Additionally, lower strain on stormwater management systems can contribute to an overall /reduction in the likelihood of severe storms to lead to flooding.

4.7. SEVERE WINTER WEATHER

4.7.1. LOCATION AND EXTENT

Severe winter weather is a region-wide hazard in the Mississippi Delta and is not confined to specific locations. Winter storms affect the entire planning area equally; Simpson County and its jurisdictions are not more or less susceptible to their impacts than other communities in District 5. More information on the extent of the threat posed by these storms is provided in the base plan. However, the extent of these storms is limited, with an average amount of annual snowfall in the county of .25 inches. For more information on severe winter weather events across the District, refer to the base plan.

4.7.2. PREVIOUS OCCURRENCES

Several impactful severe winter weather events have occurred in Simpson County over the past two decades. The most significant of these in recent years include:

- The January 2018 cold snap that led to challenges like burst pipes, increased heating demands, and risk to seniors and other vulnerable populations
- The February 2021 freezing rain, sleet, and snow event that led to widespread power outages due to ice accumulation
- The January 2014 snowstorm led to significant road hazards and injuries and fatalities across District 5. (blurb on injuries/fatalities in this county)

Between 2015 and 2020, there were two severe winter weather events in Simpson County, causing $75,000 in property damage. Since the 2020 plan update, there have been three such events, causing $200,000 in damage.

4.7.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been five events in the past 10 years. A severe winter weather event is expected to occur every two years. Severe winter weather events in Simpson County and its jurisdictions are considered **Likely** but increasing in frequency and severity.

4.7.4. LOCALIZED VULNERABILITY ASSESSMENT

4.7.4.1. OVERALL VULNERABILITY

All counties within District 5 are vulnerable to the impact of severe winter storms. Because it is closer to the Southern portion of the region, winter weather in Simpson County may be slightly less severe than across the region. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the County's natural, historic, and cultural assets, as discussed in the base plan. Based on the frequency and the severity of severe winter storms, the risk to the County and its jurisdictions is **High**. Severe winter storms can disrupt utility and critical infrastructure which can significantly disrupt the communities of Simpson County. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to severe winter storms.

4.7.4.2. CRITICAL FACILITIES

Severe winter weather, including freezing temperatures, ice, and occasional snow, can disrupt critical facilities in Simpson County by causing power outages, damaging water and wastewater systems, and limiting transportation access. Freezing conditions may result in broken pipes, equipment failures, and interruptions to essential services at hospitals, emergency response facilities, schools, and government buildings.

4.7.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Although severe winter weather occurs infrequently, its effects can result in lasting damage to sensitive cultural, historic, and natural resources. Severe winter weather can adversely affect cultural, historic, and natural resources in the County by causing structural stress, moisture damage, and ecological disruption. Historic buildings, cemeteries, and monuments may experience cracking, spalling, or material deterioration due to freeze–thaw cycles, while ice accumulation and fallen trees can damage structures and cultural landscapes. Natural resources are also vulnerable, as winter weather can damage vegetation, alter wildlife habitats, and degrade water quality through increased runoff and erosion.

4.7.4.4. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations. As with other hazards, those who are elderly, disabled, or economically disadvantaged are at heightened risk due to limited access to reliable heating, transportation, and emergency services, and a reduced ability to physically withstand cold temperatures. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms. Individuals living in mobile homes may experience a higher risk of impacts from severe storms from high winds and hail on the structures and therefore could cause injuries and deaths. These populations can experience disproportionate impacts to severe winter weather and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Simpson County has a low to medium SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.7.4.5. STRUCTURES AND SYSTEMS

Rural communities may be more vulnerable to isolation during winter storms, especially if roads become impassable. These areas often face greater challenges in road treatment and utility restoration due to limited access to resources and longer emergency response times. Because Simpson County is relatively more rural than District 5 overall, people in the County and its municipalities are at slightly higher risk. Based on previous occurrences, there have been nearly $300,000 in the past 10 years. It is expected that similar damages will occur in the future.

4.7.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Stagnant population reduction in Simpson County reduces the strain on electrical and other utility systems, reducing the likelihood that these systems experience failure during significant events. However, this may also contribute to slower emergency response times, increasing risk.

4.8. TORNADO

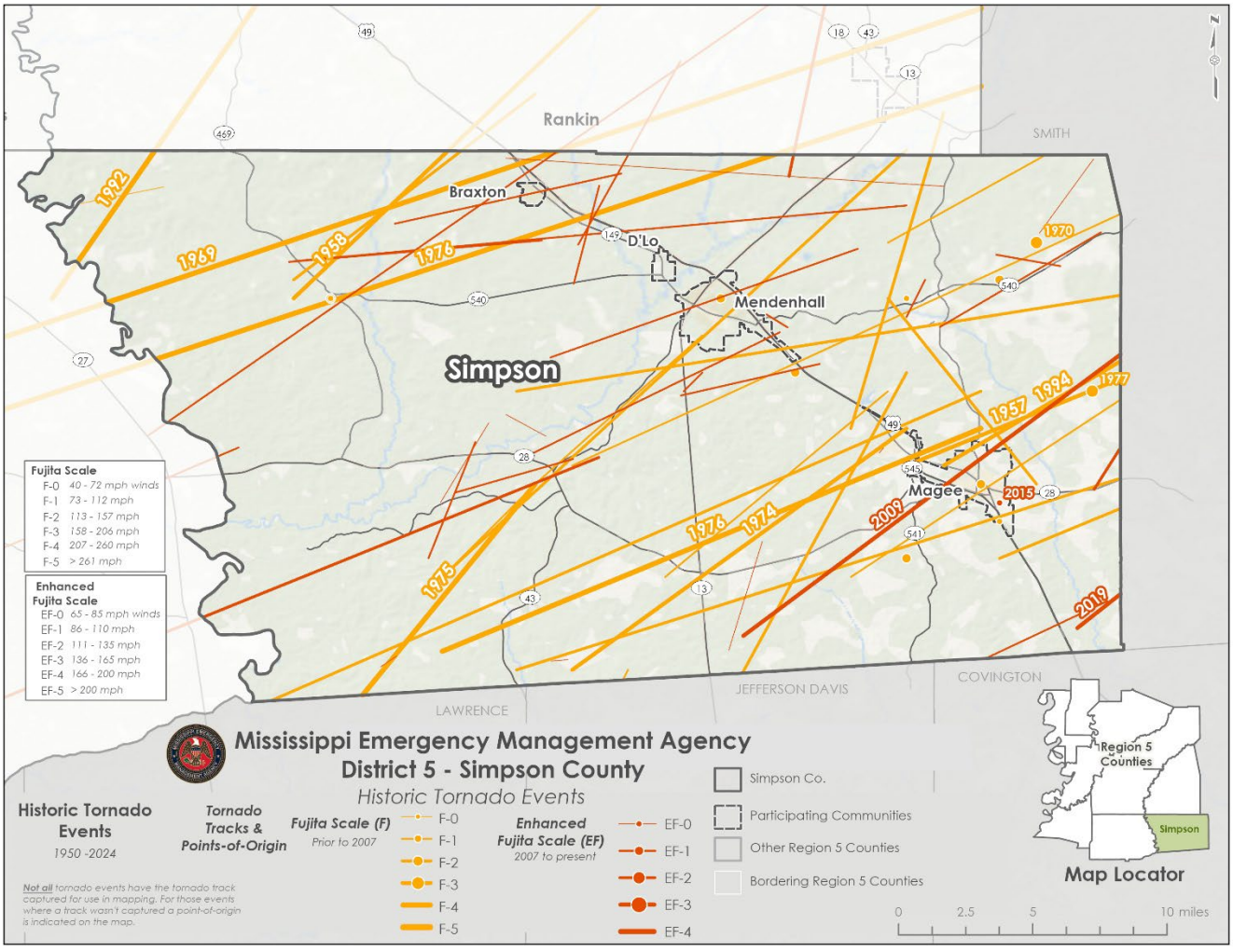
4.8.1. LOCATION AND EXTENT

Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments. Due to the unpredictable nature of tornado formation and the ability for the entire planning area to be impacted by severe storms, the entirety of Simpson County is equally likely to experience a tornado of any magnitude. Tornados of any strength on the Enhanced Fujita (EF) scale are possible throughout the county. For more information on tornadoes across the District, refer to the base plan.

4.8.2. PREVIOUS OCCURRENCES

Between 1950 and 2022, there were 61 tornadoes reported in Simpson County, causing a total of $27,754,000 in property damage. **Figure 22** below shows the historic tornado events throughout the County.

FIGURE 22: SIMPSON COUNTY HISTORIC TORNADO EVENTS



4.8.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 61 tornado events in the past 72 years. The County and its jurisdictions can expect a tornado event to occur one or two years. The probability of a tornado occurring in the future for Simpson County and its jurisdictions is **Extremely Likely**.

4.8.4. LOCALIZED VULNERABILITY ASSESSMENT

4.8.4.1. OVERALL VULNERABILITY

More populous and developed counties like Simpson County face elevated risk from tornadoes due to greater exposure and potential for cascading impacts. These areas are more likely to experience significant property damage, disruption of services, and challenges in post-disaster recovery. Additionally, mobile homes are extremely susceptible to high winds and may sustain more damage or be flipped over during a strong tornado. Tornadoes cause flying debris which can be dangerous for people in the surrounding areas and other buildings, infrastructure, and critical facilities. Due to the severity tornadoes can cause, they pose a **High** risk to Simpson County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to tornadoes.

4.8.4.2. CRITICAL FACILITIES

Tornadoes present a significant threat to critical facilities in Simpson County, as extreme winds and airborne debris can cause rapid and extensive structural damage. Hospitals, emergency response centers, schools, and water or wastewater systems are particularly vulnerable to roof loss, wall failure, and utility disruptions, which can result in immediate service outages. Power and communication failures are frequent during tornado events, and debris-cluttered roadways can hinder access to essential facilities and delay emergency response efforts.

4.8.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tornadoes can significantly impact cultural, historic, and natural resources in Simpson County by damaging irreplaceable landmarks, artifacts, and ecosystems. High winds and flying debris can compromise historic buildings, monuments, museums, and archival collections, leading to loss of structural integrity or destruction of items that hold cultural or community significance. Archaeological sites may be disturbed or exposed by soil displacement and uprooted vegetation. Natural resources, including forests, parks, wildlife habitats, and water bodies, can experience severe tree loss, erosion, and habitat disruption, which may take years to recover. These impacts can diminish the county's cultural identity, reduce tourism value, and strain conservation and restoration efforts.

4.8.4.4. PEOPLE

Some populations may face greater risk to tornadoes--the relatively short warning time typically provided for tornadoes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. 3,080 (27.2%) of the residents of Simpson County reside in mobile or manufactured homes, placing them at increased risk. These populations can experience disproportionate impacts to tornadoes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Simpson County has a low to medium SVI score and therefore may recover faster than other residents of District 5.

4.8.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that do not have safe rooms or have not been retrofitted for extreme winds are vulnerable to the impacts of tornados, including in Simpson County, as described in the base plan. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of tornadoes. Simpson County may be at slightly lower risk of these impacts simply because it is less developed than other counties in the district, and there are more such facilities to be impacted. Based on previous occurrences, there have been nearly $28,000,000 in damage over 72 years. It is expected that tornadoes will cause an average of $388,888 each year.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. Simpson County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.8.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Simpson County means fewer people and structures for tornadoes to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tornadoes.

4.9. TROPICAL STORM/HURRICANE

4.9.1. LOCATION AND EXTENT

Like the rest of District 5, Simpson County is inland but is still vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. This risk is not measurably varied across the County or planning area, except for low-lying and flood-prone areas that might be more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

The extent of the impacts of tropical storm typically includes sustained winds of 30-60 MPH with higher gusts, heavy rainfalls of six or more inches in a 24-hour period, and occasional tornadoes. For more information on tropical storms and hurricanes across the District, refer to the base plan.

4.9.2. PREVIOUS OCCURRENCES

Simpson County is inland but has experienced the direct impacts of tropical storms in the past. The tracks of the following storms have passed directly through the county, producing damaging wind, heavy rainfall, power outages, and occasional tornadoes:

- Unnamed Tropical Depression (1987)
- Tropical Storm Isidore (2002)
- Tropical Storm Gordon (2018)
- Tropical Depression Francine (2024)

4.9.3. PROBABILITY OF FUTURE OCCURRENCES

Although Simpson County is located inland, the probability of experiencing hurricane-related impacts remains moderate to **Extremely Likely** due to the proximity to the Gulf Coast and historical storm tracks. The County and its jurisdictions can expect to experience the effects of a tropical storm or hurricane approximately every 5 to 10 years, although climate trends and increased storm intensity may elevate risk.

4.9.4. LOCALIZED VULNERABILITY ASSESSMENT

4.9.4.1. OVERALL VULNERABILITY

Being in the Southern half of the district, Simpson County is likely to experience slightly more frequent and intense tropical storm impacts than the district overall. Due to the low frequency, geography, and potential damage from tropical storms and hurricanes, they pose a **Medium** risk to Simpson County and its jurisdictions. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to tropical storms and hurricanes.

4.9.4.2. CRITICAL FACILITIES

Tropical storms and hurricanes, even after weakening inland, can have impact on critical facilities in Simpson County through heavy rainfall, strong winds, and localized flooding that place significant stress on infrastructure and essential services. Hospitals, emergency response facilities, schools, government buildings, and water and wastewater systems may experience structural damage, utility disruptions, and flooding of mechanical or electrical equipment. Intense rainfall can also exceed drainage system capacity and inundate roadways, limiting access to critical facilities and hindering emergency response operations.

4.9.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Tropical storms and hurricanes can adversely impact cultural, historic, and natural resources in the County through heavy rainfall, strong winds, localized flooding, and prolonged soil saturation. Historic buildings, cemeteries, monuments, and archeological sites may be damaged by wind-driven debris, roof failure, flooding, or erosion, particularly where structures and sites are older or not designed to withstand prolonged moisture exposure. Excessive rainfall can erode soils and displace archeological materials, while flooding may degrade cultural landscapes and historic settings. Natural resources are also vulnerable, as tropical storm impacts can damage forested areas, alter stream channels, degrade wetlands, and reduce water quality due to increased runoff and sedimentation.

4.9.4.4. PEOPLE

Some populations may face greater risk to tropical storms--the relatively short warning time typically provided for tropical storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. These populations can experience disproportionate impacts to tropical storms and hurricanes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Simpson County has a low to medium SVI score and therefore may recover faster than other residents of District 5.

4.9.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storms like high winds. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of these storms across the planning area, including in Simpson County, as described in the base plan. The County may be at slightly higher risk of these impacts simply because of the County's location and it being less developed than other counties in the district, and there are more such facilities to be impacted. As noted above, low-lying and flood-prone areas are more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. Simpson County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.9.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The overall decrease in development and population in Simpson County means fewer people and structures for these storms to damage. This trend also leads to a housing and building stock that is older, decreasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tropical storms.

4.10. WILD/URBAN INTERFACE (WUI) FIRE

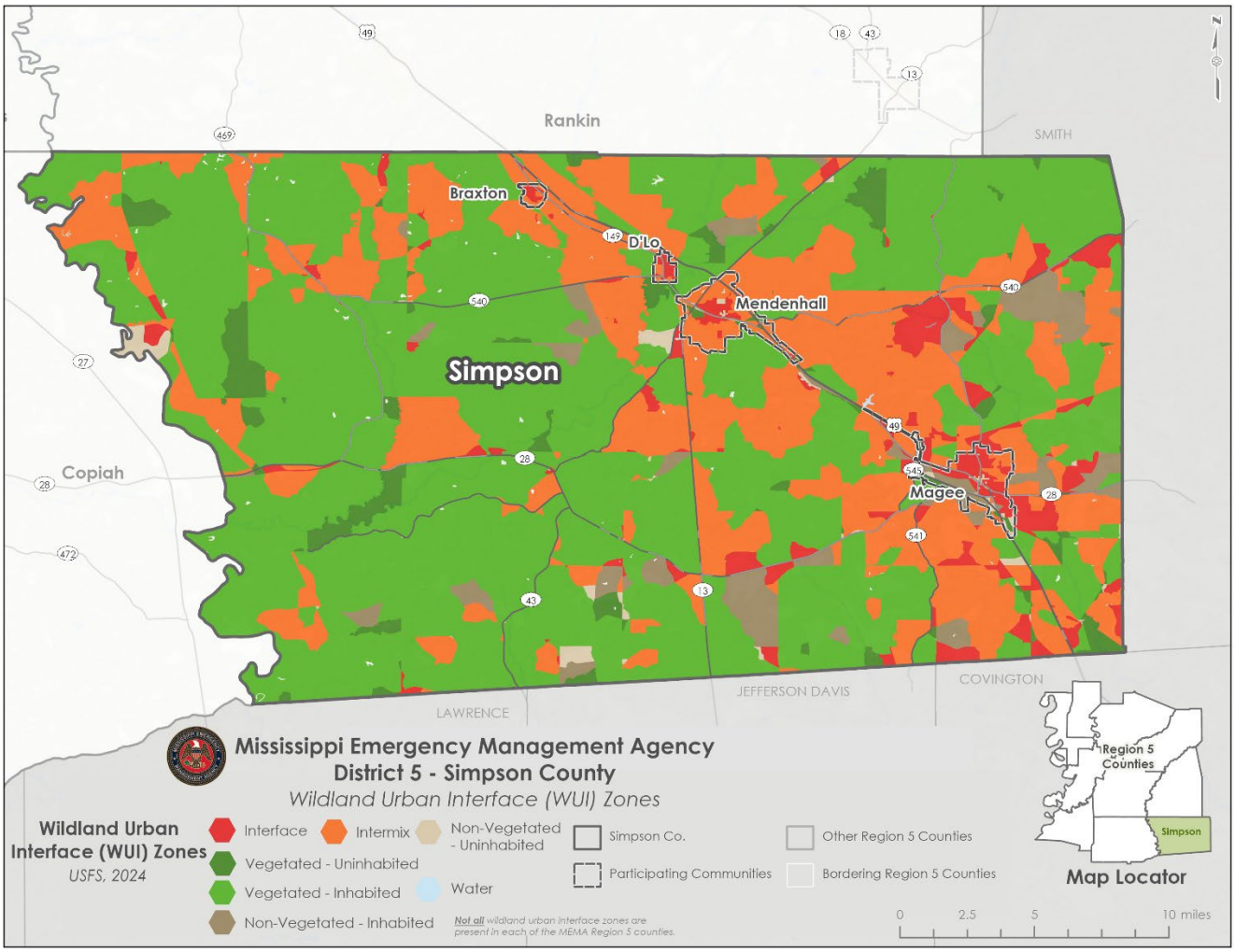
4.10.1. LOCATION AND EXTENT

Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas. There are two types of WUI Zones, and they are briefly described below. For more information on urban and WUI fires across the District, refer to the base plan.

- **Interface:** Development is bordered by wildlands on at least one side.
- **Intermix:** Development is surrounded on two or more sides by wildlands.

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. **Figure 23** is a map showing the area where this hazard is most significant in Simpson County. The Western part of the County is slightly more Vegetated than the Eastern area with scattered parts of WUI Interface and Intermix across the County. Braxton, D'Lo, Mendenhall, and Magee have extensive WUI interface and intermix.

FIGURE 23: WILDLAND URBAN INTERFACE (WUI) AREA IN SIMPSON COUNTY



The extent of a potential WUI fire impact in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development, but is not substantively different in Simpson County than in the District overall. This extent is described further in the base plan.

4.10.2. PREVIOUS OCCURRENCES

There have been zero report urban fires in the Simpson County from 1992-2020 and zero wildfires from 1984-2024. It is also important to note that some District 3 participating communities provided anecdotal information that previous fire events have not been captured using state level data. Due to this data limitation, it is possible that the number of previous occurrences could be more than reported.

4.10.3. PROBABILITY OF FUTURE OCCURRENCES

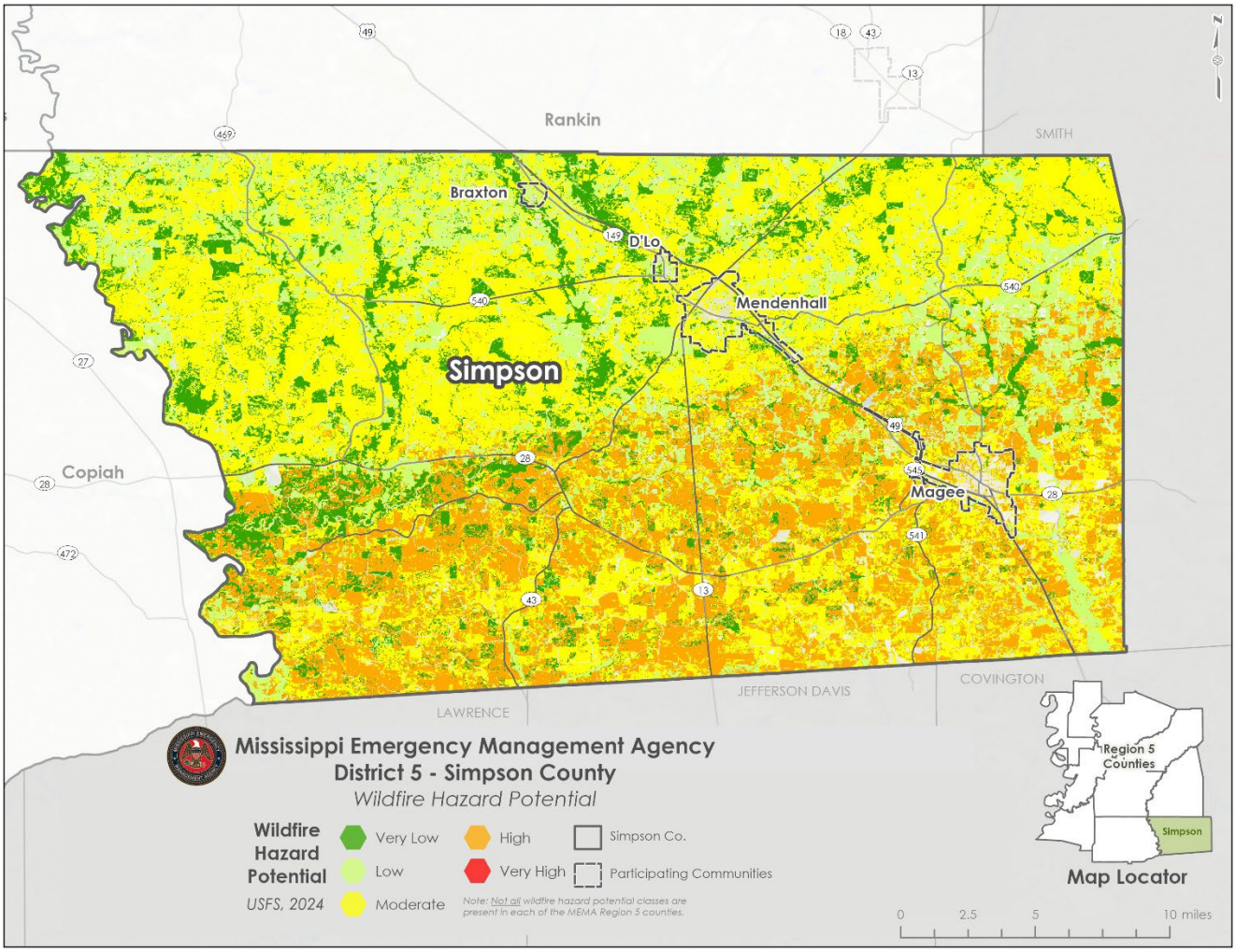
Wildland/Urban Interface (WUI) fires are expected to remain a recurring hazard in Simpson County due to the extensive area of interface and intermix across the County and its jurisdictions. Hundreds of wildfires occur in Mississippi each year, indicating that such fires may occur in the County. The wildfire potential map displayed in figure below shows the moderate to high wildfire potential areas across the County. However, based on local capacity to respond to such fires, the impact on the County is relatively low. The probability of the County and its jurisdictions responding to a severe fire is **Extremely Likely**.

4.10.4. LOCALIZED VULNERABILITY ASSESSMENT

4.10.4.1. OVERALL VULNERABILITY

Simpson County in the eastern part of the district, due to a variety of geographic factors like drier climate and soils and trends in development, are more susceptible to both WUI and urban fire. Wildfire hazard potential is generally **High** across the County and its jurisdictions. See **Figure 24** below for a visual of the wildfire hazard potential throughout the County. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to wildfires.

FIGURE 24: SIMPSON COUNTY WILDFIRE HAZARD POTENTIAL



4.10.4.2. CRITICAL FACILITIES

Urban and wildland fires pose a significant risk to critical facilities in Claiborne County by threatening structural integrity, utility systems, and operational continuity. Hospitals, fire stations, schools, government buildings, and water or wastewater facilities may be damaged or rendered inoperable by direct flame contact, radiant heat, smoke infiltration, and wind-driven embers. Fire events can disrupt electrical power, communications, and water supplies needed for medical care, emergency response, and fire suppression, while evacuation orders and hazardous conditions may limit staff access to critical facilities. Wildfires occurring in or near the wildland-urban interface can also restrict transportation routes and delay response efforts. **Figure 25** displays the critical facilities and infrastructure in the WUI zones. **Table 39** critical facilities in Simpson County lie within the WUI area and are thus at increased risk.

FIGURE 25: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE WUI ZONES

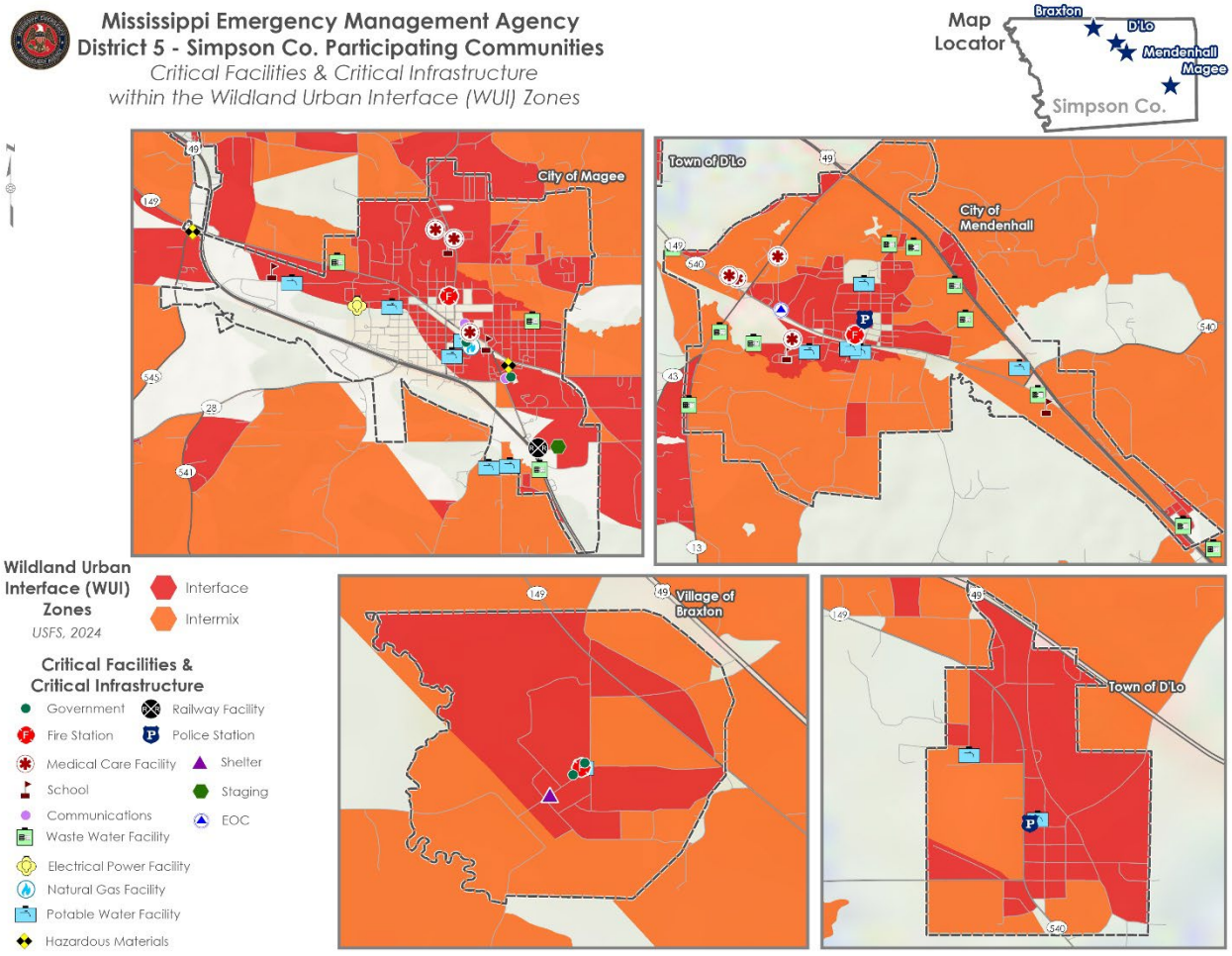


TABLE 39: CRITICAL FACILITIES IN THE WUI

Jurisdiction	Facility Type	Facility	WUI Zone
Magee	Airport	Magee Muni	Intermix - Low Density
Magee	Communications	Bell South	Intermix - Low Density
Magee	Communications	Cellular South Tower	Intermix - Low Density
Magee	Electrical Power Facility	Entergy	Intermix - Low Density
Mendenhall	EOC	Simpson County Emergency Operations Center	Interface - Medium Density
Braxton	Fire Station	Braxton Fire Rescue	Interface - Low Density
Harrisville	Fire Station	Harrisville Volunteer Fire Department	Intermix - Low Density

Jurisdiction	Facility Type	Facility	WUI Zone
Magee	Fire Station	Magee Volunteer Fire Department	Interface - Medium Density
Mendenhall	Fire Station	Mendenhall Volunteer Fire Department	Interface - Medium Density
Florence	Fire Station	Old Pearl Volunteer Fire Department	Intermix - Low Density
Pinola	Fire Station	Pinola Volunteer Fire Department Station 1	Intermix - Low Density
Mendenhall	Fire Station	Pinola Volunteer Fire Department Station 2	Interface - Low Density
Mendenhall	Fire Station	Station 7 Fire Department	Interface - Low Density
Braxton	Government	Braxton Post Office	Interface - Low Density
Braxton	Government	Braxton Town Hall	Interface - Low Density
Magee	Government	Public Works (Warehouse)	Interface - Low Density
Magee	Government - Residential	MS Dept. of Corrections	Interface - Low Density
Magee	Hazardous Materials	Lampton Love (Bulk storage of Propane gas)	Interface - Medium Density
Magee	Hazardous Materials	Magee Co-op (Farm supplies/bulk storage)	Interface - Low Density
Magee	Medical Care Facility	Magee General Hospital	Interface - Low Density
Mendenhall	Medical Care Facility	Simpson General Hospital	Intermix - Medium Density
Mendenhall	Medical Care Facility - Residential	Conva-Rest of Mendenhall	Intermix - Medium Density
Mendenhall	Medical Care Facility - Residential	Harper Village	Interface - Medium Density
Magee	Medical Care Facility - Residential	Lakeview Place - Assisted Living	Interface - Medium Density
Magee	Medical Care Facility - Residential	Millcreek	Interface - High Density
Mendenhall	Medical Care Facility - Residential	Strong River Villa - Assisted Living	Intermix - Medium Density
Magee	Natural Gas Facility	Wilmut Gas	Interface - Low Density
Mendenhall	Police Station	D'Lo Police Department	Interface - Medium Density
Mendenhall	Police Station	Sheriff's Department	Interface - Medium Density

Jurisdiction	Facility Type	Facility	WUI Zone
Mendenhall	Police Station	Simpson County Sheriffs' Department / Simpson County Jail	Interface - Medium Density
Braxton	Potable Water	Braxton Water Well - Main Street	Interface - Low Density
D'Lo	Potable Water	D'Lo Water Well 1	Interface - Medium Density
D'Lo	Potable Water	D'Lo Water Well 2	Interface - Medium Density
Magee	Potable Water	McNair Springs	Intermix - Low Density
Mendenhall	Potable Water	School Water Tank	Interface - Medium Density
Mendenhall	Potable Water	Water Well #1	Interface - Medium Density
Mendenhall	Potable Water	Water Well #2	Interface - Medium Density
Mendenhall	Potable Water	Water Well #3	Interface - Medium Density
Mendenhall	Potable Water Facility	Mendenhall Water Tank #1	Intermix - Medium Density
Mendenhall	Potable Water Facility	Mendenhall Water Tank #2	Interface - Medium Density
Magee	Potable Water Facility	Mountain Pure Water Plant	Intermix - Low Density
Mendenhall	Potable Water Facility	Water Plant	Interface - Medium Density
Magee	Potable Water Facility	Water Plant #1	Interface - Low Density
Magee	Potable Water Facility	Well #4	Interface - High Density
Magee	Potable Water Facility	Well #5	Interface - Medium Density
Magee	Potable Water Facility	Well #6	Interface - Low Density
Magee	Railway Facility	Tyson Foods	Interface - Low Density
Mendenhall	School	Copiah-Lincoln Community College - Simpson County Center	Intermix - Low Density
Mendenhall	School	Genesis One Christian School	Interface - Medium Density
Magee	School	Magee Elementary School	Interface - Low Density

Jurisdiction	Facility Type	Facility	WUI Zone
Magee	School	Millcreek School	Interface - Medium Density
Pinola	School	Simpson Central School	Interface - Low Density
Mendenhall	School	Simpson Co Technical Center	Intermix - Low Density
Magee	School	Simpson County Achievement Center	Interface - Low Density
Braxton	Shelter	Braxton Community Center	Interface - Medium Density
Magee	Staging	Guard Armory	Interface - Low Density
Mendenhall	Waste Water Facility	Feed it - Tutor Funeral	Intermix - Low Density
Mendenhall	Waste Water Facility	Grinder Station - Station #2	Intermix - Low Density
Mendenhall	Waste Water Facility	Hwy 13-Cox Pump Station	Intermix - Medium Density
Magee	Waste Water Facility	Lift Station #1	Interface - Medium Density
Magee	Waste Water Facility	Lift Station #2	Intermix - Low Density
Magee	Waste Water Facility	Lift Station #3	Intermix - Medium Density
Mendenhall	Waste Water Facility	Mendenhall POTW	Interface - Medium Density
Mendenhall	Waste Water Facility	Morehead Pump Station	Intermix - Medium Density
Mendenhall	Waste Water Facility	Polly Ave. Pump Station	Intermix - Medium Density
Mendenhall	Waste Water Facility	Ross Dr. Pump Station	Intermix - Medium Density
Mendenhall	Waste Water Facility	Subway Pump Station	Intermix - Medium Density
Mendenhall	Waste Water Facility	Taylor Pump Station	Intermix - Medium Density
Mendenhall	Waste Water Facility	Votech-Lowery Pump Station	Intermix - Low Density
Mendenhall	Waste Water Facility	Weathersby #1	Interface - Medium Density
Mendenhall	Waste Water Facility	Weathersby #2	Interface - Medium Density

4.10.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Urban and wildland fires can cause significant damage to cultural, historic, and natural resources in the County through flame exposure, extreme heat, smoke, and post-fire environmental degradation.

Historic structures, cemeteries, monuments, and archeological sites may be damaged or lost because of direct fire contact, structural weakening from heat, falling trees, or fire-suppression activities. The destruction of surrounding vegetation can alter historic settings and cultural landscapes, reducing their integrity and context. Natural resources are particularly vulnerable, as fires can result in the loss of forested areas and wildlife habitat, degrade air and water quality, and increase erosion and sediment runoff following vegetation loss.

4.10.4.4. PEOPLE

For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Issaquena and Sharkey Counties and the City of Madison, thus putting those populations at a slightly lower risk than the rest of the District.

Populations most at risk of the impacts of fires include older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate when these fires occur. These populations can experience disproportionate impacts to urban and WUI fires and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Simpson County has a low to medium SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. Because it is more rural than the district, people in Simpson County may be at slightly higher risk from wildfire, as the lower access to road infrastructure and warning systems may make evacuation more difficult.

4.10.4.5. STRUCTURES AND SYSTEMS

Simpson County contains extensive areas of direct exposure to wildfire risk, as shown in the Wildfire Risk Reduction Zones map in the base plan. In these areas, homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk and complicating suppression efforts. Simpson County does have a Community Wildfire Protection Plan (CWPP) in place, which helps address and reduce risk.

4.10.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like Simpson County, population decline can lead to reduced access to emergency services and increased response times, which can increase risk even though additional structures are not being placed in harm’s way.

4.11. HAZARDOUS MATERIAL INCIDENTS

4.11.1. LOCATION AND EXTENT

Hazardous materials incidents can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, agricultural operations, and facilities that store or use chemicals. In Simpson County, these include:

- U.S. Route 49
- State Highways 13, 28, 43, 149, 472, 540, 541 and 545
- Illinois Central Railroad

As noted in the base plan, the severity of the impact from HazMat incidents depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures. Because Simpson County is more rural, impacts of a release on the surrounding population might be less significant due to population density, although longer emergency crew response times may impact the severity of an incident.

Figure 26 below shows the gas transmission pipelines and hazardous liquid pipelines while **Figure 27** below displays the ground transportation throughout the County. For more information on hazardous material incidents across the District, refer to the base plan.

FIGURE 26: PIPELINES IN SIMPSON COUNTY

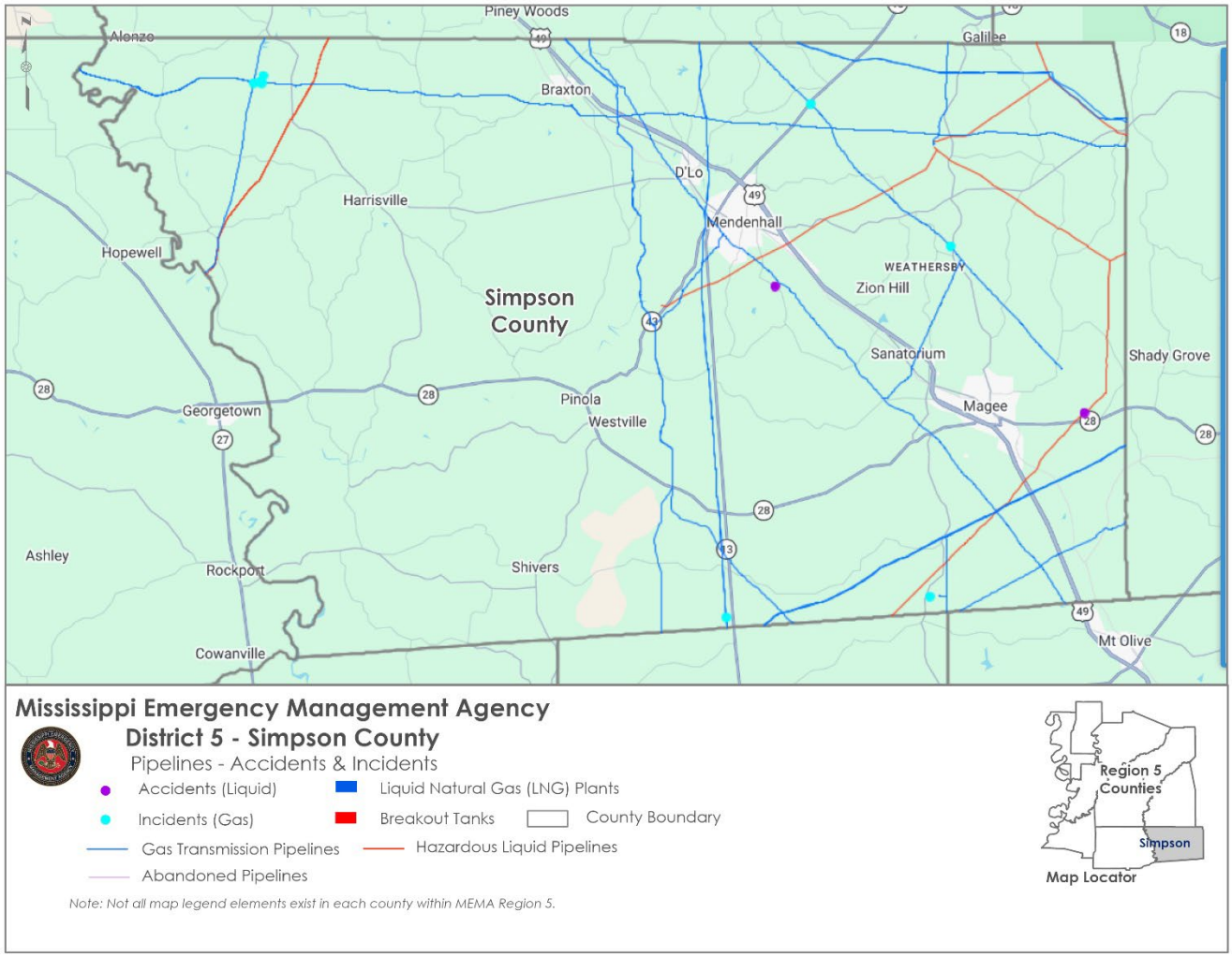
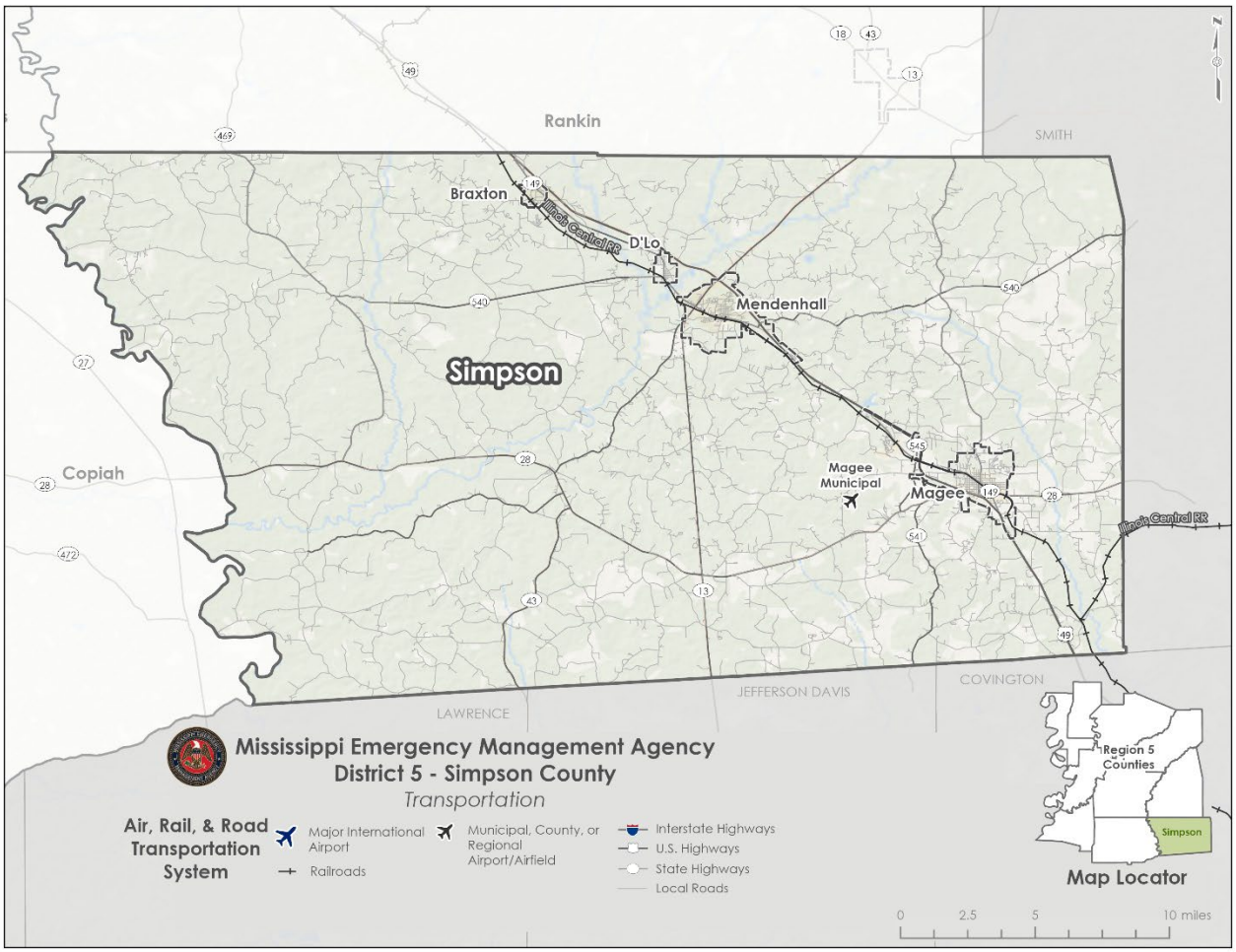


FIGURE 27: GROUND TRANSPORTATION IN SIMPSON COUNTY



4.11.2. PREVIOUS OCCURRENCES

In Simpson County, there have been a total of zero hazardous materials releases reported to the EPA since 2014.

- 2014: 0 reports at 1 facility
- 2015: 0 reports at 1 facility
- 2016: 0 reports at 1 facility
- 2017: 0 reports at 1 facility
- 2018: 0 reports at 1 facility
- 2019: 0 reports at 1 facility
- 2020: 0 reports at 1 facility
- 2021: 0 reports at 1 facility
- 2022: 0 reports at 1 facility
- 2023: 0 reports at 1 facility

- 2024: 0 reports at 1 facility

4.11.3. PROBABILITY OF FUTURE OCCURRENCES

Since hazardous materials incidents are not considered “natural hazards”, the jurisdictions are not required to evaluate the probability of future occurrences to the County. Therefore, the probability of future occurrence is **Unrated**.

4.11.4. LOCALIZED VULNERABILITY ASSESSMENT

4.11.4.1. OVERALL VULNERABILITY

More rural and less densely populated counties like Simpson County may have limited access to safe shelters, and fewer emergency response resources. These factors can increase the severity of HazMat impacts despite lower exposure levels. Since nuclear incidents are not considered “natural hazards”, the jurisdictions are not required to evaluate the overall risk to the County. The overall risk of a hazardous material incident in Simpson County and its jurisdictions is **Unrated**. This section provides further contextualization for the anticipated vulnerability of the communities within Simpson County to hazardous material incidents.

4.11.4.2. CRITICAL FACILITIES

Hazardous materials incidents can threaten critical facilities in Simpson County by causing contamination, toxic exposure, or fire and explosion hazards that force evacuations or temporary closures. Facilities such as hospitals, schools, emergency response buildings, government offices, and water or wastewater systems may experience service disruptions due to safety concerns, restricted access, or impacts to supporting utilities. Emergency operations can also be strained as resources are diverted to containment and cleanup efforts.

4.11.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Hazardous materials incidents can negatively affect cultural, historic, and natural resources in the County through contamination of soil, water, vegetation, and sensitive sites. Historic buildings, cemeteries, and archeological resources may be damaged by chemical spills, airborne releases, or cleanup activities that disturb structures and surrounding landscapes. Natural resources are particularly vulnerable, as hazardous substances can pollute streams, wetlands, and groundwater, harm wildlife, and degrade ecosystems for extended periods.

4.11.4.4. PEOPLE

Populations most at risk of the impacts of hazardous materials incidents are those living near transportation corridors, industrial facilities, and storage sites, who are more likely to be lower income. This population is also less likely to have reliable access to transportation, complicating evacuation efforts. Other vulnerable populations include older adults, children, and those with respiratory conditions, who may face challenges during shelter-in-place orders. These populations can experience disproportionate impacts to hazardous materials incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Simpson County has a low to medium SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.11.4.5. STRUCTURES AND SYSTEMS

Because it is more rural than the rest of the district, people in Simpson County may be at slightly lower risk from HazMat incidents due to the relative number of facilities that might cause releases. However, lower access to road infrastructure and warning systems may make evacuation more difficult than in

other areas, as would lower emergency response capability. Impacts on lifelines and to natural, cultural, and historic resources are generally consistent across the planning area and are described in the base plan.

4.11.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like Simpson County, population decline can lead to reduced access to emergency services and increased response times, which can increase risk from hazardous materials incidents.

4.12. NUCLEAR POWER PLANT INCIDENTS

4.12.1. LOCATION AND EXTENT

A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies.

Grand Gulf Nuclear Station is the only nuclear power plant in Mississippi. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP), includes a 50-mile radius from the facility. The entirety of Simpson County is outside of the 50-mile radius of the facility. For more information on nuclear power plant incidents across the District, refer to the base plan.

4.12.2. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. However, historical examples such as Three Mile Island (1979), Chernobyl (1986), and Fukushima Daiichi (2011) demonstrate the potential severity of such events. Grand Gulf Nuclear Station has maintained a strong safety record, but minor operational alerts have occurred in the past without offsite consequences. More information about previous occurrences can be found in the base plan.

4.12.3. PROBABILITY OF FUTURE OCCURRENCES

Nuclear power plants have strict regulatory oversight and safety protocols. However, the potential consequences are high. Natural hazards such as severe storms, flooding, or seismic activity could increase risk factors. The Fukushima Daiichi nuclear accident in 2011 is the most recent major nuclear event, and it was primarily caused by a M_w 9.0-9.1 earthquake and subsequent tsunami causing extensive damage to nearly all the facility's backup power sources. According to an NRC report, the estimated risk each year of an earthquake is intense enough to cause damage to the reactor core at Grand Gulf Nuclear Station, 1 in 83,333. Given the lack of previous occurrences and Simpson County's location outside of the 50-mile Ingestion Exposure Pathway Zone, the probability of a nuclear power plant incident affecting the county and its communities including Braxton, D'Lo, Magee, and Mendenhall, is **unlikely.**

4.12.4. LOCALIZED VULNERABILITY ASSESSMENT

4.12.4.1. OVERALL VULNERABILITY

Since nuclear incidents are not considered "natural hazards", jurisdictions are not required to evaluate the overall risk of this hazard to the same extent as natural hazards profiled in this plan. Some communities opted to evaluate nuclear power plant incidents in a manner consistent with other hazards, but Simpson County, Braxton, D'Lo, Magee, and Mendenhall did not wish to attempt to quantify the area impacted, health and safety consequences, property damage, environmental damage, and economic disruption of nuclear power plant incidents. Therefore, the overall vulnerability for Simpson County and its communities to nuclear power plant incidents is **unrated.**

4.12.4.2. CRITICAL FACILITIES

Since Simpson County and its communities are outside of the 50-mile radius from the facility, no direct impacts to critical facilities are expected to occur as a result of any nuclear power plant incident that can be reasonably anticipated.

4.12.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Since Simpson County and its communities are outside of the 50-mile radius from the facility, no cultural, historic or natural resources are expected to be significantly impacted by a nuclear power plant incident that can reasonably be anticipated.

4.12.4.4. PEOPLE

The residents of Simpson County and its communities are at an overall lower relative risk for direct impacts on health and safety than the rest of the District due to being outside of the 50-mile Ingestion Exposure Pathway Zone from the Grand Gulf Nuclear Station. However, all individuals in the District may experience stress and disruption to daily activities due to economic uncertainty, transportation interruptions, and strain on public services in the event of an incident.

4.12.4.5. STRUCTURES AND SYSTEMS

Because Simpson County and its communities are outside of the 50-mile radius from the facility, the potential impacts to structures and systems in Simpson County are expected to be minimal. More details on impacts on structures and systems are described in more detail in the base plan.

4.12.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Census data shows that Simpson County and its communities have experienced a population decline in recent years. Due to the absence of any major growth, as well as the county's position outside of the 50-mile Ingestion Exposure Pathway Zone, recent development trends in the county are not assessed to have appreciably increased or decreased the vulnerability of Simpson County and its communities.

4.13. CRITICAL FACILITIES VULNERABILITY SUMMARY

Table 40 below notes the individual critical facilities in Simpson County that were identified by the Mitigation Council and provides information on the relative risk these facilities face from various hazards.

TABLE 40: SIMPSON COUNTY CRITICAL FACILITIES VULNERABILITY SUMMARY

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
Airport	MAGEE MUNI	Magee	OUT	OUT	Intermix - Low Density	WTZ: Non-Vegetated	N/A - WHP Undetermined
Communications	AT&T Cell Tower	Magee	OUT	OUT	Non-Vegetated - Uninhabited	WTZ: Non-Vegetated	N/A - WHP Undetermined
Communications	Bell South	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Communications	Cellular South Tower	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Communications	WSJC 810	Magee	IN	OUT	Non-Vegetated - Very Low Density	Direct Exposure	Low
Electrical Power Facility	Entergy	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Electrical Power Facility	Southern Pine Substation	Magee	OUT	OUT	Non-Vegetated - Very Low Density	Direct Exposure	Low
Electrical Power Facility	Substation @ Hwy 149	Magee	OUT	OUT	Non-Vegetated - Very Low Density	Direct Exposure	Low
EOC	Simpson County Emergency Operations Center	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
Fire Station	Braxton Fire Rescue	Braxton	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Fire Station	Harrisville Volunteer Fire Department	Harrisville	IN	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Fire Station	Magee Volunteer Fire Department	Magee	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Fire Station	Mendenhall Volunteer Fire Department	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Fire Station	Old Pearl Volunteer Fire Department	Florence	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Fire Station	Pinola Volunteer Fire Department Station 1	Pinola	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Fire Station	Pinola Volunteer Fire Department Station 2	Mendenhall	OUT	OUT	Interface - Low Density	Direct Exposure	Moderate
Fire Station	Station 7 Fire Department	Mendenhall	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Government	Braxton Post Office	Braxton	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Government	Braxton Town Hall	Braxton	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
Government	Magee - City Hall	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Government	Mendenhall - City Hall	Mendenhall	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Government	Mendenhall City Barn (Response Supplies)	Mendenhall	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Government	Public Works (Warehouse)	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Government - Residential	MS Dept. of Corrections	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Hazardous Materials	Lampton Love (Bulk storage of Propane gas)	Magee	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Hazardous Materials	Magee Co-op (Farm supplies/bulk storage)	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility	AMR	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility	Central Dialysis	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility	MAGEE GENERAL HOSPITAL	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
Medical Care Facility	SIMPSON GENERAL HOSPITAL	Mendenhall	OUT	OUT	Intermix - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility - Residential	Conva-Rest of Mendenhall	Mendenhall	IN	OUT	Intermix - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility - Residential	Harper Village	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility - Residential	Hillcrest Nursing Home	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility - Residential	Lakeview Place - Assisted Living	Magee	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility - Residential	Millcreek	Magee	OUT	OUT	Interface - High Density	Indirect Exposure	N/A - WHP Undetermined
Medical Care Facility - Residential	Strong River Villa - Assisted Living	Mendenhall	OUT	OUT	Intermix - Medium Density	Direct Exposure	N/A - WHP Undetermined
Natural Gas Facility	HARRISVILLE#1 - RECIP	FLORENCE	OUT	OUT	Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
Natural Gas Facility	HARRISVILLE#2 - TURBINE	FLORENCE	OUT	OUT	Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
Natural Gas Facility	MAGEE GAS PLANT	Magee	OUT	OUT	Non-Vegetated - Low Density	Direct Exposure	Moderate

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
Natural Gas Facility	Wilmut Gas	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	DLO POLICE DEPARTMENT	Mendenhall	OUT	IN	Interface - Medium Density	Direct Exposure	Low
Police Station	MAGEE POLICE DEPARTMENT	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Police Station	MENDENHALL POLICE DEPARTMENT	Mendenhall	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Police Station	Sheriff's Department	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Police Station	SIMPSON COUNTY SHERIFFS DEPARTMENT / SIMPSON COUNTY JAIL	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Braxton Water Well - Main Street	Braxton	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Potable Water	Braxton Water Well - Willow Street	Braxton	OUT	OUT	Non-Vegetated - Uninhabited	Direct Exposure	N/A - WHP Undetermined
Potable Water	D'Lo Water Well 1	D'Lo	OUT	IN	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	D'Lo Water Well 2	D'Lo	OUT	OUT	Interface - Medium Density	Direct Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
Potable Water	McNair Springs	Magee	IN	OUT	Intermix - Low Density	Direct Exposure	High
Potable Water	School Water Tank	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Water Well #1	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Water Well #2	Mendenhall	IN	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Water Well #3	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water Facility	Mendenhall Water Tank #1	Mendenhall	OUT	OUT	Intermix - Medium Density	Direct Exposure	Moderate
Potable Water Facility	Mendenhall Water Tank #2	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water Facility	Mountain Pure Water Plant	Magee	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Potable Water Facility	Water Plant	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water Facility	Water Plant #1	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water Facility	Water Plant #2	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Direct Exposure	N/A - WHP Undetermined
Potable Water Facility	Well #3	Magee	OUT	OUT	Non-Vegetated - Low Density	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
Potable Water Facility	Well #4	Magee	OUT	OUT	Interface - High Density	Indirect Exposure	Moderate
Potable Water Facility	Well #5	Magee	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water Facility	Well #6	Magee	OUT	OUT	Interface - Low Density	Direct Exposure	Moderate
Potable Water Facility	Well #7	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Direct Exposure	Low
Railway Facility	Tyson Foods	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
School	COPIAH-LINCOLN COMMUNITY COLLEGE - SIMPSON COUNTY CENTER	Mendenhall	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
School	GENESIS ONE CHRISTIAN SCHOOL	Mendenhall	IN	OUT	Interface - Medium Density	Indirect Exposure	Low
School	MAGEE ELEMENTARY SCHOOL	Magee	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
School	MAGEE HIGH SCHOOL	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
School	MAGEE MIDDLE SCHOOL	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
School	MENDENHALL ELEMENTARY SCHOOL	Mendenhall	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
School	MENDENHALL HIGH SCHOOL	Mendenhall	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
School	MENDENHALL JUNIOR HIGH SCHOOL	Mendenhall	OUT	IN	Vegetated - Inhabited	Indirect Exposure	N/A - WHP Undetermined
School	MILLCREEK SCHOOL	Magee	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
School	SIMPSON CENTRAL SCHOOL	PINOLA	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
School	SIMPSON CO TECHNICAL CENTER	Mendenhall	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
School	SIMPSON COUNTY ACADEMY	Mendenhall	OUT	OUT	Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
School	Simpson County Achievement Center	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
School	VICTORY CHRISTIAN SCHOOL	HARRISVILLE	OUT	OUT	Vegetated - Very Low Density	Direct Exposure	Moderate
Shelter	Braxton Community Center	Braxton	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Shelter	First Baptist Church of Magee Family Life Center	Magee	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Staging	Guard Armory	Magee	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Broadhead Pump Station	Mendenhall	IN	OUT	Vegetated - Inhabited	Direct Exposure	Moderate
Waste Water Facility	Church Street Pump Station	Mendenhall	OUT	OUT	Non-Vegetated - Uninhabited	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	D LO POTW	D'Lo	IN	OUT	Vegetated - Very Low Density	WTZ: Grass	Low
Waste Water Facility	Feed it - Tutor Funeral	Mendenhall	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Grinder Station - Station #1	Mendenhall	OUT	OUT	Vegetated - Inhabited	Direct Exposure	High
Waste Water Facility	Grinder Station - Station #2	Mendenhall	OUT	OUT	Intermix - Low Density	Direct Exposure	High

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Grinder Station - Station #3	Mendenhall	OUT	OUT	Vegetated - Inhabited	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Hwy 13-Cox Pump Station	Mendenhall	IN	OUT	Intermix - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Lagoon	Mendenhall	IN	OUT	Vegetated - Inhabited	WTZ: Non-Vegetated	N/A - WHP Undetermined
Waste Water Facility	Lagoon Pump Station	Mendenhall	IN	OUT	Vegetated - Inhabited	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station #1	Magee	IN	OUT	Interface - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Lift Station #2	Magee	OUT	OUT	Intermix - Low Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Lift Station #3	Magee	OUT	OUT	Intermix - Medium Density	Direct Exposure	Very Low
Waste Water Facility	Lift Station #4	Magee	OUT	OUT	Non-Vegetated - Very Low Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	MAGEE POTW	Magee	IN	OUT	Non-Vegetated - Uninhabited	Direct Exposure	High
Waste Water Facility	MENDENHALL POTW	Mendenhall	IN	OUT	Interface - Medium Density	WTZ: Non-Vegetated	N/A - WHP Undetermined
Waste Water Facility	Morehead Pump Station	Mendenhall	OUT	IN	Intermix - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Polly Ave. Pump Station	Mendenhall	OUT	OUT	Intermix - Medium Density	Direct Exposure	Moderate

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Risk Reduction Zone	Wildfire Hazard Potential
Waste Water Facility	Ross Dr. Pump Station	Mendenhall	OUT	OUT	Intermix - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Subway Pump Station	Mendenhall	OUT	OUT	Intermix - Medium Density	Direct Exposure	N/A - WHP Undetermined
Waste Water Facility	Taylor Pump Station	Mendenhall	OUT	OUT	Intermix - Medium Density	Direct Exposure	Moderate
Waste Water Facility	Votech-Lowery Pump Station	Mendenhall	OUT	OUT	Intermix - Low Density	Direct Exposure	Low
Waste Water Facility	Weathersby #1	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	Weathersby #2	Mendenhall	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined

5. MITIGATION STRATEGY

The Mitigation Strategy section of the base plan provides an overall blueprint for all participating jurisdictions in MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Regional Hazard Mitigation Council (RHMC) and the findings and conclusions of the Capability and Risk Assessments. The goals of the MEMA District 5 can be found in Section 6 of the base plan.

This section provides community-specific strategies for the participating jurisdictions within Simpson County, including the status of actions that were included in the previous plan and actions to be considered or pursued over the next five years. As noted in the base plan, the participants are not committing to undertaking every action suggested in this list but rather are proposing an extensive list of *potential* actions that they may wish to pursue, depending in the availability of funding.

The following information is provided in the table below, as well as in the mitigation action tables within each annex in this plan:

Project Number: Each action is assigned a project number for organizational purposes.

Action Description: This is the description of the mitigation action. Actions descriptions are intended to be actionable and specific.

Responsible Agency or Department: actions assign primary responsibility to agencies or departments for implementation. The responsible entities were determined by jurisdictional representatives on the Mitigation Council, and they reflect the representatives' assessment of the entity that would be most capable of facilitating successful implementation of the action. Other agencies, departments, organizations, etc. may assist the responsible agency or department, if necessary.

Hazards Addressed: For each mitigation action, the hazard(s) that are being addressed are listed. Some hazards are considered "multi-hazard" because the action, when implemented, is designed to mitigate impacts of all disasters profiled in this plan. Other mitigation actions are specific to individual hazards.

Estimated Cost: This is the estimate cost of the action; these costs were determined through general discussions of the resources, personnel, and time needed, and the estimates are not intended to stand in for a full, detailed benefit-cost analysis.

Action Status (D/R/N/C): FEMA's guidance for local mitigation plans requires a status update for existing mitigation actions. The statuses of previous actions were assessed throughout the planning process. The four categories used by the Mitigation Council are:

> Deleted (D): action is no longer appropriate or desired, and the community does not intend to pursue the action.
>
> Retained (R): action is still desired by the community, but implementation has not been completed. The community will continue to implement the action as time and resources allow.
>
> New (N): action is new for the 2026 District 5 plan.
>
> Completed (C): action has been completed by the community.

Status Notes: Includes any information that the community provided for additional context to the action status.

Expected Time Frame for Completion: Participating jurisdictions anticipated the amount of time it will take to carry out the action. The expected time frames for actions from the previous plan were updated to reflect the expected time frame for completion from when communities adopt this plan.

Corresponding Goals: The plan goals addressed by each action item are included to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. Each action is linked to one more of the Plan's goals:

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

- Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

- Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

- Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

- Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

Priority: The priority of each of the mitigation action items is ranked either Low, Medium, or High. This prioritization allows Mitigation Council members to quickly compare actions based on a qualitative assessment of the anticipated benefits of actions. The process utilized by the Mitigation Council to prioritize actions is described in Section 6.4 of the base plan.

Potential Funding Sources: Potential sources for funding are listed for each action and encompass a range of sources including operating budget/general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), State grants, private funding, Capital Improvement Plan, and others. It is important to acknowledge that the identified funding sources are not exhaustive or definitive. The current funding landscape is undergoing significant change, and existing funding sources may not be available in the future, while new sources may emerge. If/when a community has the opportunity to implement an action, available funding sources will be re-examined to determine which source is most appropriate.

TABLE 41: UPDATED 2026 SIMPSON COUNTY MITIGATION ACTIONS

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
1-Simpson County	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Simpson County Emergency Management	All hazards	$25,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Simpson County	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Simpson County Emergency Management, Board of Supervisors	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Simpson County	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the county with advanced warning of approaching weather conditions.	Simpson County Emergency Management, National Weather Service	Tornado, severe weather	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Simpson County	Purchase and maintain emergency generators for use by key critical facilities throughout the county.	Simpson County Emergency Management, Board of Supervisors	All hazards	$100,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, HMGP, BRIC
5-Simpson County	As future updates are made to the County's existing policies and regulations, and as the county adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Simpson County Board of Supervisors	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
6-Simpson County	Seek funding to assist with the construction of a community shelter	Simpson County Emergency Management, Board of Supervisors	All hazards	$1,900,000	R	No progress since last update	On-going annually	3	Medium	General Fund, CDBG, HMGP, USDA Rural Development
7-Simpson County	Encourage residents to construct individual safe rooms.	Simpson County Emergency Management	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	Low	General Fund
8-Simpson County	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Simpson County Board of Supervisors, Floodplain Manager	Flooding	$25,000	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
9-Simpson County	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Simpson County Board of Supervisors, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Simpson County	Assist residents who want to participate in the “Buy-Out” program for repetitive loss properties	Simpson County Administrator, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
11-Simpson County	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	Simpson County Emergency Management	All hazards	$1,000,000	R	No progress since last update	On-going annually	3, 5	Low	General Fund, CDBG, HMGP, USDA Rural Development
12-Simpson County	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	Simpson County Board of Supervisors, Emergency Management	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund
13-Simpson County	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	Simpson County Emergency Management	All hazards	$5,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund
14-Simpson County	Enhance awareness of the need to adopt and enforce codes and ordinances within the county	Simpson County Board of Supervisors	All hazards	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
15-Simpson County	Improve current warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards.	Simpson County Emergency Management	All hazards	$50,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, CDBG, HMGP, USDA Rural Development
16-Simpson County	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Simpson County Board of Supervisors, Emergency Management	Public health emergencies	$75,000	R	No progress since last update	On-going annually	3	High	General Fund
17-Simpson County	Improve cellular tower capability throughout the County to upgrade communication efficiency	Simpson County Board of Supervisors, Emergency Management	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
18-Simpson County	Seek funding assistance to improve high-speed internet capabilities throughout the County	Simpson County Board of Supervisors, Emergency Management	All hazards	$2,000,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
19-Simpson County	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Simpson County Board of Supervisors, Emergency Management	All hazards	$75,000	R	No progress since last update	On-going annually	3, 5	High	General Fund
1-Magee	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Magee Police and Fire Departments	All hazards	$25,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Magee	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Magee Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Magee	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the city with advanced warning of approaching weather conditions.	Magee Police and Fire Departments, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Magee	Purchase and maintain emergency generators for use by key critical facilities throughout the city.	Magee Public Works, Police and Fire Departments	All hazards	$100,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, HMGP, BRIC

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
5-Magee	As future updates are made to the city's existing policies and regulations, and as the city adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Magee Board of Alderman, Planning Commission	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
6-Magee	Seek funding to assist with the construction of a community shelter	Magee Mayor's Office, Emergency Management	All hazards	$1,200,000	R	No progress since last update	On-going annually	3	High	General Fund, CDBG, HMGP, USDA Rural Development
7-Magee	Encourage residents to construct individual safe rooms.	Magee Police and Fire Departments	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
8-Magee	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Magee Board of Alderman, Floodplain Manager	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
9-Magee	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Magee Board of Alderman, Floodplain	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
		Manager, Planning Commission								
10-Magee	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties	Magee City Clerk, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
11-Magee	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	Magee City Clerk	All hazards	$10,000	R	10 years	On-going annually	3, 5	Low	General Fund, CDBG, HMGP, USDA Rural Development
12-Magee	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	Magee City Clerk, Board of Alderman	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund
13-Magee	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	Magee Emergency Management	All hazards	$5,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund
14-Magee	Develop mutual aid agreements with area private companies and associations to assist in post-disaster efforts	Magee Mayor, Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund
15-Magee	Seek funding to retrofit community facilities to act as community shelters	Magee City Clerk	All hazards	$500,000	R	No progress since last update	On-going annually	3	High	General Fund, CDBG, HMGP, USDA Rural Development

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
16-Magee	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Magee Mayor's Office, City Clerk, Police and Fire Departments	Public health emergencies	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
17-Magee	Improve cellular tower capability throughout the City to upgrade communication efficiency	Magee Mayor's Office, City Clerk	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC
18-Magee	Seek funding assistance to improve high-speed internet capabilities throughout the City	Magee Mayor's Office, City Clerk	All hazards	$1,000,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
19-Magee	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Magee Mayor's Office, City Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3, 5	High	General Fund
1-Mendenall	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Mendenhall Police and Fire Departments	All hazards	$25,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Mendenhall	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Mendenhall Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
3-Mendenhall	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the city with advanced warning of approaching weather conditions.	Mendenhall Police and Fire Departments, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Mendenhall	Purchase and maintain emergency generators for use by key critical facilities throughout the city.	Mendenhall Public Works, Police and Fire Departments	All hazards	$100,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, HMGP, BRIC
5-Mendenhall	As future updates are made to the city's existing policies and regulations, and as the city adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Mendenhall Board of Alderman, Planning Commission	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
6-Mendenhall	Seek funding to assist with the construction of a community shelter.	Mendenhall Mayor's Office	All hazards	$1,200,000	R	No progress since last update	On-going annually	3	Medium	General Fund, staff time
7-Mendenhall	Encourage residents to construct individual safe rooms.	Mendenhall Police and Fire Departments	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	Medium	General Fund
8-Mendenhall	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance	Mendenhall Board of Alderman, Floodplain Manager	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
	rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.									
9-Mendenhall	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Mendenhall Board of Alderman, Floodplain Manager, Planning Commission	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Mendenhall	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	Mendenhall City Clerk	All hazards	$1,000,000	R	No progress since last update	10 years	3, 5	High	General Fund, CDBG, HMGP, USDA Rural Development
11-Mendenhall	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	Mendenhall Board of Alderman, City Clerk	All hazards	$1,500 annually / $100,000 every five years	R	Plan update n progress	On-going annually	1	High	General Fund
12-Mendenhall	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	Mendenhall Emergency Management	All hazards	$5,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund
13-Mendenhall	Work with engineers to find solutions to the identified flooding problems in the city, and seek funding to carry out projects that will help alleviate flooding problems.	Mendenhall Mayor, Board of Alderman, Public Works	All Hazards	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, HMGP
14-Mendenhall	Seek funding to retrofit community facilities to act as community shelters	Mendenhall City Clerk	All hazards	$500,000	R	No progress since last update	5 years	3	High	General Fund, HMGP, CDBG, USDA Rural Development

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
15-Mendenhall	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Mendenhall Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
16-Mendenhall	Improve cellular tower capability throughout the City to upgrade communication efficiency	Mendenhall Mayor's Office, city Clerk	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
17-Mendenhall	Seek funding assistance to improve high-speed internet capabilities throughout the City	Mendenhall Mayor's Office, City Clerk	All hazards	$1,000,000	R	No progress since last update	On-going annually3	3	High	General Fund, IIJA
18-Mendenhall	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Mendenhall Mayor's Office, City Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3, 5	High	General Fund
1-D'Lo	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	D'Lo Emergency Management	All hazards	$25,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-D'Lo	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	D'Lo Emergency Management, Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
3-D'Lo	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the city with advanced warning of approaching weather conditions.	D'Lo Emergency Management, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-D'Lo	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	D'Lo Public Works, Board of Alderman	All hazards	$100,000	R	No progress since last update	On-going annually	3, 5	High	General Fund, HMGP, BRIC
5-D'Lo	As future updates are made to the town's existing policies and regulations, and as the town adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	D'Lo Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
6-D'Lo	Seek funding to assist with the construction of a community shelter.	D'Lo Board of Alderman	All hazards	$1,200,000	R	No progress since last update	On-going annually	3	Medium	General Fund, CDBG, HMGP, USDA Rural Development
7-D'Lo	Encourage residents to construct individual safe rooms.	D'Lo Emergency Management	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	Medium	General Fund
8-D'Lo	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance	D'Lo Board of Alderman, Floodplain Manager	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
	rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.									
9-D'Lo	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	D'Lo Board of Alderman, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-D'Lo	Assist residents who want to participate in the "Buy-Out" program for repetitive loss properties	D'Lo Town Clerk, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
11-D'Lo	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	D'Lo Board of Alderman	All hazards	$100,000	R	No progress since last update	10 years	3, 5	Medium	General Fund, CDBG, HMGP, USDA Rural Development
12-D'Lo	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	D'Lo Board of Alderman	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund
13-D'Lo	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	D'Lo Board of Alderman	All hazards	$5,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund
14-D'Lo	Enhance awareness of the need to adopt and enforce codes and ordinances within the town.	D'Lo Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	2, 3	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
15-D'Lo	Seek funding to retrofit community facilities to act as community shelters	D'Lo Board of Alderman	All hazards	$500,000	R	No progress since last update	5 years	3	High	General Fund, CDBG, HMGP, USDA Rural Development
16-D'Lo	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	D'Lo Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
17-D'Lo	Improve cellular tower capability throughout the Town to upgrade communication efficiency	D'Lo Board of Alderman, Town Clerk	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, HMGP, BRIC
18-D'Lo	Seek funding assistance to improve high-speed internet capabilities throughout the Town	D'Lo Board of Alderman, Town Clerk	All hazards	$500,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
19-D'Lo	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	D'Lo Board of Alderman, Town Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3, 5	High	General Fund
1-Braxton	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Braxton Emergency Management	All hazards	$25,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Braxton	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers,	Braxton Mayor's Office, Emergency Management	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
	Facebook and other social media accounts, websites, etc.)									
3-Braxton	Organize and conduct training seminars for key personnel members to become reliable weather spotters who can provide the city with advanced warning of approaching weather conditions.	Braxton Emergency Management, National Weather Service	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	2	High	General Fund
4-Braxton	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	Braxton Board of Alderman	All hazards	$100,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, HMGP, BRIC
5-Braxton	As future updates are made to the town's existing policies and regulations, and as the town adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Braxton Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
6-Braxton	Seek funding to assist with the construction of a community shelter.	Braxton Board of Alderman	All hazards	$1,200,000	R	No progress since last update	On-going annually	3	Medium	General Fund, CDBG, HMGP, USDA Rural Development
7-Braxton	Encourage residents to construct individual safe rooms.	Braxton Emergency Management	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
8-Braxton	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Braxton Board of Alderman, Floodplain Manager	Flooding	$25,000 annually	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
9-Braxton	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Braxton Board of Alderman, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
10-Braxton	Assist residents who want to participate in the “Buy-Out” program for repetitive loss properties	Braxton Town Clerk, Floodplain Manager	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
11-Braxton	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards	Braxton Board of Alderman	All hazards	$100,000	R	No progress since last update	10 years	3, 5	Low	General Fund, CDBG, HMGP, USDA Rural Development
12-Braxton	Seek funding assistance to maintain District 5’s regional Hazard Mitigation Plan.	Braxton Board of Alderman	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
13-Braxton	Maintain an effective warning system that can be used to warn residents during emergencies of approaching weather conditions and other hazards	Braxton Board of Alderman	All hazards	$5,000 annually	R	No progress since last update	On-going annually	3, 4	High	General Fund
14-Braxton	Enhance awareness of the need to adopt and enforce codes and ordinances within the town.	Braxton Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	2, 3	High	General Fund
15-Braxton	Seek funding to retrofit community facilities to act as community shelters	Braxton Board of Alderman	All hazards	$500,000	R	No progress since last update	5 years	3	High	General Fund, CDBG, HMGP, USDA Rural Development
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19-Braxton	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Braxton Board of Alderman	All hazards	$75,000	R	No progress since last update	On-going annually	3, 5	High	General Fund

1. INTRODUCTION

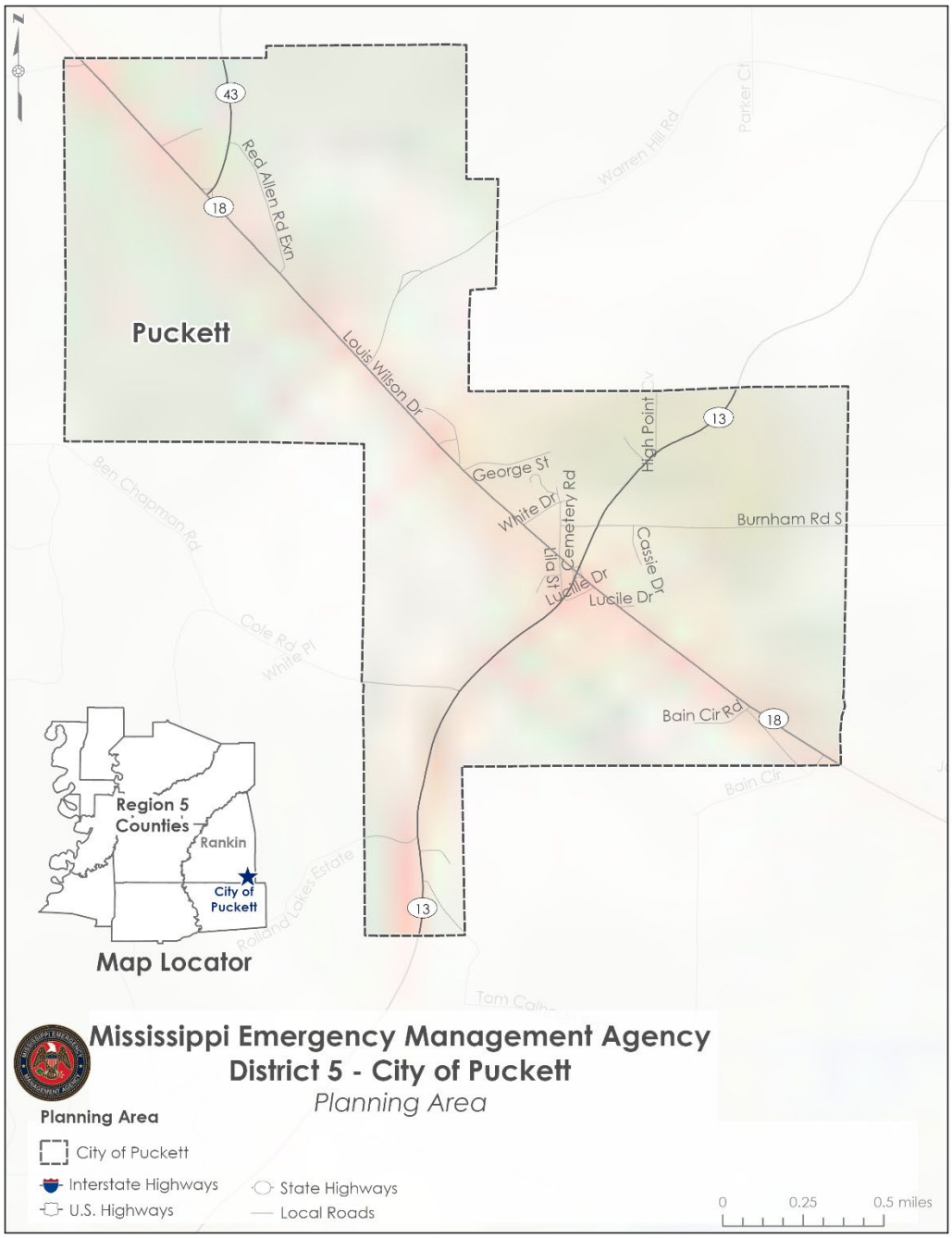
This annex provides more detailed information about Village of Puckett. It includes:

- A more localized community profile, including more detailed mapping, population and demographic information, and critical facilities information
- Local-level Hazard Identification and Risk Assessment (HIRA) information, including some more localized hazard maps and conclusions related to hazard risk and how it varies across the planning area
- A localized vulnerability assessment, including the likely impact of profiled hazards on critical facilities in Village of Puckett
- A detailed capability assessment, describing resource and tools available to the county and municipalities to participate in hazard mitigation and reduce hazard risk
- A mitigation strategy, describing a variety of actions the county and municipalities may opt to take to reduce the risk associated with profiled hazards over the useful life of this plan

2. COMMUNITY PROFILE

This section provides a more detailed profile of Village of Puckett. The Village is in the Southeastern part of Rankin County, which is in the Southern part of the planning area and **Figure 1** shows the planning area for the Village. The CDC Social Vulnerability Index (SVI) is a place-based tool developed by the CDC/ATSDR to help identify communities that may need additional support before, during, or after disasters and public-health emergencies. It uses 16 demographic and socioeconomic variables from the U.S. Census/American Community Survey—such as poverty, lack of transportation, crowded housing, and minority status—to quantify a community's relative vulnerability. This information, which only provides data at the county level, scores communities on a scale between 0 (lowest vulnerability) to 1 (highest vulnerability). According to the 2022 CDC Social Vulnerability Index, Rankin County has an overall **low** (0.0123) level of vulnerability. However, due to its rural location, assumptions could be made that the Village of Puckett's population might have a similar score as the County. The County and the Village have the lowest level of vulnerability in the entire planning area. The Village of Puckett has the lowest level of vulnerability in the entire planning area.

FIGURE 1: VILLAGE OF PUCKETT



2.1. POPULATION AND DEMOGRAPHICS

Population information from the last three Census counts for the Village of Puckett is summarized below, showing trends since the year 2010. A summary of population trends is summarized in **Table 1**. Since 2010, the population in the Village has increased by 35%. The race and ethnicity demographic data of the Village of Puckett are shown in **Table 2**. The majority of the village is White.

TABLE 1: POPULATION TRENDS | SOURCE: 2024 U.S. CENSUS DATA

Jurisdiction	2010 Census	2020 Census	2024 Census (Estimate)	Percent Change 2020-2024
Village of Puckett	357	343	463	+35%

TABLE 2: DEMOGRAPHICS IN PERCENT | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	White	African American	Hispanic	Asian	Native American	2 or more Races
Village of Puckett	98.3%	2.8%	0.9%	0.9%	0.2%	2.2%

Table 3 summarizes what percentage of the population of the Village of Puckett belongs to certain special populations measured in the Census. **Table 4** provides annual estimates of housing units in the Village of Puckett.

TABLE 3: VULNERABLE POPULATIONS | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	Below Poverty Line	Very Young (5 and under)	Elderly (65+)	Disabled
Village of Puckett	27.4%	23	52	67

TABLE 4: ANNUAL ESTIMATES OF HOUSING UNITS IN MEMA DISTRICT 5 | SOURCE: 2023 U.S. CENSUS DATA

Jurisdiction	2020	2021	2022	2023	2024
Village of Puckett	139	172	174	160	162

Employment in the Village of Puckett is largely focused on manufacturing; there are several other large industries located within Rankin County. **Table 5** below summarizes employment information in the Village.

TABLE 5: EMPLOYMENT IN THE VILLAGE OF PUCKETT | SOURCE: 2023 U.S. CENSUS DATA

Employment Categories	Management, business, science and arts occupations	Service occupations	Sales and office occupations	Natural resources, construction and maintenance occupations	Production, transportation and material moving occupations
Village of Puckett	84	28	35	18	32

2.2. INFRASTRUCTURE, CRITICAL FACILITIES AND ENERGY ASSETS

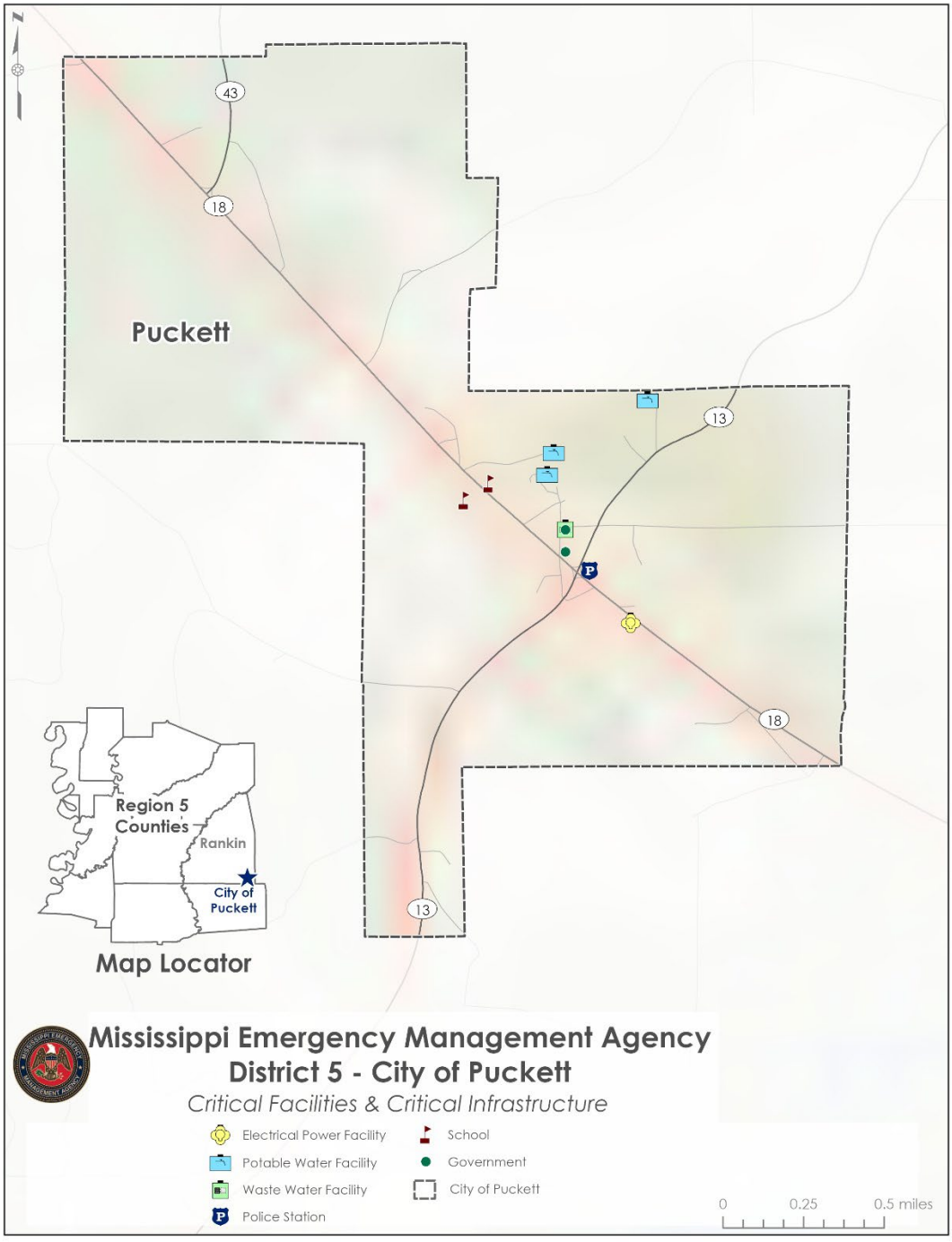
2.2.1. CRITICAL FACILITIES AND INFRASTRUCTURE

Certain assets and facilities are considered as being of importance for Village of Puckett. **Table 6** below is a list of the critical facilities within Village of Puckett. **Figure 2** below displays a map showing the locations of these critical facilities and infrastructure located within the Village. The table below consists of facilities identified in the previous plan for each community as well as facilities identified by HAZUS. These facilities were sent to each community representative of the Mitigation Council for review and given a chance to provide changes.

TABLE 6: VILLAGE OF PUCKETT CRITICAL FACILITIES AND INFRASTRUCTURE

Facility Type	Facility Name	Facility Location
Electrical Power Facility	Substation @ Hwy 18	Village of Puckett
Government	Puckett - Senior Center	Village of Puckett
Government	Town Hall / Police Station	Village of Puckett
Potable Water	Water Tower/Well	Village of Puckett
Potable Water	Water Well 1	Village of Puckett
Potable Water	Water Well 2	Village of Puckett
School	Puckett Attendance Center	Village of Puckett
School	Puckett Elementary School	Village of Puckett
Waste Water Facility	Puckett POTW	Village of Puckett

FIGURE 2: MAP OF CRITICAL FACILITIES AND INFRASTRUCTURE



2.2.2. TRANSPORTATION

Transportation in the Village of Puckett includes the list below and **Figure 2** above displays them on a map.

- State Highways 13, 18 and 43

2.2.3. ENERGY ASSETS

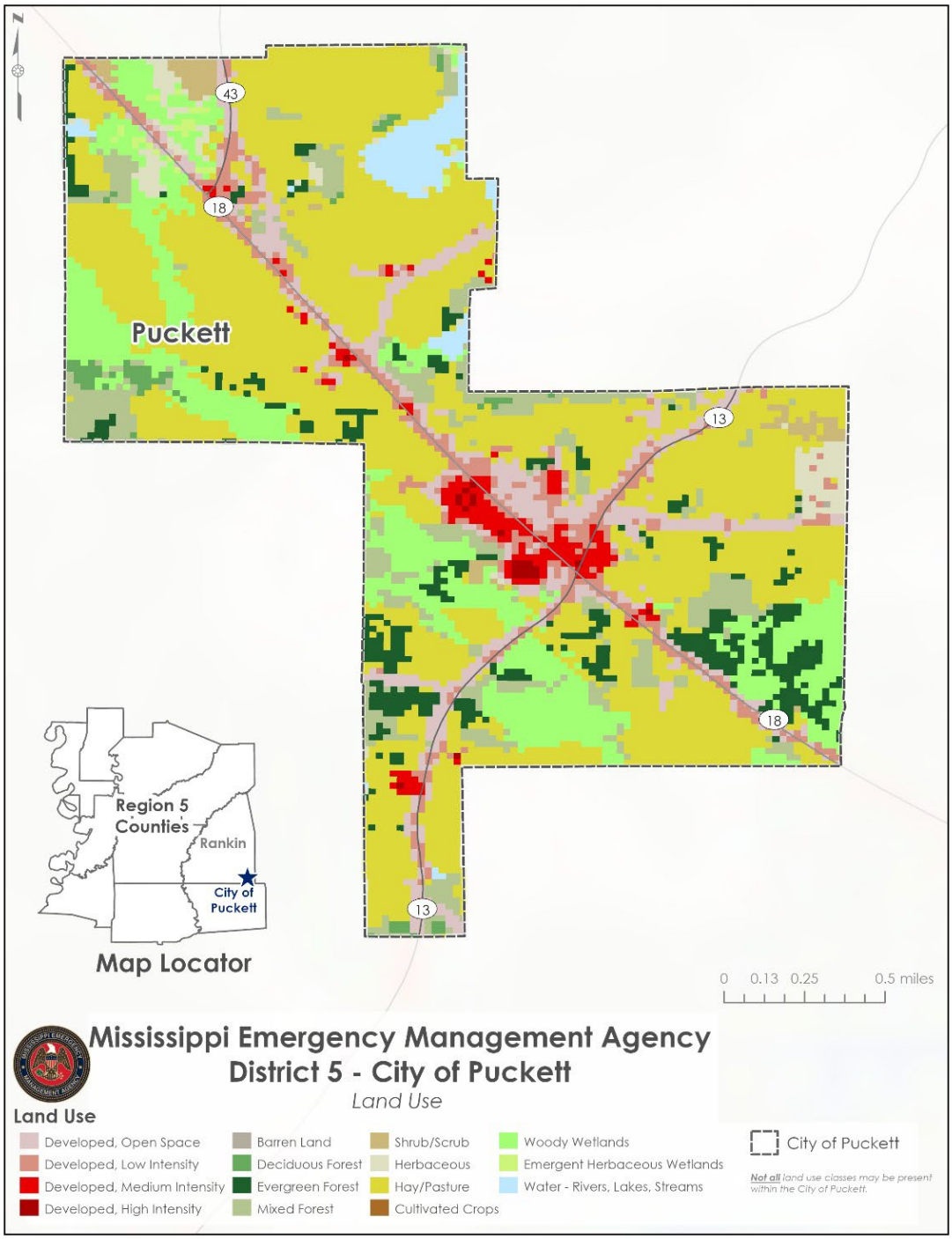
Oil, natural gas pipelines and electric transmission lines traverse the Village and the County. The list below breaks down the energy infrastructure within the Village.

- **Power Plant:** There are no utility-scale power plants located inside the Village of Puckett
- **Substations:** There is an electrical substation located at State Highway 18
- **Transmission:** Transmission infrastructure in the Puckett area is part of the Entergy Mississippi transmission network
- **Pipelines:** There are no pipelines located inside the Village of Puckett

2.3. LAND USE AND DEVELOPMENT

The Village of Puckett encompasses a mix of urban, suburban, and rural landscapes, with land use dominated by agricultural areas, forested tracts, and growing residential development in the center parts of the Village. **Figure 3** displays the land use and development throughout the Village.

FIGURE 3: VILLAGE OF PUCKETT LAND USE AND DEVELOPMENT



2.4. HISTORIC AND CULTURAL RESOURCES

Cultural resources and historical assets are generally unique or irreplaceable in nature due to their age or unique properties or characteristics. However, there are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

2.5. CHANGES IN DEVELOPMENT AND PRIORITIES

This section outlines recent and anticipated changes in development and priorities within Village of Puckett. **Table 7** lists the Village's responses to these questions in the Capability Assessment.

TABLE 7: VILLAGE OF PUCKETT CHANGES IN DEVELOPMENT AND PRIORITIES

Jurisdiction	Changes in Development in the Past Five Years	Changes in Development Anticipated in the Next Five Years	Changes in Community Priorities over the Past Five Years
Village of Puckett			

3. CAPABILITY ASSESSMENT

The capability assessment evaluates a jurisdiction's ability to implement a comprehensive mitigation strategy and identifies opportunities to establish or strengthen mitigation policies, programs, and projects. More generalized information about the goals of the capability assessment, including the process and methodology, is presented in the Capability Assessment portion of the base plan.

This section articulates specific information about the capabilities of Village of Puckett.

3.1. VILLAGE OF PUCKETT CAPABILITIES AND RESOURCES

3.1.1. STAFF AND TECHNICAL CAPABILITIES

This section describes administrative and technical capabilities available to Village of Puckett to support hazard mitigation.

TABLE 8: VILLAGE OF PUCKETT STAFF AND TECHNICAL CAPABILITIES

Staff or Personnel Resource	Y/N	Which position or department has this capability?	Comments
Emergency Management			
Engineering			
Procurement			
Floodplain Management			
Land Use, Land Management, or Development Planning			
Grant-writing			
Geographic Information Systems (GIS)			

Other reported staff and technical capabilities:

To be listed here:

- Anything they wrote in for the "other" fields in the Staff and Technical Assistance table in the capability assessment form
- Any of the following capabilities described in the previous plan, if they reported having them in the last plan:
  - Planning commission
  - LEPC
  - Maintenance programs (Tree trimming, drainage, etc)
  - Mutual aid compacts
  - Building inspection
  - Warning systems or services (reverse 911, sirens, etc)

3.1.2. PLANNING MECHANISMS

This section describes planning mechanisms in place in Village of Puckett that might support hazard mitigation efforts.

TABLE 9: VILLAGE OF PUCKETT PLANNING MECHANISMS

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Capital Improvement Plan (CIP)				
Community Wildfire Protection Plan (CWPP)				
General Plan / Community Development Plan				
Continuity of Operations Plan (COOP)				
Disaster Recovery Plan				
Economic Development Plan				
Emergency Operations Plan (EOP)				

Plan	N/A	In Place	Under Development	Date Completed OR Anticipated Completion
Floodplain Management Plan / Flood Mitigation Plan				
Historic Preservation Plan				
Natural Resource Protection Plan (NRPP)				
Open Space Management Plan (Parks & Rec/Green Plan)				
Threat Hazard Identification and Risk Assessment (THIRA)				

Other reported planning and regulatory mechanisms:
To be listed here:

- Anything they wrote in for the "other" fields in the Planning Mechanisms table in the capability assessment form
- Any of the following capabilities described in the previous plan, if they reported having them in the last plan:
  - Transportation plan
  - Stormwater management plan
  - Site plan review requirements
  - Zoning
  - Subdivision regulations
  - Flood insurance study

3.1.3. FLOODPLAIN MANAGEMENT AND REGULATION

As noted in the base plan, flooding represents the greatest natural hazard facing the nation, and NFIP participation is a key tool in a community's toolbox to address and mitigate this significant risk. This section provides further details regarding the participation of Village of Puckett in the NFIP program, including how development in the floodplain is regulated.

TABLE 10: VILLAGE OF PUCKETT FLOODPLAIN MANAGEMENT AND REGULATION

Do you participate in the National Flood Insurance Program (NFIP)?	
Have you adopted a floodplain management or flood damage prevention ordinance that meets the NFIP minimum criteria?	
Which position, designee, or agency is identified in your floodplain management ordinance is responsible for ensuring compliance with the NFIP?	
How do you regulate development in the floodplain, issue permits in the floodplain, and implement and enforce your floodplain management ordinance?	
How do you implement the substantial improvement / substantial damage provisions of your floodplain management ordinance?	
Do you participate in the Community Rating System (CRS)? If so, what is your CRS rating?	
Have you adopted the latest effective Flood Insurance Rate Map (FIRM)?	

3.1.4. FISCAL AND OTHER MECHANISMS

This section describes a variety of fiscal and other mechanisms and authorities available to support Village of Puckett's hazard mitigation efforts.

TABLE 11: VILLAGE OF PUCKETT FISCAL AND OTHER MECHANISMS

Have you adopted building codes? If yes: which ones, what year, and were they redacted?	
Have you adopted fire codes? If yes: which ones, what year, and were they redacted?	
Do you have a land use or development ordinance?	
What funding sources (including grants) have you used in the past to fund hazard mitigation activities?	
Are there other authorities, policies, programs, funding, and resources available to you that might support implementation of the mitigation strategy?	

3.2. ABILITY TO EXPAND CAPABILTIES

As part of the capability assessment process, each jurisdiction was asked to discuss their ability to expand upon the capabilities discussed earlier in this section. Below is a summary of the information provided by each participant regarding how they can strengthen their ability to conduct hazard mitigation measures in the future. **Table 12** below lists the Village's responses to these questions in the Capability Assessment.

TABLE 12: VILLAGE OF PUCKETT'S ABILITY TO EXPAND CAPABILITIES

Jurisdiction	Self-Reported Information Regarding Ability to Expand Capabilities
Village of Puckett	

4. HAZARD IDENTIFICATION & RISK ASSESSMENT

The Hazard Identification and Risk Assessment (HIRA) process, described in more detail in the HIRA section of the base plan, involves identifying potential hazards, evaluating their likelihood and potential consequences, and estimating and describing the level of risk these hazards present to a community.

Since 1969, Rankin County* has been included in 16 federal disaster declarations, of which five occurred since this plan was last updated. **Table 13** describes these events.

TABLE 13: VILLAGE OF PUCKETT FEDERAL DISASTER DECLARATIONS | SOURCE: FEMA

Declaration	Hazard Type	Affected Counties	Declaration Date
DR-4727	Severe Storm, Straight-line Winds, Tornadoes	Madison, Rankin, Warren, Yazoo	8/12/2023
EM-3569	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/28/2021
EM-3548	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	10/8/2020
DR-4528	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/5/2020
EM-3474	Covid-19 Pandemic	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	3/132020
DR-4175	Severe Storm, Tornado, Flooding	Rankin, Simpson, Warren	4/30/2014
DR-4081	Hurricane	Claiborne, Copiah, Hinds, Madison, Rankin, Simpson, Warren, Yazoo	8/8/2012
DR-1604	Hurricane	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	8/29/2005
DR-1594	Hurricane	Madison, Rankin	7/10/2005
DR-1360	Severe Storm, Flooding, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Simpson, Warren, Yazoo	2/23/2001
DR-968	Severe Storm, High Winds, Tornado, Hail	Copiah, Rankin, Simpson	11/25/1993
DR-683	Flooding, Severe Storm, Tornado	Claiborne, Hinds, Madison, Rankin, Warren, Yazoo	6/1/1983
DR-577	Severe Storm, Tornado	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	4/16/1979
EM-3032	Drought, Freezing	Claiborne, Copiah, Hinds, Issaquena, Madison, Rankin, Sharkey, Simpson, Warren, Yazoo	2/22/1977
DR-430	Heavy Rains, Flooding	Copiah, Rankin, Simpson	4/18/1974
DR-271	Hurricane	Copiah, Hinds, Madison, Rankin, Simpson	8/18/1969

** Federal disaster areas are only tracked at the county level. The disasters above represent the statistics for Rankin County.*

As described in the "HIRA Methodology" section of the base plan, participants in this plan update reconsidered the relative risk posed by the profiled hazards by conducting a hazard ranking process. **Table 14** below provides a summary of how those hazards were ranked by the Village of Puckett.

TABLE 14: HAZARD RANKING FOR THE VILLAGE OF PUCKETT

Jurisdiction	Drought	Earthquake	Expansive Soils	Flood	Dam/ Levee Failure	Severe Storms	Severe Winter Weather	Tornado	Tropical Storm / Hurricane	Wil/Urban Interface (WUI) Fire	Hazardous Material Incidents	Nuclear Power Plant Incidents
Village of Puckett												

Each of the 12 natural and manmade hazards discussed in this section are described in more detail in the HIRA section of the base plan. **Table 15** below shows the hazard scores for the Village of Puckett. This section endeavors to provide more detailed, local-level information, mapping, and conclusions for these hazards wherever relevant.

TABLE 15: VILLAGE OF PUCKETT HAZARD RISK SCORES

Hazard	Area Impacted	Health and Safety Consequences	Property Damage	Environmental Damage	Economic Disruption e	Probability	Hazard Risk Score
Dam/Levee Failure	1	1	0	1	2	1	**5**
Drought	4	1	1	2	2	2	**20**
Earthquake	4	1	2	1	1	1	**9**
Expansive Soils	1	0	0	1	1	1	**3**
Flood	2	1	2	2	3	2	**20**
Severe Storms	4	1	2	2	3	5	**60**
Severe Winter Weather	4	1	1	1	2	2	**18**
Tornado	4	1	2	2	3	4	**48**
Tropical Storms	4	1	1	1	1	2	**16**
Wild/Urban Interface Fire	2	1	2	2	2	2	**18**
Hazardous Material Incidents	0	0	0	0	0	1	**0**
Nuclear Power Plant Incident	0	0	0	0	0	1	**0**

Appendix I: Village of Puckett

4.1. DAM/LEVEE FAILURE

4.1.1. LOCATION AND EXTENT

There are 152 dams in Rankin County, but there are zero dams located in the Village of Puckett. For more information on dams and levee failures across the District, refer to the base plan.

Dam classifications were designed based on the potential impacts of failure. The potential impacts from each dam classification are detailed below in the event of a dam failure.

- **Low Hazard Dam**: In the event of the failure of a high-hazard dam, loss of life is probable, as are economic, environmental, and lifeline impacts.
- **Significant Hazard Dam**: In the event of the failure of a significant hazard dam, loss of life is not expected, but economic, environmental, and lifeline impacts are expected.
- **High Hazard Dam**: In the event of the failure of a low-hazard dam, there is no anticipated loss of life, and economic, environmental, and lifeline impacts are expected to be minimal, with losses principally limited to the owner's property.

4.1.2. PREVIOUS OCCURRENCES

Since the last plan update, MDEQ Dam Safety Division has recorded three breaches in Rankin County, but none in the vicinity of the Village of Puckett. It is important to note that some failures may not have been detected and reported.

4.1.3. PROBABILITY OF FUTURE OCCURRENCES

Since there are no dams within the Village of Puckett, the probability of future occurrences is **Unlikely.**

4.1.4. LOCALIZED VULNERABILITY ASSESSMENT

4.1.4.1. OVERALL VULNERABILITY

There are no dams located in the Village of Puckett; therefore, the overall vulnerability is **Low**.

4.1.4.2. CRITICAL FACILITIES

Dam/levee failures do not pose a risk to the Village of Puckett; therefore, no critical facilities are impacted or vulnerable.

4.1.4.1. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Dam/levee failures do not pose a risk to the Village of Puckett, therefore no cultural, historic, or natural resources are impacted or vulnerable.

4.1.4.2. PEOPLE

The risk factors for dam/levee failures are structural and not demographic in nature. The people of the Village of Puckett are at overall lower relative risk than the rest of the District, due to there being zero dams in the planning area for the Village.

4.1.4.3. STRUCTURES AND SYSTEMS

Because there are no dams or levees impacting the Village of Puckett, structures and systems are not at risk of impact.

4.1.4.4. IMPACTS OF CHANGES IN DEVELOPMENT

Dam/levee failures do not pose a risk to the Village of Puckett, therefore changes in development do not impact on the risk posed to the Village and its residents.

4.2. DROUGHT

4.2.1. LOCATION AND EXTENT

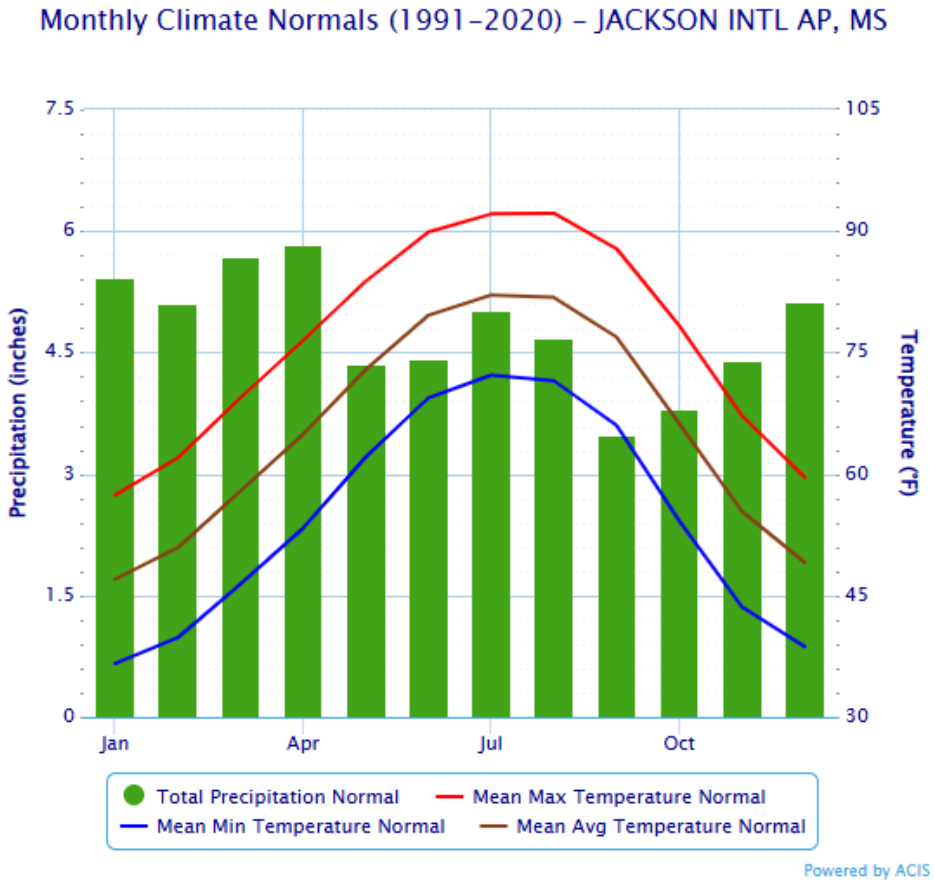
Drought events are only tracked at the county level and the numbers below represent the statistics for Rankin County. Drought affects the entire planning area equally; Rankin County and the Village of Puckett are not more or less susceptible to drought than other communities in District 5. For more information on drought across the District, refer to the base plan.

Figure 4 and **Figure 5** below display the monthly precipitation and temperature normals for the area surrounding the Jackson INTL AP, MS National Weather Service (NWS) station. According to the data, the Village experiences about 57 inches of precipitation annually with an average mean temperature of 65 degrees. The hottest months are June through September while the wettest months are January and April.

FIGURE 4: MONTHLY NORMAL PRECIPITATION AND TEMPERATURE – JACKSON INTL AP, MS | SOURCE: NWS

Month	Total Precipitation Normal (inches)	Mean Max Temperature Normal (°F)	Mean Min Temperature Normal (°F)	Mean Avg Temperature Normal (°F)
January	5.42	57.4	36.6	47.0
February	5.10	62.0	39.8	50.9
March	5.68	69.4	46.4	57.9
April	5.84	76.5	53.3	64.9
May	4.36	83.8	62.1	72.9
June	4.43	89.9	69.4	79.6
July	5.02	92.1	72.2	82.1
August	4.69	92.2	71.5	81.8
September	3.48	87.8	66.0	76.9
October	3.80	78.3	54.2	66.2
November	4.40	67.2	43.6	55.4
December	5.13	59.6	38.7	49.1
Annual	57.35	76.4	54.5	65.4

FIGURE 5: MONTHLY CLIMATE NORMALS – JACKSON INTL AP, MS | SOURCE: NWS



4.2.2. PREVIOUS OCCURRENCES

Between the 2015 and 2020 plans, five droughts occurred in Rankin County, causing $50,000 in property damages and $491,200 in crop damage. Between the 2020 and 2025 plans, there were three droughts causing zero reported property damage and $2,940,000 in crop damage.

4.2.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been eight drought events in the past 10 years. The Village can expect drought events to occur every 1-2 years. Therefore, drought poses a **Low** risk to the Village of Puckett.

4.2.4. LOCALIZED VULNERABILITY ASSESSMENT

4.2.4.1. OVERALL VULNERABILITY

The drought vulnerability assessment in the base plan highlights the District's exposure to prolonged dry conditions, which pose significant risks to agriculture, water supply, and wildfire potential. District 5, encompassing several rural counties, is particularly sensitive due to its reliance on farming and limited water infrastructure. Within the Village of Puckett, drought poses a **Medium** risk due to potential impacts, largely to public health, agriculture, and the local economy. This section provides further contextualization for the anticipated vulnerability to drought.

4.2.4.2. CRITICAL FACILITIES

Drought presents a gradually developing but significant hazard to critical facilities in the Village of Puckett, by reducing water availability, heightening wildfire potential, and straining essential services. Extended dry periods can diminish groundwater and surface water supplies needed for drinking water, sanitation, medical operations, and fire protection, affecting facilities such as hospitals, emergency services, schools, and government buildings. Drought conditions also increase wildfire risk, which can tax fire response resources and threaten nearby infrastructure, while elevated heat and energy demand may place added pressure on electrical systems that support critical operations.

4.2.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places. Drought can damage cultural, historic, and natural resources in the County by reducing soil moisture and water levels needed for their preservation. Prolonged dry conditions may harm historic sites, stress forests and wetlands, increase wildfire risk, and degrade ecosystems and culturally important water resources, potentially leading to long-term loss.

4.2.4.4. PEOPLE

As noted in the base plan, drought poses a significant threat to public health and safety, particularly when it disrupts access to clean and sufficient water supplies, and particularly for vulnerable populations—such as low-income households, the elderly, and individuals with disabilities. In the Village, individuals living below the poverty level are very high at 27%. These populations can experience disproportionate impacts to dam failures and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Village of Puckett has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.2.4.5. STRUCTURES AND SYSTEMS

Although drought doesn't typically cause direct physical damage to buildings or infrastructure, systems reliant on water (particularly those supporting agricultural operations) are the most vulnerable. Rankin County has a total approximate land area of 496,317 acres, of which 19.9% is farmland (579 farms totaling 99,015 acres of farmland). These portions of the county and their structures and systems are more vulnerable to impact than others. The potential impacts to these structures and systems are described in more detail in the base plan. Based on previous occurrences, there have been over $3,000,000 in crop damages from droughts in Rankin County. It is expected that similar damages will occur in the future which could impact the Village of Puckett.

Non-agricultural critical facilities such as transportation infrastructure, utility infrastructure, and public buildings are unlikely to be affected by drought across the planning area, including in Village of Puckett.

4.2.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in Village of Puckett may lead to higher strain on water systems during times of drought in the future.

4.3. EARTHQUAKE

4.3.1. LOCATION AND EXTENT

The earthquake seismic risk in MEMA District 5 varies from low to very high. Rankin County has areas where the earthquake seismic risk is low and very high. Ground shaking can be exacerbated by liquefaction zones. Within Rankin County, areas in the western portion of the County have low liquefaction zones. The Village of Puckett has soft clay soils and liquefaction susceptibility zones. If a strong earthquake were to occur, the Village of Puckett may experience stronger ground shaking in areas with soft and quick and sensitive clay soils. **Figure 6** shows the liquefaction susceptibility zones and **Figure 7** displays the earthquake soils across the District.

4.3.2. PREVIOUS OCCURRENCES

As noted in the base plan, Mississippi experiences relatively low seismic activity, although there have been some minor earthquakes producing light shaking felt in District 5 in recent history. Since 2000, there have been eight earthquakes in MEMA District 5. The strongest was a magnitude 3.2 that occurred in Madison County in 2015. The majority of the earthquakes occur in Madison County and occurred in 2015.

4.3.3. PROBABILITY OF FUTURE OCCURRENCES

As noted in the base plan, Mississippi MEMA District 5 is unlikely to experience damaging earthquakes, but it is not entirely free from seismic risk. While strong earthquakes are rare and **Unlikely**, minor to moderate shaking could occur in Village of Puckett, especially from distant seismic sources like the New Madrid Seismic Zone (NMSZ).

4.3.4. LOCALIZED VULNERABILITY ASSESSMENT

4.3.4.1. OVERALL VULNERABILITY

Earthquake risk varies across MEMA District 5 due to differences in geographic location, soil composition, building stock, and proximity to regional seismic zones. The Village of Puckett contains low liquefaction susceptibility zones and earthquake soil classifications of E (soft soil). While these factors can increase ground shaking, strong earthquakes pose a relatively **Low** risk to the Village. This section provides further contextualization for the anticipated vulnerability of earthquakes.

FIGURE 6: MEMA DISTRICT 5 LIQUEFACTION SUSCEPTIBILITY ZONES

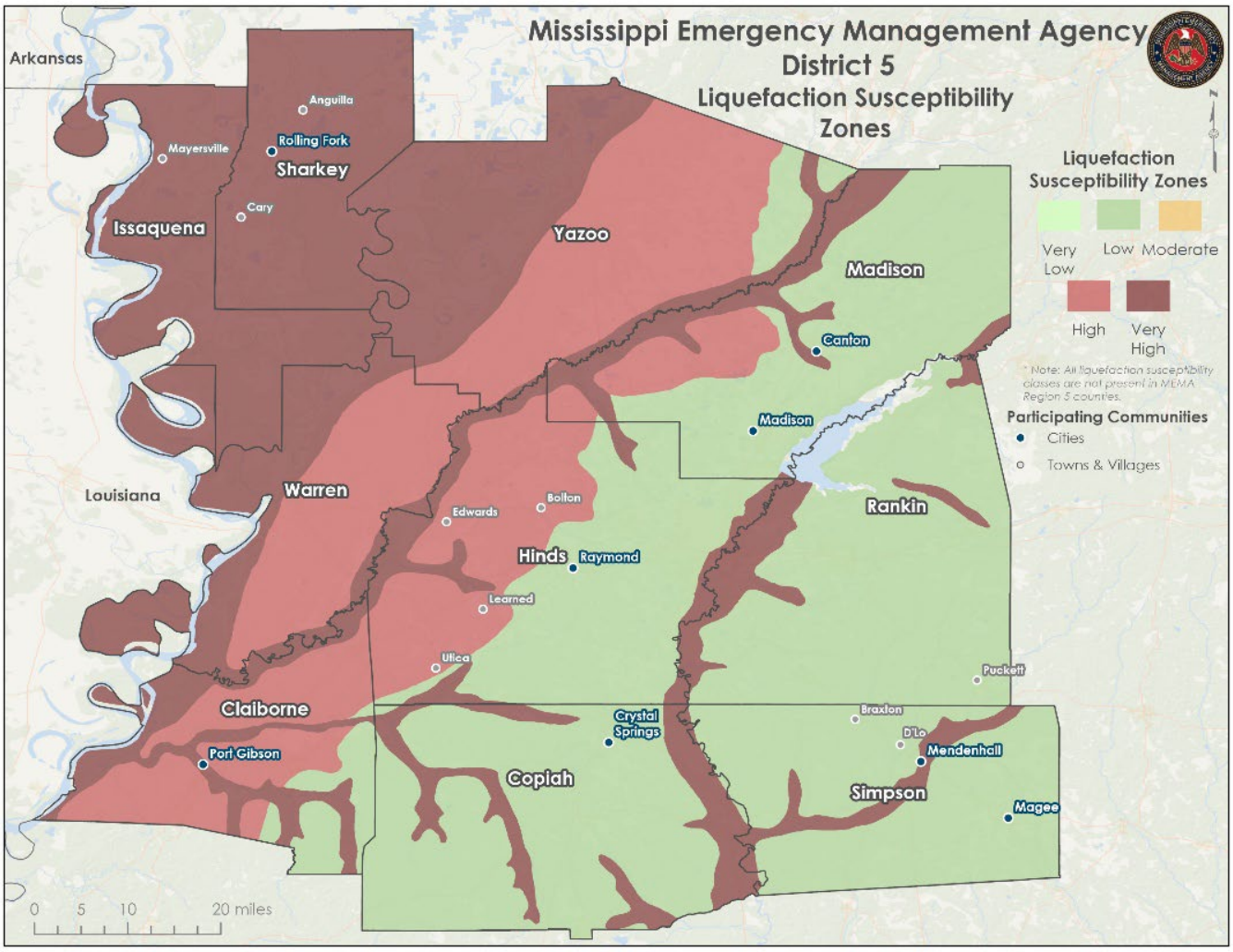
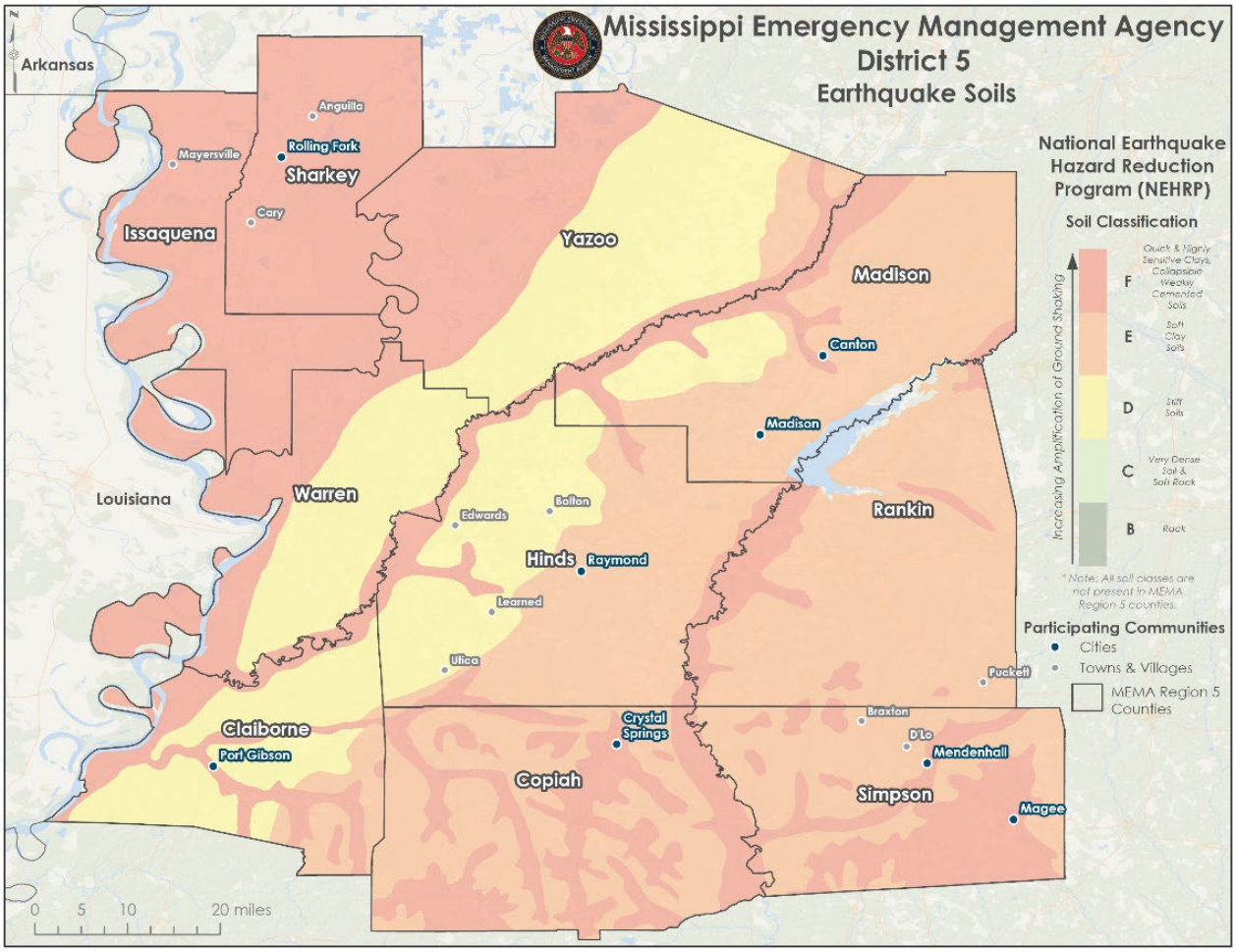


FIGURE 7: MEMA DISTRICT 5 EARTHQUAKE SOILS



4.3.4.2. CRITICAL FACILITIES

Although earthquakes occur infrequently in Rankin County, seismic activity associated with the New Madrid Seismic Zone could result in ground shaking that damages critical facilities and infrastructure due to soft clay soils.

4.3.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

4.3.4.4. PEOPLE

Some populations may face greater risk to earthquakes--the relatively short warning time typically provided for earthquakes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

As noted in the base plan, although earthquakes are rare, rural communities with limited access to emergency services and infrastructure that may be disrupted by the impacts of an earthquake are at increased risk, as are vulnerable populations. These populations can experience disproportionate

impacts to droughts and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Village of Puckett has a low SVI score and therefore may recover faster than other residents of District 5.

4.3.4.5. STRUCTURES AND SYSTEMS

Structures and infrastructure across MEMA District 5 are vulnerable to earthquake damage due to a combination of aging building stock, limited seismic design standards, and soil conditions that may amplify ground shaking.

4.3.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

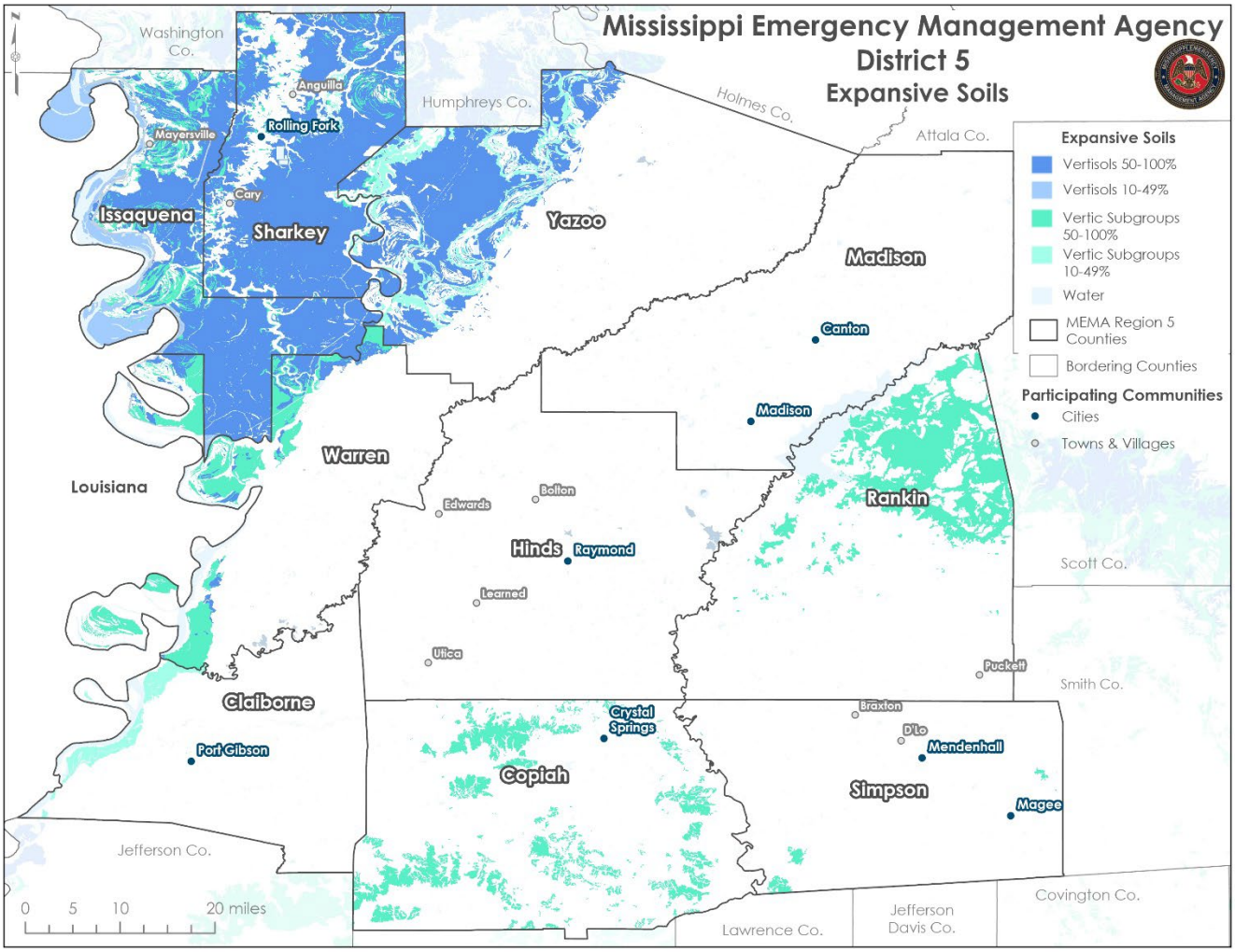
The growth in development and population in Village of Puckett may lead to higher impacts of earthquakes on its residents in the future. Any development that occurs in the Village would be at increased risk of impact from earthquakes since the soft clay soils are present and susceptible to ground shaking.

4.4. EXPANSIVE SOILS

4.4.1. LOCATION AND EXTENT

As noted in the base plan, expansive soils are prevalent throughout Mississippi, including within MEMA District 5, and pose a persistent threat to residential, commercial, and public infrastructure. Village of Puckett does not have expansive soils and therefore is not at risk of its impact. More information about location and extent of expansive soils within the District is provided in the base plan. **Figure 8** displays where expansive soils are in the District and based on the map, there are no expansive soils within the Village of Puckett. For more information expansive soils across the District, refer to the base plan.

FIGURE 8: MEMA DISTRICT 5 EXPANSIVE SOILS



4.4.2. PREVIOUS OCCURRENCES

There are no documented incidents of major damage caused by expansive soils within the D5 Region, including Rankin County and the Village of Puckett.

4.4.3. PROBABILITY OF FUTURE OCCURRENCES

Since there are no expansive soils within the Village, the probability of future occurrences is **Unlikely.**

4.4.4. LOCALIZED VULNERABILITY ASSESSMENT

4.4.4.1. OVERALL VULNERABILITY

There are no expansive soils located in the Village of Puckett; therefore, the risk of expansive soils is **Low**.

4.4.4.2. CRITICAL FACILITIES

Expansive soil does not pose a risk to the Village of Puckett; therefore, no critical facilities are impacted or vulnerable.

4.4.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

Expansive soil does not pose a risk to the Village of Puckett and there are no identified cultural resources at this time in the Village according to the National Parks Service Register of Historic Places.

4.4.4.4. PEOPLE

The risk factors for expansive soils are structural and not demographic in nature. Since there are no expansive soils in the Village, the people are not at risk or vulnerable to its impact.

4.4.4.5. STRUCTURES AND SYSTEMS

Because the geography of Village of Puckett puts it at lower relative risk of this hazard, the structures and systems (including critical facilities, community lifelines, and natural, historic, and cultural resources) in the county and its municipalities are at lower relative risk as well. The potential impacts to these structures and systems are described in more detail in the base plan.

4.4.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Expansive soil does not pose a risk to the Village of Puckett, therefore changes in development do not impact the risk posed to the Village.

4.5. FLOOD

4.5.1. LOCATION

Flooding events are only tracked at the county level and the numbers below represent the statistics for Rankin County. Floods are the most common type of natural disaster, occurring when water overflows onto land that is typically dry after heavy rainfall, storm surges, or rapid snowmelt. Flooding often leads to significant impacts on both human life and the environment. This section provides detailed information about the location, extent, previous occurrences, and overall vulnerability of communities within Village of Puckett to flooding than is provided in the base plan. For more information on flooding across the District, refer to the base plan.

For purposes of this hazard profile and vulnerability analysis, the geographic location/extent for river flooding will be primarily considered as those areas at risk to the 100-year flood (also known as the 1% annual chance flood). The 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. However, the accompanying maps also show the 500-year floodplains (also known as the 0.2% annual chance floodplains) for two major reasons. First, climate models suggest that the planning area should anticipate rain events with increasing intensity in the coming years and decades. Second, any future population growth may result in new development within or near 500-year floodplains.

Figure 9 below shows the location of flood hazard areas within Village of Puckett. The main waterways in the vicinity of the Village of Puckett include the Strong River, which passes just South and West of the Village (near the D'Lo/Mendenhall area) and serves as the primary waterway for the surrounding region. Other key water features include both Clear and Pickett Creeks.

FIGURE 9: VILLAGE OF PUCKETT FLOOD HAZARD AREAS

4.5.2. EXTENT

Riverine flooding is among the most significant hazards in the planning area due to its ability to impact large geographic areas, threatening a significant number of people and properties, the relatively small amount of flood water that it takes to cause significant injury or property damage, and the ability of flood water to linger for days, causing extensive damage. Because variations in geography, elevation, and building design mean that the same flood can cause a wide variety of extents of damage to different

structures, the variation in extent across Rankin County is most accurately captured by the flood zone mapping provided above under “location.”

The most significant recorded flooding event in the State’s history, indicating the potential extent of the threat of the flood hazard, was in 1927, when persistent heavy rainfall and run-off inundated 27,000 square miles. However, while historical flooding can provide a useful indicator of the potential extent of the flood threat, worse floods are always possible, particularly with increased development.

4.5.3. PREVIOUS OCCURRENCES

Since 1974 there have been three federal disaster declarations pertaining to flooding in Rankin County*, details of which are provided below in **Table 16**. There have been a significant number of flooding events throughout Rankin County but zero have been recorded in Village of Puckett.

TABLE 16: FLOODING-RELATED MAJOR DISASTER DECLARATIONS IN VILLAGE OF PUCKETT

Disaster Number	Description	(Declaration Date) and Incident Period	Individual Assistance	Public Assistance
DR-4175	Severe Storm, Tornado, Flooding	(4/30/2014) 4/28/2014-5/3/2014	Y	Y
DR-683	Flooding, Severe Storm, Tornado	(6/1/1983) 6/1/1983	Y	N
DR-430	Heavy Rains, Flooding	(4/18/1974) 4/18/1974	Y	Y

** Federal disaster areas are only tracked at the county level. The disasters above represent the statistics for Rankin County.*

Between the 2015 and 2020 plans, there were 37 flooding events in Rankin County, causing $4,142,000 in property damage. Since the 2020 plan, there have been 84 such events in Rankin County, causing $1,478,000 in damage. However, the NCEI’s Storm Event Database is not granular enough to conclusively determine how many of these events impacted Puckett. The event descriptions provided in the Storm Events Database give some additional details about where damage was reported. Information on each of the 84 events in Rankin County from 2020-2025 is provided in **Table 17**.

Table 17. Individual Flood Events 2020-2025

Date	Time (CST-6)	Event Description	Assessed Damages	Estimated Flood Depth
1/2/2020	19:12	There was flooding on North Church Street to the north of Florence. Gunter Road was also flooded.	$2,000	6 inches
1/2/2020	19:15	Several roads were flooded in northern Rankin County, which included: West Pinebrook Drive, Fannin Landing Circle, Lawrence Road, Holly Bush Road, and Dudley Drive.	$5,000	6 inches
1/2/2020	19:20	Several roads were flooded south of Brandon.	$5,000	6 inches
1/2/2020	19:45	Highway 80 was flooded between Brandon and Pelahatchie.	$5,000	6 inches
1/11/2020	09:23	Fox Hall Road was flooded.	$2,000	6 inches
1/14/2020	10:15	Fox Hall Road was covered in water.	$2,000	6 inches
1/14/2020	11:42	Holly Bush and Stump Ridge roads were flooded.	$2,000	6 inches
1/14/2020	11:58	Pecan Circle and Barton Crossing were closed due to flooding.	$2,000	6 inches

1/14/2020	12:05	Highway 80 at Gulde Road was closed due to flooding.	$2,000	6 inches
1/14/2020	12:30	Multiple roads across Flowood were flooded and closed. These included Grants Ferry Road at Abundance Place, Airport Road at Liberty Road, Marshall Road at Lakeland Drive and 4th Street by Nucor Steel. Castlewoods Blvd. was also closed. Cooper Road was also closed near Hog Creek.	$50,000	8 inches
1/14/2020	12:30	Multiple roads across central Rankin County were flooded and closed.	$13,000	8 inches
1/14/2020	14:40	A few roads were closed in Richland due to flooding.	$3,000	6 inches
4/23/2020	01:00	Street flooding occurred and water entered a few homes along Pine Park Drive.	$45,000	8 inches
4/23/2020	01:50	Williams Road was flooded. Flooding also occurred at Willow Lake Apartments and on Revelation Drive. Flooding also occurred on Old Pearson Road near US Highway 49.	$15,000	10 inches
4/23/2020	02:00	Roads were flooded in the Richland East neighborhood.	$3,000	8 inches
4/23/2020	02:00	A house was flooded in Castlewoods.	$15,000	6 inches
4/23/2020	02:25	Flooding occurred along Ashley Road.	$2,000	4 inches
4/23/2020	07:00	Owen Boone Road near MS Highway 13 was flooded from earlier heavy rainfall.	$2,000	4 inches
8/1/2020	20:00	Water covered one side of Flowood Drive. Water also covered the road at Magnum Drive and Flowood Drive.	$1,000	4 inches
4/9/2021	20:58	Roads were blocked due to flash flooding.	$3,000	6 inches
4/9/2021	22:15	Water flowed across roads in Florence.	$4,000	6 inches
4/9/2021	22:45	Flooding occurred in a few spots along Old Whitfield Road. White Blvd between the Country Inn and Suites and Business Center Parkway was impassable. There was an estimated 2.5 feet of water over the road.	$7,000	30 inches
7/7/2021	14:30	Multiple roads were underwater. These included: Old Whitfield Road near Fire Academy Drive, Old Brandon Road near City Hall, S Pearson Road and Hwy 468 south of town near railroad tracks.	$5,000	24 inches
7/16/2021	16:14	Heavy rainfall from slow moving thunderstorms resulted in a few instances of flash flooding across western Rankin County. Several roads experienced flash flooding, including Highway 80 at the intersection of Highway 49 and Louisa Street.	$10,000	24 inches
4/5/2022	05:20	Floodwater was flowing across Church Road.	$2,000	8 inches
4/17/2022	17:10	The frontage road south of Interstate 20 near Pearson Road was flooded with at least a foot of standing water. A car stalled in the floodwater.	$25,000	10 inches
4/17/2022	18:00	Several homes along Mohr Road were threatened by floodwaters from a nearby creek.	$5,000	10 inches
7/4/2022	17:35	Street flooding occurred on Meadowlane Drive at Michel Street in Brandon.	$2,000	8 inches
8/24/2022	08:00	Flooding on Slade Road washed out part of the pavement.	$2,000	10 inches
8/24/2022	08:00	Flooding at Red Oak Road and Fleming Road.	$1,000	6 inches
8/24/2022	08:45	Several roads flooded and closed in Northern Rankin County including Kiddie Road, Coal Bluff Road, Lawrence Road and Flemming Road.	$5,000	6 inches

8/24/2022	09:35	Rising water approached numerous cars at a car dealership on Highway 80 in Pearl.	$1,000	8 inches
8/24/2022	09:35	Flooding on Treetops Boulevard.	$1,000	6 inches
8/24/2022	09:35	Flooding on Flowood Drive.	$1,000	6 inches
8/24/2022	09:55	Part of Old Pearson Road was under water.	$1,000	6 inches
8/24/2022	09:55	One lane of Highway 80 was closed due to flooding in Front of Pearl High School.	$1,000	8 inches
8/24/2022	10:02	There was widespread flooding on Mount Helm Road off of Highway 25. A house was surrounded by flood water.	$5,000	18 inches
8/24/2022	10:05	There was widespread flooding along Flowood Drive in Flowood.	$5,000	18 inches
8/24/2022	10:10	Roads were flooded and impassable in the Brandon area, and the Peach Tree Nursing Home at the intersection of Crossgates Blvd and Old Brandon Road was flooded. Approximately 40 residents had to be evacuated.	$1,000,000	30 inches
8/24/2022	10:31	Flooding reported at the Village Nursing Home on Old Brandon Road in Brandon. 42 residents needed to be evacuated.	$0	30 inches
8/24/2022	10:37	Social media posts showed flooding on Hemlock Drive in Laurelwood in Flowood.	$0	12 inches
8/24/2022	10:45	A business was flooded, and a portion of a parking lot was covered with 1 to 2 feet of water.	$35,000	18 inches
8/24/2022	10:46	Widespread flooding occurred in the Stonehenge Subdivision towards Stonehenge Drive.	$5,000	18 inches
8/24/2022	11:00	Two washouts occurred along Pisgah Road.	$40,000	12 inches
8/24/2022	11:00	There was flooding along Northshore Parkway and Church Road.	$1,000	12 inches
8/24/2022	11:00	Can Creek Road was flooded.	$1,000	6 inches
8/24/2022	11:00	Road washed out a culvert on Shenandoah Lane.	$25,000	12 inches
8/24/2022	11:00	Stump Ridge Road was blocked due to flooding.	$1,000	8 inches
8/24/2022	11:10	East Deer Ridge Road was closed due to flooding.	$1,000	8 inches
8/24/2022	11:22	Two lanes were blocked by flooding on Highway 49 north of Gunter Road.	$2,000	10 inches
8/24/2022	11:26	Widespread flooding occurred in the Windsong Subdivision off of Highway 468 in Brandon.	$5,000	18 inches
8/24/2022	11:30	There was flooding on Spanish Oak Drive.	$1,000	6 inches
8/24/2022	11:30	Williams Road was closed due to flooding.	$1,000	8 inches
8/24/2022	11:30	Nearby flooding led to the evacuation of 104 children and 22 staff members at the Railroad Daycare Center.	$5,000	30 inches
8/24/2022	11:30	Flooding at Mullican Road and South Eagle Ridge Drive.	$2,000	6 inches
8/24/2022	11:30	There was flooding at Greenfield Road and Whitfield Road.	$1,000	6 inches
8/24/2022	11:31	Three to five inches of water was flowing across the entrance to the Greenfield Station neighborhood.	$1,000	5 inches
8/24/2022	11:31	Three to five inches of water was flowing across the entrance to the Greenfield Station neighborhood.	$0	5 inches
8/24/2022	11:33	Water encroached on several homes along Highway 468.	$1,000	8 inches
8/24/2022	11:35	Water flowed across the entrance to the Hudspeth Center.	$1,000	6 inches
8/24/2022	11:35	Water flowing across the entrance to the Hudspeth Center.	$0	6 inches

8/24/2022	11:39	Widespread flooding occurred in Country Place on Spring Lake Drive.	$5,000	6 inches
8/24/2022	11:45	Flooding at Andrew Chapel Road at Highway 80.	$1,000	6 inches
8/24/2022	11:54	Flooding occurred in the Live Oaks Subdivision south of Bellegrove Circle in Brandon.	$5,000	8 inches
8/24/2022	12:30	A flooded creek rose into the backyards of some homes in the Southwind Subdivision with fences damaged.	$5,000	8 inches
8/25/2022	16:30	Flooding on Greenfield Station Road off Mississippi Highway 468.	$5,000	6 inches
8/25/2022	17:47	Flooding caused a vehicle to stall near Whitfield.	$15,000	8 inches
3/26/2023	17:40	Williams Road behind Florence High School became flooded due to heavy rainfall.	$1,000	10 inches
3/26/2023	18:15	Standing flood water was observed near the Roses outlet store in Pearl.	$1,000	6 inches
1/24/2024	08:15	Many ditches were overflowing and ponding was observed on portions of US Highway 80.	$2,000	6 inches
1/24/2024	09:00	Flooding occurred across the roadway on S Pearson Road near Grand at Pearl Apartments.	$1,000	6 inches
1/24/2024	09:04	Many ditches were overflowing and fields had standing water near the airport.	$1,000	8 inches
1/24/2024	10:00	Fox Hall Road was closed due to flash flooding along parts of the road.	$1,000	8 inches
3/8/2024	10:10	A portion of MS Highway 468 was under water.	$1,000	6 inches
3/8/2024	10:10	Part of the intersection of Service Drive and Gateway Drive were flooded.	$1,000	6 inches
3/8/2024	10:15	Several streets and roads were flooded in Pearl.	$10,000	10 inches
3/8/2024	10:15	A few roads in the southern part of Rankin County were flooded over including parts of Monterey Road, Star Road, and Williams Road. A car was submerged in floodwater near the intersection of Old Pearson Road and Peggy Road in Florence.	$25,000	12 inches
3/8/2024	10:55	Parts of Gulde Road near US Highway 80 were flooded up to two feet deep.	$1,000	24 inches
3/8/2024	12:05	Parts of Quail Hill Road were flooded.	$1,000	10 inches
3/8/2024	18:00	Around 80 children and teachers were evacuated from the Railroad Center Daycare when floodwaters from a nearby creek threatened to flood the building.	$1,000	20 inches
4/9/2024	23:30	Ditches overflowed, and low-lying fields were flooded.	$0	18 inches
9/12/2024	05:34	The intersection of Gulde Road and Highway 80 was closed due to flash flooding.	2,000	10 inches
5/27/2025	07:20	Some roads in town were flooded over.	$0	10 inches
6/27/2025	15:30	Water covered portions of Earl Clark Dr, deep enough in spots where the road was temporarily closed. Additionally, minor flooding on N Church St near Marvin United Methodist Church.	$2,000	6 inches

4.5.4. PROBABILITY OF FUTURE OCCURRENCES

As demonstrated by data from the NCEI's Storm Events Database, Rankin County has experienced a significant number of flooding events in recent years. However, the information from NCEI does not

contain enough granularity to definitively conclude what number of these events affected Puckett. None of the event descriptions mention Puckett, but this does not mean that the community was not impacted by any of these events. When considering the county-level events, as well as their own experience with flooding, representatives for Puckett assessed the probability of future flooding events impacting their jurisdiction to be **Low.** As climate change increases the intensity and unpredictability of rainfall, the likelihood of flooding is expected to grow, making proactive planning and infrastructure investment critical for long-term resilience.

4.5.5. LOCALIZED VULNERABILITY ASSESSMENT

4.5.5.1. OVERALL VULNERABILITY

As noted in the base plan, flooding can cause widespread damage to buildings, roads, utilities, and public infrastructure, and can significantly impact all eight community lifelines as well as natural, historical, and cultural resources. Mitigation Council members considered multiple factors when quantifying their overall vulnerability to flooding. This includes the number of recorded events; the potential area exposed to flooding; economic and environmental impacts; and the risk to human safety. In consideration of these factors, the representatives for Puckett determined that the community's vulnerability to flooding events is **Medium**. This section provides further contextualization for the anticipated vulnerability to flooding events.

4.5.5.2. CRITICAL FACILITIES

The Village of Puckett has zero critical facilities in the floodplain. Flooding poses a notable vulnerability to the community despite the absence of critical facilities within the 100-year or 500-year floodplains. Even localized or unmapped flooding can inundate utility systems, potentially contaminating drinking water, disrupting wastewater treatment, and causing power and communication outages that impede emergency response and continuity of government. Additionally, flooded roads and bridges may block access to critical facilities and essential services, delaying emergency response, evacuation operations, and overall recovery efforts.

4.5.5.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

4.5.5.4. PEOPLE

Some populations may face greater risk to flooding--the relatively short warning time typically provided for flooding means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Populations most at risk of the impacts of flooding include older adults, low-income families, and individuals without access to flood insurance or reliable transportation, as these can make it more difficult to evacuate when flood warnings occur. These populations can experience disproportionate impacts to floods and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Village of Puckett has a low SVI score and therefore may recover faster than other residents of District 5.

4.5.5.5. STRUCTURES AND SYSTEMS

Based on previous occurrences, flooding has caused over $1,478,000 in damage in the past five years within Rankin County. However, within the Village of Puckett, there have not been recorded flood

events. While there have been no reported damages from flooding, the presence of floodplains poses a risk to structures and systems across the Village.

Flooding poses a significant risk to structures and critical systems in the Village by causing physical damage, inundation, and operational disruptions. Floodwaters can damage building foundations, walls, and interiors, particularly in structures located in low-lying areas or flood-prone zones, leading to costly repairs and long-term structural degradation. Electrical, mechanical, and HVAC systems are especially vulnerable to water damage, which can result in power outages and prolonged service interruptions. Flooding may also impair transportation networks, water distribution, wastewater treatment, and drainage systems, reducing access to essential services and facilities. These impacts can disrupt emergency responses, government operations, and community recovery efforts, especially when flood events are recurrent or severe.

4.5.5.6. NFIP INSURED STRUCTURES

The National Flood Insurance Program (NFIP) is a federal program managed by FEMA that provides flood insurance to property owners, renters, and businesses in participating communities. It aims to reduce flood damage by restricting floodplain development and offering affordable insurance, as standard homeowners insurance typically does not cover flood damage. The Village of Puckett and its jurisdictions are a participating in the NFIP. For more information about the NFIP, reference **Section 5.8.6.3** in the base plan.

According to current data from the NFIP, there are zero Repetitive Loss properties in Village of Puckett as of 2025. Due to the repetitive nature of these losses, structures meeting the NFIP definitions of repetitive loss and severe repetitive loss should be prioritized for mitigation measures, as these measures are likely to be relatively cost effective.

4.5.5.7. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in Village of Puckett may lead to higher impacts of flooding. An increase in the number of structures in the floodplain allows for less permeable surface to absorb floodwater, along with higher strain on stormwater management systems that can contribute to an overall increase in the severity of flood events.

4.6. SEVERE STORMS

4.6.1. LOCATION AND EXTENT

Severe storm events are only tracked at the county level and the numbers below represent the statistics for Rankin County. Severe storms are a region-wide hazard in the Mississippi Delta and are not confined to specific locations. Severe storms affect the entire planning area equally; Village of Puckett are not more or less susceptible to their impacts than other communities in District 5. More information on the extent of the threat posed by severe storms is provided in the base plan. For more information on severe storms across the District, refer to the base plan.

4.6.2. PREVIOUS OCCURRENCES

Recent events highlight the destructive potential of these storms. Since 2020, the following events have taken place in Rankin County:

- 62 thunderstorms, causing $2,727,000 in property damage
- Six occurrences of severe lightning, causing $415,000 in property damage
- Five high wind events, causing $38,000 in property damage
- 21 hailstorms, causing $9,614,000 in property damage

4.6.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 94 severe storm events in the past five years within Rankin County. It is expected that the County will experience 18 severe storm events in a year. The probability of future occurrences of severe storms in Rankin County and the Village of Puckett is **Highly Likely**, These storms are expected to occur multiple times per year.

4.6.4. LOCALIZED VULNERABILITY ASSESSMENT

4.6.4.1. OVERALL VULNERABILITY

As noted above, the risk of severe storms (due to the frequency and ubiquity of these events) is largely equal across the entire planning area, posing risks to natural and cultural resources and community lifelines, as discussed in the base plan. However, demographic and development factors can cause variation in vulnerability to this risk. Based on the frequency and the extent of damage that severe storms can cause the risk of severe storms is **High** for Rankin County and the Village of Puckett. This section provides further contextualization for the anticipated vulnerability of severe storm events.

4.6.4.2. CRITICAL FACILITIES

Since severe storms impact the planning area equally, all critical facilities are at risk of severe storm impacts. Severe storm events, including strong thunderstorms accompanied by high winds, heavy rainfall, hail, and lightning, present an ongoing risk to critical facilities in the Village. These storms can cause damage to essential buildings such as hospitals, emergency response facilities, schools, government offices, roof failure, shattered windows, and impacts of debris.

4.6.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

4.6.4.4. PEOPLE

The wind, hail, lightning, and flooding often produced by severe storms can lead to injury or death. Some populations may face greater risk to severe storms--the relatively short warning time typically

provided for severe storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. These populations can experience disproportionate impacts to severe storms and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Village of Puckett has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.6.4.5. STRUCTURES AND SYSTEMS

Aging infrastructure and limited emergency resources without redundancies increase the vulnerability of structures and systems in Village of Puckett to the impacts of severe storms. However, this vulnerability is not markedly higher or lower in the Village than the rest of the District; the vulnerability of structures and systems across D5 is described in more detail in the base plan. Based on previous occurrences, there have been over $12,000,000 of damages in the past five years which is about $2,500,000 a year. It is expected that in the next several years, similar damage from severe storms will continue to occur.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of severe storms like high winds. Rankin County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.6.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in Village of Puckett means more people and structures for storms to damage. Additionally, higher strain on stormwater management systems can contribute to an overall increase in the likelihood of severe storms to lead to flooding. Increased population growth and development can also increase the number of structures and people at risk to severe storms in the future.

4.7. SEVERE WINTER WEATHER

4.7.1. LOCATION AND EXTENT

Severe storm events are only tracked at the county level and the numbers below represent the statistics for Rankin County. Severe winter weather is a region-wide hazard in the Mississippi Delta and is not confined to specific locations. Winter storms affect the entire planning area equally; Village of Puckett are not more or less susceptible to their impacts than other communities in District 5. More information on the extent of the threat posed by these storms is provided in the base plan. However, the extent of these storms is limited, with an average amount of annual snowfall in the Village of 0-1 inches. For more information on severe winter weather events across the District, refer to the base plan.

4.7.2. PREVIOUS OCCURRENCES

Several impactful severe winter weather events have occurred in Rankin County over the past two decades. The most significant of these in recent years include:

- The January 2018 cold snap that led to challenges like burst pipes, increased heating demands, and risk to seniors and other vulnerable populations
- The February 2021 freezing rain, sleet, and snow event that led to widespread power outages due to ice accumulation
- The January 2014 snowstorm led to significant travel hazards

Between 2015 and 2020, there were four severe winter weather events in Rankin County, causing $6,000 in property damage. Since the 2020 plan update, there have been eight such events, causing $363,000 in damage.

4.7.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 12 severe winter weather events in the past 10 years. It is expected that a severe winter weather event will occur once every 1-2 years. Therefore, the provability of severe winter weather events occurring in the future within Rankin County and the Village of Puckett are considered **Low**.

4.7.4. LOCALIZED VULNERABILITY ASSESSMENT

4.7.4.1. OVERALL VULNERABILITY

All counties within District 5 are vulnerable to the impact of severe winter storms. Because it is closer to the Southern portion of the region, winter weather in Village of Puckett may be slightly less severe than across the region. Critical facilities may nonetheless face operational challenges during prolonged outages or freezing conditions, and severe winter weather can significantly impact the Village's natural, historic, and cultural assets, as discussed in the base plan. Based on the frequency and the severity of severe winter storms, the risk to the Village of Puckett is **Medium**. Severe winter storms can disrupt utility and critical infrastructure which can significantly disrupt the Village. This section provides further contextualization for the anticipated vulnerability of severe winter storms.

4.7.4.2. CRITICAL FACILITIES

Severe winter weather, including freezing temperatures, ice, and occasional snow, can disrupt critical facilities in the Village by causing power outages, damaging water and wastewater systems, and limiting transportation access. Freezing conditions may result in broken pipes, equipment failures, and interruptions to essential services at hospitals, emergency response facilities, schools, and government buildings.

4.7.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

4.7.4.4. PEOPLE

Severe winter weather poses significant risks to human health and safety, particularly among vulnerable populations. As with other hazards, those who are elderly, disabled, or economically disadvantaged are at heightened risk due to limited access to reliable heating, transportation, and emergency services, and a reduced ability to physically withstand cold temperatures. Many homes in rural areas lack adequate insulation or backup power sources, making them susceptible to dangerously low indoor temperatures during prolonged power outages caused by ice storms. These populations can experience disproportionate impacts to severe winter weather and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Village of Puckett has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.7.4.5. STRUCTURES AND SYSTEMS

Rural communities may be more vulnerable to isolation during winter storms, especially if roads become impassable. These areas often face greater challenges in road treatment and utility restoration due to limited access to resources and longer emergency response times. Based on previous occurrences, severe winter weather events have caused $393,000 in damage in the past 10 years within Rankin County. It is expected that similar damages to occur in the County. Based on the data from the County, damages from such events would be limited in the Village of Puckett compared to other jurisdictions within the District.

4.7.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

Population growth and related residential expansion in the Village of Puckett may lead to more energy efficient buildings, modern infrastructure, and general structural readiness for the impacts of winter weather. However, this population growth can also strain electrical and other utility systems, increasing the likelihood that these systems experience failure during significant events.

4.8. TORNADO

4.8.1. LOCATION AND EXTENT

Tornado events are only tracked at the county level and the numbers below represent the statistics for Rankin County. Tornadoes are among the most extreme and destructive weather events. Formed from intense thunderstorms, they can cause loss of life and destroy entire neighborhoods within moments. Due to the unpredictable nature of tornado formation and the ability for the entire planning area to be impacted by severe storms, the entirety of Village of Puckett is equally likely to experience a tornado of any magnitude. Tornados of any strength on the Enhanced Fujita (EF) scale are possible throughout the county. For more information on tornadoes across the District, refer to the base plan.

4.8.2. PREVIOUS OCCURRENCES

Between 1950 and 2022, there were 99 tornadoes reported in Rankin County, causing a total of $144,866,000 in property damage. Rankin County ranks second, behind Hinds County, in the most tornado events and reported property damage across District 5.

4.8.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences there have been 99 tornadoes within the past 72 years. It is expected that a tornado event will occur once or twice a year. Historical data spanning 72 years indicates a consistent pattern of tornado activity across Rankin County. Based on the County data it is **Highly Likely** that tornadoes will occur and impact the Village of Pucket in the future.

4.8.4. LOCALIZED VULNERABILITY ASSESSMENT

4.8.4.1. OVERALL VULNERABILITY

More rural and less densely populated jurisdictions like the Village of Puckett may have older housing stock, limited access to safe shelters, and fewer emergency response resources. These factors can increase the severity of tornado impacts despite lower exposure levels. Additionally, mobile homes are extremely susceptible to high winds and may sustain more damage or be flipped over during a strong tornado. Tornadoes cause flying debris which can be dangerous for people in the surrounding areas and other buildings, infrastructure, and critical facilities. Due to the severity tornadoes can cause, they pose a **High** risk to the Village. This section provides further contextualization for the anticipated vulnerability to tornadoes.

4.8.4.2. CRITICAL FACILITIES

Tornadoes present a significant threat to critical facilities in the Village of Puckett, as extreme winds and airborne debris can cause abrupt and extensive structural damage. Essential facilities, including hospitals, emergency services, schools, and water or wastewater systems—are vulnerable to roof loss, wall failure, utility disruption, and other forms of functional impairment. Tornado events also commonly lead to power and communication outages, while debris-cluttered roads can limit access to these facilities and hinder timely emergency response.

4.8.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

4.8.4.4. PEOPLE

Some populations may face greater risk to tornadoes--the relatively short warning time typically provided for tornadoes means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are

elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

Population data for mobile or manufactured homes are only tracked at the county level and the numbers below represent the statistics for Rankin County. Populations residing in structures not designed as storm shelters are inherently vulnerable to tornado hazards. This risk is especially elevated for individuals living in mobile homes, which statistically account for a disproportionate number of tornado-related fatalities and injuries due to their limited structural resilience. 8,902 (19.6%) of the residents of Rankin County reside in mobile or manufactured homes, placing them at increased risk. These populations can experience disproportionate impacts to tornadoes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Village of Puckett has a low SVI score and therefore may recover faster than other residents of District 5.

4.8.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that do not have safe rooms or have not been retrofitted for extreme winds are vulnerable to the impacts of tornados, including in Village of Puckett, as described in the base plan. Community lifelines and natural, historic, and cultural resources are also vulnerable to the impacts of tornadoes. Village of Puckett may be at slightly lower risk of these impacts simply because it is less developed than other jurisdictions in the district, and there are more such facilities to be impacted.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tornado events. Rankin County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.8.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in Village of Puckett means more people and structures for tornados to damage. This trend also leads to a housing and building stock that is newer, increasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tornadoes.

4.9. TROPICAL STORM/HURRICANE

4.9.1. LOCATION AND EXTENT

Like the rest of District 5, Village of Puckett is inland but is still vulnerable to the impacts of tropical storms and hurricanes that make landfall and track inland. This risk is not measurably varied across the County or planning area, except for low-lying and flood-prone areas that might be more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section.

The extent of the impacts of tropical storm typically includes sustained winds of 30-60 MPH with higher gusts, heavy rainfalls of six or more inches in a 24-hour period, and occasional tornadoes. For more information tropical storms and hurricanes across the District, refer to the base plan.

4.9.2. PREVIOUS OCCURRENCES

Village of Puckett is inland but has experienced the direct impacts of tropical storms in the past. The tracks of the following storms have passed directly through the county, producing damaging wind, heavy rainfall, power outages, and occasional tornadoes:

- Tropical Storm Francine (2024)
- Tropical Storm Gordon (2018)
- Tropical Storm Isidore (2002)

4.9.3. PROBABILITY OF FUTURE OCCURRENCES

Although Village of Puckett is located inland, the probability of experiencing hurricane-related impacts remains **Low** due to the district's proximity to the Gulf Coast and historical storm tracks. Rankin County and the Village of Puckett can expect to experience the effects of a tropical storm or hurricane approximately every 5 to 10 years, although climate trends and increased storm intensity may elevate risk.

4.9.4. LOCALIZED VULNERABILITY ASSESSMENT

4.9.4.1. OVERALL VULNERABILITY

Being in the Southern half of the district, the Village of Puckett is likely to experience slightly more frequent and intense tropical storm impacts than the district overall. Due to the low frequency, geography, and potential damage from tropical storms and hurricanes, they pose a **Medium** risk to the Village. This section provides further contextualization for the anticipated vulnerability of tropical storms and hurricanes.

4.9.4.2. CRITICAL FACILITIES

Tropical storms and hurricanes, even after weakening inland, can still impact critical facilities in the Village by producing heavy rainfall, strong winds, and localized flooding that stress infrastructure and disrupt essential services. Hospitals, emergency response facilities, schools, government buildings, and water or wastewater systems may face structural damage, utility outages, and flooding that affects mechanical or electrical components. Excessive rainfall can also overwhelm drainage systems and flood roadways, limiting access to critical facilities and slowing emergency response efforts.

4.9.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

4.9.4.4. PEOPLE

Some populations may face greater risk to tropical storms--the relatively short warning time typically provided for tropical storms means that individuals who are isolated, lack internet or cellular connectivity, have mobility issues, live in a mobile home or otherwise lack access to below-ground shelter, are elderly, and young children are at a greater risk. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. These populations can experience disproportionate impacts to tropical storms and hurricanes and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Village of Puckett has a low SVI score and therefore may recover faster than other residents of District 5.

4.9.4.5. STRUCTURES AND SYSTEMS

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storms like high winds. As noted above, low-lying and flood-prone areas are more subject to flash flooding or riverine flooding during heavy rain events; more information about this risk is provided in the Flood section. Since the Village of Puckett is increasing in population, the number of structures at risk could increase as development increases.

Structures across the planning area that were built before modern building codes are more vulnerable to the impacts of tropical storm events. Rankin County follows Mississippi's statewide building standards, which are based on the 2018 International Residential Code (IRC), the 2018 International Building Code (IBC), and the 2018 International Energy Conservation Code (IECC). These standards establish baseline requirements for structural safety, durability, and energy efficiency across both residential and commercial development. The IRC generally requires new homes to be designed to withstand wind speeds up to 115 mph while the IBC requires new commercial structures to be designed to withstand 110-115 mph wind speeds.

4.9.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The growth in development and population in Village of Puckett mean more people and structures for these storms to damage. This trend also leads to a housing and building stock that is newer, increasing the relative number of structures that were built to modern codes and are more resistant to the impacts of tropical storms.

4.10. WILD/URBAN INTERFACE (WUI) FIRE

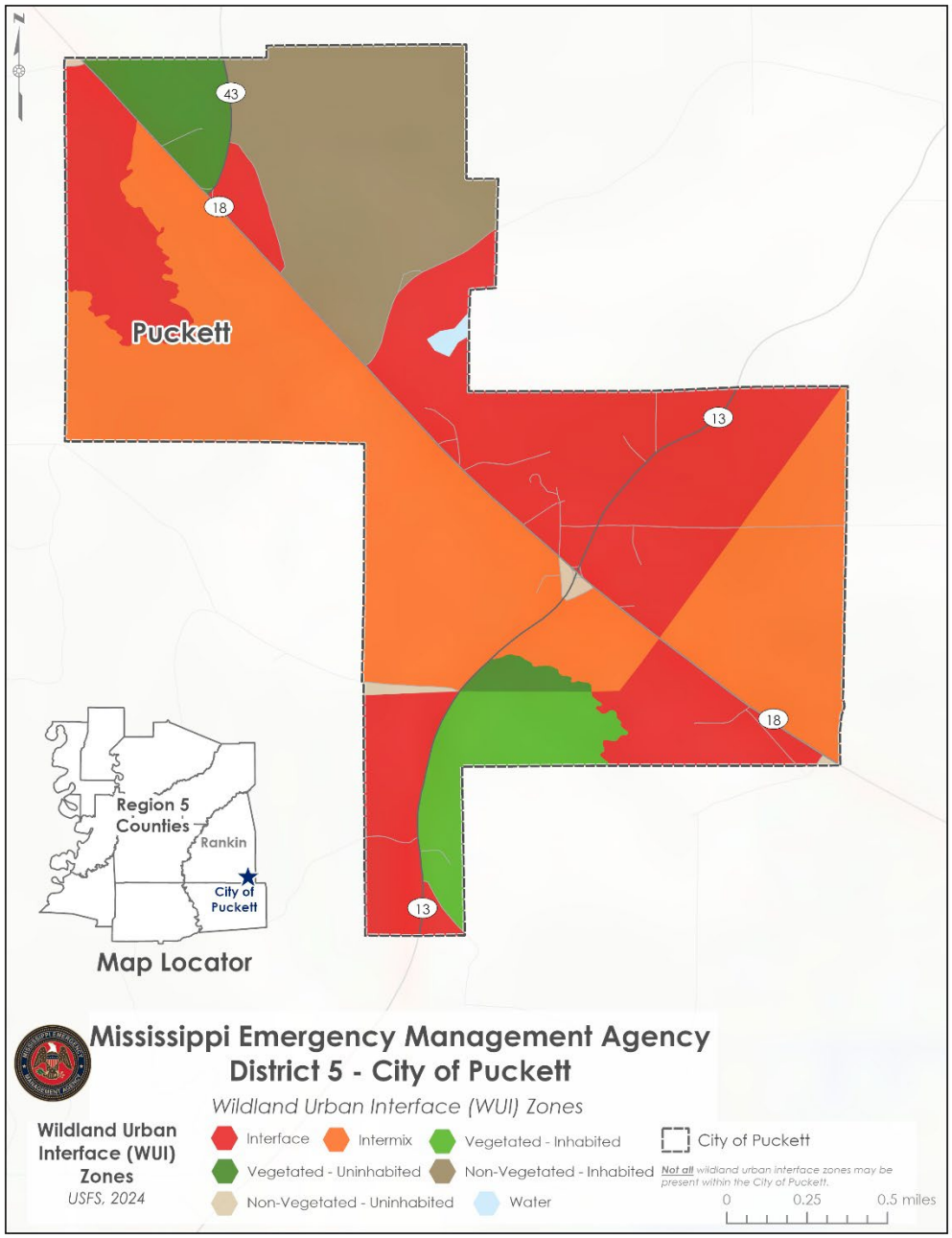
4.10.1. LOCATION AND EXTENT

Wildland/Urban Interface (WUI) fires are a growing concern in Mississippi, particularly in areas where residential and commercial development borders forested or grassland regions. MEMA District 5, which includes a mix of urban centers, suburban growth, and rural forested lands, is increasingly vulnerable to wildfire threats due to expanding development into fire-prone areas. There are two types of WUI Zones, and they are briefly described below. For more information on urban and WUI fires across the District, refer to the base plan.

- **Interface:** Development is bordered by wildlands on at least one side.
- **Intermix:** Development is surrounded on two or more sides by wildlands.

Wildland/Urban Interface (WUI) fires occur where developed areas meet or intermingle with wildland vegetation. **Figure 10** below is a map showing the area where this hazard is most significant in Village of Puckett. The Village has substantial WUI interface areas across its boundaries, both intermix and interface and at risk of fires. The extent of a potential WUI fire impact in MEMA District 5 varies based on vegetation type, weather conditions, topography, and proximity to development, but is not substantively different in the Village of Puckett than in the District overall.

FIGURE 10: WILDLAND URBAN INTERFACE (WUI) AREA IN VILLAGE OF PUCKETT



4.10.2. PREVIOUS OCCURRENCES

The Village of Puckett faces both structural fire and wildfire risks, including a fatal residential fire reported in Rankin County and recurring wildfire exposure identified through regional wildfire-risk mapping. Larger wildfires in Rankin County—such as a 200-acre event that prompted evacuations—demonstrate the potential for significant wildfire impacts in areas surrounding Puckett. However, there have been no reported urban fires from 1992-2020 or wildfires reported from 1984-2024 in the Village of Puckett. It is also important to note that some District 3 participating communities provided anecdotal information that previous fire events have not been captured using state level data. Due to this data limitation, it is possible that the number of previous occurrences could be more than reported.

4.10.3. PROBABILITY OF FUTURE OCCURRENCES

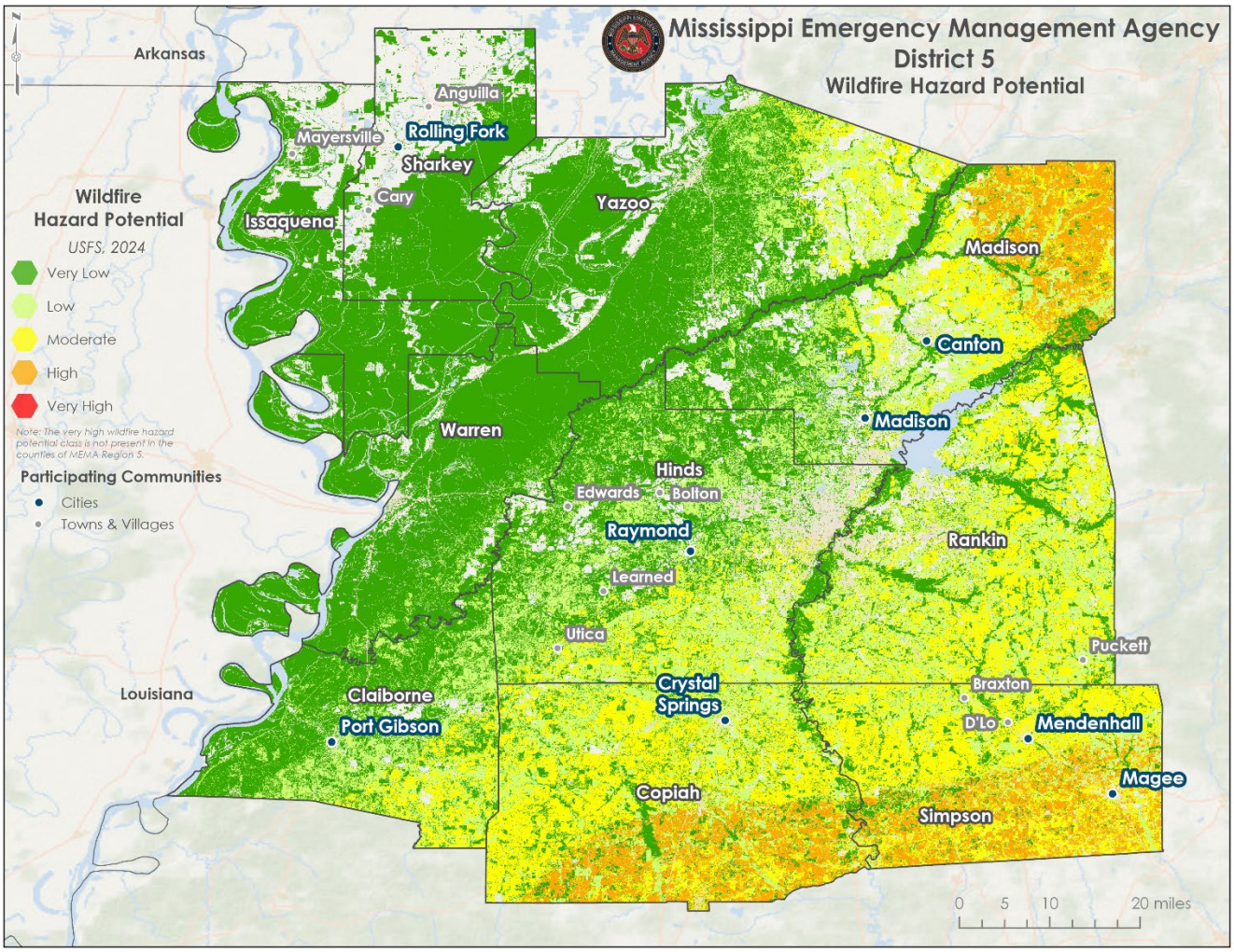
While there have been no reported fires in the Village, Wildland/Urban Interface (WUI) fires are expected to remain a recurring hazard in Village of Puckett. Hundreds of wildfires occur in Mississippi each year, indicating that such fires may occur in the County likely to occur in the County. The probability of the Village responding to a severe fire is **Low**.

4.10.4. LOCALIZED VULNERABILITY ASSESSMENT

4.10.4.1. OVERALL VULNERABILITY

Jurisdictions like the Village of Puckett in the eastern part of the district, due to a variety of geographic factors like drier climate and soils and trends in development, are more susceptible to both WUI and urban fire. As see in **Figure 11** below, wildfire hazard potential is generally moderate across the Village. Therefore, urban and WUI fires pose a **Medium** risk to the Village. This section provides further contextualization for the anticipated vulnerability to urban/wildfires.

FIGURE 11: MEMA DISTRICT 5 WILDFIRE HAZARD POTENTIAL



4.10.4.2. CRITICAL FACILITIES

Urban and wildland fires pose a significant risk to critical facilities in the Village of Puckett by threatening structural integrity, utility systems, and operational continuity. Hospitals, fire stations, schools, government buildings, and water or wastewater facilities may be damaged or rendered inoperable by direct flame contact, radiant heat, smoke infiltration, and wind-driven embers. Fire events can disrupt electrical power, communications, and water supplies needed for medical care, emergency response, and fire suppression, while evacuation orders and hazardous conditions may limit staff access to critical facilities. Wildfires occurring in or near the wildland-urban interface can also restrict transportation routes and delay response efforts. **Figure 12** displays the Village of Puckett's critical facilities and infrastructure in the WUI zones. **Table 18** lists the critical facilities in Village of Puckett that lie within the WUI area and are thus at increased risk.

FIGURE 12: CRITICAL FACILITIES AND INFRASTRUCTURE IN THE WUI ZONES

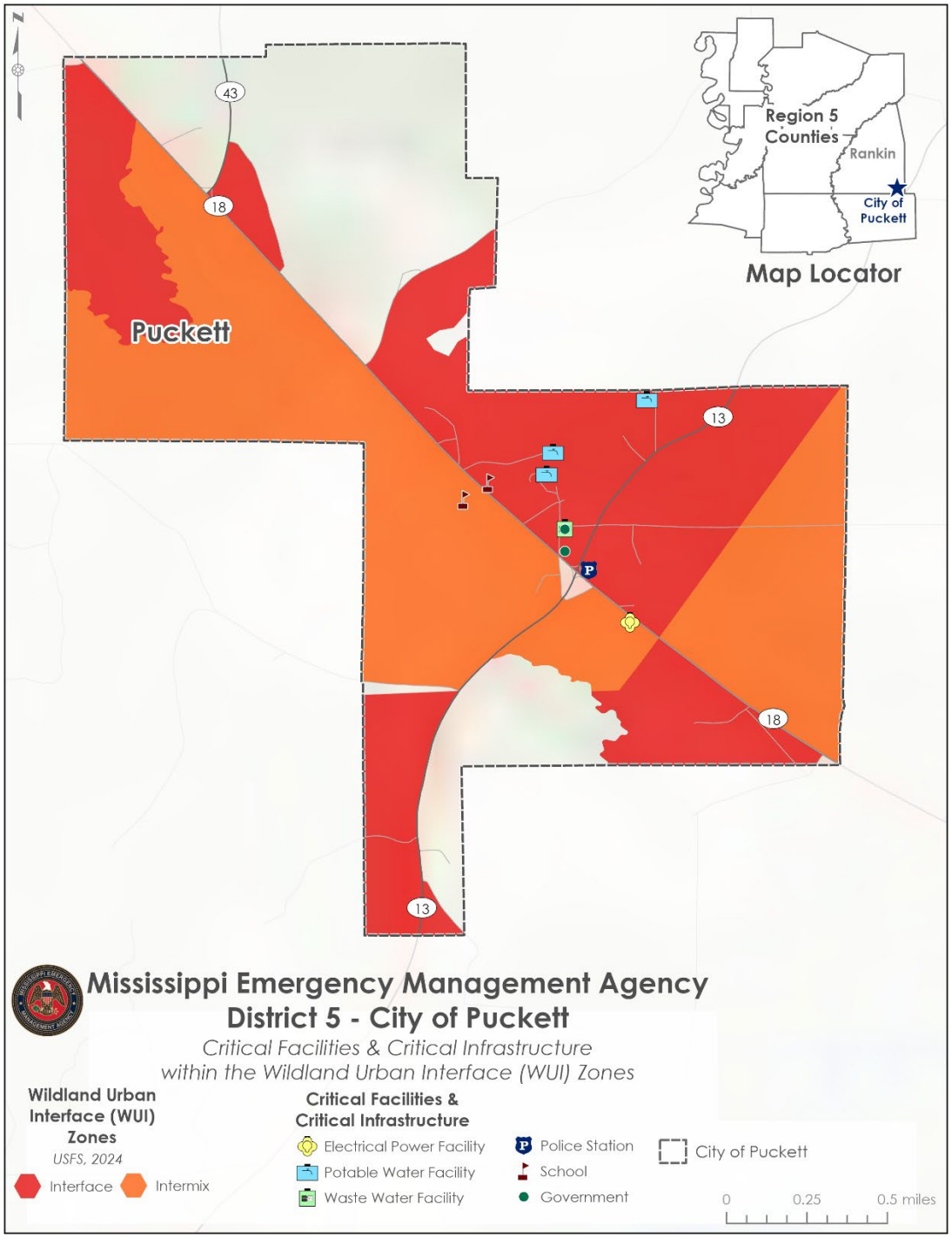


TABLE 18: CRITICAL FACILITIES IN THE WUI

Jurisdiction	Facility Type	Facility	WUI Zone
Village of Puckett	Electrical Power Facility	Substation @ Hwy 18	Intermix - Low Density
Village of Puckett	Government	Puckett - Senior Center	Interface - Medium Density

Jurisdiction	Facility Type	Facility	WUI Zone
Village of Puckett	Government	Town Hall / Police Station	Interface - Medium Density
Village of Puckett	Potable Water	Water Tower/Well	Interface - Low Density
Village of Puckett	Potable Water	Water Well 1	Interface - Low Density
Village of Puckett	Potable Water	Water Well 2	Interface - Low Density
Village of Puckett	School	Puckett Attendance Center	Interface - Low Density
Village of Puckett	School	Puckett Elementary School	Intermix - Low Density
Village of Puckett	Waste Water Facility	Puckett POTW	Interface - Medium Density

4.10.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

4.10.4.4. PEOPLE

For the planning area, populations living in high to low wildfire hazard potential areas are at an increased risk. Those areas include Southern Claiborne and Hinds Counties, Simpson County, the Cities of Crystal Springs and Canton and the Village of Puckett. Participating jurisdictions located in the very low wildfire potential areas include Issaquena and Sharkey Counties and the City of Madison, thus putting those populations at a slightly lower risk than the rest of the District.

Populations most at risk of the impacts of fires include older adults, low-income families, and individuals without access to reliable transportation, as these can make it more difficult to evacuate when these fires occur. These populations can experience disproportionate impacts to urban and WUI fires and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Village of Puckett has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**. Because it is more rural than the district, people in Village of Puckett may be at slightly higher risk from wildfire, as the lower access to road infrastructure and warning systems may make evacuation more difficult.

4.10.4.5. STRUCTURES AND SYSTEMS

Village of Puckett contains extensive areas of direct exposure to wildfire risk, as shown in the Wildfire Risk Reduction Zones map in the base plan. In these areas, homes and infrastructure are adjacent to flammable vegetation, increasing ignition risk and complicating suppression efforts. The Village of Puckett and Rankin County does not have a Community Wildfire Protection Plan (CWPP) in place, which could help address and reduce risk in the future.

4.10.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like the Village of Puckett, population growth can lead to increase number of structures and development at risk of fires.

4.11. HAZARDOUS MATERIAL INCIDENTS

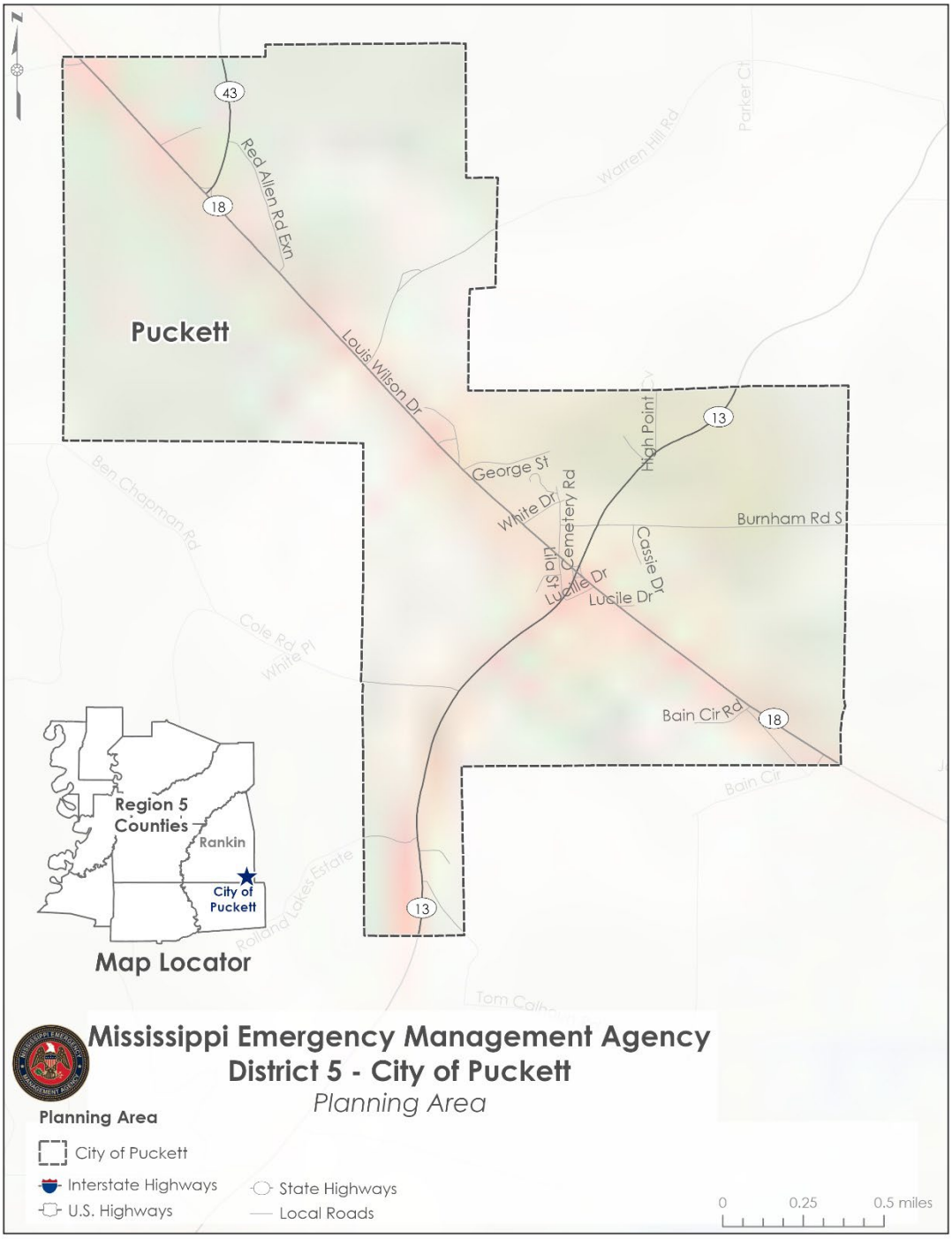
4.11.1. LOCATION AND EXTENT

Hazardous materials incidents are only tracked at the county level and the numbers below represent the statistics for Rankin County. Hazardous materials incidents can occur throughout MEMA District 5, but the risk is highest near major transportation corridors, industrial zones, agricultural operations, and facilities that store or use chemicals. In Village of Puckett, these include:

- State Highways 13, 18 and 43

As noted in the base plan, the severity of the impact from HazMat incidents depends on the type of material released, proximity to populated areas, and the effectiveness of containment and response measures. **Figure 13** below displays the ground transportation in the Village. For more information on hazardous materials incidents

FIGURE 13: GROUND TRANSPORTATION IN THE VILLAGE OF PUCKETT



4.11.2. PREVIOUS OCCURRENCES

In Rankin County, there has been a total of 201 hazardous materials releases reported to the EPA since 2014. There is no information about whether any of these releases occurred in the Village of Puckett. However, County data is being used to understand risk to the Village.

- 2014: 22 reports at 10 facilities

- 2015: 21 reports at 11 facilities
- 2016: 19 reports at 11 facilities
- 2017: 19 reports at 11 facilities
- 2018: 19 reports at 11 facilities
- 2019: 19 reports at 11 facilities
- 2020: 20 reports at 11 facilities
- 2021: 16 reports at 10 facilities
- 2022: 16 reports at 10 facilities
- 2023: 15 reports at 8 facilities
- 2024: 15 reports at 8 facilities

4.11.3. PROBABILITY OF FUTURE OCCURRENCES

Based on previous occurrences, there have been 201 incidents in the past 11 years. It is expected that hazard materials incidents will occur 18 times per year in Rankin County. It is unknown how many incidents occurred or impacted the Village of Puckett. Therefore, the likelihood of future hazardous materials incidents in Village of Puckett is considered **Susceptible**, primarily due to the district's extensive transportation infrastructure and industrial activity, and the fact that a major spill in an adjacent jurisdiction could impact Village of Puckett.

4.11.4. LOCALIZED VULNERABILITY ASSESSMENT

4.11.4.1. OVERALL VULNERABILITY

More rural and less densely populated jurisdictions like Rankin County and the Village of Puckett may have limited access to safe shelters, and fewer emergency response resources. These factors can increase the severity of HazMat impacts despite lower exposure levels. The overall risk of a hazardous material incident in the Village is **Low.** This section provides further contextualization for the anticipated vulnerability to hazardous material incidents.

4.11.4.2. CRITICAL FACILITIES

Hazardous materials incidents can threaten critical facilities in the Village by causing contamination, toxic exposure, or fire and explosion hazards that force evacuations or temporary closures. Facilities such as hospitals, schools, emergency response buildings, government offices, and water or wastewater systems may experience service disruptions due to safety concerns, restricted access, or impacts to supporting utilities. Emergency operations can also be strained as resources are diverted to containment and cleanup efforts.

4.11.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

4.11.4.4. PEOPLE

Populations most at risk of the impacts of hazardous materials incidents are those living near transportation corridors, industrial facilities, and storage sites, who are more likely to be lower income. This population is also less likely to have reliable access to transportation, complicating evacuation efforts. Other vulnerable populations include older adults, children, and those with respiratory conditions, who may face challenges during shelter-in-place orders. These populations can experience

disproportionate impacts to hazardous materials incidents and may have difficulty in preparing for and recovering from these events. According to the CDC Social Vulnerability Index (SVI), the Village of Puckett has a low SVI score and therefore may recover faster than other residents of District 5. Descriptions of socioeconomics, household, and other factors used by the CDC to produce the Social Vulnerability Index are provided in **Section 2**.

4.11.4.5. STRUCTURES AND SYSTEMS

Because it is more rural than the rest of the district, people in Village of Puckett may be at slightly lower risk from HazMat incidents due to the relative number of facilities that might cause releases. However, lower access to road infrastructure and warning systems may make evacuation more difficult than in other areas, as would lower emergency response capability. Impacts on lifelines and to natural, cultural, and historic resources are generally consistent across the planning area and are described in the base plan.

4.11.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

In rural areas like the Village of Puckett, population growth can lead to increased access to emergency services and increased response times, which can decrease the risk from hazardous materials incidents.

4.12. NUCLEAR POWER PLANT

4.12.1. LOCATION AND EXTENT

A nuclear power plant incident refers to any unplanned event at a nuclear facility that results in, or has the potential to result in, the release of radioactive materials or exposure to radiation beyond normal operating limits. These incidents can range from minor equipment malfunctions to significant accidents affecting reactor safety systems. Potential consequences include contamination of air, water, or soil; health risks to the public and plant personnel; and disruption of critical infrastructure. Incidents may be triggered by natural hazards (e.g., earthquakes, floods), technological failures, or human error, and require immediate protective actions and coordination with federal, state, and local emergency management agencies. For more information on nuclear power plants across the District, refer to the base plan.

Grand Gulf Nuclear Station is the only nuclear power plant in Mississippi. Mississippi maintains a Radiological Emergency Response Plan to prepare for radiological emergencies. The plan includes a Plume Exposure Pathway Zone (EPZ) with a 10-miles radius from the reactor, where the primary concern is people being harmed by direct radiation exposure. The second zone, an Ingestion Exposure Pathway Zone (IEP), includes a 50-mile radius from the facility. Rankin County, including the Village of Puckett, is outside of the 50-mile radius of the facility.

4.12.2. PREVIOUS OCCURRENCES

There have been no recorded major nuclear power plant incidents directly impacting MEMA District 5. Rankin County, including the Village of Puckett, is outside of the 50-mile radius from the facility.

4.12.3. PROBABILITY OF FUTURE OCCURRENCES

With no documented instances of nuclear power plant incidents impacting Puckett, the probability of future occurrences is considered **unlikely.** However, it is important to acknowledge that the probability of manmade hazards can shift as regulations are tightened or loosened, infrastructure ages, and security conditions change.

4.12.4. LOCALIZED VULNERABILITY ASSESSMENT

4.12.4.1. OVERALL VULNERABILITY

Nuclear incidents are not considered “natural hazards” by FEMA, and jurisdictions are not required to evaluate the overall risk of non-natural hazards in hazard mitigation plans. Additionally, site security and other sensitive information is not factored into this plan because it is intended to be a public document. Therefore, the overall vulnerability of Puckett to this hazard is **Unrated**. Although the overall vulnerability is unrated, emergency management and planning personnel should still evaluate the full range of potential community impacts in the event of a nuclear power plant incident.

4.12.4.2. CRITICAL FACILITIES

Since Rankin County, including the Village of Puckett, is outside of the 50-mile radius from the facility, no critical facilities are expected to be significantly impacted by any nuclear power plant incidents that can be reasonably anticipated.

4.12.4.3. CULTURAL, HISTORIC, AND NATURAL RESOURCES

There are no identified cultural resources at this time in the Village of Puckett according to the National Parks Service Register of Historic Places.

4.12.4.4. PEOPLE

The people of the Village of Puckett are at overall lower relative risk than the rest of the District, due to the Village being outside of the 50-mile radius from the Grand Gulf Nuclear Station. However, all individuals in the District may experience stress and disruption to daily activities due to economic uncertainty, transportation interruptions, and strain on public services in the event of an incident. Additionally, regional response measures, including emergency communications, resource allocation, and potential population movements, could affect residents regardless of their proximity to the facility.

4.12.4.5. STRUCTURES AND SYSTEMS

Because Rankin County, including the Village of Puckett, is outside of the 50-mile radius from the facility, the potential impacts to these structures and systems are minimal. In the event of a severe incident, facilities in Puckett may experience increased usage, as individuals that have evacuated from areas closer to the Grand Gulf Nuclear Station travel to or through Puckett.

4.12.4.6. IMPACTS OF CHANGES IN DEVELOPMENT

The Village of Puckett is outside of the 10-mile and 50-mile zones around the Grand Gulf Nuclear Station, and therefore it is assessed that Puckett faces minimal impacts from any nuclear power plant incidents that could be reasonably anticipated. While Puckett's population has increased since 2010, the community's location likely means that increased development will not significantly increase Puckett's exposure and vulnerability to nuclear power plant incidents.

4.13. CRITICAL FACILITIES VULNERABILITY SUMMARY

Table 19 below notes the individual critical facilities in Village of Puckett that were identified by the Mitigation Council and provides information on the relative risk these facilities face from various hazards.

TABLE 19: VILLAGE OF PUCKETT CRITICAL FACILITIES VULNERABILITY SUMMARY

Facility Type	Facility Name	Community	100-Year Floodplain	500 Year Floodplain	WUI Zone	Wildfire Hazard Reduction Zone	Wildfire Hazard Potential
Electrical Power Facility	Substation @ Hwy 18	Puckett	OUT	OUT	Intermix - Low Density	Direct Exposure	N/A - WHP Undetermined
Government	Puckett - Senior Center	Puckett	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Government	Town Hall / Police Station	Puckett	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined
Potable Water	Water Tower/Well	Puckett	OUT	OUT	Interface - Low Density	Direct Exposure	Low
Potable Water	Water Well 1	Puckett	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
Potable Water	Water Well 2	Puckett	OUT	OUT	Interface - Low Density	Direct Exposure	N/A - WHP Undetermined
School	PUCKETT ATTENDANCE CENTER	Puckett	OUT	OUT	Interface - Low Density	Indirect Exposure	N/A - WHP Undetermined
School	PUCKETT ELEMENTARY SCHOOL	Puckett	OUT	OUT	Intermix - Low Density	Indirect Exposure	N/A - WHP Undetermined
Waste Water Facility	PUCKET POTW	Puckett	OUT	OUT	Interface - Medium Density	Indirect Exposure	N/A - WHP Undetermined

5. MITIGATION STRATEGY

The Mitigation Strategy section of the base plan provides an overall blueprint for all participating jurisdictions in MEMA District 5 to become less vulnerable to its identified hazards, based on the consensus of the Regional Hazard Mitigation Council (RHMC) and the findings and conclusions of the Capability and Risk Assessments. The goals of the MEMA District 5 can be found in Section 6 of the base plan.

This section provides community-specific strategies for the Village of Puckett, including the status of actions that were included in the previous plan and actions to be considered or pursued over the next five years. As noted in the base plan, the participants are not committing to undertaking every action suggested in this list but rather are proposing an extensive list of *potential* actions that they may wish to pursue, depending on the availability of funding.

The following information is provided in the table below, as well as in the mitigation action tables within each annex in this plan:

Project Number: Each action is assigned a project number for organizational purposes.

Action Description: This is the description of the mitigation action. Actions descriptions are intended to be actionable and specific.

Responsible Agency or Department: actions assign primary responsibility to agencies or departments for implementation. The responsible entities were determined by jurisdictional representatives on the Mitigation Council, and they reflect the representatives' assessment of the entity that would be most capable of facilitating successful implementation of the action. Other agencies, departments, organizations, etc. may assist the responsible agency or department, if necessary.

Hazards Addressed: For each mitigation action, the hazard(s) that are being addressed are listed. Some hazards are considered "multi-hazard" because the action, when implemented, is designed to mitigate impacts of all disasters profiled in this plan. Other mitigation actions are specific to individual hazards.

Estimated Cost: This is the estimate cost of the action; these costs were determined through general discussions of the resources, personnel, and time needed, and the estimates are not intended to stand in for a full, detailed benefit-cost analysis.

Action Status (D/R/N/C): FEMA's guidance for local mitigation plans requires a status update for existing mitigation actions. The statuses of previous actions were assessed throughout the planning process. The four categories used by the Mitigation Council are:

> Deleted (D): action is no longer appropriate or desired, and the community does not intend to pursue the action.
>
> Retained (R): action is still desired by the community, but implementation has not been completed. The community will continue to implement the action as time and resources allow.
>
> New (N): action is new for the 2026 District 5 plan.
>
> Completed (C): action has been completed by the community.

Status Notes: Includes any information that the community provided for additional context to the action status.

Expected Time Frame for Completion: Participating jurisdictions anticipated the amount of time it will take to carry out the action. The expected time frames for actions from the previous plan were updated to reflect the expected time frame for completion from when communities adopt this plan.

Corresponding Goals: The plan goals addressed by each action item are included to monitor and evaluate how well the mitigation plan is achieving its goals once implementation begins. Each action is linked to one more of the Plan's goals:

Goal 1 – Engage all of District 5 to participate in the development, implementation, and maintenance of a multi-jurisdictional Hazard Mitigation Plan.

- Objective 1.1 Appoint members to the District 5 Mitigation Council
- Objective 1.2 Local officials shall promote District 5's Plan and support community mitigation programs
- Objective 1.3 Develop a multi-jurisdictional plan that is feasible, beneficial and easy to understand
- Objective 1.4 Establish a process to keep the multi-jurisdictional plan up-to-date

Goal 2 – Develop an understanding of the hazards threatening District 5 and the techniques to minimize District 5's vulnerability to those hazards.

- Objective 2.1 Increase local knowledge of hazards and hazard mitigation approaches
- Objective 2.2 Establish a method to gather and maintain information needed for defining risk and understanding vulnerabilities
- Objective 2.3 Utilize the best available data to identify the location and potential impacts of hazards on people, property, and the natural environment
- Objective 2.4 The public, especially those living or working in identified hazard areas, should have facilitated access to information needed to understand their vulnerability to hazards and the effective techniques to reduce those risks.

Goal 3 – To protect life and property to the best of District 5's ability.

- Objective 3.1 Protect and maintain critical facilities in District 5
- Objective 3.2 Improve the enforcement of requirements for building in the floodplain and remove repetitive flood properties when appropriate
- Objective 3.3 Identify adequate resources to meet health and safety needs after a disaster
- Objective 3.4 Improve systems that provide warning and emergency communications
- Objective 3.5 Improve preparation and response regarding public health emergencies

Goal 4 – Promote public awareness.

- Objective 4.1 Inform the public of the risk to natural hazards and ways to increase the public's capability to prepare, respond, recover, and mitigate the impacts of natural hazards
- Objective 4.2 Form public and private partnerships to promote mitigation practices

Goal 5 – Encourage the development and implementation of long-term cost effective and environmentally sound mitigation projects.

- Objective 5.1 Identify projects that provide maximum risk protection
- Objective 5.2 Local officials shall promote the mitigation plan and seek assistance to carry out mitigation programs

Priority: The priority of each of the mitigation action items is ranked either Low, Medium, or High. This prioritization allows Mitigation Council members to quickly compare actions based on a qualitative assessment of the anticipated benefits of actions. The process utilized by the Mitigation Council to prioritize actions is described in Section 6.4 of the base plan.

Potential Funding Sources: Potential sources for funding are listed for each action and encompass a range of sources including operating budget/general fund, development fees, Community Development Block Grant (CDBG), Hazard Mitigation Grant Program (HMGP), State grants, private funding, Capital Improvement Plan, and others. It is important to acknowledge that the identified funding sources are not exhaustive or definitive. The current funding landscape is undergoing significant change, and existing funding sources may not be available in the future, while new sources may emerge. If/when a community has the opportunity to implement an action, available funding sources will be re-examined to determine which source is most appropriate.

TABLE 20: UPDATED 2026 VILLAGE OF PUCKETT MITIGATION ACTIONS

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
1-Puckett	Maintain a public outreach strategy designed to educate citizens of the risks posed by natural hazards and the protective measures they can take to avoid or minimize those risks.	Puckett Board of Alderman, Emergency Management	All hazards	$5,000	R	No progress since last update	On-going annually	3, 4	High	General Fund
2-Puckett	Coordinate with all available media outlets to assist with informing residents on what to do, where to go, and how to recover from hazard events (e.g. TV stations, local radio and newspapers, Facebook and other social media accounts, websites, etc.)	Puckett Mayor's Office	All hazards	$10,000	R	No progress since last update	On-going annually	1, 3, 4	High	General Fund
3-Puckett	Purchase and maintain emergency generators for use by key critical facilities throughout the town.	Puckett Public Works, Police and Fire Departments	All hazards	$500,000	R	No progress since last update	On-going annually	3, 5	Medium	General Fund, State Homeland Security Program, HMGP, CDBG
4-Puckett	As future updates are made to the town's existing policies and regulations, and as the town adopts new policies and regulations in the future, they should be reviewed to incorporate hazard mitigation practices to reduce the effect of natural hazards on new and existing infrastructure and buildings.	Puckett Board of Alderman	All hazards	$10,000	R	No progress since last update	On-going annually	1, 5	High	General Fund, staff time
5-Puckett	Seek funding to assist with the construction of a community shelter.	Puckett Mayor's Office	All hazards	$1,200,000	R	No progress since last update	On-going annually	3	Medium	General Fund, HMGP, BRIC

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
6-Puckett	Encourage residents to construct individual safe rooms.	Puckett Emergency Management, Police and Fire Departments	Tornado, severe storms	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, staff time
7-Puckett	Maintain compliance with the National Flood Insurance Program by maintaining compliance with the three basic components of the program 1) floodplain identification and mapping risk, 2) responsible floodplain management, and 3) flood insurance education with actions such as maintaining copies of flood insurance rating maps, enforcing a floodplain management ordinance, tracking development in the floodplain, and educating residents about flood insurance.	Puckett Floodplain Manager, Board of Alderman	Flooding	$25,000	R	No progress since last update	On-going annually	1, 3, 5	High	General Fund, staff time
8-Puckett	Continue to apply floodplain management strategies to development in the floodplain and look for ways to strengthen development requirements	Puckett Floodplain Manager, Board of Alderman	Flooding	$10,000	R	No progress since last update	On-going annually	2, 3, 5	High	General Fund, staff time
9-Puckett	Assist residents who want to participate in the “Buy-Out” program for repetitive loss properties.	Puckett Floodplain Manager, Town Clerk	Flooding	$10,000	R	No progress since last update	On-going annually	5	High	General Fund, HMGP
10-Puckett	Seek funding assistance to retrofit critical facilities to better withstand the impacts of natural hazards.	Puckett Town Clerk	All hazards	$500,000	R	No progress since last update	10 years	3, 5	Low	General Fund, CDBG, USDA Rural Development

Project Number	Action Description	Responsible Agency or Entity	Hazards Addressed	Estimated Cost	Action Status (D/R/N/C)	Status Notes	Expected Time Frame for Completion	Corresponding Goal(s)	Priority (H/M/L)	Potential Funding Sources
11-Puckett	Seek funding assistance to maintain District 5's regional Hazard Mitigation Plan.	Puckett Board of Alderman	All hazards	$1,500 annually / $100,000 every five years	R	Plan update in progress	On-going annually	1	High	General Fund
12-Puckett	Maintain an effective warning system that can be used to warning residents during emergencies of approaching weather conditions and other hazards.	Puckett Emergency Management	All hazards	$10,000	R	No progress since last update	On-going annually	3, 4	High	General Fund, BRIC
13-Puckett	Seek funding to conduct a drainage improvement study of Clear Creek.	Puckett Public Works, Board of Alderman	Flooding	$100,000	R	No progress since last update	5 years	2, 3, 5	High	General Fund, BRIC, CDBG
14-Puckett	Seek funding assistance to improve capacity of "Personal Protective Equipment" (PPE) and develop a protocol to make supplies available to the public during a pandemic	Puckett Mayor's Office, City Clerk, Police and Fire Departments	Public health emergency	$50,000	R	No progress since last update	On-going annually	3	High	General Fund
15-Puckett	Improve cellular tower capability throughout the Town to upgrade communication efficiency	Puckett Board of Alderman, Town Clerk	All hazards	$10,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
16-Puckett	Seek funding assistance to improve high-speed internet capabilities throughout the Town	Puckett Board of Alderman, Town Clerk	All hazards	$500,000	R	No progress since last update	On-going annually	3	High	General Fund, IIJA
17-Puckett	Seek funding assistance to upgrade remote capabilities allowing employees to work off-site if required during hazard events	Puckett Board of Alderman, Town Clerk	All hazards	$75,000	R	No progress since last update	On-going annually	3	High	General Fund

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