

RESOLUTION 24-262

**A RESOLUTION OF THE CITY OF SPRING HILL TO
ADOPT THE 2024 MAURY COUNTY NATURAL HAZARD
MITIGATION PLAN**

WHEREAS, the participating jurisdictions of Maury County have worked together to develop a strategy known as the Maury County Hazard Mitigation Plan to improve disaster resistance in the planning area; and

WHEREAS, the Federal Disaster Mitigation Act of 2000 (DMA2000) pursuant 44 CFR Part 201 and the Federal Emergency Management Agency (FEMA) require communities to adopt an approved hazard mitigation plan in order to be eligible to receive pre-disaster and post-disaster federal funding for mitigation purposes; and

WHEREAS, the participating jurisdiction has participated in the hazard mitigation plan by the formation of a Mitigation Planning Committee (MPC); and

WHEREAS, the MPC recommends the formal adoption of the Maury County Hazard Mitigation Plan dated 10/16/2024 by the passing of this resolution; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Mayor and Alderman of the City of Spring Hill, Tennessee, in the regular session assembled, that:

Section 1: The Board of Mayor and Alderman of the City of Spring Hill, Tennessee, hereby approves and adopts the updated hazard mitigation plan in its entirety with projects as adopted by the MPC; and agrees to be governed by the Hazard Mitigation Plan dated 10/16/2024 attached hereto and incorporated.

Section 2: The Board of Mayor and Alderman of the City of Spring Hill, Tennessee, authorizes the appropriate participating officials to pursue funding opportunities for the implementation of proposals designated therein; and will, upon receipt of such funding or other necessary resources, seek to implement the actions contained in the hazard mitigation plan.

Section 3: The Board of Mayor and Alderman of the City of Spring Hill, Tennessee, will continue to cooperate and participate in the hazard mitigation planning process, holding regular meetings, including reporting progress as required by FEMA, the Tennessee Emergency Management Agency (TEMA), and the MPC.

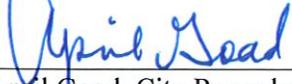
Adopted this 4th day of November, 2024.

Passed and adopted **this 4th day of November, 2024.**



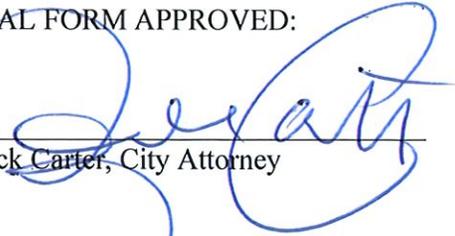
Jim Hagaman, Mayor

ATTEST:



April Goad, City Recorder

LEGAL FORM APPROVED:



Patrick Carter, City Attorney



STAFF MEMORANDUM

TO: Board of Mayor and Alderman
FROM: Greg Boyd, EMA Director
DATE: November 1, 2024
RE: Resolution 24-262 Maury County Hazard Mitigation Plan

PURPOSE:

The City approves our partner county Hazard Mitigation Plans to ensure that specific vulnerabilities are addressed within the county frameworks. FEMA requires this local buy-in for cities to be eligible for federal funding and grants.

BACKGROUND:

Historically, approving Hazard Mitigation Plans for two counties has involved a collaborative process where each county identifies hazards specific to its geography, infrastructure, and population needs. This practice of intergovernmental cooperation ensures the City is better prepared and can access FEMA funding, creating a unified approach to reducing disaster impacts.

DESCRIPTIONS

A Hazard Mitigation Plan is a document required by FEMA that identifies natural hazards, assesses vulnerabilities, and outlines strategies to reduce or eliminate long-term risk to people and property. The plan is essential for communities to receive federal funding and assistance.

FINANCIAL IMPACT:

The adoption of the provided plan does not carry with it any required expenditures.

RECOMMENDATION:

Staff recommends that the Board of Mayor and Aldermen approve Resolution 24-262 as presented.

Reviewed and Approved by:

Greg Boyd
Graig Temple

Don Brite
Chris Dugan



OFFICE OF THE CITY ADMINISTRATOR

199 Town Center Parkway • Spring Hill, Tennessee 37174

931-486-2252, ext 215

www.springhilltn.org

U.S. Department of Homeland Security
Region 4
3005 Chamblee Tucker Road
Atlanta, GA 30341



FEMA

October 16, 2024

Mr. Shannon Ball
State Hazard Mitigation Officer
Tennessee Emergency Management Agency
3041 Sidco Drive
Nashville, TN 37204

Reference: Maury County Hazard Mitigation Plan

Dear Mr. Ball:

The Federal review of the draft Maury County Hazard Mitigation Plan for compliance with the planning requirements contained in 44 CFR §201.6 is complete. The plan is compliant with Federal requirements, subject to formal community adoption.

For our office to issue formal approval of the plan, the jurisdiction(s) must submit adoption documentation. Upon receipt of the adoption resolution(s) to our office, we will issue formal approval of the Maury County Hazard Mitigation Plan. Once approved, please submit a final copy of the Plan, without draft notations and track changes.

If you or any plan participant need assistance, please do not hesitate to contact Kymberly Kudla, of my staff, at (202) 655-6712.

Sincerely,

A handwritten signature in blue ink that reads "Kristen M. Martinenza".

Kristen M. Martinenza, P.E., CFM
Branch Chief, Risk Analysis Branch

Maury County Hazard Mitigation Plan 2024 Update



Prepared BY:

The Maury County Hazard Mitigation Planning Committee
The Maury County Office of Emergency Management

Assistance Provided By:

The Tennessee Emergency Management Agency
as part of the Tennessee Mitigation Initiative

Executive Summary

Over the past two decades, hazard mitigation has gained increased national attention due to the large number of natural disasters that have occurred throughout the U.S. and the rapid rise in costs associated with those disaster recoveries. It has become apparent that money spent mitigating potential impacts of a disaster event can result in substantial savings of life and property. With these benefit-cost ratios extremely advantageous, the *Disaster Mitigation Act of 2000* was developed as U.S. Federal legislation reinforcing the importance of pre-disaster mitigation planning by calling for local governments to develop mitigation plans ([44 CFR 201](#)).

A local hazard mitigation plan aims to identify the community's notable risks and specific vulnerabilities and then to create/implement corresponding mitigation projects to address those areas of concern. This methodology helps reduce human, environmental, and economic costs from natural and man-made hazards through the creation of long-term mitigation initiatives.

The advantages of developing a local hazard mitigation plan are numerous and include improved post-disaster decision-making, education on mitigation approaches, and an organizational method for prioritizing mitigation projects. Communities with a mitigation plan receive larger amounts of Federal and State funding opportunities to be used on mitigation projects and can receive these funds faster than communities without a plan.

This 2024 update of the *Maury County Hazard Mitigation Plan* (HMP) addresses Building Resilient Communities and Infrastructure (BRIC), Flood Mitigation Assistance (FMA), and Hazard Mitigation Grant Program (HMGP) requirements. Each jurisdiction within the county participated in the preparation of the update, including:

- Maury County
- City of Mt. Pleasant
- City of Spring Hill
- City of Columbia

In reference to [federal code title 44 CFR 201](#), the plan is required to be submitted to both the Tennessee Emergency Management Agency (TEMA) (State) and the Federal Emergency Management Agency (FEMA) (Federal) for review to be approved. When the plan is deemed "approval pending adoption" by FEMA ([44 CFR 201.6\(c\)5](#)), each of the participating jurisdictions will adopt the plan through a local resolution.

EMAP Standard: This document is in accordance with the Emergency Management Accreditation Program (EMAP) Standard 4.2 Hazard Mitigation.

Maury County Hazard Mitigation Plan (HMP)

Table of Contents

Executive Summary **1**

Table of Contents **2**

Chapter 1: The Planning Process..... **4**

 1.1 Purpose and Need, Authority and Statement of Problem.....4

 1.1.1 Purpose and Need4

 1.1.2 Authority.....4

 1.1.3 Statement of Problem4

 1.2 Methodology, Update Process, and Participation Summary5

 1.2.1 Local Government Participation.....5

 1.2.2 Hazard Mitigation Planning Process 10

 1.3 Plan Update 15

 1.3.1 The New Plan 15

 1.3.2 2024 HMP Strategy Review 15

 1.4 Multi-Jurisdictional Special Considerations.....27

 1.5 Public Participation 27

 1.6 County Data Profile.....28

 1.6.2 Resources and Assets 28

 1.6.3 Development and Growth 28

 1.6.4 Demographics 28

 1.6.5 Social Vulnerability 30

 1.6.6 Critical Infrastructure 32

 1.7 Resource Capabilities 32

Chapter 2: Threat and Hazard Identification and Risk Assessment **34**

 Risk Assessment Overview.....34

 2.3 Drought37

 2.5 Extreme Temperatures43

 2.6 Flood48

 2.7 Geological58

 2.9 Infrastructure Incidents.....62

 2.10 Severe Weather.....65

 2.12 Tornadoes.....73

 2.13 Wildfire80

Maury County Hazard Mitigation Plan (HMP)

Chapter 3: Mitigation Strategy..... 85

 3.1 Mitigation Goals.....85

 3.3 Compliance with NFIP86

 3.4 Prioritization Process87

 3.5 Mitigation Action Plan.....88

Chapter 4: Implementation, Integration, and 94

 4.1 Plan Adoption, Implementation, Monitoring, and Evaluation94

 4.1.1 Plan Adoption94

 4.1.2 Implementation.....94

 4.1 Integration into Local Planning Mechanism95

 4.2 Monitoring, Evaluating, Updating95

Appendix A: Planning Documentation..... 98

 Public Notice & Survey

 Public Survey Results

 Meeting Attendance Sheets

Appendix B: Maury County Overview 113

 MTIDA - Maury County Overview

 National Risk Index

Appendix C: ETSU/NOAA 137

 ETSU Climate Trend and Variations Report

 NOAA Storm Event Database

Appendix D: HAZUS/FIRM 192

 HAZUS 100 Year & 500 Year

APPENDIX E: Man Made Hazards 227

 Communicable Diseases/Pandemic.....227

 Dams230

 Earthquakes235

 Hazardous Materials242

 Terrorism.....246

CHAPTER 1: THE PLANNING PROCESS

Chapter One: The Planning Process

1.1 Purpose and Need, Authority and Statement of Problem

1.1.1 Purpose and Need

FEMA defines “hazard mitigation” as any sustained action taken to reduce or eliminate the long-term risk to life and property from a hazard event. Hazard mitigation planning is the process through which hazards are identified, likely impacts determined, mitigation goals set, and appropriate mitigation strategies defined, prioritized, and implemented. The Hazard Mitigation Plan aims to identify, assess, and mitigate risk to better protect the people and property of Maury County from the effects of natural and man-made hazards. This Plan documents the hazard mitigation planning process and identifies relevant hazards, vulnerabilities, and strategies the County and incorporated jurisdictions will use to decrease vulnerability and increase resiliency and sustainability. This Plan demonstrates the participating communities’ commitment to reducing risks from identified hazards and serves as a tool to help decision-makers direct mitigation activities and resources.

1.1.2 Authority

This Hazard Mitigation Plan has been adopted by Maury County and all participating jurisdictions in accordance with the authority granted to local communities by the State of Tennessee. This Plan was updated per state and federal rules and regulations governing local hazard mitigation plans. The Plan shall be reviewed annually and go through a complete update process every five years to remain eligible for hazard mitigation grants. The following legislation was used for guidance:

- Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act ([Stafford Act](#) or the Act), 42 U.S.C. 5165, enacted under Section 104 of the Disaster Mitigation Act of 2000 (DMA 2000) Public Law 106-390 of October 30, 2000, as implemented at 44 CFR 201.6 and 201.7 dated October 2011.
- Tennessee Code Annotated
 - T.C.A. 58-2-106(b)(16)
 - T.C.A. 58-2-106(b)(1)
 - T.C.A. 58-2-103(a)(5)

1.1.3 Statement of Problem

Each year in the United States, natural disasters take the lives of hundreds of people and injure thousands more. Taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. Unfortunately, this only partially reflects the cost of disasters because additional expenses incurred by insurance companies and non-governmental organizations are not reimbursed by tax dollars. Many natural disasters are predictable, and much of the damage caused by these events can be reduced or even eliminated.

The original Maury County Hazard Mitigation Plan was created and approved by FEMA in 2019. Per federal requirements stated in *44 CFR 201*, all local hazard mitigation plans are required to go through a FEMA approval process every five years to remain eligible for hazard mitigation grants. This plan will be re-evaluated and updated every

CHAPTER 1: THE PLANNING PROCESS

five years to ensure local governments are continuing to assess the hazards and risks within their communities. This plan update has been prepared to meet requirements set forth by FEMA and the Tennessee Emergency Management Agency (TEMA) to ensure Maury County is eligible for funding and technical assistance from state and federal hazard mitigation programs. All communities are welcome to address man-made hazards and risks in their hazard mitigation plan. However, it's important to note that the State and Federal governments only evaluate and approve based on natural hazards only as per federal code title 44 CFR 201.

1.2 Methodology, Update Process, and Participation Summary

This Hazard Mitigation Plan was developed under the guidance of a Hazard Mitigation Planning Committee (HMPC). The Committee included representatives of Maury County, City of Columbia, City of Mt. Pleasant and City of Spring Hill.

Information in this plan will be used to help guide and coordinate mitigation activities and decisions for local land use policy in the future. Proactive mitigation planning will help reduce the cost of disaster response and recovery to communities and their residents by protecting critical community facilities, reducing liability exposure, and minimizing overall community impacts and disruptions. This plan identifies activities that can be undertaken by both the public and the private sectors to reduce risk to safety, health, and property caused by natural and man-made hazards.

1.2.1 Local Government Participation

The planning regulations and guidance stress that each local government seeking FEMA approval of their mitigation plan must participate in the planning effort in the following ways:

- Participate in the process as part of the HMPC;
- Detail where within the planning area the risk differs from that facing the entire area;
- Identify potential mitigation actions; and
- Formally adopt the plan.

For the HMPC, "participation" meant the following:

- Providing facilities for meetings;
- Attending and participating in the HMPC meetings;
- Collecting and providing other requested data (as available);
- Identifying mitigation actions for the plan;
- Reviewing and providing comments on plan drafts;
- Informing the public, local officials, and other interested parties about the planning process and providing opportunity for them to comment on the plan;
- Coordinating, and participating in the public input process; and
- Coordinating the formal adoption of the plan by the appropriate governing body.

The HMPC met all the above-stated participation requirements. Maury County and all its incorporated jurisdictions (City of Mt. Pleasant, TN, City of Spring Hill, TN, Maury

CHAPTER 1: THE PLANNING PROCESS

County School Districts and City of Columbia, TN) participated in the 2024 Plan update, as well as reviewed and provided timely comments on all draft components of the Plan. A summary of past and current community participation is shown below in *Table 1*. All participants were invited to this committee via email by the Maury County Emergency Management Agency (MCEMA) Hazard Mitigation Planner under the authority granted by the County Emergency Management Director. Those who did not originally respond were reached out to via phone or email by the County EMA Director.

Table 1: Multi-Jurisdictional HMPC Participation

Jurisdiction	2019 Participation	2024 Participation
Maury County	Yes	Yes
City of Mt. Pleasant, TN	Yes	Yes
City of Spring Hill, TN	Yes	Yes
City of Columbia, TN	No	Yes

The HMPC for the 2024 plan update included key community representatives. *Table 2* details the HMPC members, meeting dates, associated FEMA Lifeline, and committee member attendance. FEMA Lifelines are a fundamental way for a community to recover, however, all participants might not be associated with a FEMA Lifeline. If they are not associated with a FEMA Lifeline, then they will be indicated as not applicable (NA).

The EMA director invited individuals who represented regional and local agencies that have authority in regulating county/city development, individuals that represent vulnerable populations, as well as those that are responsible for responding to the identified hazards of prime concern. These partners include jurisdictional police, fire, public works, and health departments, community representatives, nonprofit organizations, local floodplain administration, the county/city school board, elected officials, and electric utility companies. All committee members provided key information to recognize and mitigate hazards of prime community concern. A more detailed summary of HMPC meeting dates, members seeking approval and FEMA lifeline association follows in *Table 2*. Meeting sign-in sheets are included in Appendix A.

CHAPTER 1: THE PLANNING PROCESS

Table 2: HMPC Members

Name	Title	Associated FEMA Lifeline	Organization / Jurisdiction	Meeting Dates									
				11/07 /23	12/11 /23	02/01 /24	02/09 /24	02/16 /24	02/29 /24	03/08/ 24	04/1 6/24	07/02 /24	07/16 /24
Greg Boyd	Emergency Management Director	Safety & Security	City of Spring Hill	Yes		Yes							
Jeff Hardy	Emergency Management Director	Safety & Security	Maury County	Yes		Yes					Yes		
Joey Norman	Emergency Management Director	Safety & Security	City of Columbia	Yes		Yes							
Pat Woodmansee	Emergency Management Assistant Director	Safety & Security	Maury County	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Clint Derryberry	Emergency Management Planner	Safety & Security	Maury County	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kim Anthony	Emergency Management Planning Manager	Safety & Security	State of Tennessee	Yes								Yes	
Garrett Scott	Emergency Management	Safety & Security	State of Tennessee	Yes									
Shane Petty	Emergency Management Operations Chief	Safety & Security	Maury County	Yes									
David Smith	Assistant Director of Community Services	Food, Water, Shelter	City of Mt. Pleasant		Yes								
Ted Howell	Utilities Director	Energy	City of Mt. Pleasant		Yes								
Jack Burgett	Assistant Police Chief	Safety & Security	City of Mt. Pleasant		Yes								
Michael Hay	Police Chief	Safety & Security	City of Mt. Pleasant		Yes								
Phillip Grooms	Fire Chief	Safety & Security	City of Mt. Pleasant		Yes		Yes				Yes		

CHAPTER 1: THE PLANNING PROCESS

Ben Willard	Codes Dept.	Transportation	City of Mt. Pleasant		Yes	Yes	Yes							
Tyler Scroggins	Public Works Director	Safety & Security	City of Spring Hill			Yes		Yes						
Chris Dugan	Assistant Public Works Director	Safety & Security	City of Spring Hill			Yes								
Nick Brown	Columbia Fire & Rescue	Safety & Security	City of Columbia			Yes								
Randy Carroll	Columbia State Community College	Safety & Security	Columbia State Community College			Yes								
Robert Caldiraro	Building Director	Transportation	Maury County			Yes								
Lisa Cole	Executive Assistant Maury Co. Mayor	Safety & Security	Maury County			Yes								
Ty Cobb	Columbia Fire & Rescue	Safety & Security	City of Columbia			Yes								
Chris Brooks	Building & Planning Director	Transportation	City of Mt. Pleasant					Yes						
April Watson	Admin. Assistant	Transportation	City of Spring Hill					Yes	Yes		Yes			
Robert Perkins	Planner	Safety & Security	TEMA							Yes	Yes			
William Groce	District Coordinator	Safety & Security	TEMA							Yes				
Mark Gandee	911 Director	Communications	Maury County								Yes			
Bo Hardin	Captain Fire Department	Safety & Security	Maury County								Yes			
Shane Eaton	Emergency Management	Safety & Security	Lawrence Co.								Yes			
Josh Wickham	Resilience Administrator	Safety & Security	TEMA								Yes			
Sara Cox	STORM Act Manager	Safety & Security	TEMA								Yes			

CHAPTER 1: THE PLANNING PROCESS

Shannon Ball	Hazard Mitigation	Safety & Security	TEMA								Yes		
Siphrah Cox	Finance Director	Not applicable	City of Mount Pleasant								Yes		
Benida Oliver	Office Manager	Transportation	Maury Co. Hwy. Dept.								Yes		
Sheila K. Butt	Mayor	Not applicable	Maury County								Yes		
Sonya Shows	Grant Writer	Not applicable	SCHAUS								Yes		
Norma Eaton	Grant Writer	Not applicable	SCHAUS								Yes		
Dawn Baxter	Executive Assistant	Water Systems	Maury Co. Water System								Yes		
Alex Murillo	Emergency Management	Safety & Security	Maury County									Yes	
Talon Hunt	Emergency Management	Safety & Security	Maury County									Yes	
Shane Petty	Emergency Management	Safety & Security	Maury County									Yes	
Danny Fleming	Emergency Management	Safety & Security	Maury County									Yes	
Jeremy Snider	Emergency Management	Safety & Security	Maury County									Yes	
Josh Young	Emergency Management	Safety & Security	Giles County									Yes	

CHAPTER 1: THE PLANNING PROCESS

1.2.2 Hazard Mitigation Planning Process

The 2024 Maury County Hazard Mitigation Plan was updated following guidance put forth by FEMA in the *Local Mitigation Planning Policy Guide* which became effective on April 19, 2023. This guidance emphasized the need for a whole community planning approach to include representatives from all sectors of the community with an emphasis on the increased need for vulnerable and underserved population representation. The guidance also highlighted increased emphasis on risk, vulnerability, and resilience assessments, the inclusion of high hazard dams, and future weather trends/patterns.

FEMA guidance proposes a structured four-phase approach to completing a Hazard Mitigation Plan as follows:

- 1) Planning Process
- 2) Risk Assessment
- 3) Mitigation Strategy
- 4) Plan Maintenance

Phase I - Planning Process

Organize to Prepare the Plan

The planning process officially began with a meeting held on (11-07-2023) at the (Maury County Office of Emergency Management). The meeting covered the scope of hazard mitigation, the purpose of planning, eligible grants, risk assessments and vulnerabilities impacting the community. During the planning process, the committee communicated through face-to-face meetings, email, and telephone conversations. The neighboring communities were given an opportunity to be involved in the planning process with email invitations by the County EMA Director for the planning committee meetings. The neighboring communities that were outreached to include: Williamson, Lewis, Hickman, Marshall, Giles, and Lawrence Counties. See Appendix A: for invite email.

Involve the Public

Early discussions established the significance of involving the public. The HMPC agreed to an approach using established public information mechanisms and resources within the community. Public involvement activities for this plan update included public notices posted on the Maury County Office of Emergency's Facebook page on March 2, 2024 and March 28, 2024. In order to ensure socially vulnerable and underserved populations were included in organizing efforts the Maury County Office of Emergency Management held an in person meeting at The Family Center located at 921 S Beckett St, Columbia, TN, United States, Tennessee on 03/11/2024. Surveys were conducted with our most vulnerable populations and can be accessed upon request of Maury County EMA. Neighboring communities, agencies, utilities, academia, civic organizations, and other interested parties were given the opportunity to participate.

A number of public notices were posted on various dates including March 5, 2024 and March 28, 2024 on Facebook and Maury County website inviting members of the public to fill out an online survey that encourages them to provide insight on shaping resiliency in Maury County. Documentation to support outreach efforts such as

CHAPTER 1: THE PLANNING PROCESS

emails, surveys, sign-in sheets, community flyers, and social media postings can be found in Appendix A.

Maury County Hazard Mitigation Planning Meetings

Date: 11/07/2023

Location: Maury County Office of Emergency Management
1451 Tom J. Hitch Parkway
Columbia, TN 38401

Items Discussed:

- (1) Identify Jurisdictions within Maury County that are going to be a part of the Maury County Hazard Mitigation Plan 2024 Update
- (2) Review Jurisdictional Questionnaire

Date: 12/11/2023

Location: Mt. Pleasant Fire Station 1
209 Bond Street
Mt. Pleasant, TN 38474

Items Discussed:

- (1) Identify Jurisdictions within Maury County that are going to be a part of the Maury County Hazard Mitigation Plan 2024 Update
- (2) Review Jurisdictional Questionnaire

Date: 02/01/2024

Location: Maury County Office of Emergency Management
1451 Tom J. Hitch Parkway
Columbia, TN 38401

Items Discussed:

- (1) Checked status of Jurisdictional Questionnaires and addressed any questions.
- (2) Reviewed 2019 Action Projects
- (3) Discussed Hazard Mitigation projects and provided link to submit projects for the 2024 update.

Date: 02/09/2024

Location: Mt. Pleasant Fire Station 1
209 Bond Street
Mt. Pleasant, TN 38474

Items Discussed:

- (1) Discussed how to enter projects.
- (2) Hazard Mitigation Scoring
- (3) Funding Sources

Date: 02/16/2024

Location: Maury County Office of Emergency Management
1451 Tom J. Hitch Parkway
Columbia, TN 38401

Items Discussed:

- (1) Hazard Mitigation Scoring
- (2) Reviewed 2019 Projects

CHAPTER 1: THE PLANNING PROCESS

Date: 02/29/2024

Location: Spring Hill Public Works
8060 Station Hill Drive
Spring Hill, TN 37174

Items Discussed:

- (1) Discussed how to enter projects.

Date: 02/16/2024

Location: Maury County Office of Emergency Management
1451 Tom J. Hitch Parkway
Columbia, TN 38401

Items Discussed:

- (1) Reviewed Hazard Mitigation projects submitted
- (2) Engaging Public Input including Homeless
- (3) Critical Infrastructure
- (4) Sections in HMP that are applicable to Maury County

Date: 04/16/2024

Location: Maury County Office of Emergency Management
1451 Tom J. Hitch Parkway
Columbia, TN 38401

Items Discussed:

- (1) TEMA Storm Act

Date: 05/31/2024

Location: Maury County Office of Emergency Management
1451 Tom J. Hitch Parkway
Columbia, TN 38401

Items Discussed:

- (1) Discuss current status of Maury County Hazard Mitigation Plan 2024 Update

Date: 07/02/2024

Location: Maury County Office of Emergency Management
1451 Tom J. Hitch Parkway
Columbia, TN 38401

Items Discussed:

- (1) Review Maury County Hazard Mitigation Plan 2024 Update with TEMA Planner

Date: 07/16/2024

Location: Maury County Office of Emergency Management
1451 Tom J. Hitch Parkway
Columbia, TN 38401

Items Discussed:

- (1) Review Maury County Hazard Mitigation Plan 2024 Update with Giles County, TN EMA.

Date: 07/18/2024

Location: Maury County Office of Emergency Management
1451 Tom J. Hitch Parkway
Columbia, TN 38401

Items Discussed:

- (1) Review Hazard Mitigation Plan
- (2) Review Hazard Mitigation Projects
- (3) Mitigation Actions – Going Further

CHAPTER 1: THE PLANNING PROCESS

Coordination

Early in the planning process, the committee determined that the risk assessment, mitigation strategy development, and plan approval would be greatly enhanced by inviting other local and state partners to participate in the process. The coordination involved contacting these agencies through email, flyers, in-person and phone conversations. All groups and agencies were advised on how to become involved in the plan development process and were solicited asking for their assistance and input. A summary of agencies and organizations actively involved in the HMPC is as follows:

- Tennessee Emergency Management Agency
- Maury County Office of Emergency Management
- Maury County School Districts
- City of Mt. Pleasant
- City of Spring Hill
- City of Columbia
- Public Utilities
- Family Center (Nonprofit Agency)
- Community Health Outreach (Nonprofit Agency)
- The Well (Nonprofit Agency)
- People Table (Community Organization)

Coordination with other community planning efforts was also paramount to the success of this plan. Mitigation planning involves identifying existing policies, tools, and actions that will reduce a community’s risk and vulnerability to hazards. Maury County uses a variety of planning mechanisms such as land development regulations and ordinances to guide growth and development. Integrating existing planning efforts and mitigation policies and action strategies into this plan establishes a credible and comprehensive plan that ties into and supports other community programs.

Table 3 identifies the existing planning mechanisms that were reviewed and how they were incorporated into the 2024 Hazard Mitigation Plan Update.

Table 3: Planning Mechanism Review

Existing Planning Mechanisms	Reviewed? (Yes/No)	Method of Use in Hazard Mitigation Plan
State Hazard Mitigation Plan	Yes	Identifying hazards, assessing vulnerabilities, and mitigation strategies
Local Emergency Operations Plan	Yes	Identify major capabilities
Community Data Profile	Yes	Development trends, capability assessment
Stormwater Ordinance	Yes	Capability assessment, mitigation strategies
Building and Zoning Codes and Ordinances	Yes	Different years of code regulations utilized in different jurisdictions
CDC Social Vulnerability Index	Yes	Analyze vulnerable population in jurisdictions
FEMA’s National Risk Index	Yes	Analyze natural hazard risk within each jurisdiction
Land Use Maps	Yes	Assessing vulnerabilities, development trends, and mitigation strategies
Critical2TN Infrastructure Database	Yes	Assessing vulnerabilities, mitigation strategies
NOAA Archives	Yes	Analyze weather data and trends

CHAPTER 1: THE PLANNING PROCESS

ETSU Geoinformatics & Disaster Science Lab	Yes	Analyze future weather trends and patterns
U.S Census Bureau	Yes	Analyze community demographic data and trends
Local County Hazard Mitigation Plan	Yes	Analyze previous plan for updates
Flood Insurance Rate Maps	Yes	Analyze flood prone areas within the community

These and other documents were reviewed and considered, as appropriate, during the collection of hazard identification, vulnerability assessment, and capability assessment. Data from these plans and ordinances were incorporated into the risk assessment and hazard vulnerability sections of the plan as appropriate. The data was also used in determining the capability of the community in being able to implement certain mitigation strategies.

Phase II – Risk Assessment

Identify the Hazard, Assess the Risk and Vulnerabilities

The committee completed a comprehensive effort to identify/update, document, and profile all hazards that have, or could have, an impact on the community. The committee also conducted a capability assessment to review and document the planning area’s current capabilities and gaps. By collecting information about existing government programs, policies, regulations, ordinances, and emergency plans, the committee could assess the activities and measures already in place that contribute to mitigating some of the risks and vulnerabilities identified. A more detailed description of the risk assessment process and the results are included in Chapter 2 Risk and Vulnerability Assessment.

Phase III – Mitigation Strategy

Set Goals and Review Actions

This meeting facilitated brainstorming and discussion sessions that described the purpose and process of developing planning goals and objectives, a comprehensive range of mitigation alternatives, and a method of selecting and defending recommended mitigation actions using a series of selection criteria. This information is included in Chapter 3 Mitigation Strategy.

Draft an Action Plan

A complete first draft of the plan was prepared based on information and input collected during the HMPC meetings, and various agencies and individuals were invited to comment on this draft. Public and agency comments were integrated into the final draft for TEMA and FEMA Region IV to review and approve, contingent upon final adoption by Maury County.

Phase IV – Plan Maintenance

Adopt the Plan

To secure buy-in and officially implement the plan, the plan was reviewed and adopted by the appropriate governing bodies.

Implement, Evaluate, and Revise the Plan

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning and actions. Chapter 4 Plan Integration and Maintenance

CHAPTER 1: THE PLANNING PROCESS

discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement.

1.3 Plan Update

The 2019 Maury County Hazard Mitigation Plan contained a hazard identification and risk assessment for each jurisdiction and a corresponding action list aimed at mitigation risk. Since that time, progress has been made by both the County and incorporated jurisdictions on the implementation of the mitigation strategy with 2 completed actions and 28 in progress. This chapter includes an overview of the approach to updating the plan and identifies new analyses and information included in this plan update.

1.3.1 The New Plan

The updated plan involved a comprehensive review and revision of each section of the 2019 plan and included an assessment of the success of the County and the incorporated jurisdictions in evaluating, monitoring, and implementing the mitigation strategy outlined in the 2019 plan. Only the information and data still valid from the 2019 plan was carried forward as applicable in this update. The following requirements were addressed during this plan update process with consideration of the priorities and goals of the Maury County Hazard Mitigation Planning Committee:

- Consider changes in vulnerability due to action implementation;
- Document success stories where mitigation efforts have proven effective;
- Document areas where mitigation actions were not effective;
- Document any new hazards that may arise or were previously overlooked;
- Document NFIP as related to the county and jurisdictions;
- Incorporate new data or studies on hazards and risks;
- Incorporate new data related to future climate patterns and trend;
- Incorporate new capabilities or changes in capabilities;
- Incorporate social vulnerability data and vulnerable population information;
- Incorporate growth and development-related changes to inventories; and
- Incorporate new action recommendations or changes in action prioritization;
- Enhanced public outreach and multi-agency coordination efforts.

1.3.2 2019 HMP Strategy Review

During the 2019 update of the Maury County Hazard Mitigation Plan, the HMPC identified 38 actions as relevant to the county. Of these 38 actions, 2 have been completed, 28 are in progress, and 8 have not been started. Actions that had not been pursued were discussed for relevance to the new plan and were either carried over to the 2024 plan or deleted from the strategy. 28 of these projects were determined to still be viable and will be carried over or revised in this plan update. Details and the status of all previous actions are in *Table 4*.

CHAPTER 1: THE PLANNING PROCESS

Table 4: Mitigation Action Progress Summary (2019 Plan)

Goal Action	Priority Action	Project	Planned Implementation	Date	Comment	Current Status
1.2.1	69	Identify grant opportunities for all jurisdictions and disciplines.	On-going		Grant opportunities are continually researched and identified.	Delete
1.5.1	69	Review annually and after each disaster to revise the County Basic Emergency Operations Plan.	Annually and after disasters.			Carry Forward
1.5.2	69	Develop/maintain/revise annually a countywide NIMS-typed resources inventory.	Annually			Carry Forward
1.5.4	69	Provide annual Emergency Operations Center training.	Annually			Carry Forward
1.7.2	69	Continue to activate the EAS as necessary.	As Required			Carry Forward
2.1.2	69	Create a GIS map database of identified sites to display ERG established zones and evacuation perimeters.	On-going			
2.2.1	69	Provide funds for overtime/backfill to facilitate hazardous materials training for first responders.		July 2023		Delete
2.2.4	69	Plan and conduct annual CBRNE exercises involving all emergency response agencies.	Annually			Carry Forward
3.1.1	69	Partner with volunteer agencies to distribute severe weather awareness/preparedness literature at events.	On-going			Complete
3.1.2	69	Partner with NWS to publicize citizen weather spotter preparedness training.	On-going			Complete

CHAPTER 1: THE PLANNING PROCESS

3.1.3	69	Publish news articles and distribute literature for public education on safe rooms/shelter-in-place.	Annually			Delete
3.1.4	69	Participate in the Severe Weather Awareness Week campaign.	Annually			Carry Forward
3.2.2	69	Partner with public utilities to publish news articles/distribute literature to increase public knowledge of downed line safety.	On-going			Delete
3.3.2	69	Work with local and state inspectors to ensure anchor codes are met for mobile homes.	On-going			
3.4.1	69	Enact legislation requiring NOAA weather radios in daycare, healthcare and industrial facilities.	On-going			Delete
3.6.1	69	Recommend that Health Agencies maintain/update contact information for suppliers of drugs, food, water, and fuel annually.	On-going			Delete
3.7.1	69	Partner with agencies to identify citizens' subject to suffer during extreme temperatures.	On-going			Delete
3.7.2	69	Partner with volunteer agencies to protect the homeless, poor, elderly and chronically-ill during extreme temperatures.	On-going			Complete
3.7.3	69	Partner with volunteer agencies/utilities to provide utility bill assistance for citizens.	On-going			Delete
3.8.1	69	Recommend that Health Agencies maintain/update annually contact information for supplies of potable water.	On-going			Delete

CHAPTER 1: THE PLANNING PROCESS

4.1.1	69	Ensure that maps are updated/aligned with tax roles for detailed flood hazard information.	On-going		Properties have been identified	Complete
4.1.4	69	Evaluate the need to relocate/acquire structures in flood hazards.	On-going		Properties have been identified	
4.1.5	69	Use mapping database to establish zoning restrictions in flood hazard areas.	On-going			
4.2.1	69	Study methods to slow or detain the amount of water from flood-prone waterways.	On-going			
4.2.2	69	Evaluate the realignment of bridges to remove abutment obstructions from flood-prone waterways.	On-going			
4.2.3	69	Evaluate methods to reduce flooding to flood-prone roadways.	On-going			
4.2.5	69	Evaluate methods to improve storm water systems in flood-prone areas.	On-going			
4.3.1	69	Identify roadways repetitively damaged by flooding.	On-going			
4.5.1	69	Distribute flood awareness and preparedness literature at events.	On-going			Delete
5.1.2	69	Partner with agencies to present fire prevention programs to service clubs, senior citizens, and special-needs populations.	On-going			Delete
5.1.3	69	Partner with agencies to present the proper use of fire extinguishers.	On-going			Delete
5.1.4	69	Partner with agencies to distribute fire prevention literature at community	On-going			Delete

CHAPTER 1: THE PLANNING PROCESS

		events.				
5.1.5	69	Partner with the media to promote a “change your clock, change your smoke detector battery” twice yearly.	On-going			Delete
5.1.6	69	Obtain grants to provide free smoke detectors to residents in need.	On-going			Delete
5.2.1	69	Continue rigid enforcement of existing fire and electrical codes.	On-going			
5.2.2	69	Develop emergency pre-plans for all public buildings, schools, businesses, and churches.	On-going			Delete
5.4.1	69	Create a GIS mapping database identifying water line size/hydrant locations in rural areas.	On-going			
5.4.2	69	Assist in obtaining grant funds to replace small diameter lines with adequate-sized mains.	On-going			Carry Forward
5.4.3	69	Assist in obtaining grant funds to construct pumping stations to provide adequate pressure in elevated areas.	On-going			Carry Forward
5.4.4	69	Assist in obtaining grant funds to install hydrants at ½ mile intervals in unincorporated areas.	On-going			Delete
5.5.1	69	Expand fire prevention efforts to include programs on wildfire and arson.	On-going			Carry Forward
5.5.2	69	Publish news articles to promote wildfire awareness.	On-going			Delete
5.5.3	69	Publish outdoor burn permit requirements in area newspapers each week, September through May.	On-going			Complete

CHAPTER 1: THE PLANNING PROCESS

5.5.4	69	Publish outdoor burn ban information in area newspapers.	On-going as required			Delete
5.5.5	69	Partner with the Division of Forestry to distribute wildfire fuels reduction, awareness, and prevention literature at community events.	On-going			
5.6.2	69	Require prosecution and restitution for arson.	On-going		Arson training in progress	Complete
5.7.1	69	Provide annual wildland fire training for municipal and rural fire departments.	On-going			
6.1.1	69	Distribute information on the importance of public vigilance in the fight against terrorism.	On-going			Delete
6.2.3	69	Develop and practice, at least annually, evacuation plans for all critical facilities.	On-going			Delete
6.2.4	69	Partner with schools to improve security and lockdown procedures.	On-going			Complete
6.3.1	69	Continue to participate in the Joint Terrorism Task Force.	On-going			Delete
6.3.6	69	Support Tennessee Homeland Security strategies to counterterrorism.	On-going			Delete
7.1.3	69	Maintain and publicize a hotline to report suspected meth labs.	On-going		TN has accomplished this.	Complete
7.2.1	69	Enact legislation to require quantity limitations and registration for all ephedrine and pseudoephedrine product sales.	On-going		Enacted by State of TN	Complete
7.3.4	69	Develop meth lab FOGs for all emergency responders.	Accomplished			Delete
8.1.1	69	Partner with the state	On-going			Delete

CHAPTER 1: THE PLANNING PROCESS

		Division of Geology to quantify the potential for an earthquake greater than 6.0 in Maury County.				
8.1.2	69	Partner with UT geology department to identify areas of greatest hazard.	On-going			Delete
8.1.3	69	Create a GIS database to determine critical facilities and other structures that may be affected by a disaster.	On-going			Complete
8.2.1	69	Distribute earthquake awareness and preparedness literature at community events.	On-going			Delete
8.2.2	69	Provide critical facilities managers with FEMA’s guidebook, “Reducing the Risks of Nonstructural Earthquake Damage”.	On-going			Delete
9.1.1	69	Continue to develop and recruit volunteers to staff mass clinic plan to include response to all widespread disease.	On-going			Delete
9.1.2	69	Exercise the mass clinic plan and revise as necessary.	On-going			Delete
9.1.3	69	Continue to participate in Strategic National Stockpile drills and exercises.	On-going			Delete
9.1.4	69	Maintain an inventory of Mark I packs to respond to chemical agent dispersal events.	On-going			Delete
10.1.1	69	Ensure that Mass Gatherings/Special Events are conducted as safely as practical.	On-going			Complete
10.1.2	69	Enhance all Hazardous Operations Teams	Annually			
10.1.3	69	Develop additional Hazardous Operations	On-going			

CHAPTER 1: THE PLANNING PROCESS

		Teams as needed				
4.8.1	69	Enhance Swift Water, Dive Recovery and Boat Teams	On-going		Funding sought annually	
1.6.1	68	Ensure adoption of the National Incident Management System (NIMS) by all jurisdictions.	Accomplished			Complete
1.6.2	68	Schedule/conduct ICS training annually for first responders.	On-going			Complete
1.7.3	68	Maintain NAWAS at Maury E-Com & Spring Hill Communications.	Accomplished			Complete
2.2.2	68	Provide funds for overtime and backfill to allow for hazardous materials, HMTO, operations- level, and CBRNE Training.	On-going			Delete
3.2.1	68	Continue power line right-of-way clearing to reduce incidence of downed communication and power lines.	On-going		Local utility providers have developed process.	Complete
3.3.1	68	Continue to enforce building codes for new structures and structures being renovated.	On-going			
4.4.1	68	Erect signage to indicate water depth at flooding points.	On-going			
5.3.2	68	Provide jurisdictional matching funds for awarded AFGs.	On-going			Delete
1.6.3	67	Ensure all personnel are trained in NIMS annually.	On-going			Carry Forward
1.7.4	67	Purchase and install an automated wide-area rapid notification system (D NAWAS).		Jan. 2015	Complete	Complete
1.7.5	67	Develop evacuation routes and procedures.	On-going			Delete
3.5.2	67	Equip all fire department and rescue vehicles with	On-going		Many apparatus now	Complete

CHAPTER 1: THE PLANNING PROCESS

		chain saws.			carry saws	
4.1.2	67	Use HAZUS-MH to map 50 and 100-year flood plains.	On-going			
4.1.3	67	Identify repetitive-loss areas and structures.	On-going		Have identified properties	Complete
4.4.2	67	Install gates to block roadways and bridges during flooding.	On-going			
7.1.2	67	Partner with schools to promote recognition and reporting of meth labs.	On-going			Delete
1.3.1	66	Develop/maintain a web site with public information on shelter locations, shelter-in-place instructions, FEMA course listing, and links to hazard preparedness websites.	On-going		Web-site developed with links.	Complete
1.6.4	66	Conduct annually large-scale disaster exercises involving all response agencies.	On-going			Complete
2.2.3	66	Enhance Maury Haz-Ops Team Capabilities for regional response to CBRNE incidents.	On-going			
4.8.1	69	Enhance Swift Water, Dive Recovery and Boat Teams.	On-going			
2.3.1	66	Enhance Maury Haz-Ops Team Capabilities for regional response to transportation incidents.	On-going			
3.3.4	66	Enact legislation requiring mobile home parks to install ground anchors for each space.	On-going			Delete
3.3.5	66	Enact legislation requiring new mobile home parks to provide storm shelters to protect all residents.		July 2023		Delete
4.2.4	66	Evaluate the feasibility of construction of	On-going			

CHAPTER 1: THE PLANNING PROCESS

		detention features.				
5.3.1	66	Develop long range plans for Rapid Intervention Team (RIT) training for all departments.	On-going			
5.6.1	66	Enact legislation to make mandatory fines for non-permitted outdoor burning.	On-going			Complete
1.1.2	65	Maintain hazard mitigation committee and conduct meetings to review plan as needed.	On-going			Carry Forward
1.4.1	65	Assist in finding funding sources to equip shelter facilities.	On-going			
1.7.6	65	Develop redundancy capabilities for 911 services.	On-going		Some redundancy developed	Complete
1.7.7	65	Develop redundancy capabilities for radio communications.	On-going		Some redundancy developed	Carry Forward
3.5.1	65	Equip all emergency response vehicles with on-demand tire chains.	On-going		New apparatus being bought with chains	Complete
4.3.3	65	Evaluate the feasibility of expanding ditch depth and width along rural roadways to mitigate flooding of road surfaces.	On-going			
6.3.2	65	Fund overtime and backfill to provide first response to terrorism training for all first response agencies.		July 2023		Delete
6.3.5	65	Enhance Haz-Device Unit Capabilities for regional response to CBRNE incidents.	On-going			Delete
4.8.1	64	Enhance Swift Water Rescue Team.	On-going		Enhance all teams	
4.8.2	64	Fund overtime and backfill costs to allow for training.	On-going			Delete
4.8.3	64	Provide Equipment for	On-going			

CHAPTER 1: THE PLANNING PROCESS

		Safe Water Rescue Ops.				
1.1.1	64	Develop strategies to prevent the loss of public records.		July 2023		Delete
1.5.3	64	Develop an Emergency Operations Center.		Dec 2014		Complete
1.5.4		Enhance Emergency Operations Center	On-going			Complete
1.5.5	64	Purchase/install office computers and display equipment for the sharing of information during EOC activation.		Dec 2014		Complete
3.3.3	64	Provide funding to assist low-income residents to anchor previously-sited mobile homes.		July 2023		Delete
3.6.2	64	Install generators in critical facilities and fuel depots.	On-going		Some generators obtained	Carry Forward
4.6.1	64	Provide regular maintenance to remove debris from flood-prone streams.	On-going			Carry Forward
4.6.2	64	Install larger culverts to permit clear stream flow.		July 2023		Carry Forward
5.1.1	64	Continue aggressive fire prevention programs in all schools.	On-going			
5.7.2	64	Provide wildland firefighting equipment to all rural fire departments in the county.	On-going		Some equip. obtained	Complete
6.2.2	64	Evaluate all critical facilities for safety and recommend improvements.	On-going			Carry Forward
6.3.4	64	Enhance Haz-Ops Team Capabilities for regional response to CBRNE incidents.	On-going			Delete
7.3.1	64	Develop Meth Task Force to include Law Enforcement and the Haz-Ops Team and other needed members or	On-going			Delete

CHAPTER 1: THE PLANNING PROCESS

		personnel.				
7.3.2	64	Fund training, overtime, and backfill cost for Meth Task Force personnel training.		July 2023		Delete
7.3.3	64	Provide equipment to allow responders safe entry at clandestine labs.	On-going			Complete
6.2.1	63	Evaluate the need to restrict parking of vehicles in close proximity to critical facilities.	On-going			Delete
1.7.1	62	Install warning capabilities for all hazards.		July 2023		Complete
2.1.1	61	Enact legislation to require fixed sites to install alert devices and develop warning/evacuation plans.		July 2023		
2.4.1	61	Establish codes to prohibit construction of residential or public structures near fixed hazardous materials sites.		July 2023		
2.4.2	61	Establish codes to prohibit construction of special-needs population facilities near rail lines.		July 2023		
4.7.1	61	Restrict construction and/or placement of mobile homes within the flood plain.		July 2023		
6.3.3	61	Budgets to provide adequate first- response personnel for every shift.		July 2023		Delete
4.3.2	57	Raise grade level of identified roadways.	On-going			

CHAPTER 1: THE PLANNING PROCESS

1.4 Multi-Jurisdictional Special Considerations

Hazards Assessment

Most of the natural hazards identified within this plan have an impact on both Maury County and the incorporated jurisdictions. Some hazards have a larger impact on the County rather than the incorporated jurisdictions and vice versa. Impacts of identified hazards differ the most at the rural and urban interface where flooding can have different severity levels. Therefore, the flooding section emphasizes the depth, duration, and timing of severe flooding events. Below is a table that shows whether a hazard will have multi-jurisdictional impacts.

Hazards	Will the hazard have multi-jurisdictional differences?
Drought	No
Earthquake	No
Extreme Temperature	No
Wildfire	Yes
Flooding	Yes
Geologic	No
Severe Weather	No
Tornado	No
Communicable Disease	No
Dam/Levee Failure	Yes
Hazardous Materials Release	No
Infrastructure Incident	No

1.5 Public Participation

Public involvement included public survey collection and meetings. Organizations representing vulnerable and underserved populations were contacted in an effort to gain further input from populations most at risk during hazardous events. The formal public meetings for this plan are discussed in section 1.2.2.

A social media post on Facebook and the Maury County web site were posted on March 5th and 28th to gather insights from the community about resilience strategies and disaster preparedness efforts. Documentation to support the public outreach efforts can be found in Appendix A. Over the past five years, the community was kept involved in the planning process through the implementation of projects in the plan.

CHAPTER 1: THE PLANNING PROCESS

1.6 County Data Profile

1.6.2 Resources and Assets

Maury Regional Medical Center provides 24-hour emergency care to residents of the county and is home to 255 beds. The county also has: 145 volunteer firefighters with 12 stations, and 151 full time Law Enforcement officers including the county sheriff. Maury County School District facilities the learning of approximately 13,200 students via their system of 22 schools within the region.

Maury County houses eight radio stations (WKOM, WKRM, WMCP, WMRB, WMCP, WXRQ, W264AD, and W279DL). The main phone companies in the area are ATT, Verizon and T-Mobile. Residents in the county can either obtain internet via Columbia Power & Water Systems (CPWS), AT&T, Spectrum, T-Mobile, EarthLink, Verizon, Comcast, HughesNet, Viasat, Dish & DirectTV. Communication resources, a vital component of emergency response and preparedness, is notably lacking in the more rural portions of Maury County. Between 2018 and 2022, 94.8% of households had a computer and 88.3% had broadband internet access according to the United States Census Bureau.

The main roadways that travel through the county are Natchez Trace Parkway, Interstate 65, US Highways 31, 43, 412 and 431; State Highways 7, 20, 50, 99, 121, 166, 243, 245, 246, 247, 373 and 396. The nearest interstates are I-840 (1.37 miles away), I-24 (21.08 miles away) and I-40 (11.67 miles away). The largest waterway in Maury County is the Duck River, which winds 290 miles through the county and has more fish varieties per mile than any other river in North America containing rare species such as birdwing pearly mussel and fish (barrens, topminnow, pygmy madtom). Other smaller waterways that intersect throughout Maury County are Flat Creek 35.63054, -86.84944, Cedar Creek 35.56273, -86.87719, Fountain Creek 35.56840, -86.96382, Bear Creek 35.63303, -87.00902, Lytle Creek 35.62384, -87.02015, Rutherford Creek 35.64640, -87.04363, Little Bigby Creek 35.63683, -87.07350, Knob Creek 35.66255, -87.09354, Greenlick Creek 35.67241, -87.11829, Snow Creek 35.68605, -87.19349, Leipers Creek 35.68848, -87.20265, Poplar Creek 35.68445, -87.23054, Big Bigby Creek 35.65177, -87.24691 and Catheys Creek 35.65945, -87.25689. A further analysis of these water systems will be explored in the hazard flood section as related to their propensity for flood events.

The nearest international airport is Nashville International Airport (BNA) (approx. 27.3 miles) and the closest general aviation location is Maury Regional Airport. Given the limited public transportation options and the rural environment of Maury County, the mean travel time to work, workers age 16+, 2018 – 2022 was over 26 minutes.

Maury County is governed by an elected County Mayor and Board of Commissioners (twenty-two members). The jurisdictions within Maury County are governed by an elected Mayor and a Board of Commissioners. There are multiple regulatory committees that are appointed by both the County Mayor and the Board of Commissioners.

1.6.3 Development and Growth

Like a majority of its counterparts, Maury County, has been experiencing rapid growth. The population of the county increased between the 2010 and 2020 censuses

CHAPTER 1: THE PLANNING PROCESS

from 81,141 to 100,974. Most of Maury Counties’ employed population work within the automotive industry and the logistics industry. Maury County is a member of Joint Economic and Community Development Boards to ensure and promote economic growth within the county and for its constituents. As stated, Maury County has experienced much growth since the last planning period, specifically residentially/industrially/commercially. **Mt. Pleasant** is observing residential growth along/in Zion Road, Sugar Creek Subdivision, Sugar Creek Townhomes, King Property (1st Ave. / S. Crossbridges), S. Walnut Townhomes & Southport Road. **The City of Columbia** has endured substantial residential growth in many areas around the city with major annexation increasing by 4.6%. The overall growth from 2010-2020 was raised by 20.5% population and 9.3% housing units. **The City of Spring Hill** has undergone exponential growth in its housing and residential structures. Many new subdivisions and multi-family complexes have been built. Industrial growth in **Mt. Pleasant** continues with expansion of UST Landmark Warehouse, GCP Warehouse, Co-Op and Industrial sites at Cherry Glenn. However, it is noteworthy that the county has seen the development of the Auto Industry through General Motors Ultium Cells LLC 2.3 billion investment at its facility in Spring Hill, TN. There has also been investment at Landmark Ceramics in Mt. Pleasant, TN.

1.6.4 Demographics

Throughout the planning process, Maury County HMPC remained committed to recognizing socially vulnerable and underserved populations. In order to maintain this commitment, the HMPC reached out to key stakeholders as discussed in Section 1.2 and reviewed the CDC/ATSDR Social Vulnerability Index (SVI). SVI information is located in Appendix B.

Table 5 below illustrates the population data of the county according to the 2023 U.S Census. Other important demographics obtained via the U.S Census Bureau and County Health Rankings (RWJ Foundation) are presented in list form. Of the 110,760 (07/01/2023) residents living within Maury County:

- The median household income is \$ 71,500 (In 2022 dollars)
- 10.4% live below the national poverty line
- 11% are confronted with food insecurity
- 17.4% are persons age 65 years and over
- 7.5% (2018-2022) of the under 65 years of age population live with a disability
- 10.1% of the under-65 population do not have health insurance
- Population as of 2020 was 164.7 people per square mile

Table 5: Population Data

Demographic		Percentage
Identified gender		
Male		48.7%
Female		51.3%
Age Group		
Under 5		6.2%
Under 18		22.6%
Over 65		17.4%
Race/Ethnicity (one)		

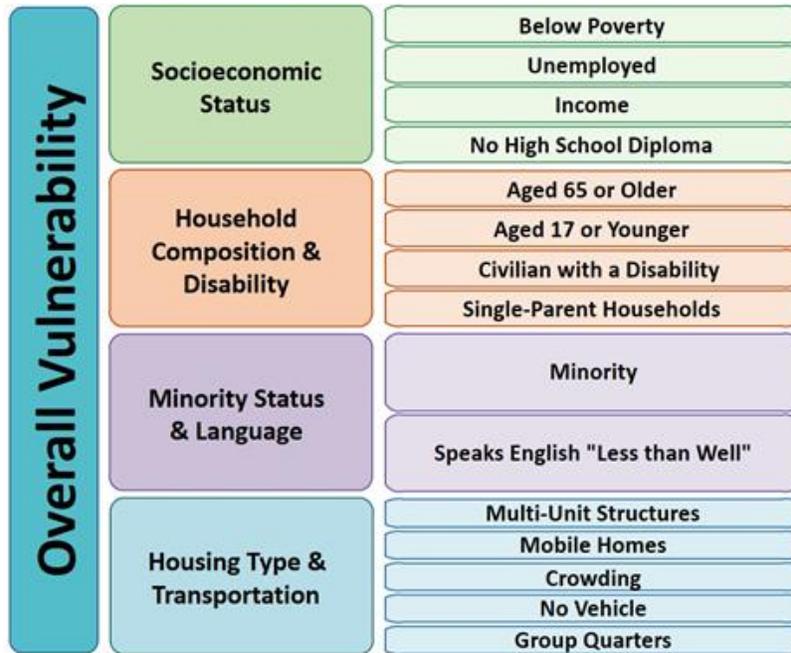
CHAPTER 1: THE PLANNING PROCESS

White (not Hispanic/Latino)	84.2%
Asian	1.2%
Black or African American	11.4%
American Indian or Alaskan Native	0.5%
Hispanic/Latino	7.2%
Education	
High School Graduate or Higher	91.8%
Bachelor’s Degree or Higher	25.9%

1.6.5 Social Vulnerability

Social vulnerability refers to a community’s capacity to prepare for and respond to the stress of hazardous events ranging from natural disasters, such as tornadoes or disease outbreaks, to human-caused threats, such as toxic chemical spills. Social vulnerability considerations were included in this plan update to identify areas across the planning area that might be more vulnerable to hazard impacts based on several factors. The County BEOP will also incorporate this information to improve response efforts in socially vulnerable neighborhoods.

The Center for Disease Control and Prevention (CDC) has developed a social vulnerability index (SVI) to measure the resilience of communities when confronted by external stresses such as natural or human-caused disasters or disease outbreaks. The SVI is broken down to the census tract level and provides insight into vulnerable populations to assist emergency planners and public health officials in identifying communities more likely to require additional support before, during, and after a hazardous event. The SVI index combines four main themes of vulnerability, which are, in turn, broken down into subcategories for 16 vulnerability factors. The themes are outlined below.



CHAPTER 1: THE PLANNING PROCESS

Table 6 shows the specific breakdown for Maury County.

Table 6: Maury Co. Social Vulnerability Factors

Maury County Social Vulnerability Factors	
Total Square Miles	613
Total Population (as of 07/01/2023)	110,760
Housing Units Estimated	47,735
Households	39,591
Persons below Poverty	15767
Age 16+ unemployed	1671
Per Capita Income	\$41,095
Age 25+ w/ no HS Diploma	6,335
Percentage of Persons below poverty	10.4
Unemployment rate	3.8
Per Capita Income	\$41,095
Percentage of persons w/ no HS diploma 25 yo+	9.6
Aged 65+ & older	15,334
Age 17 & younger	22,010
Civilian noninstitutionalized population with a disability	11,585
Single Parent HH w/ children under 18	2,517
Percentage of person aged 65+	16.2
Percentage of persons 17 or younger	23.3
Percentage of civilian noninstitutionalized population with a disability	12.4
Percentage of single parent households with children under 18	7.2
Minority (all persons except white, non-Hispanic)	19,910
Persons (age 5+) who speak English "less than well"	628
Percentage minority (all persons except white, non-Hispanic)	21
Percentage of persons (age 5+) who speak English "less than well"	0.7
Housing in structures with 10 or more units	2,155
Mobile Homes	4,062
At Household level (occupied housing units) more people than rooms	544
Households w/ no vehicle	963
Persons in Group Quarters	1215
Percentage of housing in structures with 10 or more units	5.6
Percentage of mobile homes	10.6
Percentage of occupied housing units with more people than rooms	1.5
Percentage of households with no vehicle available	2.7
Percentage of persons in group quarters	1.3

CHAPTER 1: THE PLANNING PROCESS

1.6.6 Critical Infrastructure

Critical Infrastructure are assets in a community that are considered vital to the public's health and safety. Due to the sensitivity of these assets in Maury County and the incorporated jurisdictions, these assets are restricted for public viewing. However, the data is viewable to restricted personnel on the State of Tennessee's Critical2TN Database. The county and incorporated jurisdictions currently have 53 assets identified.

1.7 Resource Capabilities

The committee gathered the following resource capabilities to determine what existing staff and resources are being used to support mitigation programs.

CHAPTER 1: THE PLANNING PROCESS

Table 7: Jurisdictional Mitigation Capabilities

Mitigation Capabilities	Maury County	City of Spring Hill	City of Columbia	City of Mt. Pleasant
Building Codes	Yes	Yes	Yes	Yes
Zoning Codes	Yes	Yes	Yes	Yes
Subdivision Ordinance	Yes	Yes	Yes	Yes
Stormwater Ordinance	Yes	Yes	Yes	No
Floodplain Ordinance	Yes	Yes	Yes	Yes
Erosion, Sedimentation and Pollution Control Ordinance	Yes	Yes	Yes	Unknown
Stormwater Management Program	Yes	Yes	Yes	No
Site Plan Review Requirements	Yes	Yes	Yes	Yes
Capital Improvements Plan	Yes	Yes	Yes	Yes
Economic Development Plan	Yes	Yes	Yes	No
Local Emergency Operations Plan	Yes	Yes	Yes	Yes
Flood Insurance Study or Other Engineering Study for Streams	Yes	Yes	Yes	Yes
Repetitive Loss Plan	Yes	No	Yes	No
Elevation Certificates	Yes	Yes	Yes	Yes
Grant writer	Yes	No	Yes	No
Public Information Officer	Yes	Yes	Yes	No
Floodplain Manager	Yes	Yes	Yes	No
Full Time Fire Service	No	Yes	Yes	Yes
Law Enforcement	Yes	Yes	Yes	Yes
Emergency Manager	Yes	Yes	Yes	No
GIS Personnel	Yes	Yes	Yes	No
Capital improvements project funding	Yes	Yes	Yes	Yes
Fees for water, sewer, gas, or electric services	Yes	Yes	Yes	Yes
Impact fees for new development	No	Yes	Yes	Yes
General obligation bonds	Yes	No	Yes	Yes
Withhold spending in hazard-prone areas	Yes	No	Yes	No

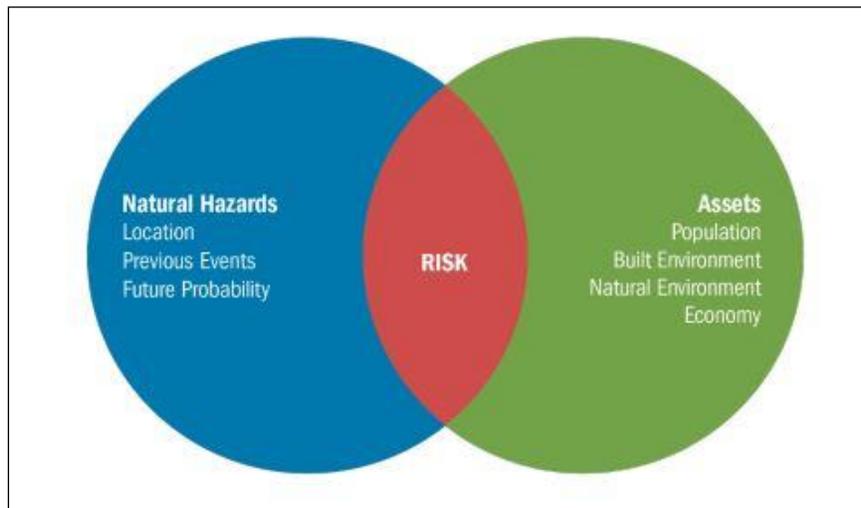
CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Chapter 2: Hazard and Risk Assessment

Risk Assessment Overview

Hazard Mitigation Planning is about developing a strategy to reduce risk in the long term. An essential part of the process is identifying hazards, risks, impacts and vulnerabilities. In mitigation planning, “risk” is the potential for damage or loss when a hazard interacts with an asset. Assets can be people, buildings, infrastructure, the economy, or natural and cultural resources.

The risk assessment helps communicate vulnerabilities, develop priorities, and inform decision making. It is the factual basis for the mitigation strategy. The hazards and associated impacts in the risk assessment should be the hazards and impacts the mitigation strategy seeks to address. If, for example, the risk assessment shows that the state will have hurricane damage in a specific area, the mitigation strategy should include actions to protect state assets and jurisdictions, especially underserved communities, and socially vulnerable populations, in those areas.



The Maury County HMPC conducted a hazard identification analysis to determine the natural and man-made hazards that threaten the County. Existing hazard data from TEMA, FEMA, the National Oceanic and Atmospheric Administration (NOAA), and other sources were examined to assess the significance of these hazards to the planning area. Hazard data from the ETSU Geoinformatics & Disaster Science Lab was also analyzed as related to the changing weather trends and their significance. Significance was measured in general terms and focused on key criteria such as frequency and resulting damage, which includes deaths and injuries, as well as property and economic damage. Any hazard that had two or more green lifeline categories is considered low risk for damages and therefore, will not be providing mitigation actions for those specific hazards.

To further focus on the list of identified hazards for this plan update, the HMPC researched past events that resulted in a federal and/or state emergency or disaster

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

declaration in Maury County to identify known hazards. *Table 8* presents a list of all major disaster and emergency declarations that have occurred in Maury County since 1953, illustrating which hazards pose the greatest risk to the County.

Table 8: Presidential Disaster Declarations in Maury County (1953-2023)

Declaration #	Date	Event Details	Individual Assistance	Public Assistance
DR-4691-TN	2023-03-08	Winter Storm	1	1
DR-4601-TN	2021-05-08	Tornado	1	1
DR-4550-TN	2020-07-09	Severe Storm	1	1
DR-4514-TN	2020-04-02	Biological	1	1
DR-3473-TN	2020-03-13	Biological	1	0
DR-4189-TN	2014-08-13	Severe Storm	1	1
DR-3217-TN	2005-09-05	Hurricane	1	0
DR-1909-TN	2010-05-04	Severe Storm	1	1
DR-1634-TN	2006-04-05	Severe Storm	0	1
DR-1464-TN	2003-05-08	Severe Storm	1	1
DR-1408-TN	2002-04-05	Severe Storm	1	0
DR-1262-TN	1999-01-19	Severe Storm	1	1
DR-1215-TN	1998-04-20	Severe Storm	1	0
DR-1010-TN	1994-02-28	Severe Storm	1	0
DR-585-TN	1979-05-07	Severe Storm	1	0
DR-459-TN	1975-03-22	Flood	1	0
DR-366-TN	1973-03-21	Flood	1	0

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Table 9 documents the hazards of interest to Maury County and the decision to re-evaluate or delete them from this plan update. The hazards of concern were altered as necessary to ensure the Maury County Hazard Mitigation Plan is in accordance with the Tennessee Mitigation Strategy.

Table 9: Overview of Updates to Chapter 2: Risk and Vulnerability Assessment

Tennessee 2018 Mitigation Strategy	Maury County 2019 HMP	Status	Maury County 2024 HMP Update
Communicable Disease	Hazard of Primary Concern	Re-evaluated	Not a Hazard of Primary Concern
Dam Failure	Hazard of Primary Concern	On-going	Not a Hazard of Primary Concern
Drought	Hazard of Primary Concern	On-going	Hazard of Primary Concern
Earthquakes	Hazard of Primary Concern	On-going	Not a Hazard of Primary Concern
Extreme Temperatures	Hazard of Primary Concern	On-going	Hazard of Primary Concern
Flooding	Hazard of Primary Concern	On-going	Hazard of Primary Concern
Geological Hazard	Hazard of Primary Concern	On-going	Hazard of Primary Concern
Hazardous Materials Release	Hazard of Primary Concern	On-going	Not a Hazard of Primary Concern
Infrastructure Incident	Hazard of Primary Concern	On-going	Hazard of Primary Concern
Terrorism	Hazard of Primary Concern	Re-evaluated	Not a Hazard of Primary Concern
Tornadoes	Hazard of Primary Concern	On-going	Hazard of Primary Concern
Severe Weather (thunderstorms, lightning, hail)	Hazard of Primary Concern	On-going	Hazard of Primary Concern
Wildfire	Hazard of Primary Concern	On-going	Hazard of Primary Concern

Summary of changes in the 2024 plan update:

- The following Hazards were removed as Hazards of Primary Concern as they are man-made. They are included in Appendix E.
 - Communicable Disease
 - Dam Failure
 - Earthquakes
 - Hazardous Materials Release
 - Terrorism

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

2.1 Drought

A. Hazard Overview

Drought is a deficiency in precipitation over an extended period. It is a standard, recurrent feature of climate that occurs in virtually all climate zones. The duration of droughts varies widely. In some cases, drought develops relatively quickly and lasts a very short time, exacerbated by extreme heat and/or wind. There are other cases when drought spans multiple years or even decades. Studying the paleoclimate record is often helpful in identifying when long-lasting droughts have occurred. Common types of droughts are detailed below.

Table 10: Drought Classifications

Type	Details
Meteorological Drought	Meteorological Drought is based on the degree of dryness (rainfall deficit) and the length of the dry period.
Agricultural Drought	Agricultural Drought is based on the impacts on agriculture by factors such as rainfall deficits, soil water deficits, reduced groundwater, or reservoir levels needed for irrigation.
Hydrological Drought	Hydrological Drought is based on the impact of rainfall deficits on the water supply, such as stream flow, reservoir and lake levels, and groundwater table decline.
Socioeconomic Drought	Socioeconomic drought is based on the impact of conditions (meteorological, agricultural, or hydrological drought) on the supply and demand of some economic goods. Socioeconomic deficiency occurs when the demand for an economic good exceeds the supply due to a weather-related deficit in the water supply.

The wide variety of disciplines affected by drought, its diverse geographical and temporal distribution, and the many scales drought operates on make it difficult to develop a definition to describe drought and an index to measure it. Many quantitative measures of droughts have been developed in the United States, depending on the discipline affected, the region being considered, and the particular application. Several indices developed by Wayne Palmer and the Standardized Precipitation Index help describe the many scales of drought.

The **U.S. Drought Monitor** summarizes drought conditions across the United States and Puerto Rico. Often described as a blend of art and science, the map is updated weekly by combining a variety of data-based drought indices and indicators and local expert input into a single composite drought indicator.

The **Standardized Precipitation Index (SPI)** measures drought, which differs from the Palmer Drought Index (PDI). Like the PDI, this index is negative for lack and positive for wet conditions. But the SPI is a probability index that considers only precipitation, while Palmer's indices are water balance indices that consider water supply (rain), demand (evapotranspiration), and loss (runoff).

The **Palmer Drought Severity Index (PDSI)**, devised in 1965, was the first drought indicator to assess moisture status comprehensively. It uses temperature and precipitation data to calculate water supply and demand, incorporates soil moisture, and is considered the most effective for unirrigated cropland. It primarily reflects the Perry-term drought and has been used extensively to initiate drought relief. It is more complex than the SPI and the Drought Monitor.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

B. County Profile

According to the PDSI map shown in *Figure 11*, Middle Tennessee has a relatively low risk of drought hazards. However, drought cannot be confined to geographic or political boundaries, and some areas may experience more severe drought events than what is shown on the map.

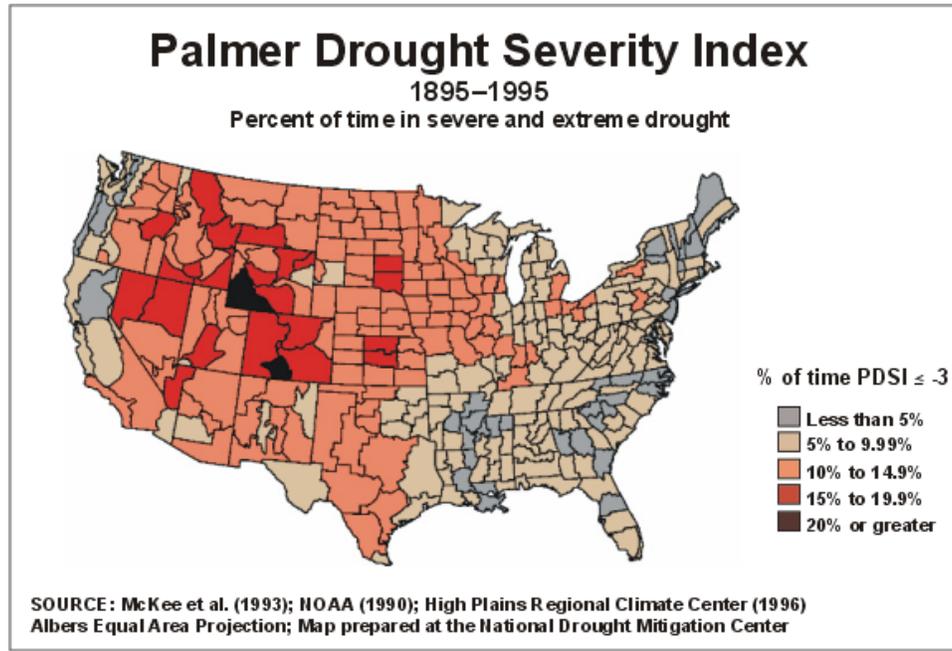


Figure 11 - Palmer Drought Map

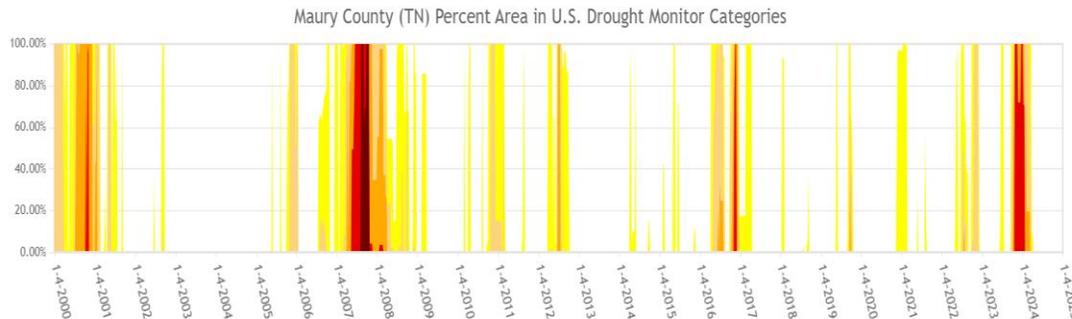


Figure 12 - Drought Monitor Time Series (Source: National Drought Mitigation Center)

Figure 12 above illustrates drought conditions within Maury County between 2000 and 2024. According to the National Drought Mitigation Center, the last Extreme Drought (D4) period occurred in 2007. D4 (extreme drought) is categorized by browning grass, low lake levels, municipality water restrictions, and increased water prices. D0 (abnormally dry) conditions consist of hard ground and declining agriculture ponds and creeks. Middle Tennessee has faced several significant droughts throughout its history, each having a considerable impact on agriculture, water supply, and the economy. Here are some key drought events:

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

- **1930s Dust Bowl Drought:** Part of the wider Dust Bowl phenomenon, this drought caused severe agricultural damage in Tennessee, with crop failures and soil erosion being major concerns. The lack of water also led to significant economic difficulties for small farms.
- **1950s Drought:** Characterized by very low rainfall and high temperatures, this drought severely impacted agriculture. Crop yields and livestock numbers plummeted, forcing many farmers to abandon their land. The economic repercussions were felt long-term.
- **1986-1988 Drought:** Prolonged dry periods and elevated temperatures marked this drought. Reservoir and river water levels dropped significantly, affecting both agricultural and urban water supplies. The forestry sector and wildlife were also adversely affected.
- **2007-2008 Drought:** One of the most severe droughts in recent history, with 2007 being among the driest years recorded for Middle Tennessee. Water restrictions were necessary in many areas, and agricultural losses were high. The drought also increased wildfire risks and put stress on water resources. Middle Tennessee has faced several significant droughts throughout its history, each having a considerable impact on agriculture, water supply, and the economy.

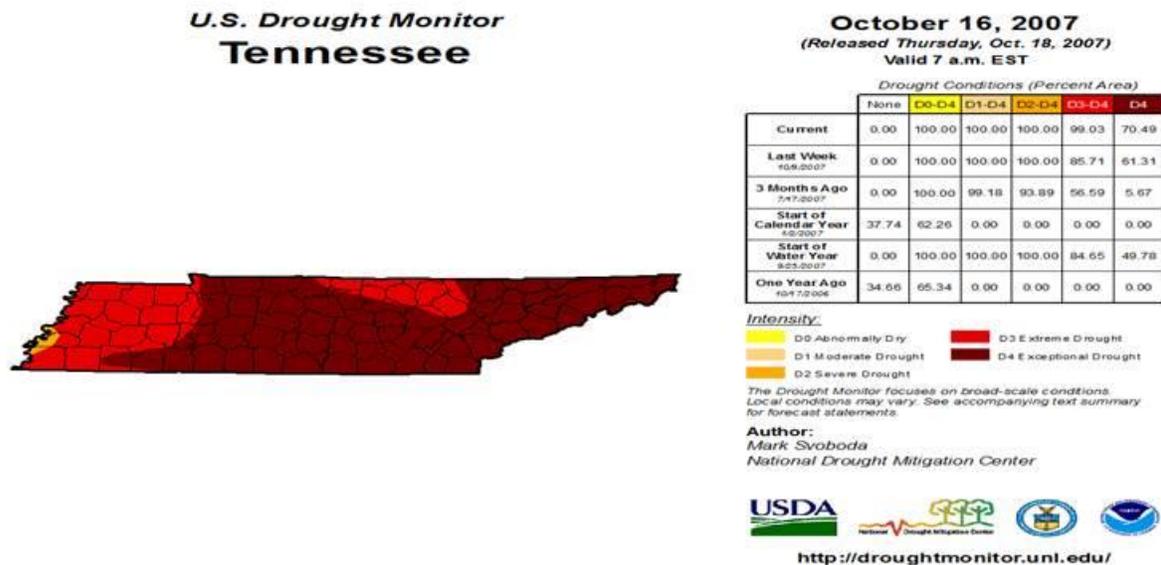


Figure 13 – U.S. Drought Monitor

- **2016 Drought:** This drought quickly became severe, heavily impacting agriculture with significant crop losses and strained water supplies. It also led to a rise in wildfires.
- **2024 Drought:** While this drought was short-lived and occurred during a relatively colder time within the county, it led to a sharp increase in wildfires. [2024 Drought News Article](#)

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT



Figure 14 – Drought Maury County

Tennessee Drought Update

For the assessment period ending February 6th, 2024

This Week's Drought Monitor of Tennessee Map

From the US Drought Monitor, authored by Deborah Bathke, NDMC with input from the Tennessee Climate Office



Recent rainfall has led to minor D2 to D1 improvements in West Tennessee

Statewide Condition Summary

What's Changed? The majority of the rain that Tennessee received in the last week fell across West and East Tennessee, resulting in totals of up to 1 inch. While recent conditions have been closer to normal, we may still be dealing with dry conditions that are lingering from the peak of the drought that occurred in Fall of 2023. Streamflows on average appear to be near normal levels for most of the state.

What's New? Following the rainfall West Tennessee received, D2 to D1 improvements have been made for some areas.

What's Next? Over the next 7 days, forecasts are showing another round of rain across the whole state of Tennessee, with the highest projected totals (3 – 4 inches) expected in southeast Tennessee. Areas dealing with severe and extreme drought conditions may receive 1.5 – 2 inches over the next week.

Statewide Coverage By Category

Category	Coverage This Week	Change Since Last Week
D0: Abnormally Dry	26.11%	-0.04%
D1: Moderate Drought	29.02%	+7.63%
D2: Severe Drought	11.30%	-7.21%
D3: Extreme Drought	1.13%	-0.42%
D4: Exceptional Drought	0%	0%

Change Since Last Week



A product of the Tennessee Climate Office
www.etsu.edu/tn-climate



Figure 15 – Tennessee Drought 2024

Probability Future Events – about twice every decade

The probability of Maury County and its municipalities experiencing a drought event can be challenging to quantify but based on the historical record of 3 droughts since 2000; it can reasonably be assumed that this type of event has occurred every few years.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

C. Risk Assessment

Maury County is vulnerable to drought; however, estimated potential losses are inherently difficult to calculate because drought tends to cause minor damage to the built environment. Therefore, it is assumed that all buildings and facilities in the planning area would technically be exposed to the drought hazard; there is no significant vulnerability to these buildings on a structural level.

Potential drought losses can be calculated in terms of the value of agriculture in the County, which is perhaps most vulnerable to drought. According to the USDA, the net income for agriculture is around \$2.6 million. Population growth could contribute directly to this hazard, as more users pull from the available water supply within the region. Drought can also increase the County’s vulnerability to wildfires. Dry, hot, and windy weather combined with dry vegetation and a spark through human intent, accident, or lightning can start a wildfire.

The National Risk Index is a dataset and online tool to help illustrate the United States communities most at risk for natural hazards. It was built and designed by FEMA in close collaboration with various stakeholders and partners in academia; local, state and federal government. The Risk Index leverages available source data for natural hazards and community risk factors to develop a baseline relative risk assessment for each county and census tract. Some of these community risk factors include social vulnerability which is determined by the data pulled from the Census performed every ten years. A higher social vulnerability score is proportional to a higher risk score.

National Risk Index Score for Drought = Relatively low rating

Although the National Risk Index is a well-valued tool it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

Table 16: Drought Risk based on selected FEMA Lifelines

Drought	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Columbia							
County							

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

D. Land Use and Development

According to the National Drought Mitigation Center, how we use land affects our vulnerability to drought. In general, land use patterns that maintain the integrity of watersheds and that have a smaller paved footprint result in greater resilience in the face of drought. The projected increase in population will possibly result in an increase in buildings and infrastructure, leading to increased impervious areas. An increase in population may also put increasing pressure on water and other natural resources, particularly during periods of drought. Therefore, future development could impact drought vulnerability in Maury County.

E. Multi-Jurisdictional Differences

Due to the nature of drought, Maury County and the incorporated jurisdictions are equally susceptible to drought conditions.

F. Summary

Maury County and all incorporated jurisdictions are equally vulnerable to drought. With historical frequency considered there is a significant chance of this event occurring each year. Drought can affect people’s health and safety. Examples of drought impacts on society include anxiety or depression about economic losses, conflicts when there is not enough water, reduced incomes, fewer recreational activities, higher incidents of heat stroke, and even loss of human life. Drought conditions can also provide a substantial increase in wildfire risk. As plants and trees wither and die from a lack of precipitation, increased insect infestations, and diseases—all associated with drought—they become fuel for wildfires. Maury County periods of drought can equate to more wildfires and more intense wildfires, which affect the economy, the environment, and society in many ways, such as by destroying neighborhoods, crops, and habitats.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

2.5 Extreme Temperatures

A. Hazard Overview

Heat Waves

Excessive Heat is when the heat index reaches at least 105° F for at least three hours on two consecutive days, and the nighttime air temperature does not drop below 75° F. The definition of Excessive Heat is a “rule of thumb” because the detrimental effects of high temperatures and humidity vary among segments of the population (old, young, etc.) and whether the population, in general, has built up a heat tolerance (residents in desert communities fair better than visitors). While some may be better able to cope with Excessive Heat as defined, others may still be adversely affected by a lower heat index. A “rule of thumb” works for mitigation planning because the benefits of specific mitigation actions start accruing before conditions reach Excessive Heat levels. Exposure to extreme heat can pose health risks, including sunburn, dehydration, heat cramps, and heat stroke.

[The National Weather Service Heat Index](#) calculates how hot it feels when relative humidity is factored in with the actual air temperature using a 4-factor scale: caution, extreme caution, danger, extreme danger. The National Weather Service (NWS) also issues Heat Alerts.

- A Heat Advisory is issued 12-24 hours before the onset, at least 100°F but less than 105°F for at least 2 hours.
- An Excessive Heat Watch is issued when temperatures of 105°F or greater are forecasted for the next 24 to 72 hours.
- An Excessive Heat Warning is issued when temperatures of 105°F last for more than 3 hours per day for two consecutive days or temperatures exceed 115°F for any period.

Cold Wave

Extreme cold temperatures occur during the winter months and typically accompany winter storm events. Extended periods of extremely cold temperatures result from the movement of high-pressure systems into the United States. When Arctic air masses are present, extreme winter temperatures hover over Tennessee.

The National Weather Service (NWS) issues the nation’s Wind Chill Warning, Watch, and Advisory:

- Wind Chill Warning: NWS issues a wind chill warning when dangerously cold wind chill values are expected or occurring.
- Wind Chill Watch: NWS issues a wind chill watch when dangerously cold wind chill values are possible.
- Wind Chill Advisory: NWS issues a wind chill advisory when seasonably cold wind chill values, but not extremely cold values, are expected or occurring.

[The National Weather Service Wind Chill Chart](#) calculates the danger from winter winds and freezing temperatures using a 3-factor time-based scale (30 min, 10 min, 5 min).

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

B. County Profile

The following figure provides extreme temperature event information for Maury County. The threat index for Maury County is Low.

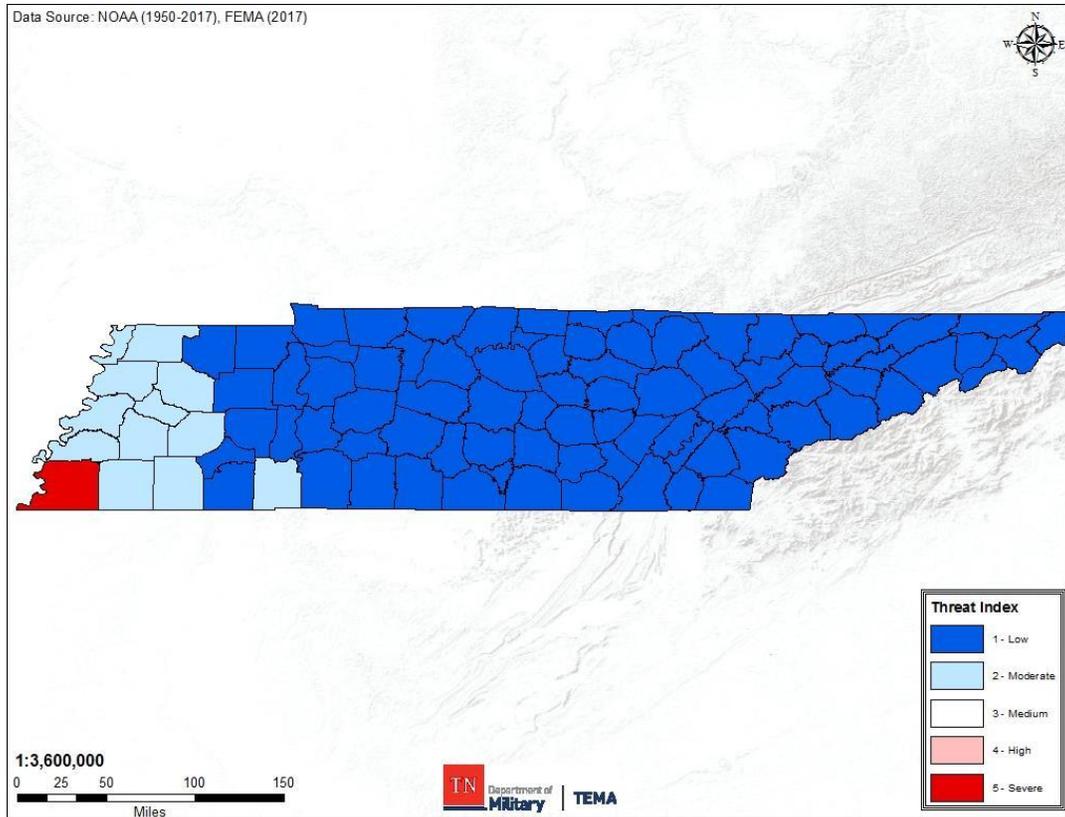


Figure 17 Extreme Temperatures Impact Density (Source: 2018 Tennessee Hazard Mitigation Plan)

The following narratives were obtained via the NOAA Storm Event Database for Cold/Wind Chill, Excessive Heat, and Extreme Cold/Wind Chill. A table containing all NOAA-recorded events between 2000-2024 for Maury County is included in Appendix C.

December 13, 2010 - With temperatures in the middle teens during the morning hours, a 73 year old woman who had mistakenly locked herself out of her house, died due to hypothermia in northwest Maury County.

December 23, 2022 - An abnormally strong and cold upper-level low pressure system plunged southward through much of the central and eastern United States, bringing a blast of Arctic air. These historically cold temperatures impacted all of Middle Tennessee beginning late on December 22, 2022. As the Arctic front swept eastward through the area, temperatures plummeted with low temperatures on the morning of December 23rd in the single digits and even below zero. This front also brought strong winds, and the combination of very cold air and strong winds resulted in brutal wind chills with values of -15 degrees to -30 degrees common area wide through December 24th. While snow was observed with this system, it did not last long and snow accumulations of only 1 to 2 inches was found approximately in areas north of Interstate 40. However, this snow resulted in significant impacts by early December 23rd with numerous traffic accidents and road closures reported. An AWOS station in Columbia measured a minimum wind chill of -24 degrees.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

June 30, 2023 - The first part of the day on June 30, 2023, was characterized by dangerous hot and humid conditions across most of Middle Tennessee as heat index values soared to 115 to 125 degrees. With these hot temperatures, an abundant amount of instability was in place across the area. With a mesoscale convective system (MCS) developing over Illinois and Indiana and diving southward, it moved into an environment that was favorable for severe thunderstorms. Damaging winds were the main hazards with this line of thunderstorms with several wind damage reports received through the evening hours. A CWOP station in Mount Pleasant measured a maximum heat index value of 117 degrees.

August 4, 2010 - Around the Nashville Metropolitan area, a couple dozen people were hospitalized suffering from heat exhaustion along with several others being hospitalized suffering from burnt feet. There were no known fatalities. There were also numerous reports of damage from the heat, including exploding tires on automobiles. Afternoon temperatures around 100 degrees and unusually high humidity led to heat index values between 110 and 115 degrees on August 4th.

Probability of Future Events - Once every 10 years

The probability of Maury County and its participating jurisdictions experiencing extreme temperature variations is difficult to predict but based on the historical record of events since 1950; it can reasonably be assumed that this type of event can occur frequently; 4 events over an 13-year period.

C. Risk Assessment

In the county, road traveling conditions, electrical lines, human health, and agricultural functions are some of the most vulnerable features.

The [National Risk Index](#) is a dataset and online tool to help illustrate the United States communities most at risk for natural hazards. It was built and designed by FEMA in close collaboration with various stakeholders and partners in academia; local, state, and federal government. The Risk Index leverages available source data for natural hazards and community risk factors to develop a baseline relative risk assessment for each county and census tract. Some of these community risk factors include social vulnerability which is determined by the data pulled from the Census performed every ten years. A higher social vulnerability score is proportional to a higher risk score.

National Risk Index Score for Cold Waves = No Rating

National Risk Index Score for Hot Waves = Relatively Low Rating

Although the National Risk Index is a well-valued tool it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was mid-level impact of the identified hazard. The results are below:

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Table 18: Extreme Temperature Risk based on selected FEMA Lifelines

Extreme Temperature	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Columbia							
County							
Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

Future Heat Events and Social Vulnerability

The cross-examination of NOAA Future Heat Events and CDC Social Vulnerability Index (2018) indicates that in 2030, Maury County will have a projected maximum of 8 total days with temperatures over 95 degrees. Multiple determinates such as socioeconomic status, household composition, disability, minority status, language, housing, and transportation heavily indicate how an individual will be affected by extreme temperatures. Individuals within vulnerable or underserved populations are not only more likely to experience the effects of extreme temperatures but they will likely be impacted to a higher degree than their counterparts.

D. Land Use and Development

Extreme temperature events have significant or even catastrophic impacts on property and critical infrastructure. Maury County is interested in protecting facilities, property, and infrastructure owned and managed by the jurisdictions. Disasters can damage not only private property but government property as well, placing a financial and operational burden on the County. Losses can extend from structures and contents to the interruption of services and the general economy. Many of these

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

structures could receive indirect impacts, such as downed electrical lines that cut off electricity to the facilities, frozen pipelines that crack, destroyed crops, and customers not being able to access travel to the structures due to ice-covered roads.

E. Multi-Jurisdictional Differences

Due to the nature of extreme temperatures, Maury County and the incorporated jurisdictions are equally susceptible. The entire State is vulnerable to extreme temperatures. Varying land elevations, the landscape's character, and proximity to large bodies of water play a significant role in the State's temperatures.

F. Summary

Maury County and the incorporated jurisdictions are equally vulnerable to extreme temperatures, affecting people's health and safety. Therefore, it is essential to have proper measurements in place to prevent critical structures from being vulnerable to utility failure during extreme temperatures.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

2.6 Flood

A. Hazard Overview

Flooding events occur when excess water from rivers and other bodies of water overflow onto riverbanks and adjacent floodplains. In addition, lower-lying regions can collect water from rainfall, and poorly drained land can accumulate rain through ponding on the surface. Floods in Maury County are usually caused by rain and may also be caused by snowmelt and man-made incidents.

The area adjacent to a channel is the floodplain, as shown in *Figure 19*. A floodplain is flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding. It includes the floodway, which consists of the stream channel and adjacent areas that carry flood flows, and the flood fringe, which are areas covered by the flood but do not experience a strong current. Floodplains are made when floodwaters exceed the capacity of the main channel or escape the channel by eroding its banks. When this occurs, sediments (including rocks and debris) are deposited that gradually build up over time to create the floor of the floodplain. Floodplains generally contain unconsolidated sediments, often extending below the stream's bed.

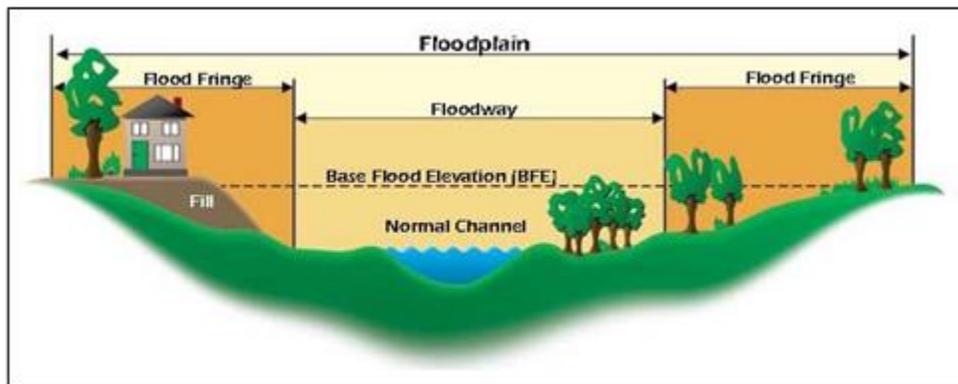


Figure 19 Characteristics of a Floodplain (Source: FEMA)

Three general health hazards common to flood events:

1. Floodwaters carry anything on the ground that the upstream runoff picked up, including dirt, oil, bacteria, animal waste, lawn, farm, and industrial chemicals. Pastures and areas where farm animals are kept or their wastes are stored can contribute to polluted waters in the receiving streams. Floodwaters also saturate the ground, which leads to infiltration into sanitary sewer lines. When wastewater treatment plants are flooded, there is nowhere for the sewage to flow. Infiltration and lack of treatment can lead to overloaded sewer lines that can back up into low-lying areas and homes. Even when flood waters dilute it, raw sewage can be a breeding ground for bacteria such as *E. coli* and other disease-causing agents.
2. The second health problem arises after most water has gone. Stagnant pools can become breeding grounds for mosquitoes, and wet building areas that have not been adequately cleaned breed mold and mildew. A building that is not thoroughly cleaned becomes a health hazard, especially for small children and the elderly. Another health hazard occurs when ducts in a forced air system are not adequately cleaned after inundation. When the furnace or air

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

conditioner is turned on, the sediments left in the ducts are circulated throughout the building and breathed in by the occupants. If the county water system loses pressure, a boil order may be issued to protect people and animals from contaminated water.

3. The third problem is the long-term psychological impact of having been through a flood and seeing one’s home damaged and personal belongings destroyed. The cost and labor needed to repair a flood-damaged home severely strain people, especially the unprepared and uninsured. There is also a long-term problem for those who know their homes can be flooded again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems.

B. County Profile

Riverine flooding occurs from inland water bodies such as streams and rivers. In Tennessee, flooding is highly dependent on precipitation amounts and is highly variable within the State.

HAZUS is a regional multi-hazard loss estimation model developed by FEMA and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state, and regional officials to plan and stimulate efforts to reduce multi-hazard risks to prepare for emergency response and recovery.

Table 20 Mapped Flood Insurance Zones

Flood Hazard Area	Description
HAZUS (100-yr)	Areas subject to inundation by the 1-percent-annual-chance flood event are generally determined using approximate methodologies. Mandatory flood insurance purchase requirements and floodplain management standards apply.
HAZUS (500-yr)	A 500-year flood zone is a moderate flood hazard area and is an area between the limits of the base flood and the 0.2- percent-annual-chance (or 500-year) flood. Mandatory flood insurance is not required.
Non-highlighted Areas	Minimal risk areas outside the 1-percent and .2 percent-annual-chance floodplains.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

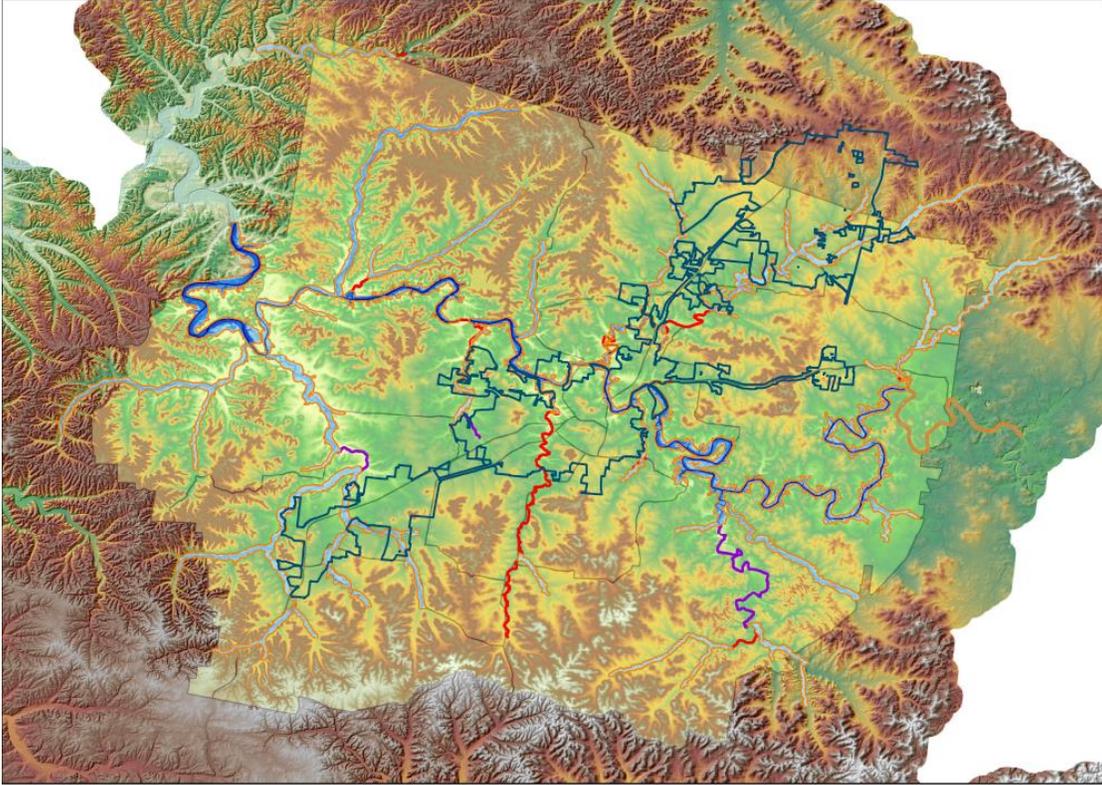


Figure 21: HAZUS 100-year Flood Map – Maury County, TN

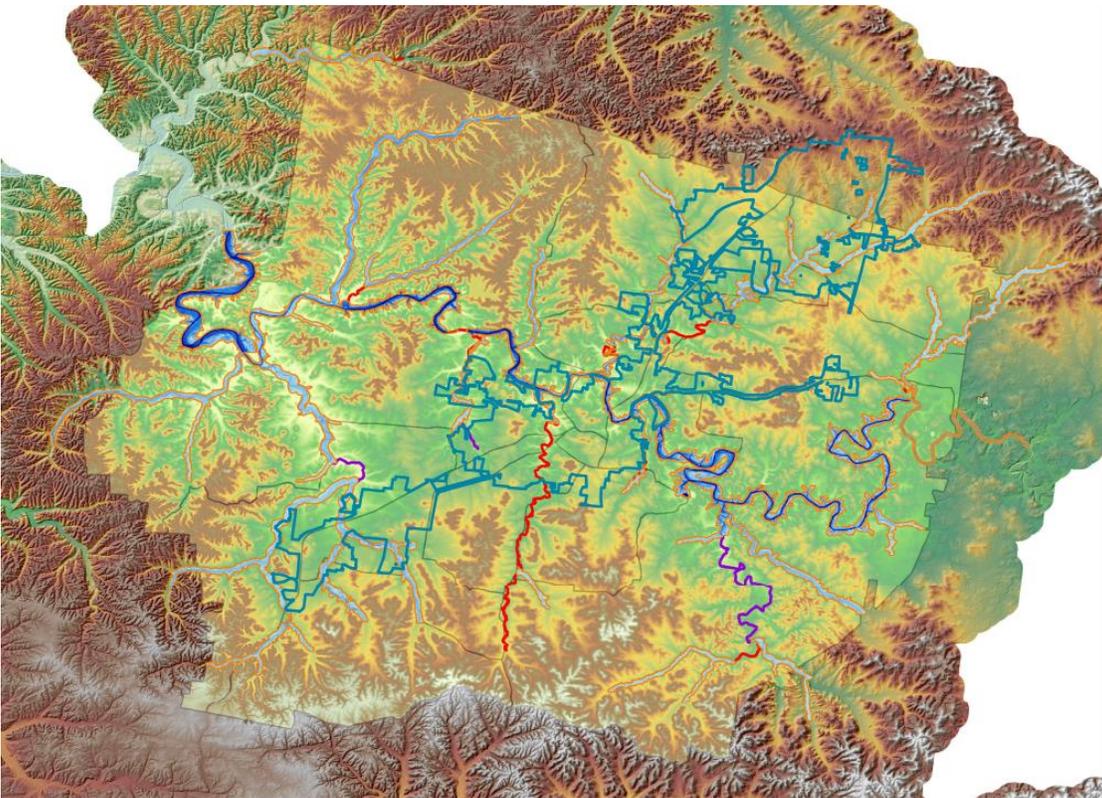


Figure 22: HAZUS 500-year Flood Map – Maury County, TN

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Table 23: NFIP Policy Data

Jurisdiction	CID Number	Policies In-Force	Insurance In-Force Whole \$
Maury County	470123	53	\$11,850,000.00
City of Columbia	475423	50	\$12,498,000.00
City of Spring Hill	470278	82	\$24,877,000.00
Mt. Pleasant	470125	13	\$3,184,000.00

Policies In-force: number of NFIP flood insurance policies

Insurance In-force whole \$: the value of building and contents insured by the NFIP

Written Premium In-force: total premiums paid for NFIP insurance policies

According to the National Flood Insurance Program, repetitive flood loss is a facility or structure that has experienced two or more insurance claims of at least \$1,000 in any given 10-year period since 1978. Severe repetitive loss is defined as a facility or structure that has experienced four or more insurance claims exceeding \$5,000 or two claims exceeding the value of the building. Within the NFIP, flood loss properties are usually considered the most vital structures to mitigate. The chart below provides a summary of repetitive and severe repetitive losses for Maury County.

Table 24: NFIP Loss Data

NFIP Loss Data for Maury County					
Jurisdiction	Total Losses	Closed Loses	Open Loses	CWOP Loses	Total Payments
Maury County	RL: 12				345,375.45
	SRL: 0	0	0	0	0
City of Columbia	RL: 52				799,621.44
	SRL: 35				609,119.55
City of Spring Hill	RL: 2				16,027.81
	SRL: 0	0	0	0	0
Mt Pleasant	RL: 7				176,610.54
	SRL: 0	0	0	0	0

RL: Repetitive Loss

SRL: Severe Repetitive Loss

Total Losses: number of flood insurance claims filed by policyholders

Closed Losses: number of flood insurance claims paid to policyholders

Open Losses: claims that are still being processed

CWOP Losses: claims that were "closed without payment"

Total Payments: total dollars paid to policyholders

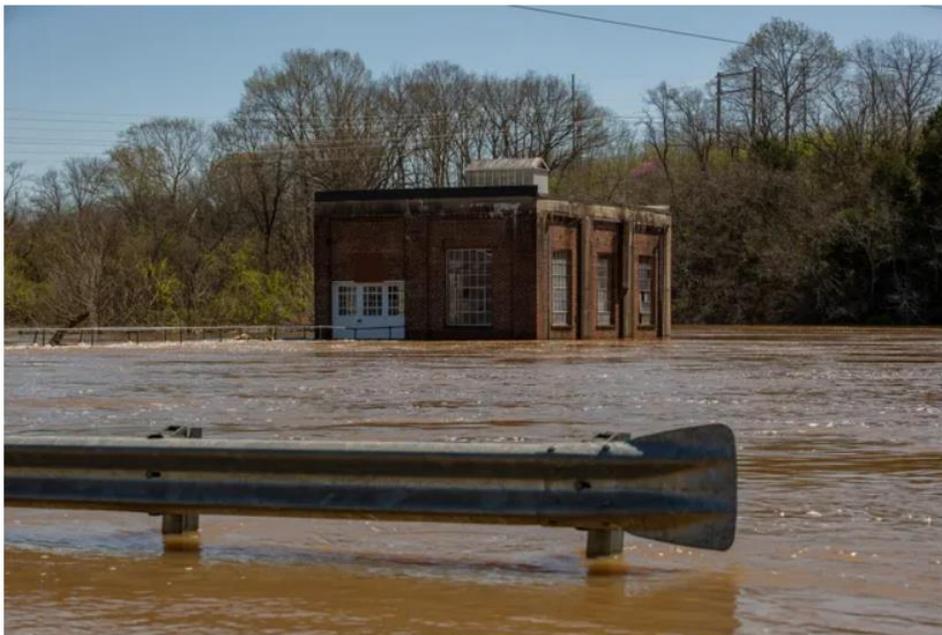
Over the past 26 years, there have been approximately 80 flooding events in Maury County. A table of [NOAA-reported flooding events](#) is located in Appendix C. The following narratives were obtained via the NOAA Storm Event Database. Only events resulting in injury, death, or extensive damage (greater than \$200.0K property/crop damage) were included as expanded narratives.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

January 23, 2002: Countywide, water was over some roads as much as 10 inches and threatening residences. Several auto accidents were reported due to flooding. 20 homes, 10 trailers, 27 businesses received damage. 50 people were evacuated. 25 bridges and 30 roads were closed. 50 hay bales were destroyed. Doppler radar estimated as much as 6 to 8 inches of rain fell over the southern part of Middle Tennessee during this flood event. \$2,000,000 worth of damage was estimated by Maury County EMA.

May 2010: Numerous streets were reported flooded with 5 inches of water in Columbia. Also, numerous homes, businesses, non-commercial buildings, along with several county, state, and federal roads across the county received damage due to the flood. A frontal boundary setup across Western and Middle Tennessee late Friday night (April 30), and remained through the weekend. A persistent southerly flow fed moisture into the area and perceptible water values rose to almost 2 inches, based on data from KOHX upper air soundings. As a series of shortwaves moved through, a band of showers and thunderstorms developed and remained nearly stationary for much of the day on Saturday, May 1st and Sunday, May 2nd, resulting in widespread record flooding across much of Middle Tennessee. Some of these thunderstorms became severe also, resulting in thunderstorm wind damage and seven confirmed tornadoes across Middle Tennessee. Damage estimates were \$1,400,000.

March 27, 2021: Significant flash flooding affected far northern Maury County and Spring Hill. An historic flash flooding event affected the central third of Middle Tennessee from the early morning hours on March 27 through the day into the early morning hours on March 28. A woman attempting to clear debris blocking a drainage culvert was swept through the culvert and drowned. A total of 7 deaths were reported from the flooding across Middle Tennessee, with 5 in Davidson County, 1 in Cheatham County, and 1 in Maury County. A Presidential Disaster Proclamation was declared for many counties in May 2021. This flash flood event was the worst seen in Middle Tennessee since the May 1-2, 2010 flood. Several roads were flooded and closed for multiple weeks with over 14 inches of water, including Fairview Road at Les Robinson Road west of Spring Hill, and Duplex Road between Highway 31 and Miles Johnson Parkway in Spring Hill. Flood waters also reportedly covered the parking lot of Walmart in Spring Hill on Highway 31. Damage estimates were \$334,900.



Floodwaters submerge the Riverwalk Park Dam in Columbia, Tenn., on Monday, March 29, 2021. Mike Christen / The Daily Herald

Figure 25: Flooding Columbia, TN March 29, 2021

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

September 12, 2020: A stationary frontal boundary stalled across the central portions of Middle Tennessee from Saturday, September 12, 2020 into Sunday, September 13, 2020. Persistent southwest flow aloft brought copious amounts of Gulf of Mexico moisture northward and interacted with this boundary, causing a roughly 7 hour period of nearly continuous heavy rain and thunderstorms. Rainfall totals reached over 6" in some locations, resulting in major flash flooding and river flooding along a narrow corridor across Maury County. One resident reported 9 inches of rainfall on September 13th. Numerous water rescues were conducted. The American Red Cross estimated that between 30 to 40 homes had been damaged in Mt Pleasant. Many trees and brush had been uprooted and had to be cleared from roadways, bridges and drainages. Houses along Old Hwy 43 had over 2 feet of water in them. In the City of Mt. Pleasant, the drainage systems in the historical square backed up causing over 12 inches of water on the roads. Significant Search and Rescue operations with over 15 people rescued from homes and businesses.



The belongings of a household are set out to dry in Sandy Hook, Tenn., on Wednesday, Sept. 16, 2020. A flash flood swept through the community days earlier.

Note the waterline on the side of the house at the bottom of the windows.

Probability of Future Events - (2 Events Every 10 Years)

The impact of extreme weather events may increase the frequency and intensity of flash flooding within Tennessee, particularly in highly urbanized regions such as Memphis, Nashville, Knoxville, and Chattanooga. Any area with extreme changes in deep terrain, predominately in East Tennessee, will experience significant flooding impacts.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Based on a historical record of 80 flood events over 26 years (1997 - 2023), there is a likelihood for a flood event to occur annually or semiannually. In conjunction with the future weather projections developed by ETSU Geoinformatics & Disaster Science Lab. The future risk of flooding in Maury County is tied to predicted changes in the precipitation patterns. Tennessee and Maury County have increasing trends in observed precipitation, and the Fourth National Climate Assessment (2018) reports that the broader Southeast region has seen an increase in the frequency and intensity of extreme rainfall events. There is high confidence that this trend will continue in the future. According to the Climate Mapping Risk Assessment (CMRA) Report, Maury County is expected to experience a modest increase in various flood indicators by mid- and late-century. Both the increase in total precipitation and extreme rainfall events will increase the risk of flooding in Maury County. The long-term (1895-2023) trend in annual precipitation shows an increase of +0.67" per decade, the medium-term (1961-2023) trend in precipitation shows a slightly moderated increasing trend of +0.55" per decade, but the short-term (1991-2023) trend shows a decrease of -0.21" per decade. This indicates that precipitation has increased in Maury County over the long and medium terms, but has shown a slight decreasing trend in the past three. The ETSU Climate Trend and Variations Report can be found in Appendix C.

C. Risk Assessment

The HMPC meeting cited flooding as a repetitive hazard in the county and jurisdictions. Discussion of commonly flood-prone areas took place, as did mention of improvements that have already been made to mitigate risks. Projects were also discussed at this time and can be found in the Mitigation Action Plan.

The [National Risk Index](#) is a dataset and online tool to help illustrate the United States communities most at risk for natural hazards. It was built and designed by FEMA in close collaboration with various stakeholders and partners in academia; local, state and federal government. The Risk Index leverages available source data for natural hazards and community risk factors to develop a baseline relative risk assessment for each county and census tract. Some of these community risk factors include social vulnerability which is determined by the data pulled from the Census performed every ten years. A higher social vulnerability score is proportional to a higher risk score.

National Risk Index Score for Flooding = relatively low rating (68.6)

Although the National Risk Index is a well-valued tool it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Table 26: Flooding Risk based on selected FEMA Lifelines

Flooding	FEMA Lifelines						
	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Columbia							
County							
Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

HAZUS Data and Methodology

A Level I HAZUS analysis was completed using a probabilistic risk assessment for the 100-yr and 500-year return periods. The HAZUS reports can be found in Appendix D. The Level I vulnerability assessment is presented below by return period.

Building Inventory (General Building Stock)

HAZUS estimates that 41,887 buildings in the region have an aggregate total replacement value of \$15,171 million.

- **Essential Facility Inventory:** HAZUS indicates that there is 1 hospital in the region with a total capacity of 255 beds. There are 32 schools, 17 fire stations, 4 police stations, and 1 emergency operation center.
- **General Building Stock Damage:** For the 100-year flood scenario, HAZUS estimates that about 68 buildings will be at least moderately damaged. This is over 60% of the total number of buildings in the scenario. There are estimated 3 buildings that will be destroyed completely.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Debris Generation

- **100-year Scenario:** The model estimates that a total of 2,384 tons of debris will be generated. Of the total amount, Finishes comprises 38% of the total, Structure comprises 32% of the total, and Foundation comprises 30%. If the debris tonnage is converted into an estimated number of truckloads, it will require 96 truckloads (@25 tons/truck) to remove the debris generated by the flood.
- **500-year Scenario:** The model estimates that a total of 3,629 tons of debris will be generated. Of the total amount, Finishes comprises 31% of the total, Structure comprises 36% of the total, and Foundation comprises 32%. If the debris tonnage is converted into an estimated number of truckloads, it will require 146 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Shelter Requirements

HAZUS estimates the number of households expected to be displaced due to the flood and the associated potential evacuation. HAZUS also estimates those displaced people that will require accommodations in temporary public shelters.

- **100-year Scenario:** The model estimates 342 households (or 1,027 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 190 people (out of a total population of 100,910) will seek temporary shelter in public shelters.
- **500-year Scenario:** The model estimates 384 households (or 1,152 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 215 people (out of a total population of 100,910) will seek temporary shelter in public shelters.

D. Land Use and Development

All future development within the floodplain may be considered at risk. An increase in population will likely increase the number of buildings and infrastructure. New development in unincorporated areas could potentially occur in areas prone to flooding and increase vulnerabilities and potential losses; however, most land use regulations require the consideration of flooding during the development process.

E. Multi-Jurisdictional Differences

Flooding affects all jurisdictions differently; that is why it is essential to document the depth, duration, and time that flooding occurred. These differences are noted in past occurrences to demonstrate the toll that flooding can take on the county's rural and urban areas. Due to the topography of Maury County with its rolling hills and deep valleys, flood events are prone to occur near the streams within the county. The Flood Insurance Rate Index Map is located within Appendix D. FIRM's illustrate the areas at risk and depth of flooding within the county and its incorporated jurisdictions.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Intersections & Roads that consistently flood in Maury County:

- Duplex Rd at Augusta Trace Drive – Spring Hill
- [Old Kedron Road at McCutcheon Creek](#) – Spring Hill
- Port Royal Road at Tom Lund Road – Spring Hill
- Experiment Station Lane at Lion Parkway – City of Columbia
- East Forsythe Street – City of Columbia
- Martin Drive – City of Columbia
- East 7th in the 300 block area – City of Columbia
- Riverside Drive – City of Columbia
- Mockingbird Drive – City of Mt. Pleasant
- Locust Street – City of Mt Pleasant
- West Cooper Street – City of Mt Pleasant
- North Main Street – City of Mt Pleasant
- Railroad Street – City of Mt Pleasant
- Mt Joy Road – City of Mt Pleasant
- Gillespie Lane – Maury County
- [Rally Hill Road at Flat Creek](#) – Maury County

Waterways that are prone to flooding in Maury County:

- [Duck River in the Riverside Community](#), City of Columbia, TN
- McCutcheon Creek in Spring Hill, TN
- [Big Bigby Creek in Mt Pleasant, TN](#)
- Duck River – Maury County

F. Summary

Severe flooding has the potential to inflict significant damage in Maury County. The total economic loss estimated for the 100-year riverine flood is \$185.96 million. The total economic loss estimated for the 500-year riverine flood is \$223.37 million. Residential, commercial, and public buildings and critical infrastructures such as transportation, water, energy, and communication systems may be damaged or destroyed by flood waters. During a flood event, chemicals and other hazardous substances may contaminate local water bodies. Flooding kills animals and, in general, disrupts the ecosystem. Snakes and insects may also make their way to the flooded areas.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

2.7 Geological

A. Hazard Overview

The speed of onset of a landslide or sinkhole event is very rapid and unpredictable. However, broad areas that are susceptible to this type of hazard may be identified by soil samples and/or surrounding geological/riverine features. This hazard is usually measured in terms of yards of soil displaced and financial damage caused. Land subsidence and sinkholes can develop from both natural processes or as a consequence of indirect or direct human intervention. Sinkholes formed as a consequence of human activity typically result from: the pumping of water, oil, and gas from underground reservoirs; alteration of surface runoff patterns; dissolution of limestone aquifers; the collapse of underground mines; drainage of organic soils; and initial wetting of dry soils (hydro compaction). Land subsidence could occur anywhere in Tennessee and is usually not easily observable because it occurs over a large area. Land subsidence and sinkholes can occur naturally in parts of the country with Karst landscapes. Karst landscapes typically feature caves, underground water sources, and sinkholes.

B. County Profile

It is difficult to predict where land subsidence and sinkholes will occur accurately. Still, the USGS has managed to identify Tennessee areas with higher risk potential. It is doubtful that a sinkhole will form in an area not considered a Karst formation. Figure 31 illustrates karst landscapes across the country, the bedrock in which they are found, and the sinkhole hotspots. As shown, eastern and middle Tennessee have a higher tendency for sinkhole hotspots.

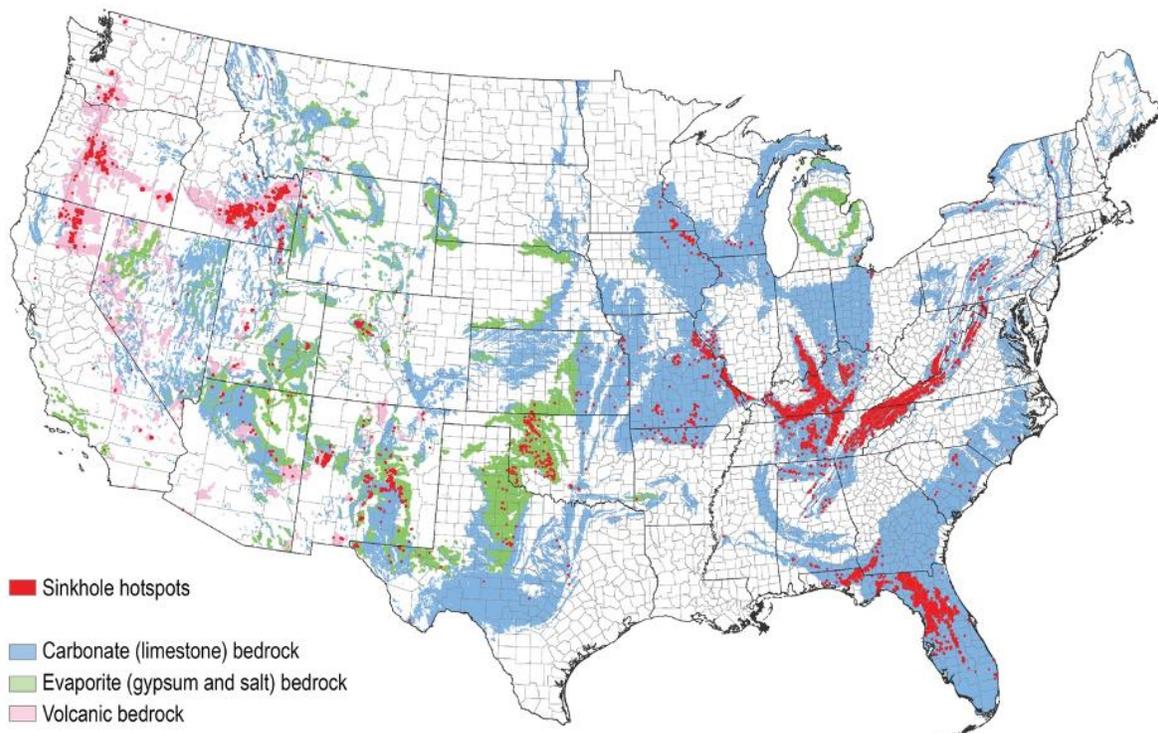


Figure 27: Karst Map of the Conterminous United States (Source: United States Geological Service)

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

The following table contains the documented sinkholes for Maury County and was obtained via the USGS Landform database.

Table 28 Sinkholes in Maury County

Sinkholes	Depth (ft)	Area (km2)	Volume (m3)
1,347	42.3	0.2392	93,298

Sinkhole Database: <https://tnlandforms.us/landforms/sinks.php>

11/11/2023: A 10 year old horse named Skylar became trapped in a sink hole filled with mud in the Santa Fe community of Maury County. By the time rescuers arrived the horse had sunk up to her neck. Rescue crews brought in heavy equipment to start digging her out. The more the horse struggled the deeper she went so a vet sedated her allowing rescuers to successfully extricate her from the sink hole. She was cleaned up and reportedly doing well. [First Responders rescue horse from Maury County sink hole.](#)

05/25/2021: A baby calf fell into a 20 – 30 foot sink hole on Dry Creek Road in the Mt. Pleasant community of Maury County. Maury County Fire Department and Animal Rescue officials safely removed the baby calf from the sink hole. [Crews successfully rescue calf from sinkhole in Maury County.](#)

02/11/2020: A horse fell into a sink hole that formed overnight off Forest Ridge Trail of Maury County. The Maury County Fire Department and Animal Control responded. After digging a pathway out of the sink hole the horse was able to walk out of the sink hole. [Maury County Fire Dept. rescues horse from sinkhole on Forest Ridge Trail.](#)

03/01/2016: Part of Hwy 31 Northbound collapsed as a result of a sink hole causing traffic the portion of the road to be shut down until repairs could be made. [Crews repair sink hole in Maury County.](#)

05/17/2010: [State Route 7 in Maury County, TN closed](#) until late 2010 due to landslide. Due to severe damage from the flooding that occurred in early May, a portion of State Route 7 in Maury County will be closed for several months. Heavy rains saturated the ground underneath the pavement, causing two sections of the roadway to collapse and slide down a steep embankment. Traffic is currently being detoured around the roughly 3 mile stretch of SR 7, which is located in the Santa Fe community in the northwest section of Maury County. The two landslide areas involve approximately 1500 feet of roadway. In some places, the road sank 20 feet below its original elevation. TDOT has initiated an emergency contract for geotechnical studies of the soil in the area and for the design of the repairs.

Probability of Future Events – 2 new sinkholes every 5 years

Heavy rains and flooding can trigger sinkholes. An increase in the number and intensity of severe storms, and resulting heavy rains and flooding, may also result in sinkholes developing more frequently. With several areas within the state increasing in population and infrastructure (both public and private), this could damage infrastructure, property values, and commerce disruption. Historically, most sinkhole impacts have occurred along the border between Tennessee's central and east regions. This makes Maury County vulnerable to these constant changes.

C. Risk Assessment

Sinkholes and surface depressions receive precipitation runoff which filters down through the soil and rock strata into the cavities in the rock and becomes part of the groundwater regime. This serves to replenish the groundwater supply. However, when trash and waste materials are dumped into the sinkholes and depressions,

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

water that filters through the sinkholes then becomes contaminated, significantly affecting the groundwater supply.

Many buildings and the majority of infrastructure networks throughout the county can be vulnerable to sinkholes. This risk is minimal, but the nature of sinkholes is challenging to predict. Therefore, the committee found it essential to include this natural hazard in their plan.

The [National Risk Index](#) is a dataset and online tool to help illustrate the United States communities most at risk for natural hazards. It was built and designed by FEMA in close collaboration with various stakeholders and partners in academia; local, state and federal government. The Risk Index leverages available source data for natural hazards and community risk factors to develop a baseline relative risk assessment for each county and census tract. Some of these community risk factors include social vulnerability which is determined by the data pulled from the Census performed every ten years. A higher social vulnerability score is proportional to a higher risk score.

National Risk Index Score for Landslide = Relatively Moderate Rating

Although the National Risk Index is a well-valued tool it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

Table 29: Geological Risk based on selected FEMA Lifelines

Geologic	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Columbia							
County							
Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

D. Land Use and Development Trends

In rural areas, sinkholes usually develop naturally from the normal weathering process. However, sometimes the grading for ponds or ground silos in the soil underlain by a cavernous rock can and often leads to the development of new sinkholes, as can the concentration of water flow in ditch lines or the re-routing of surface water.

E. Multi-Jurisdictional Differences

Due to the nature of Sinkholes, Maury County and all incorporated jurisdictions are equally susceptible to sinkholes.

F. Summary

The relief of the ridges and mountains can be very dramatic and scenic. However, these unusual and often dramatic scenes can be interrupted by the sudden collapse of a roadway or a house or even the flooding of a sinkhole basin crossed by a road or occupied by a residential, public, or commercial structure. The karst landscape can impact many areas of Tennessee, causing damage to all facilities and landscapes. In rare and dramatic cases, karst may cause bodily harm or injury. Sinkholes are not incredibly dangerous at this time in Maury County; however, due to their unreliable nature, the HMPC finds it essential to capture this natural occurrence in Tennessee.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

2.9 Infrastructure Incidents

A. Hazard Overview

Infrastructure disasters are complex scenarios. They can be challenging to respond to, prepare for, and mitigate, as the infrastructure is often a mechanism for responding to, preparing for, and mitigating hazards. Further, infrastructure is usually owned by various public and private interests, making delegating responsibilities difficult.

An infrastructure incident can be either natural or man-made due to physical or cyber-attacks, flooding, tornadoes, or other severe weather events. Infrastructure incidents, specifically ones affecting critical infrastructure, can affect the areas in which they reside, affecting transportation, life safety, and economic resources. Critical infrastructure, as defined by the USA Patriot Act of 2001 (42 U.S.C 5195c(e).), is "systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters." Infrastructure includes but is not limited to roadways, bridges, hospitals, utilities, airports, and community support facilities (fire, law enforcement, search/rescue).

Infrastructure incidents can lead to a failure of communications systems and energy sources, leading to further issues from primary or secondary disasters. The main infrastructure incidents affecting a locality are roadway incidents, cyberattacks, and utility outages. According to the American Society of Civil Engineers, 4.4% of Tennessee bridges are structurally deficient, 5% of roads are in poor condition, and the state experiences 584 power outages between 2008-2017.

B. County Profile

Critical infrastructure entities can be found for Maury County on the Maury county Critical Infrastructure Dashboard (Critical2TN), which is to be utilized as a resource for situational awareness before, during, and after an incident. Due to the sensitivity of this critical infrastructure, it is for official use only. Maury County contains 52 critical infrastructure entities.

Probability of Future Events – Unable to Quantify

C. Risk Assessment

Infrastructure incidents can be challenging to predict as they can occur for many reasons, with or without notice. Severe weather events can cause damage or destruction to infrastructure resulting in complete loss of capabilities, as can any form of cyber or physical attack. All assets are at risk; however, an infrastructure incident is more likely to occur in urban, densely populated areas as that is where most infrastructure is located.

The [Social Vulnerability Index \(SVI\)](#) is a dataset that uses 16 census variables that help local officials identify communities that may need support before, during or after disasters. Unfortunately, the National Risk Index does not capture non-natural disaster impacts, therefore, using the SVI can help public health officials and local

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

planners better prepare for and respond to emergency events such as critical infrastructure incidents.

Social Vulnerability Index Score for Maury County = low level vulnerability

Although the Social Vulnerability Index is a well-valued resource it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

Table 30: Infrastructure Incident Risk based on selected FEMA Lifelines

Infrastructure Incident	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Columbia							
County							
Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

D. Land Use and Development Trends

Maury County and its incorporated jurisdictions include codes to regulate safety and are consistent with state and federal regulations to ensure that infrastructure has the best chance of withstanding destructive events.

E. Multi-Jurisdictional Differences

The entirety of Maury County is at risk for an infrastructure incident, specifically road-based and utility-based events. However, more highly populated areas are at a higher risk for building-based infrastructure incidents. Critical infrastructure incidents may

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

affect the entire county but would more than likely take a more significant toll on vulnerable populations within the area.

F. Summary

Preparing for incidents before they occur is the most productive way to mitigate the risk of infrastructure incidents throughout Maury County. All facilities, roadways, and utilities could be at risk for an infrastructure incident including severe weather or direct/indirect attack.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

2.10 Severe Weather

A. Hazard Overview

Thunderstorms

Thunderstorms result from the rapid upward movement of warm, moist air. They can occur inside warm, moist air masses and at fronts. As the warm, moist air moves upward, it cools, condenses, and forms cumulonimbus clouds that can reach heights greater than 35,000 ft. Thunderstorms are responsible for developing and forming many severe weather phenomena, posing significant hazards to the population and landscape. Damage from thunderstorms is mainly inflicted by downburst winds, large hailstones, and flash flooding caused by heavy precipitation. Stronger thunderstorms can produce tornadoes and waterspouts.

- Maury County experiences an average of 50 thunderstorms annually, characterized by heavy rainfall, strong winds, and frequent lightning, posing risks of flash flooding and power outages.
 - **May 8th, 2024:** On May 8th 2024 at approximately 17:30, a strong storm entered Maury County from the southwest. When it reached the area of Iron Bridge Road and Mount Olivet Road, it developed into a tornado which stayed on the ground for approximately 12 miles. Approximately 237 residences were damaged some of which were destroyed. The remainder of Maury County experienced strong winds that resulted in damaged roofs and downed trees. Max wind speed is estimated to have been 75 MPH. Some of the most extensive damage was on Old Hwy 99 and Blackburn Lane. This tornado affected areas of Maury County, City of Columbia and the area of Spring Hill.

Wind

All jurisdictions are vulnerable to receiving damage from severe winds. The NOAA Storm Data Preparation document categorizes wind into three different types, as defined below.

- High Wind: Sustained non-convective winds of 40mph or greater lasting for one hour or longer or winds (sustained or gusts) of 58 mph for any duration on a widespread or localized basis.
- Strong Wind: Non-convective winds gusting less than 58 mph or sustained winds less than 40 mph, resulting in a fatality, injury, or damage.
- Thunderstorm Wind: Winds arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 58 mph, or winds of any speed (non-severe thunderstorm winds below 58 mph) producing a fatality, injury, or damage.

Historically, severe wind events occur multiple times yearly in Maury County. It is not unusual for Maury County to experience winds speeds up to 80 KMH (70 mph), causing structural damage, power outages, and downed trees. Based on a historical record of 199 wind events over 74 years (1950- 2024), with 187 since 1990 the historic frequency calculates a 100% chance of this event occurring yearly.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

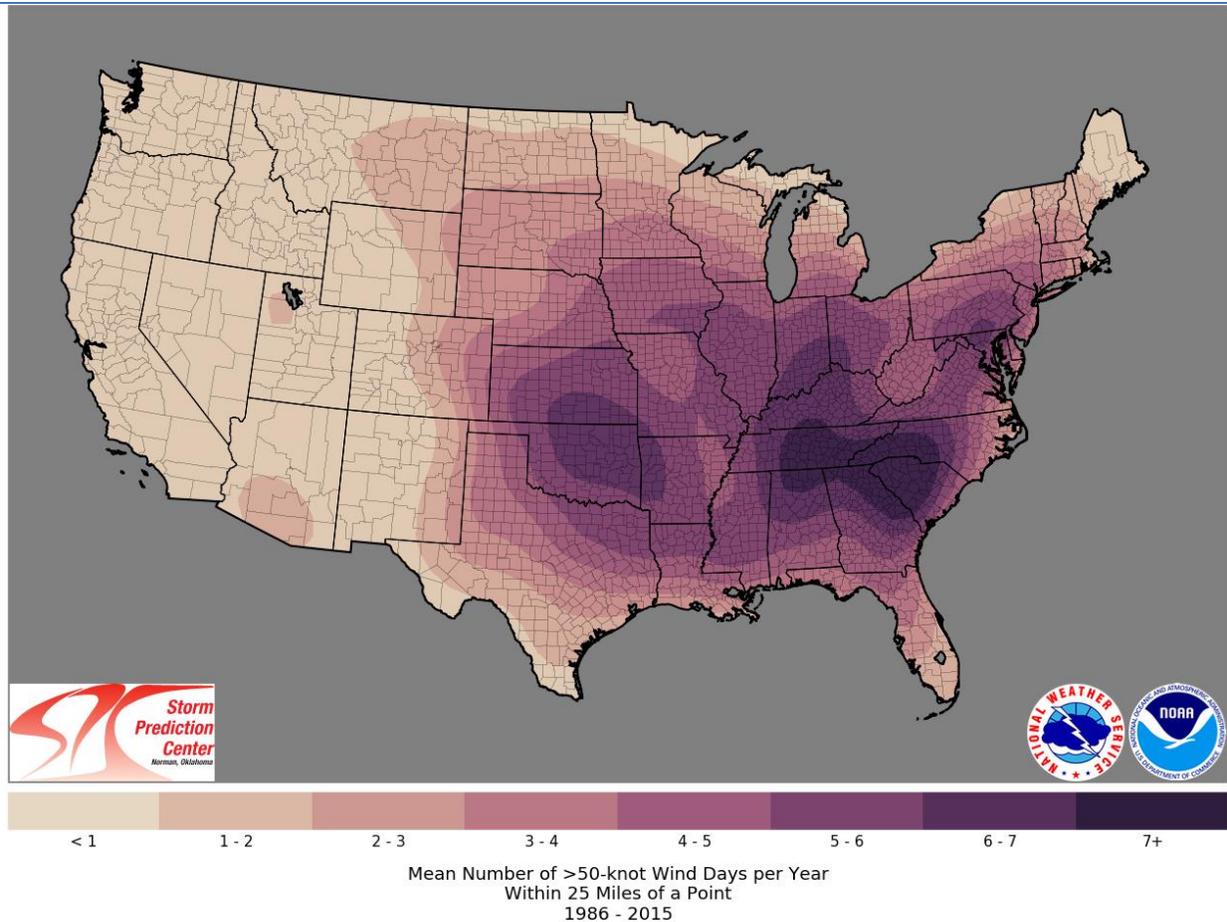


Figure 31: Mean Number of >50-knot Wind Days per Year (1986-2015) (source: NOAA)

- **June 28th, 2018:** At 09:27 a thunderstorm with high winds measuring 60 mph entered Maury County causing an estimated \$220,000 in property damage. Emergency Management received numerous reports of trees blown down across Spring Hill. One tree fell through a house on Neeleys Bend leaving it uninhabitable, and a large tree branch fell onto another house on Neeleys Bend causing significant roof damage. At 11:52 numerous trees were blown down in and around Mount Pleasant with one tree falling onto a home making it uninhabitable. At 11:59 numerous trees and power lines were blown down around the intersection of Elk Ridge Road and Enterprise Road.
- **April 13th, 2022:** A line of severe thunderstorms moved across Middle Tennessee during the late afternoon and evening hours on April 13, 2022. Widespread damaging winds affected most counties of Middle Tennessee, with numerous trees and power lines blown down along with widely scattered structural damage. Spring Hill, TN recorded winds of at least 45 mph, The City of Columbia recording winds of at least 48 mph. More than 2,000 customers were without power due to snapped power poles and downed power lines.
- **July 08 2016:** At 20:21 CST Thunderstorm winds snapped and uprooted a 200 yard wide swath of trees across Houston Cheek Road in the Parks Station community of Maury County, TN. One tree fell on a carport. Highway Department equipment was needed to clear the road. The wind gust was estimated to be 60 mph. Trees were blown down on Highway 31 just north of Duplex Road in Spring Hill. Trees were blown down on Pipkins Hills Drive in Spring Hill. A home weather station in Spring Hill measured a wind gust of 65 MPH.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

- **August 26, 2016:** Social media reports indicated a microburst struck portions of Spring Hill. Trees were blown down on Kedron Road across from the Kings Creek Golf Course. 50-60 lbs. planter urns were moved and a strong playground slide was also ripped off in the area. Winds were estimated around 60 mph. Trees were also reported down in Santa Fe, Mount Pleasant, Hampshire and Columbia.

Hail

Hail forms when updrafts carry raindrops into icy areas of the atmosphere, where they freeze into ice. Hailstorms occur throughout the spring, summer, and fall but are more frequent in late spring and early summer. Hailstones are usually less than two inches in diameter and can fall at speeds of 120 mph. Hail causes nearly \$1 billion in damage to crops and property yearly in the United States. *Table 32* provides an overview of the typical impacts on a community related to hailstone size.

Table 32: TORRO Hail Index (Source: The Tornado and Storm Research Organization)

Scale	Description	Max Diameter (mm)	Typical Damage
H0	Pea	5-9	No damage
H1	Mothball	10-15	Slight general damage to crops and plants
H2	Marble	16-20	Significant damage to crops and vegetation
H3	Walnut	21-30	Severe damage to fruits and crops, damage to glass and plastic structures, wood and paint scored
H4	Pigeons Egg	31-40	Widespread glass damage, auto-body damage
H5	Golf Ball	41-50	Destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Hens Egg	51-60	Grounded aircrafts dented; brick walls pitted
H7	Tennis Ball	61-75	Severe roof damage and risk of serious injury
H8	Softball	76-90	Severe damage to aircrafts
H9	Grapefruit	91-100	Extensive structural damage, risk of severe or fatal injuries to people caught in storm
H10	Melon	>100	Extensive structural damage, risk of severe or fatal injuries to people caught in storm

- Hailstorms in Maury County are less common but can occur several times a year, with hailstones often ranging from pea-sized to golf ball-sized, causing significant damage to crops, vehicles, and buildings.
 - **May 6th, 2024:** 1.75-inch hail recorded off Hwy 50 east of Williamsport.
 - **June 15th, 2018:** 1.00-inch hail recorded near Sunnyside Lane in Maury County.
 - **March 27th, 2021:** 1.75-inch hail recorded west of Duplex Rd. in the city of Spring Hill
 - **March 27th, 2021:** 1.00-inch hail recorded East of I-65 in the City of Spring Hill.
 - **April 2nd, 2006:** Hail the size of a hen egg was reported. Newspaper story related that 100 homes were damaged by the hail in Spring Hill, causing \$100,000 worth of damage.
 - **March 31st, 2016:** Scattered showers and thunderstorms developed across Middle Tennessee during the afternoon and evening hours on March 31. A few of the storms became supercells and produced two weak tornadoes along with numerous reports of large hail and wind damage. Flash flooding also occurred in parts of Lawrence and Giles Counties where thunderstorms repeatedly moved across the same areas throughout the day. Golf ball size hail was reported on the west side of Columbia.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Lightning

Lightning is an electrical discharge between positive and negative regions of a thunderstorm. Lightning is one of the more dangerous weather hazards in the United States. Annually, lightning is responsible for deaths, injuries, and millions of dollars in property damage, including damage to buildings, communications systems, power lines, and electrical systems. Lightning also causes forest and brush fires and deaths, and injuries to livestock and other animals. According to the National Lightning Safety Institute, lightning causes more than 26,000 fires in the United States annually. The institute estimates property damage, increased operating costs, production delays, and lost revenue from lightning and secondary effects to be more than \$6 billion annually. Impacts can be direct or indirect. People or objects can be struck or damaged when the current passes through or nearby.

Lightning strikes in Maury County occur frequently during thunderstorms, with an estimated 15-20 incidents per year, leading to potential wildfires, property damage, and safety hazards for residents.

- **February 2nd, 2022:** Storms occurred in the county, two homes in the City of Columbia were struck by lightning. Columbia Fire Department Responded to both areas. One of the stuck houses experienced damage. [Columbia Home struck by lightning.](#)
- **October 1st, 2015:** Lightning struck a home on Clara Mathis Drive in Spring Hill and started a fire. As emergency crews were fighting the fire, lightning struck the home again. Lightning also struck a doctor's office in Spring Hill, but the extent of the damage is unknown.
- **December 28, 2016:** At 18:46 Lightning struck near a 500 gallon propane tank in the Bigbyville community of Maury County, TN and traveled underground, which ruptured the gas line, then traveled towards a home blowing a hole in the refrigerant line on the HVAC

Winter Weather

A freeze occurs when temperatures are below 32 degrees Fahrenheit for a period. These temperatures can damage crops, burst water pipes, and create layers of "black ice." Winter storms are events that can range from a few hours of moderate snow to blizzard-like circumstances that can affect driving conditions and impact communications, electricity, and other services. In Maury County, all jurisdictions are vulnerable to freezes and moderate winter storms, but not to the severity level seen in much of the northern U.S. Based on previous occurrences, Maury County can experience multiple winter weather events in one year affecting all jurisdictions equally. The severity of winter storms is commonly measured by inches of snowfall. It is possible for snowfall to accumulate up to 1 foot in Maury County and/or ice accumulations to cause hazardous conditions due to its proximity to and around the mountains. U.S. Mean snowfall per year is from 6-12" annually average mean snowfall per year is below in *Figure 33*.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

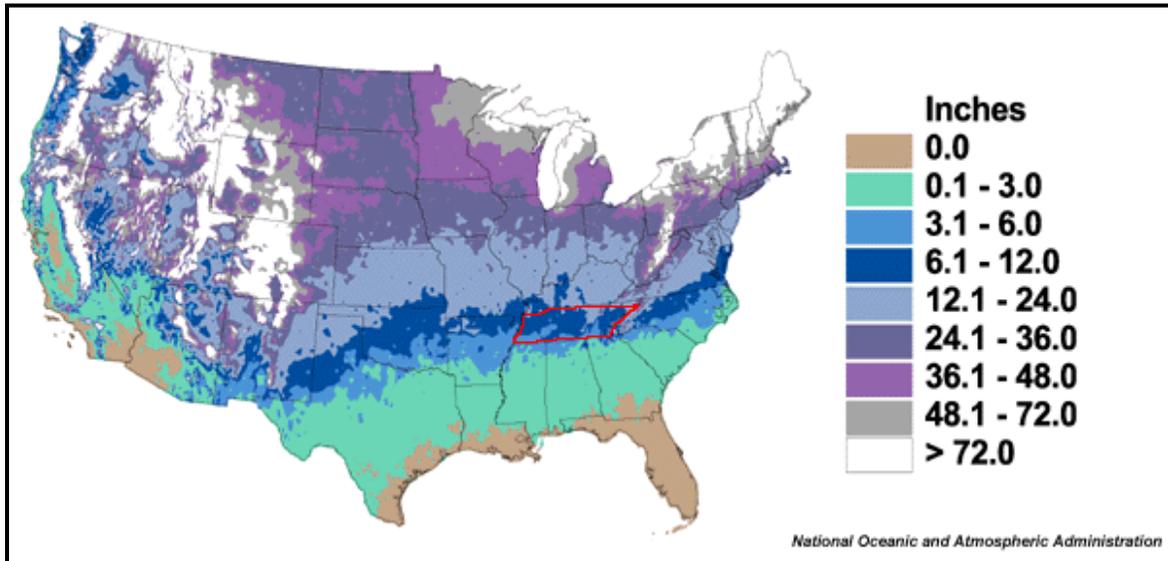


Figure 33: Average Snowfall per Year (Source: NOAA)

- February 17-18, 2021:** After a major winter storm brought significant freezing rain, sleet, and snow to Middle Tennessee earlier in the week, another winter storm from Wednesday February 17 into Thursday February 18, 2021, brought the most widespread, heavy snowfall Middle Tennessee had seen in 5 years. The majority of the snow fell during the afternoon and evening hours on February 17, but another wave of light snow occurred during the late morning and afternoon on February 18. Snowfall totals ranged from 2 to 6 inches across Middle Tennessee. The City of Spring Hill recorded 2 inches of snow, The City of Mt. Pleasant recorded 2 inches of snow, the City of Columbia recorded 2.5 inches of snow, and the Maury County as a whole experienced anywhere from 2-4 inches of snow.
- January 22-27, 2022:** An abnormally strong and cold upper-level low pressure system plunged southward through much of the central and eastern United States, bringing a blast of Arctic air. These historically cold temperatures impacted all of Middle Tennessee beginning late on December 22, 2022. As the Arctic front swept eastward through the area, temperatures plummeted with low temperatures on the morning of December 23rd in the single digits and even below zero. This front also brought strong winds, and the combination of very cold air and strong winds resulted in brutal wind chills with values of -15 degrees to -30 degrees' common area wide through December 24th. While snow was observed with this system, it did not last long and snow accumulations of only 1 to 2 inches was found.
- January 14th, 2024:** A winter weather system began traveling through the state, bringing dangerously cold temperatures and snow to Tennessee. This event was followed by another system on Thursday, Jan. 18 that brought wintry precipitation through a large portion of the state. Temperatures are expected to stay below freezing throughout the weekend. Multiple road ways experienced treacherous accumulation, residents were urged to stay home and stay off secondary roadways. Following the initial system, the City of Mt. Pleasant Water System 1 was compromised resulting in a multiple day response from Maury County OEM.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

B. County Profile

The entirety of Maury County is at risk of severe weather. Severe weather events are most likely in the spring and summer months and during the afternoon and evening hours, but they can occur year-round and at all hours. In terms of magnitude, the NWS defines thunderstorms in terms of severity. A severe thunderstorm produces winds greater than 57 miles per hour and/or hail greater than 1 inch in diameter and/or a tornado. The NWS chose these severity measures as parameters more capable of producing considerable damage. Hailstones can vary in diameter, and in Tennessee, there have been records of hail up to 2.75 inches.

Event narratives were obtained via the NOAA Storm Event Database and are included for each severe weather category. Tables containing NOAA-recorded severe weather events between 1950- 2024 for Maury County are contained in Appendix C.

Probability of Future Events - Once Every Year

In order to determine the likelihood of future severe weather occurrences in Maury County historic data and weather patterns were analyzed. In conjunction with the future weather projections developed by ETSU Geoinformatics & Disaster Science Lab, it can be assumed that severe weather could occur in Maury County on a 3 year basis. Appendix C highlights projections developed by the ETSU Geoinformatics & Disaster Science Lab.

C. Risk Assessment

Severe weather is not as spatially defined in any location in Maury County; therefore, the entire County is equally at risk of severe weather. This includes the entire County population, all critical facilities, buildings (commercial and residential), and infrastructure.

The [National Risk Index](#) is a dataset and online tool to help illustrate the United States communities most at risk for natural hazards. It was built and designed by FEMA in close collaboration with various stakeholders and partners in academia; local, state and federal government. The Risk Index leverages available source data for natural hazards and community risk factors to develop a baseline relative risk assessment for each county and census tract. Some of these community risk factors include social vulnerability which is determined by the data pulled from the Census performed every ten years. A higher social vulnerability score is proportional to a higher risk score.

National Risk Index Score for Hail = very low

National Risk Index Score for Strong Wind = relatively high

National Risk Index Score for Ice Storm = relatively low

National Risk Index Score for Winter Weather = relatively low

Although the National Risk Index is a well-valued tool it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Table 34: Severe Weather Risk based on selected FEMA Lifelines

Severe Weather	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Columbia							
County							
Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

D. Land Use & Development

Increased development and population growth can reasonably translate to increased damages resulting from severe weather events. The population in Maury County is expected to rise similarly to its surrounding counties and Tennessee. An increase in population will lead to an increase in the number of residential and commercial structures as well as new and improved infrastructure, which in turn means an increase in the number and value of assets at risk of wind damage.

E. Multi-Jurisdictional Differences

The entirety of Maury County and the incorporated jurisdictions, including all assets, can be considered equally at risk of severe weather events. This includes the entire population, all critical facilities, buildings (commercial and residential), and infrastructure.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

F. Summary

Maury County is subject to severe weather hazards, including thunderstorms, wind, lightning, and hail. Associated damages include impacts to utilities, residential and commercial buildings/property, and agricultural losses. High wind can cause trees to fall and potentially result in injuries or death; lightning can lead to house fires and serious injury. Hail can cause injury and severe property damage to homes and automobiles.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

2.12 Tornadoes

A. Hazard Overview

Tornadoes have the potential to produce winds over 200 mph (EF5 on the Enhanced Fujita Scale) and can be very expansive. Before February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita scale. Both scales are wind estimates (not measurements) based on damage. The new scale provides more damage indicators (28) and associated degrees of damage. *Table 35* shows the wind speeds associated with the enhanced Fujita scale ratings and the damage that could result at different intensity levels.

Table 35: Enhanced Fujita Scale

EF Rating	3 Second Wind Gust (mph)	Estimated Damage
0	65-85	Light Damage. Slight damage to roofs, gutters, siding, tree branches broken, shallow-rooted trees overturned
1	86-110	Moderate Damage. Mobile homes damaged, exterior portions of homes damaged or lost (i.e., roofs, doors, windows)
2	111-135	Considerable Damage. Mobile homes destroyed, cars lifted, well-constructed home frames shifted, roofs torn off, light-object missiles generated, large trees uprooted or snapped.
3	136-165	Severe Damage. Severe damage to large buildings, entire home stories destroyed, trees debarked, trains overturned, heavy vehicles lifted and thrown, structures with weaker foundations thrown
4	166-200	Devastating Damage. Well-constructed houses and whole frame houses leveled, cars thrown, small missiles generated
5	200+	Incredible Damage. Substantial frame houses leveled off foundations and the automobile-sized missiles generated, and high rises experience considerable damage and deformation

According to the Glossary of Meteorology (AMS 2000), a tornado is "a violently rotating column of air, pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a funnel cloud." Most tornadoes move from southwest to northeast or west to east.

Although tornadoes can occur in any location, most of the tornado activity in the United States exists in the Mid-West and Southeast. An exact season does not exist for tornadoes; however, most occur between early spring and mid-summer (February – June). The onset of tornado events is rapid, giving those in danger minimal time to seek shelter. The current average lead time, according to NOAA, is 13 minutes. A tornado can reach wind speeds of 40 mph to 250 mph and higher. The following map illustrates the frequency of tornadoes in Tennessee.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

B. County Profile

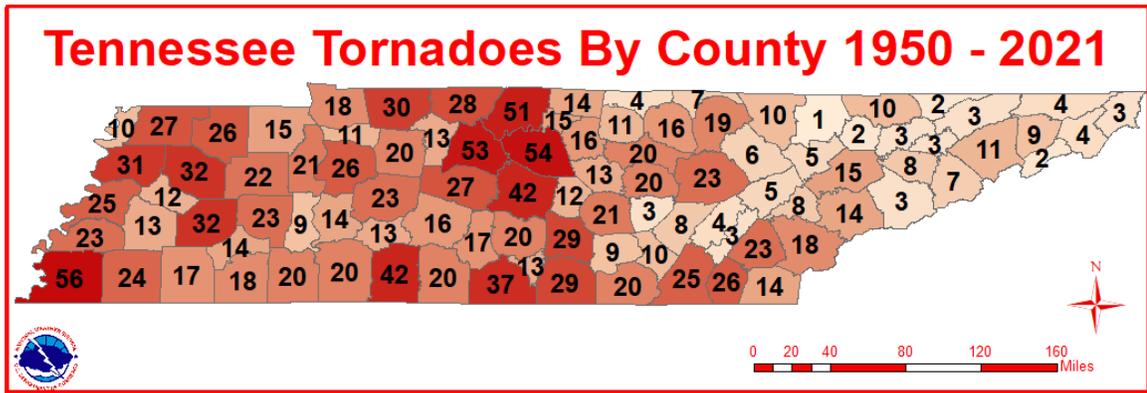


Figure 36: Tornadoes by County (NWS/NOAA)

Figure 36 illustrates the number of tornados across the state of Tennessee by county from 1950 – 2021. The National Weather Service in Nashville, TN identified 16 tornados in Maury County.

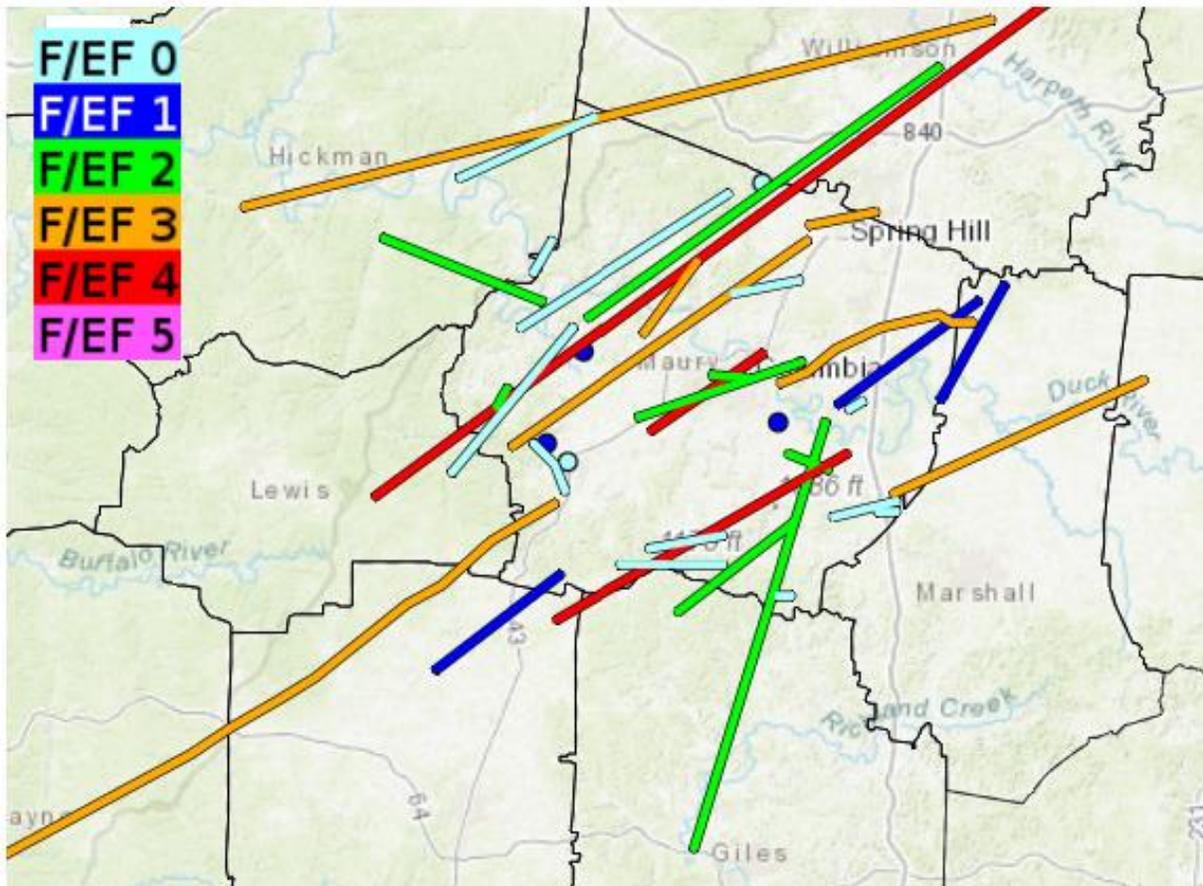


Figure 37: Tornadoes Tracks – Maury County

Figure 37 shows the track and strength of tornados across Maury County.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Table 38 provides a breakdown of tornado events by date and hour in Maury County; tornadoes on average occur at 2:50 pm.

Table 38: Tornado Time & Date

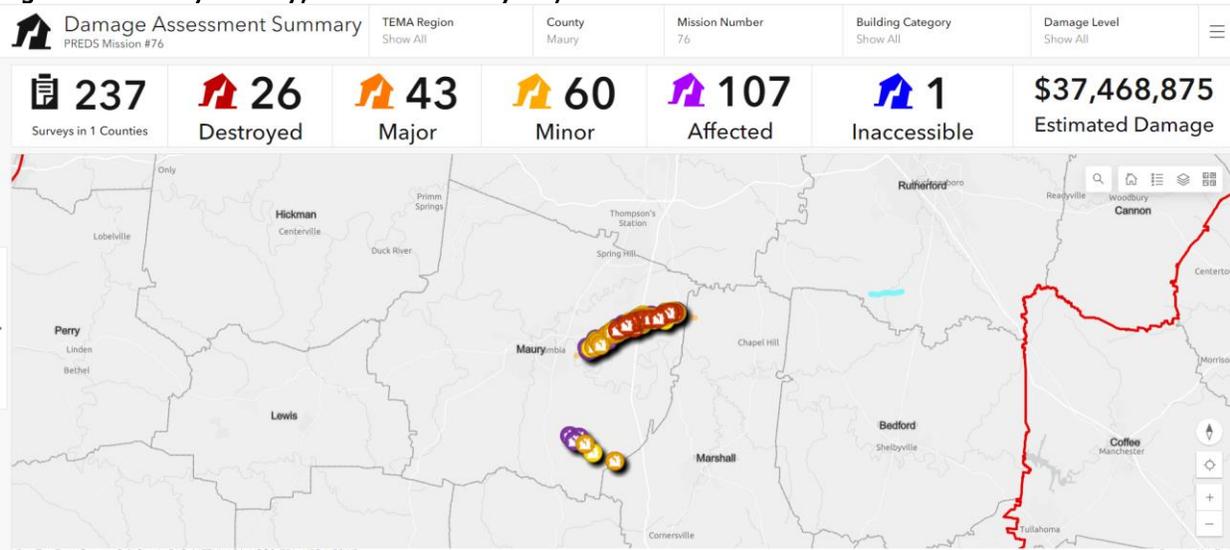
date (m/d/yyyy)	time LT	county- state affected
7/30/1884	500 pm	Maury- TN
7/25/1877	500 pm	Maury- TN
4/18/1877	1000 pm	Lewis- TN Maury- TN Williamson- TN Davidson- TN Rutherford- TN
3/4/1842	500 pm	Hickman- TN Maury- TN
3/21/1835	900 pm	Maury- TN Lewis- TN
3/12/1855	900 pm	Maury- TN
1/11/1898	500 pm	Maury- TN
5/8/2024	537 pm	Maury- TN Marshall- TN
11/5/2018	1109 pm	Maury- TN Hickman- TN
8/31/2017	511 pm	Maury- TN
12/23/2015	655 pm	Wayne- TN Lawrence- TN Lewis- TN Maury- TN
3/18/2013	1122 am	Maury- TN
4/27/2011	350 am	Lawrence- TN Maury- TN
11/15/2005	625 pm	Maury- TN
4/28/2002	242 pm	Maury- TN
5/25/2000	202 am	Maury- TN Hickman- TN
5/25/2000	216 am	Maury- TN
5/25/2000	228 am	Maury- TN
4/16/1998	500 pm	Giles- TN Maury- TN Lawrence- TN
3/8/1998	405 pm	Maury- TN
5/7/1984	225 pm	Maury- TN
4/3/1974	430 pm	Maury- TN Marshall- TN
7/15/1966	400 pm	Maury- TN
1/10/1963	1155 pm	Williamson- TN Maury- TN
11/5/1948	100 pm	Giles- TN Maury- TN
3/26/1948	945 pm	Maury- TN
4/11/1947	300 am	Maury- TN
3/27/1944	300 am	Maury- TN
4/5/1936	830 pm	Maury- TN
3/14/1933	245 pm	Maury- TN
3/24/1921	350 pm	Maury- TN Marshall- TN Bedford- TN
4/20/1920	1030 am	Maury- TN Williamson- TN
3/13/1913	215 pm	Giles- TN Maury- TN
3/13/1913	245 pm	Maury- TN Marshall- TN
4/15/1910	430 am	Maury- TN
4/29/1909	1015 pm	Hickman- TN Maury- TN Williamson- TN
12/14/1901	500 pm	Maury- TN
11/20/1900	930 pm	Maury- TN

The following narratives were obtained via the NOAA Storm Event Database. Only events resulting in injury, death, or extensive damage (greater than \$200K property/crop damage) were included as expanded narratives. A table containing all NOAA-recorded tornadoes between 1950-2024 for Maury County is contained in Appendix C.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

May 8th, 2024: On May 8th 2024 a strong storm entered Maury County from the southwest. When it reached the area of Iron Bridge Road and Mount Olivet Road at approximately 17:30, it developed into a tornado which stayed on the ground for approximately 12 miles. Approximately 237 residences were damaged some of which were destroyed. The remainder of Maury County experienced strong winds that resulted in damaged roofs and downed trees. Some of the most extensive damage was on Old Hwy 99 and Blackburn Lane. Estimated damages are \$37,468,875.

Figure 39: Maury County, TN Tornado May 8th, 2024



December 23, 2015: At 18:55 a strong, long-track EF3 tornado touched down just east of the Hardin County/Wayne County line about 2.5 miles southwest of the town of Lutts. At touchdown, hundreds of trees were snapped and uprooted before the tornado reached its peak strength about one half mile west-southwest of Lutts along Lutts Road where the tornado reached a width of 800 yards and EF3 strength. A post office and church, both brick buildings, were destroyed along with multiple homes swept from their foundations. Four people were injured here in Lutts. As the tornado continued northeast, hundreds of trees were snapped and uprooted along its path to where a concentrated area of trees were destroyed about 5 miles north of Collinwood. The tornado continued snapping and uprooting trees until the Highway 64 and Natchez Trace Parkway intersection. At this location, an outbuilding was destroyed along with the roof of a mobile home. Further northeast into Lawrence County along Napier Road, a house was swept off its foundation where 3 people were injured. As the tornado traveled northeast, several homes with roofs completely removed or damaged heavily were found along Linville Road. The tornado weakened as it crossed Lewis County into Maury County where a barn was destroyed and many trees were snapped and uprooted along Joy Road, 2 miles southwest of Mount Pleasant. The total path length of the tornado across Wayne, Lawrence, Lewis and Maury Counties was 48.51 miles. This is the first tornado on record to occur in Wayne County, Lewis County, and Maury County in the month of December. Lawrence County previously had one tornado in the month of December, which occurred on December 7, 1951. In addition, this was the strongest tornado to occur in the NWS Nashville county warning area since April 10, 2009. The estimated damages from this tornado were \$2,500,000.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Probability of Future Events - Once Every 2 Years

Historical data and weather patterns were analyzed to determine the likelihood of future tornado occurrence in Maury County. In conjunction with the future weather projections developed by ETSU Geoinformatics & Disaster Science Lab and historical data it is expected Maury County will experience a Tornadic event around 2 times over the next 5 years. Appendix C illustrates the projections developed by the ETSU Geoinformatics & Disaster Science Lab.

C. Risk Assessment

The entirety of Maury County can be considered at risk for a tornado. This includes the entire County population, all critical facilities, buildings (commercial and residential), and infrastructure. Tornadoes tracked in Tennessee predominantly travel in a northeasterly direction in the state. While all assets are considered at risk from this hazard, a particular tornado would only cause damages along its specific track.

The [National Risk Index](#) is a dataset and online tool to help illustrate the United States communities most at risk for natural hazards. It was built and designed by FEMA in close collaboration with various stakeholders and partners in academia; local, state and federal government. The Risk Index leverages available source data for natural hazards and community risk factors to develop a baseline relative risk assessment for each county and census tract. Some of these community risk factors include social vulnerability which is determined by the data pulled from the Census performed every ten years. A higher social vulnerability score is proportional to a higher risk score.

National Risk Index Score for Tornado = relatively high rating

Although the National Risk Index is a well-valued tool it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Table 40: Tornado Risk based on selected FEMA Lifelines

Tornado	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communication	Transportation	Hazardous Materials
Columbia							
County							
Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

D. Land Use and Development Trends

Maury County codes include proper wind strength and safety regulations consistent with state and federal regulations. While the adopted code provides adequate protection, older and mobile homes are highly susceptible to tornado events. There are multiple mobile home areas in the county. Many incorporated jurisdictions do not have building ordinances for the structures that reside in the area.

Information to be obtained from the Hazard Mitigation Questionnaire or county codes office.

E. Multi-Jurisdictional Differences

The entirety of Maury County and its incorporated jurisdictions are at risk for a tornado event. It is worth noting that given the county’s sizeable rural component, some tornadic events may have gone unreported.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

F. Summary

This includes the entire County population, all critical facilities, buildings (commercial and residential), and infrastructure. While all assets are considered at risk from this hazard, a tornado would only cause damages along its specific track. The weakest tornadoes, EF0, can cause minor roof damage, and stronger tornadoes can destroy frame buildings and badly damage steel reinforced concrete structures. Given the strength of the wind impact and construction techniques, buildings are vulnerable to direct impact, including potential destruction, from tornadoes and wind debris that tornadoes turn into missiles. Structures constructed of light materials such as mobile homes are most susceptible to damage.

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

2.13 Wildfire

A. Hazard Overview

According to the Tennessee Division of Forestry, debris burning, and arson are the two leading causes of wildfires. Generally, three significant factors sustain wildfires and allow predictions of a given area’s potential to burn. These factors include, fuel, topography; and weather.

Fuel is the material that feeds the fire and is a critical factor in wildfire behavior. Fuel is generally classified by type and by volume. Fuel sources are diverse and include everything from dead tree needles, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. Artificial structures and other associated combustibles are also considered a fuel source. The type of prevalent fuel directly influences the behavior of wildfire. Light fuels such as grasses burn quickly and catalyze spreading wildfires.

An area’s **topography** (terrain and land slopes) affects its susceptibility to wildfire spread. Fire intensities and rates of spread increase as the slope increases due to the tendency of heat from a fire to rise via convection and radiation. The natural arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.

Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out the fuels that feed the wildfire creating a situation where fuel will more readily ignite and burn more intensely. The wind is the most treacherous weather factor. The issue of drought conditions contributes to concerns about wildfire vulnerability.

B. County Profile

Maury County is in the Highland Rim [District of the Tennessee Division of Forestry](#). The Tennessee Division of Forestry provides statistics for each region, summarizing wildfire events. Table 41 below contains statistics for Maury County from 2020 to 2023 as confirmed by the Maury County Fire Department. These statistics also provide the extent of the Wildfire Hazard.

Table 41: Maury County Fire Department Responses

Year	# of Acres Burned	# of Wildfire Incidents	Primary Fire Cause
2023	76	69	Debris Vegetation Burn
2022	112	44	Open/Outdoor Fire
2021	21	26	Unintentional
2020	37	20	Unintentional

In **May of 2024**, approximately 5 acres of planted corn caught fire due to unintentional spread from a debris fire on Mahon Road. Maury County Fire Department utilized two brush trucks, two tankers, and multiple personnel to extinguish the fire and prevent further loss.

In **November of 2023**, approximately 26 acres caught fire and burned in the Yanahli Wildlife Management Area. TN Department of Forestry utilized a bulldozer to cut a firebreak to contain the fire. [Source](#)

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Fire crews battling 26-acre fire in Maury County

Smoke will be visible in the air for days, fire officials said.



By Daniel Smithson
Published: Nov. 9, 2023 at 8:01 AM CST

Figure 42: Maury County Fire Department Forest Fire Response

In **December of 2022**, approximately 2 acres of wildland burned on Sam Johnson Road. Two brush trucks, one engine, and one tanker were utilized to control the fire.

Due to the terrain and rural nature of the county, combined with limited resources and capabilities inside the county, wildfire poses a significant risk to the region's agricultural resources and residential structures. As seen by the Wildland Urban Interface map below, most of the county is either low housing or no housing. The sparse population and the availability of fuel create an environment where fires could develop and spread rapidly and delay the notice as well as response.

Wildland-Urban Interface (WUI) Change 1990-2020

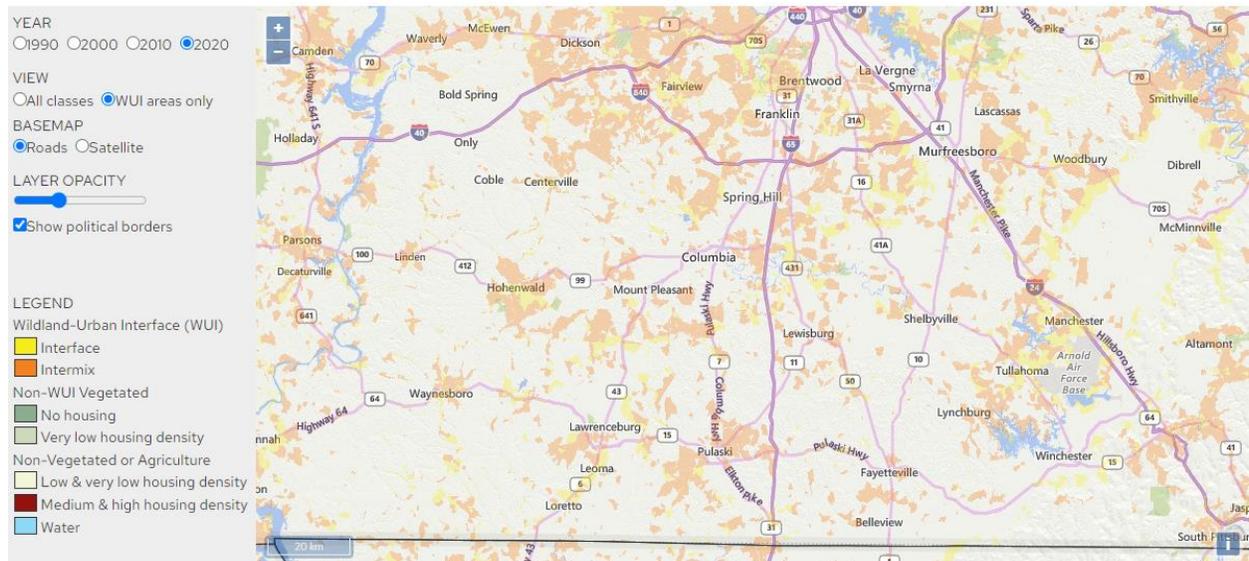


Figure 43: Wildland-Urban Interface (SILVUS LAB)

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Probability of Future Events – Likely

It is hard to predict the likelihood of wildfires as many factors contribute to the ignition of a wildfire. Wildfires can be part of a natural and healthy forest disturbance process, but they have become increasingly frequent and severe in recent years. Higher spring and summer temperatures cause soils to be drier for longer, increasing the likelihood of drought and a more extended wildfire season. These hot, dry conditions also increase the chance that wildfires will be more intense and long burning once they start by lightning strikes or human error.

Due to changing precipitation patterns, future conditions make forests more susceptible to severe fires. Wildfires emit carbon dioxide, greenhouse gases, and air pollutants such as methane and nitrous oxide, up to 3% of annual U.S. greenhouse gas emissions. Wildfires release carbon that has been sequestered by the trees that are burned. However, these effects are not uniform across all forests.

One of the most severe future conditions concerns about wildfires is that it could lead to an increase in the conditions that lead to more enormous wildfires – which is essential as most of the area burned in the Eastern United States results from a limited number of massive wildfires. After examining what conditions were associated with VLFs (very large fires), the researchers found that they are some of the same related to future conditions.

C. Risk Assessment

Wildfires have a higher likelihood of occurring during periods of drought due to dryer foliage being quicker to ignite and spread.

The [National Risk Index](#) is a dataset and online tool to help illustrate the United States communities most at risk for natural hazards. It was built and designed by FEMA in close collaboration with various stakeholders and partners in academia; local, state and federal government. The Risk Index leverages available source data for natural hazards and community risk factors to develop a baseline relative risk assessment for each county and census tract. Some of these community risk factors include social vulnerability which is determined by the data pulled from the Census performed every ten years. A higher social vulnerability score is proportional to a higher risk score.

National Risk Index Score for Wildfire = Very Low

Although the National Risk Index is a well-valued tool it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

Table 44: Wildfire Risk based on selected FEMA Lifelines

Wildfire Risk	FEMA Lifelines						
	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Columbia							
Maury County							
Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

D. Land Use and Development Trends

Many residential and commercial buildings and most infrastructure networks throughout the county may be vulnerable to wildfire impacts. Many of these structures are at risk for direct impacts and indirect impacts; such as downed electrical lines, decreased water quality, decreased air quality, devastated agriculture crops, and restricted travel routes.

E. Multi-Jurisdictional Differences

Due to the nature of wildfires, Maury County and all incorporated jurisdictions are equally susceptible. Both new and existing properties in the urban-wildland interface are at risk. Increased population densities in both incorporated and unincorporated areas heighten the risk of loss of life, injury, and property damage. Additionally, the county's agricultural properties are vulnerable to wildfires caused by both natural and man-made ignition sources. The high amount of rural farmland further increases the potential for crop and farm animal loss during wildfire events.

F. Summary

Maury County and the incorporated jurisdictions are equally vulnerable to wildfire. Fires, smoke, and air quality can affect people’s health and safety. Therefore, it is

CHAPTER 2: RISK AND VULNERABILITY ASSESSMENT

essential to have proper measures in place to prevent critical structures, homes, and businesses from being vulnerable to fire and smoke damage.

CHAPTER 3: MITIGATION STRATEGY

Chapter 3. Mitigation Strategy

3.1 Mitigation Goals

Goals are general guidelines that explain what is to be achieved. They are usually broad-based policy-type statements, long-term, and represent global visions. Goals help define the benefits that the plan is trying to achieve.

Goal Setting Exercise

In 2024, the HMPC agreed upon the goals for their hazard mitigation plan. It was decided that the goals from the 2019 plan should be carried over into the 2024 plan. They still reflect the current hazards and current conditions in the community.

Resulting 2024 Plan Update Goals

At the end of the meeting, the HMPC agreed upon three general goals for planning efforts. Those goals are as follows:

Goal 1: Protect the Lives and health of citizens from the effects of natural hazards.

Goal 2: Emphasize mitigation planning to decrease vulnerability to new and existing structures.

Goal 3: Encourage public support and commitment to hazard mitigation by communicating mitigation benefits.

CHAPTER 3: MITIGATION STRATEGY

Expanding & Improving Mitigation Programs

The participating jurisdictions determined which areas they could improve or expand based on the table above. Gaps and limitations for each jurisdiction may be addressed in the mitigation strategy.

Table 45: Expansion Narrative

Jurisdiction/Applicant	How are you able to expand?
Maury County	Dollars from taxes to pay for projects. Old infrastructure to not make up for new incoming population and growth.
City of Columbia	Working on significant studies to utilize for projects in the next 3 – 5 years. Dollars from taxes to pay for projects. Old infrastructure to not make up for new incoming population and growth.
City of Spring Hill	Dollars from taxes to pay for projects. Old infrastructure to not make up for new incoming population and growth.
City of Mt. Pleasant	Dollars from taxes to pay for projects. Old infrastructure to not make up for new incoming population and growth.

3.3 Compliance with NFIP

Maury County, City of Columbia, City of Spring Hill, and City of Mt. Pleasant participate in FEMA’s National Flood Insurance Program (NFIP). Each participating community enforces a flood damage prevention ordinance that regulates development within the Special Flood Hazard Area (SFHA). Additionally, as members of FEMA’s NFIP, each community requires Elevation Certificates on all new buildings and substantial improvements within the SFHA.

Given the flood hazards in the planning area, an emphasis will be placed on continued compliance with the NFIP.

Each participating community will take the following steps 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 the local ordinance;
- Maintaining records of floodplain development;
- Assisting in the preparation and revision of floodplain maps;
- Helping residents obtain information on flood hazards, floodplain map data, flood insurance, and proper construction measures.

Table 46: NFIP Designees

Jurisdiction	Title of NFIP Designee
Maury County	Director of Building & Zoning
City of Columbia	Robert Archibald
City of Spring Hill	Deputy Development Director
City of Mt. Pleasant	Director of Building & Planning

CHAPTER 3: MITIGATION STRATEGY

3.4 Prioritization Process

The prioritization process was necessary as most mitigation projects represent a significant investment of financial and personal resources. By evaluating each project’s degree of feasibility and the level of costs versus benefits, Maury County could determine which projects should include based on the available funding and time. The HMPC used the SAFE-T method to prioritize these projects. This approach was adopted from the successful methodology used by other counties in FEMA Region 4. This rating system uses five variables to evaluate each project's overall feasibility and appropriateness. *Figure 47* further explains this method.

Project Prioritization Method: SAFE-T			
Variable		Value	Description
S	Societal: The public must support the overall implementation strategy and specified mitigation actions. The projects will be evaluated in terms of community acceptance, social vulnerability and societal benefits	1	Low community acceptance/priority
		2	Moderate community acceptance/priority
		3	High community acceptance/priority
A	Administrative: The projects will be evaluated for anticipated staffing and maintenance requirements to determine if the jurisdiction has the personnel and administrative capabilities necessary to implement the project or whether outside help will be needed.	1	High staffing, outside help needed
		2	Some staffing, no outside help needed
		3	Low staffing, no outside help needed
F	Financial: The projects will be evaluated on their general cost-effectiveness and whether additional outside funding will be required.	1	Somewhat cost-effective
		2	Moderately cost effective
		3	Very cost-effective
E	Environmental: The projects will be evaluated for any immediate or long-term environmental impacts caused by their construction or operation.	1	Many environmental impacts
		2	Some environmental impacts
		3	Few environmental impacts
T	Technical: the projects will be evaluated on their ability to reduce losses in the short term or long term.	1	Short-term fix
		2	Medium-term fix
		3	Long-term fix

Figure 47: SAFE-T Project Prioritization

The identification and analysis process of mitigation alternatives allowed the HMPC to come to a consensus and prioritize recommended mitigation actions. The HMPC discussed the contribution of the effort to save lives or property first and foremost, with additional consideration given to the benefit-cost aspect of a project; however, this was not a quantitative analysis. The team agreed that prioritizing the actions collectively enabled the actions to be ranked in order of relative importance and helped steer the development of additional actions that meet the more essential objectives while eliminating some of the actions which did not garner much support. The cost-effectiveness of any mitigation alternative will be considered in greater detail by performing benefit-cost project analyses when seeking FEMA mitigation grant funding for eligible actions associated with this plan.

CHAPTER 3: MITIGATION STRATEGY

3.5 Mitigation Action Plan

The Mitigation Action Plan was developed to present the recommendations developed by the HMPC for how the communities can reduce the risk and vulnerability of people, property, infrastructure, and natural and cultural resources to future disaster losses. Emphasis was placed on both future and existing development. The action plan summarizes who is responsible for implementing each of the prioritized actions and when and how the actions will be implemented. Due to funding availability and other criteria, it should be clarified that the actions included in this mitigation strategy are subject to further review and refinement, alternatives analyses, and reprioritization. This document does not obligate Maury County and the incorporated jurisdictions to implement any or all of these projects. Rather this mitigation strategy represents the desires of the community to mitigate the risks and vulnerabilities from identified hazards. Mitigation actions and projects are identified in Table 48.

CHAPTER 3: MITIGATION STRATEGY

Table 48: Maury County/Spring Hill/ Columbia/Mt. Pleasant - New/Existing Mitigation Actions and Projects

Action Description and Hazard Mitigated	Responsible Department	Jurisdiction	Time Frame	Priority Score					Estimated Cost	Funding Source	Infrastructure (New/Existing)
				Societal	Administrative	Financial	Environmental	Technical			
Evaluate feasibility to expand ditches along roadways Flooding	Highway or Public Works	Maury County	Medium	3	3	3	3	3	\$200K	HMGP, FMA, BRIC, Local	Both
Study/evaluate methods to improve storm water systems in flood prone areas Flooding	Highway Dept or Public Works	Maury County	Long	3	3	3	3	3	\$200K	HMGP, FMA, BRIC, Local	Both
Replace small diameter lines with adequately sized lines and main Flooding, Infrastructure	County Water Dept or Public Works, Other Utilities	Maury County	Long	3	3	3	3	3	\$200K	HMGP, FMA, BRIC, Local	Both
Install larger culverts to permit clear stream flow Flooding	County Water Dept or Public Works	Maury County	Medium	3	3	2	3	3	\$100K	HMGP, FMA, BRIC, Local	Both
Install gates to block roadways and bridges during flooding Flooding	Highway Dept or Public Works	Maury County	Long	3	3	3	3	3	\$300K	HMGP, FMA, BRIC, Local	New
Study/evaluate methods to reduce flooding to flood-prone areas Flooding	Highway Dept or Public Works, Other Utilities	Maury County	Long	3	3	3	3	3	\$150K	HMGP, FMA, BRIC, Local	Existing
Study/evaluate methods for soil stabilization Geologic	Highway Dept, Public Works, Water Dept, Other Utilities	Maury County	Medium	3	1	3	1	3	\$500K	HMGP, FMA, BRIC, Local	Both
Identify locations and construct or retrofit facilities for severe weather Severe Weather, Tornadoes	Emergency Mgmt, Schools, Planning, Other Utilities	Maury County	Long	3	1	3	2	3	\$800K	HMGP, BRIC, Local	Both
Enhance/Install Security Measures for Critical Infrastructure All Hazards	All Depts	Maury County	Ongoing	3	3	2	3	3	\$500K	HMGP, BRIC, Local	Both
Install generators in critical facilities and fuel depts	All Depts	Maury County	Ongoing	3	3	3	3	3	\$800K	HMGP, BRIC, Local	Both
Drought, Extreme Temp, Flooding, Geological, Infrastructure, Severe Weather, Tornado, Wildfire	All Depts	Maury County	Ongoing	3	3	3	3	3	\$800K	HMGP, BRIC, Local	Both
Study/evaluate the realignment of bridges to remove abutment obstructions from flood/prone waterways Flooding	Highway Dept or Public Works	Maury County	Long	3	3	3	3	3	\$250K	HMGP, FMA, Local	New

CHAPTER 3: MITIGATION STRATEGY

Action Description and Hazard Mitigated	Responsible Department	Jurisdiction	Time Frame	Priority Score					Estimated Cost	Funding Source	Infrastructure (New/Existing)	
				Societal	Administrative	Financial	Environmental	Technical				Total
Emergency Operations Center	Columbia Fire & Rescue	Columbia, TN	12 Months	3	1	3	2	3	12	\$4M	Capital Improvement	New
Drought, Extreme Temperature, Wildfire, Maintain with Current Building Standard	Developmental Services	Columbia, TN	Ongoing	2	3	3	2	2	12	\$15K	Regular Budget	Existing
Flooding, Tornado, Severe Weather												
Upgrades to wastewater facility	Wastewater	Columbia, TN	Ongoing	2	1	3	2	2	10	\$5M	Capital Improvement	Both
Drought, Infrastructure	Developmental Services	Columbia, TN	Ongoing	3	2	2	2	2	11	\$30K	Capital Improvement	Both
Water runoff redesign (flood prone areas)												
Flood	Columbia OEM	Columbia, TN	Ongoing	3	3	3	3	3	15	\$400K	Development Grant	New
Early Alert System												
Tornado, Severe Weather	Columbia MIS	Columbia, TN	Ongoing	3	2	3	3	3	14	\$250K	Budget	Both
Update and revise MIS Protocol to meet cyber security standards												
Infrastructure	Columbia OEM	Columbia, TN	Ongoing	3	1	3	1	2	10	\$40K	Regular Budget	Existing
Update city BEOP												
Drought, Extreme Temperature, Wildfire, Flooding, Geologic, Severe Weather, Tornado, Communicable Disease, Dam Failure, Hazmat, Terrorism, Infrastructure												

CHAPTER 3: MITIGATION STRATEGY

Action Description and Hazard Mitigated	Responsible Department	Jurisdiction	Time Frame	Priority Score					Estimated Cost	Funding Source	Infrastructure (New/Existing)
				Social	Administrative	Financial	Environmental	Technical			
Old Kedron Road - Elevate the roadway to prevent flooding and obstruction of roadways for periods of time Flood, Geological, Infrastructure, Severe Weather	Public Works	Spring Hill, TN	Medium	3	1	3	1	3	\$9M	HMGP, BRIC, FMA, LOCAL	Both
Port Royal Bridge - Rebuild bridge structure so columns aren't blocking and holding back debris and damming water way Flood, Geological, Infrastructure, Severe Weather	Public Works	Spring Hill, TN	Medium	3	1	3	1	3	\$5M	HMGP, BRIC, FMA, LOCAL	Both
Carr Drive - FEMA study shows that homes are in flood plain and properties need to be purchased Flood, Geological, Infrastructure, Severe Weather	Public Works	Spring Hill, TN	Long	2	3	3	3	3	\$5M	HMGP, BRIC, FMA, LOCAL	Existing
Generators, transfer switches and quick connects for water and wastewater plants Flood, Geological, Infrastructure, Severe Weather	Water Department	Spring Hill, TN	Medium	3	3	3	3	3	500k	HMGP, BRIC, FMA, LOCAL	Existing
Upgrades to wastewater facility Drought, Infrastructure	Wastewater	Spring Hill, TN	Ongoing	2	1	3	2	2	\$5M	Capital Improvement	Both

CHAPTER 3: MITIGATION STRATEGY

Action Description and Hazard Mitigated	Responsible Department	Jurisdiction	Time Frame	Priority Score					Estimated Cost	Funding Source	Infrastructure (New/Existing)		
				Social	Administrative	Financial	Environmental	Technical				Total	
Partner with UT geology department to identify areas of greatest hazard	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	3	15	\$500	HMG, BRIC, FMA, Local	Both
Geological Create a GIS database to determine critical facilities and other structures that may be affected by disaster	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	3	15	\$500	HMG, BRIC, FMA, Local	Both
All Disasters Ensure that maps are updated/aligned with tax roles for detailed flood hazards information, evaluate the need to relocate/acquire structures in flood hazards	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	3	15	\$500	HMG, BRIC, FMA, Local	Both
Flood Use mapping database to establish zoning restrictions in flood hazard areas	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	3	15	\$500	HMG, BRIC, FMA, Local	Both
Flood Study methods to slow or detain the amount of water from flood-prone waterways. Evaluate methods to improve storm water systems in flood-prone areas.	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	3	15	\$500	HMG, BRIC, FMA, Local	Both
Flood Evaluate the realignment of bridges to remove abutment obstructions from flood-prone waterways	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	3	15	\$500	HMG, BRIC, FMA, Local	Both

CHAPTER 3: MITIGATION STRATEGY

Action Description and Hazard Mitigated	Responsible Department	Jurisdiction	Time Frame	Priority Score					Estimated Cost	Funding Source	Infrastructure (New/Existing)
				Social	Administrative	Financial	Environmental	Technical			
Evaluate methods to reduce flooding to flood-prone roadways. identify roadways repetitively damaged by flooding Flood	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	\$500	Both	
				3	3	3	3	3			15
Distribute flood awareness and preparedness literature at events Flood	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	\$500	Both	
				3	3	3	3	3			15
Maintain automatic aid agreements with Maury County Fire Rescue and Columbia Fire Rescue Wildfire	Mount Pleasant Fire Dept	Mount Pleasant	Ongoing	3	3	3	3	3	\$500	Both	
				3	3	3	3	3			15
Develop long range plans for Rapid Intervention Team (RIT) training for all departments Wildfire	Mount Pleasant Fire Dept	Mount Pleasant	Ongoing	2	2	3	2	2	\$100	Both	
				2	2	3	2	2			11
Install generators in critical facilities and fuel depots Drought, Extreme Temperature, Flood, Geological, Infrastructure, Severe Weather, Tornado, Wildfire	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	\$500	Both	
				3	3	3	3	3			15
Develop and enhance emergency operations center, purchase/install office computers and display equipment for the sharing of information during EOC activation Flood, Geological, Infrastructure, Severe Weather, Tornado, Wildfire	City of Mount Pleasant	Mount Pleasant	Ongoing	3	3	3	3	3	\$500	Both	
				3	3	3	3	3			15

CHAPTER 4: IMPLEMENTATION, INTEGRATION, AND MAINTENANCE

Chapter 4. Implementation, Integration, and Maintenance

This section provides an overview of the overall plan implementation, integration and maintenance strategy and outlines the method and schedule for monitoring, evaluating, and updating the plan. This section also discusses incorporating the plan into existing planning mechanisms and how to address continued public involvement.

4.1 Plan Adoption, Implementation, Monitoring, and Evaluation

4.1.1 Plan Adoption

The purpose of formally adopting this plan is to secure buy-in, raise awareness of the plan, and formalize the plan's implementation. This plan will be adopted by the appropriate governing body for each participating community. Copies of the executed resolutions will be available at Maury County EMA.

Note to Reviewer: Executed resolutions will be inserted when they become available.

4.1.2 Implementation

Implementation and maintenance of the plan is critical to the overall success of hazard mitigation planning. This section provides an overview of the overall strategy for plan implementation and maintenance.

Mitigation is most successful when it is incorporated into the day-to-day functions and priorities of the government. Implementation will be accomplished by adhering to the schedules identified for each action and through constant, pervasive, and energetic efforts to network and highlight the multi-objective benefits to each program and the community. This effort is achieved through the routine actions of monitoring agendas, attending meetings, and promoting a safe, sustainable community. Additional mitigation strategies could include consistent and ongoing enforcement of existing policies and vigilant review of programs for coordination and multi-objective opportunities.

Simultaneous to these efforts, it is important to maintain constant monitoring of funding opportunities that can be leveraged to implement some of the more costly actions. This will include creating and maintaining a list of ideas on how to meet local match or participation requirements. When funding does become available, the communities will be able to capitalize on the opportunity due to the diligence of the HMPC. Funding opportunities to be monitored include special pre- and post-disaster funds, state and federal funds, benefit assessments, and other grant programs, including those that can serve or support multi-objective applications.

Elected officials, officials appointed to head community departments and community staff are charged with the implementation of various activities in the plan. Recommendations will be made to modify timeframes for the completion of activities, funding resources, and responsible entities. On an annual basis, the priority standing of various activities may also be changed. Some activities that are found unachievable may be removed from the plan entirely and activities addressing problems unforeseen during plan development may be added.

CHAPTER 4: IMPLEMENTATION, INTEGRATION, AND MAINTENANCE

4.1 Integration into Local Planning Mechanism

A vital implementation mechanism that is highly effective and low-cost is the incorporation of the Hazard Mitigation Plan recommendations and their underlying principles into other plans and tools. All plan participants (Maury County, City of Columbia, City of Spring Hill and City of Mount Pleasant) will use existing methods and programs to implement hazard mitigation actions where possible. As previously stated, mitigation is most successful when it is incorporated into government and public service's day-to-day functions and priorities. This plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing actions, where possible, through these other program mechanisms. These existing mechanisms include:

- Regularity Capabilities
- Administrative Capabilities
- Fiscal Capabilities

For further information regarding the different capabilities refer to Chapter 3 – Mitigation Strategy.

Implementation and incorporation into existing planning mechanisms will be conducted by respective planning authorities and will be done through the routine actions of:

- Monitoring other planning/program agendas;
- Attending other planning/program meetings;
- Participating in other planning processes; and
- Monitoring community budget meetings for other community program opportunities.

The successful implementation of this mitigation strategy will require constant and vigilant review of existing plans and programs for coordination and multi-objective opportunities that promote a safe, sustainable community. Efforts should continuously be made to monitor the progress of mitigation actions implemented through other planning mechanisms. Where appropriate, priority actions should be incorporated into Hazard Mitigation Plan updates.

4.2 Monitoring, Evaluating, Updating

For the Hazard Mitigation Plan update review process, the Maury County Emergency Management Agency Director will be responsible for facilitating, coordinating, and scheduling reviews and maintenance of the plan. The review of the Hazard Mitigation Plan will be conducted as follows:

- The Maury County Emergency Management Agency will be responsible for leading the meeting to review the plan.
- Notices will be emailed to the members of the HMPC, federal, state, and local agencies, non-profit groups, local planning agencies, and representatives of business interests, neighboring communities, and others advising them of the date, time, and place for the review.
- Local City officials will be notified by email or phone call.
- Before the review, department heads and others tasked with implementing

CHAPTER 4: IMPLEMENTATION, INTEGRATION, AND MAINTENANCE

various projects/actions will be queried concerning progress in their area of responsibility and asked to present a report at the review meeting.

- A copy of the current plan will be available for public comment.
- After the review meeting, a status report will be developed outlining the implementation of projects over the past year.

Criteria for Annual Reviews

The criteria recommended for annual reviews will include the following:

- Community growth or change in the past year to include residential, commercial, and industrial growth trends.
- The number of substantially damaged or improved structures by flood zone and review of jurisdictional NFIP membership.
- Renovations to public infrastructure, including water, sewer, drainage, roads, bridges, gas lines, and buildings.
- Natural hazard occurrences that required activation of the Emergency Operations Center (EOC) and whether the event resulted in a presidential disaster declaration.
- Natural hazard occurrences that were not of a magnitude to warrant activation of the EOC or a federal disaster declaration but were severe enough to cause damage in the community or closure of businesses, schools, or public services.
- The dates of hazardous events, narratives, and documented damages.
- Closures of places of employment or schools and the number of days closed.
- Road or bridge closures due to the hazard and the length of time closed.
- Assessment of the number of private and public buildings damaged and whether the damage was minor, substantial, major, or if buildings were destroyed. The assessment will include residences, mobile homes, commercial structures, industrial structures, and public buildings, such as schools and public safety buildings.
- Review of any changes in federal, state, and local policies to determine the impact of these policies on the community and how and if the policy changes can or should be incorporated into the Hazard Mitigation Plan.
- Review of the implementation status of projects/actions (mitigation strategies). The reason for delay will be discussed for any projects that are behind schedule or not yet started.

4.2.1 Continued Public Involvement

Continued public involvement is imperative to the overall success of the plan’s implementation. The update process provides an opportunity to solicit participation from new and existing stakeholders, publicize mitigation success stories, and seek additional public comment. The plan maintenance and update process will include continued public and stakeholder involvement and input through attendance at designated committee meetings, web postings, press releases to local media, and public hearings.

Public Involvement Process for Annual Reviews

CHAPTER 4: IMPLEMENTATION, INTEGRATION, AND MAINTENANCE

The public will be notified via the Maury County website or any other form of a publicized social platform (i.e., local newspaper, Facebook, Twitter) well in advance of any public meetings or comment periods.

Public Involvement for Five-year Update

When the HMPC reconvenes for the five-year update, they will coordinate with all stakeholders participating in the planning process—including those that joined the committee since the planning process began—to update and revise the plan. In reconvening, the HMPC will develop a plan for public involvement and will be responsible for disseminating information through various media channels detailing the plan update process. As part of this effort, public meetings will be held, and public comments will be solicited on the plan update draft.

APPENDIX A: PLANNING DOCUMENTATION

APPENDIX A: PLANNING DOCUMENTATION



The Maury County Office of Emergency Management is seeking public input from residents residing within Maury County. The purpose of this call for public input is to gather information for Hazard Mitigation planning. This planning process will aid our community in becoming more resilient and better prepared for both natural and man-made disasters.

La Oficina de Gestión de Emergencias del Condado de Maury está buscando aportes del público de los residentes que viven dentro del Condado de Maury. El propósito de esta convocatoria para recibir aportes del público es recopilar información para la planificación de Mitigación de Riesgos. Este proceso de planificación ayudará a nuestra comunidad a volverse más resiliente y mejor preparada para desastres naturales y provocados por el hombre.



English



Español



Public Notice & Survey – 03/05/2024

APPENDIX A: PLANNING DOCUMENTATION



Maury County Office Of Emergency Management

Published by Talon Bishop · March 28 ·



The Maury County Office of Emergency Management is seeking public input from residents residing within Maury County. The purpose of this call for public input is to gather information for Hazard Mitigation planning. This planning process will aid our community in becoming more resilient and better prepared for both natural and man-made disasters.

La Oficina de Gestión de Emergencias del Condado de Maury está buscando aportes del público de los residentes que viven dentro del Condado de Maury. El propósito de esta convocatoria para recibir aportes del público es recopilar información para la planificación de Mitigación de Riesgos. Este proceso de planificación ayudará a nuestra comunidad a volverse más resiliente y mejor preparada para desastres naturales y provocados por el hombre.



XelH-hPVhNfkYVGkERq6vYc28fZRenr5IN0B6r379Et7EXKvIYrHqQuY2d0rIIXms35ESH75z8tbBRIhbGjIwq43cHMS

Public Notice & Survey – 03/28/2024

APPENDIX A: PLANNING DOCUMENTATION



Hazard Mitigation Public Input Form (English)

Public input plays a crucial role in the Hazard Mitigation planning process. Your insights are invaluable in shaping resilience strategies and disaster preparedness efforts.

***This form is intended for individuals residing in Maury County. In which area of Maury County do you live?**

- Columbia
- Culleoka
- Hampshire
- Mount Pleasant
- Santa Fe
- Spring Hill
- Williamsport
- Other area inside Maury County

***What are your primary concerns regarding natural or manmade disaster events? (You may select more than one option)**

- Safety and Security
- Property Damage and Loss
- Health Risks
- Economic Impact
- Community Infrastructure
- Access to Resources and Support
- Communication and Information
- Government Response and Preparedness
- Community Resilience and Preparedness
- Social Equity and Justice
- Access and Functional Needs
- Other

Hazard Mitigation Public Input Form (English) page 1 of 2.

APPENDIX A: PLANNING DOCUMENTATION

*Please provide further details about the concerns you selected above.

Are there any specific enhancements to government capabilities that you would like to suggest? (Optional)

Please use the space below to share any other concerns you would like to express. (Optional)

Copyright © 2024 Cleartronic, Inc. All Rights Reserved.

APPENDIX A: PLANNING DOCUMENTATION

Hazard Mitigation Public Input Survey Primary Concerns Totals (by community)					
Columbia:		Culleoka:		Hampshire:	
Safety & Security	107	Safety & Security	10	Safety & Security	3
Property Damage and Loss	74	Property Damage and Loss	6	Property Damage and Loss	1
Health Risks	69	Health Risks	8	Health Risks	3
Economic Impact	68	Economic Impact	3	Economic Impact	3
Community Infrastructure	56	Community Infrastructure	5	Community Infrastructure	1
Access to Resources and Support	75	Access to Resources and Support	6	Access to Resources and Support	1
Communication and Information	84	Communication and Information	7	Communication and Information	3
Government Response/Resilience	63	Government Response/Resilience	8	Government Response/Resilience	2
Community Response/Resilience	49	Community Response/Resilience	7	Community Response/Resilience	1
Social Equity/Justice	22	Social Equity/Justice	1	Social Equity/Justice	0
Access and Functional Needs	44	Access and Functional Needs	6	Access and Functional Needs	1
Other	10	Other	0	Other	0
Total Surveys received from area:	136	Total Surveys received from area:	12	Total Surveys received from area:	5
Mount Pleasant:		Santa Fe:		Spring Hill:	
Safety & Security	13	Safety & Security	3	Safety & Security	14
Property Damage and Loss	10	Property Damage and Loss	3	Property Damage and Loss	6
Health Risks	9	Health Risks	3	Health Risks	5
Economic Impact	5	Economic Impact	3	Economic Impact	6
Community Infrastructure	6	Community Infrastructure	1	Community Infrastructure	8
Access to Resources and Support	9	Access to Resources and Support	3	Access to Resources and Support	6
Communication and Information	12	Communication and Information	3	Communication and Information	5
Government Response/Resilience	8	Government Response/Resilience	2	Government Response/Resilience	10
Community Response/Resilience	6	Community Response/Resilience	3	Community Response/Resilience	7
Social Equity/Justice	3	Social Equity/Justice	1	Social Equity/Justice	0
Access and Functional Needs	6	Access and Functional Needs	2	Access and Functional Needs	4
Other	0	Other	0	Other	0
Total Surveys received from area:	15	Total Surveys received from area:	3	Total Surveys received from area:	17
Williamsport:		Other Areas:		TABLE KEY: Primary Concern Secondary Concern Tertiary Concern Safety & Security 154 Communication and Information 116 Access to Resources and Support 102 Total Surveys received: 192	
Safety & Security	2	Safety & Security	2		
Property Damage and Loss	1	Property Damage and Loss	0		
Health Risks	1	Health Risks	1		
Economic Impact	0	Economic Impact	0		
Community Infrastructure	2	Community Infrastructure	1		
Access to Resources and Support	2	Access to Resources and Support	0		
Communication and Information	2	Communication and Information	0		
Government Response/Resilience	2	Government Response/Resilience	1		
Community Response/Resilience	2	Community Response/Resilience	0		
Social Equity/Justice	1	Social Equity/Justice	0		
Access and Functional Needs	1	Access and Functional Needs	0		
Other	1	Other	0		
Total Surveys received from area:	2	Total Surveys received from area:	2		

Hazard Mitigation Public Input Results by Community

APPENDIX A: PLANNING DOCUMENTATION

**MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM**

1451 Tom J Hitch Parkway * Columbia, TN 38401
Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov
Mailing Address: One Courthouse Square, Columbia, TN 38401
Maury County Office of Emergency Management
11/07/2023 - Hazard Mitigation Plan Meeting - Maury Co. OEM

Name	Phone	Agency	Signature	Email
Clint Domberry		Maury Co. OEM		cdomberry@MauryCounty-TN.gov
PAT Woodmanssee		Maury Co. OEM		pwoodmanssee@maurycounty-tn.gov
Jody Norman		Columbia OEM		jnorman@columbiatn.com
Jeff Harsh		Maury Co OEM		jharsh@maurycounty-tn.gov
Gareth Scott		TEMA		Gareth.Scott@tn.gov
Rim Anthony		TEMA		rim.anthony@tn.gov
Shane Petty		Maury Co. OEM		spretty@MauryCountytn.gov
Garold		SH. EMA		garold@springhilltn.org

1 | Page

Meeting 11/07/2023

**MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM**

1451 Tom J Hitch Parkway * Columbia, TN 38401
Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov
Mailing Address: One Courthouse Square, Columbia, TN 38401
Maury County Office of Emergency Management
12/11/2023 - HMP 2024 Update - 209 Bond Street

Name	Phone	Agency	Signature	Email
Clint Domberry		Maury Co. OEM		cdomberry@MauryCounty-TN.gov
David Smith		City of Mt. Pleasant		dsmith@mtpleasant-tn.gov
Ted Howell		City of Mt. Pleasant		howell@mtpleasant-tn.gov
Jack Burgett		Mt. Pleasant Police		jburgett@mtpleasant-tn.gov
Michael Hay		MPPD		mhay@mtpleasant-tn.gov
Philip Grooms		MPFD		pgrooms@mtpleasant-tn.gov
PAT Woodmanssee		MC OEM		pwoodmanssee@maurycounty-tn.gov
BEN WILLARD		MPFD		bwillard@mtpleasant-tn.gov

1 | Page

Meeting 12/11/2024

APPENDIX A: PLANNING DOCUMENTATION

MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM

1451 Tom J Hitch Parkway * Columbia, TN 38401
 Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov

Mailing Address: One Courthouse Square, Columbia, TN 38401

Maury County Office of Emergency Management
 02/01/2024 – Hazard Mitigation Planning Meeting



Name	Phone	Agency	Signature	Email
Tyler Scroggins		City of Spring Hill		tscroggins@springhilltn.org
Chris Dugan		City of Spring Hill		cdugan@springhilltn.org
Joey Norman		Columbia OEM		jnorman@columbiatn.com
Nick Brown		Columbia		nbrown@columbiatn.com
Randy Carroll		Maury County		rcarroll@maurycounty-tn.gov
Randy Carroll		Columbia State		rcarroll14@columbiastate.edu
Greg Boyd		SH EMA	Via Zoom	gboyd@springhilltn.com

Meeting 02/01/2024

MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM

1451 Tom J Hitch Parkway * Columbia, TN 38401
 Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov

Mailing Address: One Courthouse Square, Columbia, TN 38401

Maury County Office of Emergency Management
 02/01/2024 – Hazard Mitigation Planning Meeting



Name	Phone	Agency	Signature	Email
Clint Demberly		Maury Co OEM		cdemberly@Maury County-TN.gov
BEN WILLARD		CITY OF MT. PLEASANT F.D.		bwillard@mtpleasant-tn.gov
Lisa Kule		Maury Co Mayor		lkule@maurycounty-tn.gov
Pat Woodmansee		Maury Co OEM		pwmansee@maurycounty-tn.gov
Jess Hardy		MC OEM		jhardy@maurycounty-tn.gov
Ty Cobb		CITY OF COLUMBIA		tcobb@columbiatn.com

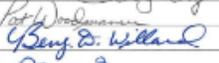
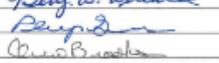
Meeting 02/01/2024

APPENDIX A: PLANNING DOCUMENTATION

**MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM**

1451 Tom J Hitch Parkway * Columbia, TN 38401
Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov
Mailing Address: One Courthouse Square, Columbia, TN 38401

Maury County Office of Emergency Management
02/09/2024 – HMP 2024 Update Meeting – Mt. Pleasant, TN

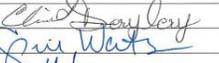
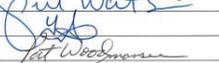
Name	Phone	Agency	Signature	Email
Clint Demiberry		Maury Co. OEM		cdemiberry@MauryCounty-TN.gov
Pat Woodmansee		Maury Co. OEM		pwoodmansee@MauryCounty-TN.gov
BEN WILLARD		CITY OF MT. PLEASANT		bwillard@mtpleasant-tn.gov
Phillip Grooms		City of Mt. Pleasant		pgrooms@mtpleasant-tn.gov
Chris Brooks		City of Mt. Pleasant		cbrooks@mtpleasant-tn.gov

Meeting 02/09/2024

**MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM**

1451 Tom J Hitch Parkway * Columbia, TN 38401
Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov
Mailing Address: One Courthouse Square, Columbia, TN 38401

Maury County Office of Emergency Management
02/16/2024 – Hazard Mitigation Planning Meeting - Maury County OEM

Name	Phone	Agency	Signature	Email
Clint Demiberry		MC OEM		cdemiberry@MauryCounty-TN.gov
April Watson		City of Spring Hill		awatson@springhilltn.org
Tyler Scroggins		City of Spring Hill		tscroggins@springhilltn.org
Pat Woodmansee		MC OEM		pwoodmansee@MauryCounty-TN.gov

Meeting 02/16/2024

APPENDIX A: PLANNING DOCUMENTATION

**MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM**

1451 Tom J Hitch Parkway * Columbia, TN 38401
Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov
Mailing Address: One Courthouse Square, Columbia, TN 38401

Maury County Office of Emergency Management
02-29-2024 - Hazard Mitigation Plan Meeting
8060 Station Hill Rd, Spring Hill, TN

Name	Phone	Agency	Signature	Email
Clint Derryberry		Maury Co. OEM	<i>Clint Derryberry</i>	<i>cderryberry@MauryCounty-TN.gov</i>
Pat Woodmansee		Maury Co. OEM	<i>Pat Woodmansee</i>	<i>pwoodmansee@MauryCounty-TN.gov</i>
April Watson		City of Spring Hill	<i>April Watson</i>	<i>awatson@SpringHilltn.org</i>
Project Entry				

Meeting 02/29/2024

**MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM**

1451 Tom J Hitch Parkway * Columbia, TN 38401
Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov
Mailing Address: One Courthouse Square, Columbia, TN 38401

Maury County Office of Emergency Management
03/08/2024 - Hazard Mitigation Planning Meeting - MCOEM

Name	Phone	Agency	Signature	Email
Clint Derryberry		MC OEM	<i>Clint Derryberry</i>	<i>cderryberry@MauryCounty-TN.gov</i>
Pat Woodmansee		MC OEM	<i>Pat Woodmansee</i>	<i>pwoodmansee@MauryCounty-TN.gov</i>
William Groce		TEMA	<i>William Groce</i>	<i>william.groce@tn.gov</i>
Rob Parks		TEMA	<i>Rob Parks</i>	<i>robert.parks@tn.gov</i>

Meeting 03/08/2024

APPENDIX A: PLANNING DOCUMENTATION

05-31-2024
Hazard Mitigation Planning
Meeting - 2024 update



Name	Agency	Phone	E-mail Address
Rob Perkins	TEMA		robert.perkins@tc.gov
Nicholas T. Sturgeon	WXEMA		nick.sturgeon@williamsoncounty-tn.gov
PAT Woodmansee	MCOEM		Pwoodmansee@maurycounty-tn.gov
Alex Merrill	MCOEM		Alex.D.Merrill@protonmail.com
Chris Derryberry	MCOEM		cderryberry@MauryCounty-TN.gov
Talon Bishop	MCOEM		taloncbishop@gmail.com

Meeting 05/31/2024 at Maury Co. O.E.M.

APPENDIX A: PLANNING DOCUMENTATION

Clint Derryberry

Subject: 2024 Maury Co Hazard Mitigation Plan 2024 Update
Location: 1451 Tom J Hitch Parkway, Columbia, TN 38401

Start: Thu 7/18/2024 8:30 AM
End: Thu 7/18/2024 10:30 AM

Recurrence: (none)

Meeting Status: Meeting organizer

Organizer: Clint Derryberry
Required Attendees: Clint Derryberry; Kim Anthony; twillard@mppleasant-tn.gov; Joey Norman; Tyler Scoggins; April Watson; Bendia Oliver; talonchishop@gmail.com; akerstiens@nourmppleasantpower.com; Ashley Maddux; Dale Brown; dbaxter@myncvs.com; denismoree@nourmppleasantpower.com; Jeremy Vanderford; Jessica Weaver; Jonathan Hardin@qps.com; Mary Singleton; Richard Kelley; Steven Hopkins; Tara Peck; Todd Shultz; Victoria Smith; Chris Brooks; Dwayne Hicke; caldarero@maurycounty-tn.gov; Robert Archibald; Amanda Siegel; Brian Smith; Darryl Atkinson; Gary Rogers; Jeff Hardy; Josh Young; MARK GANDEE; Pat Woodmanasee; pete.tibbs@hickmanco.com; Shelton Barnett; Brittany Gibson; chris boehrs; Donna Gannon; Jeff Dewire; Jeff L. Riggins; howel@mppleasant-tn.gov; Nick Sturgeon; William groce@tn.gov; Brian Ocarit; Ryan Massey@qps.com; tom.lunn@qps.com; mrtre@drcnc.com; Jonathan Bary; Matthew Turner; Andy Kenney; maurycountyfire@gmail.com; Robert Calderaro

Optional Attendees:

All.

Thank you to all our neighbors who have supported us during the recent tornado that impacted Maury County and to our local responders that didn't stop until everyone was accounted for. So much has and continues to be done to assist those affected.

As you may remember, the day the tornado happened, we had a meeting scheduled regarding the 2024 Maury County Hazard Mitigation Plan update. We have scheduled an opportunity to get together Thursday July 18th starting at 08:30 at the Maury Co. Office of Emergency Management. There will be a Zoom option as well should you prefer and those details are below. The Hazard Mitigation Plan is important to enhance our ability to deal with natural disasters. If you are unable to attend and have anything you would like to go ahead and discuss before, please reach out to us.

Thank You,

Pat Woodmanasee
 Clint Derryberry

Maury Co. Office of Emergency Management
 1451 Tom J Hitch Parkway
 Columbia, TN 38401

Mailing address: One Public Square
 Columbia, TN 38401

<https://www.maurycounty-tn.gov>
 Follow us on FB at: [maurycountyofficeofemergencymanagement](https://www.facebook.com/maurycountyofficeofemergencymanagement)

This message may contain confidential and/or privileged information. If you are not the intended recipient or authorized to receive this for the intended recipient, you must not use, copy, disclose or take any action based on this message or any information herein. If you have received this message in error, please advise the sender immediately by sending a reply e-mail and delete this message. Thank you for your cooperation.

Join Zoom Meeting

<https://us06web.zoom.us/j/88120254602?pwd=RUU3VTJSR2RNRUJMc4cXNTYjZlNUT09>

Meeting ID: 881 2025 4602

Passcode: 8GEPXh

One tap mobile

+16465388656,,88120254602#,*\$19020# US (New York)
 +16469313860,,88120254602#,*\$19020# US

Dial by your location

- +1 646 538 8656 US (New York)
- +1 646 931 3860 US
- +1 301 715 8592 US (Washington DC)
- +1 305 224 1968 US
- +1 309 205 3325 US
- +1 312 626 6799 US (Chicago)
- +1 507 473 4847 US
- +1 564 217 2000 US
- +1 609 444 9171 US
- +1 689 278 1000 US
- +1 719 359 4580 US
- +1 720 707 2699 US (Denver)
- +1 720 707 2699 US (Denver)
- +1 253 205 0468 US
- +1 253 215 8782 US (Tucson)
- +1 346 248 7799 US (Houston)
- +1 360 209 5623 US
- +1 386 347 5053 US

Meeting ID: 881 2025 4602

Passcode: 519020

APPENDIX A: PLANNING DOCUMENTATION

MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM



1451 Tom J Hitch Parkway * Columbia, TN 38401
Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov



Mailing Address: One Courthouse Square, Columbia, TN 38401

Maury County Office of Emergency Management
07-18-2024 – Hazard Mitigation Plan 2024 Update Review - Maury County O.E.M.

Name	Phone	Agency	Signature	Email
BEN WILLARD		Mt. Pleasant F.D.	<i>Ben Willard</i>	bwillard@mtpleasant-tn.gov
Victoria Smith		Mt. Pleasant Utility	<i>Victoria Smith</i>	vsmit@mtpleasant-tn.gov
Ryan Massey		CPWS	<i>Ryan Massey</i>	ryan.massey@cpws.com
Mark Delk		CPWS	<i>Mark Delk</i>	mark.delk@cpws.com
Robert Archibald		Dev. Services, City of Columbia	<i>Robert Archibald</i>	rarchibald@columbiatn.gov
Steven Hopkins		PREMC	<i>Steven Hopkins</i>	shoptkins@drenc.com
Talon Hunt-Bishop		MC OEM	<i>Talon Hunt-Bishop</i>	thunt@mcocm.maurycounty-tn.gov
Brian O'Leary		Columbia Fire	<i>Brian O'Leary</i>	boleary@columbiatn.com
Shelton Barnett		Lawrence EMA	<i>Shelton Barnett</i>	sbarnett@lawrenceburg-tn.gov
Robert Caldoraro		Maury Co. Build. + Zoning	<i>Robert Caldoraro</i>	rcaldoraro@MauryCounty-tn.gov
Jeff Hardy		Maury Co. EMA	<i>Jeff Hardy</i>	jhardy@MauryCounty-TN.gov

Meeting 07/18/2024 at Maury Co. O.E.M.

MAURY COUNTY OFFICE OF EMERGENCY MANAGEMENT
MAURY HAZARDOUS OPERATIONS TEAM



1451 Tom J Hitch Parkway * Columbia, TN 38401
Phone: 931-375-6800 * Fax: 931-840-0113
www.maurycounty-tn.gov



Mailing Address: One Courthouse Square, Columbia, TN 38401

Maury County Office of Emergency Management
07-18-2024 – Hazard Mitigation Plan 2024 Update Review - Maury County O.E.M.

Name	Phone	Agency	Signature	Email
Christy Derryberry		Maury County EMA	<i>Christy Derryberry</i>	cderryberry@MauryCounty-tn.gov
Jessica Weaver		City of Spring Hill TN	<i>Jessica Weaver</i>	jweaver@springhilltn.org
Paul Watson		City of Spring Hill	<i>Paul Watson</i>	awatson@springhilltn.org
Pat Woodman		MC OEM	<i>Pat Woodman</i>	pwoodman@maurycounty-tn.gov
Chris Basher		Maury County High.	<i>Chris Basher</i>	cbasher@maurycounty-tn.gov
Benida Oliver		MC Highway Dept.	<i>Benida Oliver</i>	boliver@maurycounty-tn.gov
Kim Anthony		TEMA	<i>Kim Anthony</i>	Kim.Anthony@tn.gov
Jeremy Vanderford		City of Spring Hill	<i>Jeremy Vanderford</i>	jvanderford@springhilltn.org

Meeting 07/18/2024 at Maury Co. O.E.M.

APPENDIX B: COUNTY OVERVIEW

APPENDIX B: COUNTY OVERVIEW – [MTIDA.ORG](https://www.mtida.org)



QUICK FACTS

County Seat	Columbia
Year Incorporated	1817
Land Area in Square Miles (County)	613
Water Area in Square Miles (County)	2
Latitude	N35° 36.90'
Longitude	W87° 02.12'
Elevation	650'
Market Region	Nashville
Distance From Nashville	45 miles
Time Zone	Central
City Website	www.columbiatn.com
County Website	www.maurycounty-tn.gov
Additional Incorporated Cities within the County	Mt. Pleasant and Spring Hill
Unincorporated Cities	Culleoka, Hampshire, Santa Fe, Williamsport

POPULATION

	City	County
2020 (Census)	41,690	100,974
2023 Population	44,466	109,982
2023 Median Age	39.5	40.5
2028 Population Projection	46,658	119,050
Annual Growth Rate (2023-2028 Projected)	0.97%	1.60%

Source: ESRI

CLIMATE

Annual Average Temperature	57.85° F
Average High Temperature	70.1° F
Average Low Temperature	45.7° F
Annual Average Precipitation	55.43"
Annual Average Snowfall	2"
Prevailing Winds	Southerly
Mean Length of Freeze-Free Period (days)	180-220

TAX STRUCTURE

LOCAL	City	County
Property Taxes (2023)		
• Rate per \$100 value	\$0.8251	\$1.91
Ratio of Assessment		
• Residential and Farm	25%	25%
• Commercial/Industrial	40%	40%
• Personal (Equipment)	30%	30%

Total Local Assessment (2022)	\$1,523,175,566	\$3,933,474,557
Hotel-Motel Tax	5%	5%
Motor Vehicle Wheel Tax Rate		\$25.00

Source: Tennessee Comptroller of the Treasury, Division of Property Assessments
Source: County Technical Assistance Service, UTIPS

STATE

- Sales Tax**
- 4% tax on food and food ingredients
 - 7% on all other tangible personal property unless specifically exempted
- Local Sales Tax Rate**
- 2.75%
- Local and State Sales Tax Collected (FY2023)**
- \$235,365,755
- Income Tax**
- **Personal:** Repealed beginning January 1, 2021
 - **Corporate Excise Tax:** 6.5% of Tennessee taxable income
 - **Franchise Tax:** .25% of the greater of the Tennessee portion of net worth or the book value of real and tangible property in Tennessee. The minimum tax is \$100
 - **Unemployment Tax:** New employers is typically 2.7% (based on occupation) of first \$7,000

Source: Tennessee Department of Revenue



Cherry Glen Industrial Park (305 acres) is among several industrial sites in Middle Tennessee to be certified as a Select TN Certified Site. For complete information about the site and the certified program, please visit www.tnecd.com/sites/certified-sites/

APPENDIX B: COUNTY OVERVIEW

2024 COMMUNITY DATA PROFILE

EDUCATION

District Name	Maury County
Type of Public School System	County
District Grades Served	Pre-K-12
Number of Schools	23
Number of Classroom Teachers	854
Student to Teacher Ratio	15:1
Additional Staff	118
Total Number of Students	12,782
Number of Private Schools	11
Total Number of Students	2,240
Number of Teachers	205
Number of High School Graduates (2023)	844
Graduation Rate	89.0%
Educational Attainment with a Degree (Adults Age 25+)	40.1%

Source: Tennessee Department of Education

REGIONAL HIGHER EDUCATIONAL INSTITUTIONS (within 30 miles)

- Columbia State Community College Columbia
- TN College of Applied Technology Hohenwald
- University of TN Southern Pulaski
- TN College of Applied Technology Pulaski
- TN College of Applied Technology Shelbyville

Source: National Center for Education Statistics

FastTrack Job Training Assistance Program Available	Yes
---	-----

Source: Tennessee Department of Economic and Community Development

GOVERNMENT

GOVERNING BODY

City	City Manager and City Council Meets 2nd Thursday at 5:30 p.m. City Hall
County	Mayor and County Commissioners Meets 3rd Monday at 6:30 p.m. Tom Primm Commission Room 6 Courthouse Square, Columbia

Fire Department	
• Full-time fire fighters in city	93
• City volunteers	0
• Full-time fire fighters in county	1
• County volunteers	100
• Fire stations in city	5
• City fire trucks	9
• Fire stations in county	13
• County fire trucks	26

Law Enforcement	
• Full-time police officers in city	5
• Full-time police officers in county & sheriff	140
• City patrol cars	107
• County patrol cars	132

	City	County
Insurance Rating	1	5/5X
Zoning Regulations	Yes	Yes
Planning Commission	Yes	Yes
Industrial Development Corp.	Yes	Yes
Columbia Industrial Dev. Board	Yes	
Health, Housing, Education Board	Yes	

TRANSPORTATION

AIR SERVICE

Nearest General Aviation	Maury County Airport
Location Identifier	MRC
Distance from Columbia	9 miles
Runway Length	6,003 feet asphalt; 2,000 feet turf
Surface	Asphalt/Turf
Lighting	MIRL/PAPI
Fuel	100LL/Jet A 24/7
Repairs	Major
Storage	Hangar, Tie Down
Transportation	Taxi, Rental and Courtesy Car
Nearest Commercial Service	Nashville International Airport
Location Identifier	BNA
Distance from Columbia	84 miles

Nashville International Airport (BNA) serves approximately 17 million total passengers annually. BNA is currently served by 22 major carriers, including international carriers. BNA offers 585+ daily flights and provides nonstop air service to more than 101 destinations.

HIGHWAYS

U.S. Highways	31, 43, 412
State Highways	50, 412, 7, 243
Nearest Interstate	Interstate 65 and Interstate 840

COMMON CARRIERS

Air Freight Companies	Yes
Motor Freight Companies	7
Terminal Facilities	7
Bus Services	
Inter-City	No
Local	Yes
Carrier Service	Yes

RAILROADS SERVED BY

CSX Transportation and TN Southern Railroad

NAVIGABLE WATERWAYS

River	Cumberland
Channel Depth	9 feet
Nearest Port Facility	Nashville
Miles from Port	43

COMMUNICATIONS

Newspapers	Main Street Media The Daily Herald The Tennessean
Telephone Companies	AT&T
Radio Stations	4 local (WKRM, WMCP, WMRB, WXRQ)
Television Networks	4, 2 independent
Cable Service Available	Yes
Channels	125
Provider	Charter Communications, Columbia Power & Water Systems and AT&T
Internet Service Available	Yes
Provider	Charter Communications, Columbia Power & Water Systems and AT&T
Fiber Optics Available	Yes
Provider	Charter Communications, Columbia Power & Water Systems and AT&T

COLUMBIA-MAURY COUNTY, TENNESSEE

APPENDIX B: COUNTY OVERVIEW

2024 COMMUNITY DATA PROFILE

COMMUNITY FACILITIES

Health Care

Doctors	257
Dentists	43
Hospitals	1
Beds	255
Primary Care Clinics	9
Speciality Care Clinics	37
Nursing Homes	9
Beds	
Retirement Homes	0
Beds	
Intermediate/ Assisted Living	3
Beds	159
Home Health Care	14
Behavioral Health Hosp.	1
Beds	60

Religious Organizations

Protestant	120
Catholic	1
Jehovah's Witness	1
Seventh Day Adventist	2
Latter Day Saints	1
Other	

Day Care Centers	42
Day Care Centers (Co.)	58
Day Care Homes	21

Recreation

Libraries	1
Parks	20
Golf Courses	2
(Public & Private)	
Swimming Pools	4
(Public & Private)	
Country Clubs	1
Bowling Alleys	1
Soccer Fields	17

Hotels & Motels

Rooms	800
Bed & Breakfasts	2

Largest Meeting Room

Capacity	400
----------	-----

Arts & Cultural District

Columbia Arts District
Downtown Historic Business District

Restaurants (City)	70
Restaurants (County)	118

Other

Skating rink, ball fields, tennis courts, Wellness and Aquatics Center, Natchez Trace Parkway. Multi-use soccer fields at Ridley Sports Complex, 1 tournament level field.

FINANCIAL INSTITUTIONS

Banks:	Total Number of Institutions	8
	Total Number of Offices	26
	Deposits	2,373,000,000
Credit Unions:	Total Number of Branches	3
	Total Number of Offices	5
	Deposits	467,043,491
Countywide Combined Deposits		\$2,840,043,491
(Deposits for June 30, 2023)		

Source: Federal Deposit Insurance Corporation and National Credit Union Administration

INDUSTRIAL SUPPORT SERVICES

Service	Location	Distance (Miles)
Tool & Die	Mt. Pleasant	15
Heat Treating	Local	
Foundry	Mt. Pleasant	15
Heavy Hardware	Local	
Sheet Metal	Mt. Pleasant	15
Lubricants	Mt. Pleasant	15
Welding Supplies	Local	
Abrasives	Local	

SELECTED ECONOMIC INDICATORS

2023 ANNUAL AVERAGES (AGE 16+)

Labor Force	County	Labor Market Area*
Population	87,203	382,409
Employed	52,574	237,058
Unemployed	1,671	7,499
Unemployment Rate	3.1%	3.1%

* Drive Time: 45 minute radius from Columbia (County seat)

Source: ESRI

2023 EMPLOYED POPULATION 16+ BY INDUSTRY

Agriculture/Mining	0.5%
Construction	7.9%
Manufacturing	14.7%
Wholesale Trade	1.4%
Retail Trade	11.0%
Transportation/Utilities	6.9%
Information	1.3%
Finance/Insurance/Real Estate	6.8%
Services	45.1%
Public Administration	4.3%

Source: ESRI

MANUFACTURING IN AREA (Annual Averages 2022)

Number of Units	123
Ann. Avg. Employment	6,512
Ann. Avg. Weekly Wage	\$1,552

Source: Tennessee Department of Labor and Workforce Development

PER CAPITA PERSONAL INCOME

Year	2023
Amount	\$41,095

Source: ESRI

MEDIAN HOUSEHOLD INCOME

Year	2023
Amount	\$74,379

Source: ESRI

AVERAGE HOME SALES

Year	2022
Number of Homes Sold	3,07
Average Cost	\$413,245
2023 Median Home Value	\$320,779

Source: Tennessee Housing Development Agency

RETAIL SALES

Year	2022
Amount City	\$1,038,186,419
Amount County	\$2,030,854,984

Source: Tennessee Department of Revenue

NATURAL RESOURCES

Minerals: Crushed stone and phosphate
Timber:

AGRICULTURAL

Crops: Hay, soybeans, corn, wheat and tobacco
Livestock: Equine, mules, cattle, goats, poultry

COLUMBIA-MAURY COUNTY, TENNESSEE

APPENDIX B: COUNTY OVERVIEW

2024 COMMUNITY DATA PROFILE

UTILITIES

WATER

Water Supplier Columbia Power & Water Systems
Phone 931.388.4833
Website www.cpws.com
Source Duck River
Capacity 20,000,000 GPD
Current Consumption 8,630,000 GPD
Storage Capacity 13,900,000 Gallons

SEWER

Sewer Provider City of Columbia
Phone 931.560.1001
Website www.columbiatn.com/380/Wastewater
Type of Treatment Conventional activated sludge
Capacity 14,000,000 GPD (System is only permitted (NPDES permit) to discharge 10 million GPD)
Current Usage 6,000,000 GPD
City Sewer Coverage 90%
Storm Sewer Coverage 25%
Solid Waste Disposal Type County Landfill

ELECTRICITY

Source Company Tennessee Valley Authority

LOCAL POWER COMPANY (City)

Columbia Power & Water System
Executive Director Jonathan Hardin
District Address Post Office Box 379
 Columbia, Tennessee 38401-0379
Phone 931.388.4833
Website www.cpws.com

LOCAL POWER COMPANY (County)

Duck River Electric Membership Corporation
President/CEO Scott Spence
Local Address 798 New Lewisburg Highway
 Columbia, Tennessee 38401
Phone 931.388.3131
Emergency 931.388.3482
Website www.dremc.com

LOCAL GAS COMPANY (City and County)

Atmos Energy
Marketing Manager Danny Bertotti
Local Address 810 Nashville Highway
 Columbia, TN 38401
Phone 931.388.9136
Website www.atmosenergy.com
Fuel Oil Suppliers 0
Suppliers of LP Gas 3

MAJOR INDUSTRIAL MANUFACTURERS/DISTRIBUTION (30+ employees)

Firm	Product or Service	Total Employees	Union	Phone Number
Adient US, LLC	Automotive seating	300	None	931.548.3606
WireMasters, Inc.	Wiring & cables	200	None	615.791.0281
Sleep Solutions & Services (S3)	Call center/technology	130	None	888.510.1438
Medical Necessities	Medical supplies/distribution	123	None	931.840.8694
Samuel, Son & Company	Metals blanking, automotive	80	None	931.901.0931
Columbia Machine Works, Inc.	Machine fabricators	75	None	931.388.6202
Swarco America, Inc.	Fabricated rubber products	75	None	931.388.5900
PSC Industries, Inc.	Packaging	60	None	931.381.1612
EZ Scaffold	Scaffolding manufacturing	60	None	931.381.7157
Industrial Door Contractors, Inc.	Hangar doors	35	None	931.380.0463
J.C. Ford Company	Food production equipment	53	None	562.689.5330
Kirk & Blum	Sheet metal, environmental controls	50	SWIA	931.381.0037
American Banknote Corporation	Security printing & distribution	44	None	931.388.3003
Documotion Research, Inc.	Manufacturer of innovative POS labels	42	None	931.701.3800
BMC Metalworks, LLC	Fabricated metal products	44	None	931.388.2978
Parker Hannifin Corporation	Motion and Control technologies	30	None	931.548.7854

For information on industrial sites and available industrial buildings contact:

Robert T. Bibb
Executive Director
 Middle TN Industrial
 Development Association
 2108 Westwood Avenue
 Nashville, Tennessee 37212
 Phone: 615.269.5233
mtida@mtida.org
www.mtida.org

Tony Massey
City Manager
 City of Columbia
 700 North Garden Street
 Columbia, Tennessee 38401
 Phone: 931. 560.1510
tmassey@columbiatn.com
www.columbiatn.com

Chaz Molder, Mayor
 City of Columbia
 700 North Garden Street
 Columbia, Tennessee 38401
 Phone: 931.560.1505
chaz.molder@columbiatn.com
www.columbiatn.com

Wil Evans, President
 Maury County Chamber &
 Economic Alliance
 Post Office Box 1076
 106 West 6th Street
 Columbia, Tennessee 38402
 Phone: 931.388.2155
w.evans@mauryalliance.com
www.mauryalliance.com



MTIDA represents the Local Electric Power and Natural Gas Distributors located in the 40 county region of Middle Tennessee.

COLUMBIA-MAURY COUNTY, TENNESSEE

The information contained herein was obtained from sources we consider reliable. We can not be responsible, however, for errors or change in information.

Updated January 2024

APPENDIX B: COUNTY OVERVIEW



QUICK FACTS

County Seat	Columbia
Year Incorporated	1824
Land Area in Square Miles (County)	613
Water Area in Square Miles (County)	2
Latitude	N35° 32.05'
Longitude	W87° 12.40'
Elevation	720'
Market Region	Nashville
Distance From Nashville	50 miles
Time Zone	Central
City Website	www.mtpleasant-tn.gov
County Website	www.maurycounty-tn.gov
Additional Incorporated Cities within the County	Columbia and Spring Hill
Unincorporated Cities	Culleoka, Hampshire, Santa Fe, Williamsport

POPULATION

	City	County
2020 (Census)	4,781	100,974
2023 Population	5,296	109,982
2023 Median Age	42.56	40.5
2028 Population Projection	7,338	119,050
Annual Growth Rate (2023-2028 Projected)	0.31%	1.60%

Source: ESRI

CLIMATE

Annual Average Temperature	58.9° F
Average High Temperature	70.3° F
Average Low Temperature	47.5° F
Annual Average Precipitation	59.71"
Annual Average Snowfall	2"
Prevailing Winds	Southerly
Mean Length of Freeze-Free Period (days)	180-220

TAX STRUCTURE

LOCAL	City	County
Property Taxes (2023)		
• Rate per \$100 value	\$1.69	\$1.91
Ratio of Assessment		
• Residential and Farm	25%	25%
• Commercial/Industrial	40%	40%
• Personal (Equipment)	30%	30%

Total Local Assessment (2022)	\$1,523,175,566	\$3,933,474,557
Hotel-Motel Tax	4%	5%
Motor Vehicle Wheel Tax Rate		\$25.00

Source: Tennessee Comptroller of the Treasury, Division of Property Assessments
Source: County Technical Assistance Service, UTIPS

STATE

- Sales Tax**
- 4% tax on food and food ingredients
 - 7% on all other tangible personal property unless specifically exempted
- Local Sales Tax Rate**
- 2.75%
- Local and State Sales Tax Collected (FY2023)**
- \$235,365,755
- Income Tax**
- **Personal:** Repealed beginning January 1, 2021
 - **Corporate Excise Tax:** 6.5% of Tennessee taxable income
 - **Franchise Tax:** .25% of the greater of the Tennessee portion of net worth or the book value of real and tangible property in Tennessee. The minimum tax is \$100
 - **Unemployment Tax:** New employers is typically 2.7% (based on occupation) of first \$7,000

Source: Tennessee Department of Revenue



Cherry Glen Industrial Park (305 acres) is among several industrial sites in Middle Tennessee to be certified as a Select TN Certified Site. For complete information about the site and the certified program, please visit www.tnecd.com/sites/certified-sites/

APPENDIX B: COUNTY OVERVIEW

2024 COMMUNITY DATA PROFILE

EDUCATION

District Name	Maury County
Type of Public School System	County
District Grades Served	Pre-K-12
Number of Schools	23
Number of Classroom Teachers	854
Student to Teacher Ratio	15:1
Additional Staff	118
Total Number of Students	12,782
Number of Private Schools	11
Total Number of Students	2,240
Number of Teachers	205

Number of High School Graduates (2023)	844
Graduation Rate	89.0%
Educational Attainment with a Degree (Adults Age 25+)	40.1%

Source: Tennessee Department of Education

REGIONAL HIGHER EDUCATIONAL INSTITUTIONS (within 30 miles)

- Columbia State Community College Columbia
- TN College of Applied Technology Mt. Pleasant
- TN College of Applied Technology Hohenwald
- University of TN Southern Pulaski
- TN College of Applied Technology Pulaski
- TN College of Applied Technology Shelbyville

Source: National Center for Education Statistics

FastTrack Job Training Assistance Program Available	Yes
---	-----

Source: Tennessee Department of Economic and Community Development

GOVERNMENT

GOVERNING BODY

City	Mayor, City Manager and Commissioners Meets 3rd Tuesday at 6:00 p.m. Tom Hardin Room
County	Mayor and County Commissioners Meets 3rd Monday at 6:30 p.m. Tom Primm Commission Room 6 Courthouse Square, Columbia

Fire Department

• Full-time fire fighters in city	18
• Part-time fire fighters in city	12
• Full-time fire fighters in county	1
• County volunteers	200
• Fire stations in city	2
• City fire trucks	3
• Fire stations in county	11
• County fire trucks	22

Law Enforcement

• Full-time police officers in city	15
• Full-time police officers in county & sheriff	95
• City patrol cars	18
• County patrol cars	132
• Part-time police city	1

	City	County
Insurance Rating	3/3+	5/5X
Zoning Regulations	Yes	Yes
Planning Commission	Yes	Yes
Industrial Development Corp.	Yes	Yes

TRANSPORTATION

AIR SERVICE

Nearest General Aviation	Maury County Airport
Location Identifier	MRC
Distance from City	2 miles from city center
Runway Length	6,003 feet asphalt; 2,000 feet turf
Surface	Asphalt/Turf
Lighting	MIRL/PAPI
Fuel	100LL/Jet A 24/7
Repairs	Major
Storage	Hangar, Tie Down
Transportation	Taxi, Rental and Courtesy Car
Nearest Commercial Service	Nashville International Airport
Location Identifier	BNA
Distance from Mount Pleasant	62 miles

Nashville International Airport (BNA) serves approximately 17 million total passengers annually. BNA is currently served by 22 major carriers, including international carriers. BNA offers 585+ daily flights and provides nonstop air service to more than 101 destinations.

HIGHWAYS

U.S. Highways	43
State Highways	6, 166, 243
Nearest Interstate	Interstate 65 and Interstate 840

COMMON CARRIERS

Air Freight Companies	Yes
Motor Freight Companies	7
Terminal Facilities	7
Bus Services	
Inter-City	Mule Town Trolley
Local	Yes
Carrier Service	Yes

RAILROADS SERVED BY

TN Southern Railroad

NAVIGABLE WATERWAYS

River	Cumberland
Channel Depth	9 feet
Nearest Port Facility	Nashville
Miles from Port	50

COMMUNICATIONS

Newspapers	Main Street Media The Daily Herald The Tennessean
Telephone Companies	AT&T
Radio Stations	WXRQ-AM local
Television Networks	4, 2 independent
Cable Service Available	Yes
Channels	79
Provider	Charter Communications and AT&T
Internet Service Available	Yes
Provider	Charter Communications, AT&T and Starlink
Fiber Optics Available	Yes
Provider	Charter Communications

MOUNT PLEASANT-MAURY COUNTY, TENNESSEE

APPENDIX B: COUNTY OVERVIEW

2024 COMMUNITY DATA PROFILE

COMMUNITY FACILITIES *(citywide)*

Health Care		Recreation	
Doctors	6	Libraries	1
Dentists	2	Parks	6
Hospitals (Columbia)	1	Golf Courses	1
Beds	255	(Public & Private)	
Clinics	1	Swimming Pools	0
Nursing Homes	1	(Public & Private)	
Beds	72	Country Clubs	1
Retirement Homes	1	Theaters	0
Apartments	30	Bowling Alleys	0
Residential Care/			
Assisted Living	1	Hotels & Motels	1
Beds		Rooms	20
Behavioral Health Hosp.	1	Bed & Breakfasts	2
Beds	60		
Religious Organizations		Largest Meeting Room	
Protestant	10	Capacity	500
Catholic	1		
Jehovah's Witness	3	Restaurants (City)	9
Seventh Day Adventist	0	Restaurants (County)	118
Latter Day Saints	0		
Other		Other	
Day Care Centers	3		
Day Care Centers (Co.)	58		
Day Care Homes	2		

FINANCIAL INSTITUTIONS

Banks:	Total Number of Institutions	8
	Total Number of Offices	26
	Deposits	2,373,000,000
Credit Unions:	Total Number of Branches	3
	Total Number of Offices	5
	Deposits	467,043,491
Countywide Combined Deposits	\$2,840,043,491	
(Deposits for June 30, 2023)		

Source: Federal Deposit Insurance Corporation and National Credit Union Administration

INDUSTRIAL SUPPORT SERVICES

Service	Location	Distance (Miles)
Tool & Die	Local	
Heat Treating	Columbia	15
Foundry	Local	
Heavy Hardware	Columbia	15
Sheet Metal	Local	
Lubricants	Local	
Welding Supplies	Columbia	15
Abrasives	Columbia	15
Ceramic Tile	Local	

SELECTED ECONOMIC INDICATORS

2023 ANNUAL AVERAGES (AGE 16+)

Labor Force	County	Labor Market Area*
Population	87,203	199,857
Employed	52,574	116,570
Unemployed	1,671	4,199
Unemployment Rate	3.1%	3.5%

* Drive Time: 45 minute radius from Mount Pleasant

Source: ESRI

2023 EMPLOYED POPULATION 16+ BY INDUSTRY

Agriculture/Mining	0.5%
Construction	7.9%
Manufacturing	14.7%
Wholesale Trade	1.4%
Retail Trade	11.0%
Transportation/Utilities	6.9%
Information	1.3%
Finance/Insurance/Real Estate	6.8%
Services	45.1%
Public Administration	4.3%

Source: ESRI

MANUFACTURING IN AREA (Annual Averages 2022)

Number of Units	123
Ann. Avg. Employment	6,512
Ann. Avg. Weekly Wage	\$1,552

Source: Tennessee Department of Labor and Workforce Development

PER CAPITA PERSONAL INCOME

Year	2023
Amount	\$41,095

Source: ESRI

MEDIAN HOUSEHOLD INCOME

Year	2023
Amount	\$74,379

Source: ESRI

AVERAGE HOME SALES

Year	2022
Number of Homes Sold	307
Average Cost	\$413,245
2023 Median Home Value	\$320,779

Source: Tennessee Housing Development Agency

RETAIL SALES

Year	2022
Amount	\$2,030,854,984

Source: Tennessee Department of Revenue

NATURAL RESOURCES

Minerals: Crushed stone and phosphate
 Timber: Yellow Pine, Oak, and Chestnut

AGRICULTURAL

Crops: Hay, soybeans, corn, wheat and tobacco
 Livestock: Equine, mules, cattle, goats, poultry

MOUNT PLEASANT-MAURY COUNTY, TENNESSEE

APPENDIX B: COUNTY OVERVIEW

2024 COMMUNITY DATA PROFILE

UTILITIES

GAS

Local Distributor City of Mount Pleasant
Phone 931.379.7717
Website www.mtpleasant-tn.gov
Source Company Symmetry Energy
Fuel Oil Suppliers 4
Suppliers of LP Gas 3

WATER

Water Supplier City of Mount Pleasant
Phone 931.379.7717
Website www.mtpleasant-tn.gov
Source Local springs/watergrid (Columbia)
Capacity 2,000,000 GPD
Current Consumption 700,000 GPD
Storage Capacity 1,250,000 Gallons

SEWER

Sewer Provider City of Mount Pleasant
Phone 931.379.7717
Website www.mtpleasant-tn.gov
Type of Treatment Activated sludge w/tertiary
Capacity (total) 700,000 GPD
Capacity (excess) 300,000 GPD
Lagoon System Capacity 1,500,000 GPD
Current Usage 750,000 GPD
City Sewer Coverage 89%
Storm Sewer Coverage 75%
Solid Waste Disposal Type County Landfill

ELECTRICITY

Source Company Tennessee Valley Authority

LOCAL POWER COMPANY (City)

Mount Pleasant Power System
Manager Albert Kerstiens
District Address Post Office Box 186
 123 N. Main
 Mount Pleasant, Tennessee 38474
Phone 931.379.3233
Website www.mountpleasantpower.com

LOCAL POWER COMPANY (County)

Duck River Electric Membership Corporation
President/CEO Scott Spence
Local Address 798 New Lewisburg Highway
 Columbia, Tennessee 38401
Phone 931.388.3131
Emergency 931.388.3482
Website www.dremc.com

MAJOR INDUSTRIAL MANUFACTURERS/DISTRIBUTION (40+ employees)

Firm	Product or Service	Total Employees	Union	Phone Number
Landmark Ceramics	Ceramic tile mfg	174	None	931.325.5700
IB Tech	Automotive seats and safety devices	165	None	931.379.1556
Tennessee Aluminum Processors, Inc.	Aluminum smelting ingot	105	None	931.379.5836
Fuel Total Systems (FTS)	Plastic gas tanks	104	None	931.989.9600
Smelter Service Corp.	Aluminum smelting, metal fab	102	None	931.379.7765
GCP Applied Technologies	Roofing components	92	None	931.379.1850
Sonoco Protective Solutions, Inc.	Plastics foam products	91	None	931.379.3263
Cytec Syensqo Group	Industrial inorganic chemicals	90	OENG	931.379.3257
Hygrade Metal Moulding Mfg .Corp.	Aluminum extruded products	63	None	931.379.9600
Sekisui Plastics USA	Plastic pellets	60	None	931.379.0300
Loudon County Trucking	Transportation	46	None	865.408.9062

For information on industrial sites and available industrial buildings contact:

<p>Robert T. Bibb Executive Director Middle TN Industrial Development Association 2108 Westwood Avenue Nashville, Tennessee 37212 Phone: 615.269.5233 mtida@mtida.org www.mtida.org</p>	<p>Bill White, City Mayor City of Mount Pleasant Post Office Box 426 100 Public Square Mt. Pleasant, Tennessee 38474 Phone: 931.379.7717 mayor@mtpleasant-tn.gov www.mtpleasant-tn.gov</p>	<p>Kate Collier, City Manager City of Mount Pleasant Post Office Box 426 100 Public Square Mt. Pleasant, Tennessee 38474 Phone: 931.379.7717 kcollier@mtpleasant-tn.gov www.mtpleasant-tn.gov</p>	<p>Wil Evans, President Maury County Chamber & Economic Alliance Post Office Box 1076 106 West 6th Street Columbia, Tennessee 38402 Phone: 931.388.2155 w.evans@mauryalliance.com www.mauryalliance.com</p>
--	--	--	---



MTIDA represents the Local Electric Power and Natural Gas Distributors located in the 40 county region of Middle Tennessee.

MOUNT PLEASANT-MAURY COUNTY, TENNESSEE

The information contained herein was obtained from sources we consider reliable. We can not be responsible, however, for errors or change in information.

Updated January 2024

APPENDIX B: COUNTY OVERVIEW



QUICK FACTS

County Seat	Columbia
Year Incorporated	1809
Land Area in Square Miles (County)	613
Water Area in Square Miles (County)	2
Latitude	N35° 45.07'
Longitude	W86° 55.80'
Elevation	792'
Market Region	Nashville
Distance From Nashville	30 miles
Time Zone	Central
City Website	www.springhilltn.org
County Website	www.maurycounty-tn.gov
Additional Incorporated Cities within the County	Columbia and Mt. Pleasant
Unincorporated Cities	Culleoka, Hampshire, Santa Fe, Williamsport

POPULATION

	City	County
2020 (Census)	50,689	100,974
2023 Population	58,029	109,982
2023 Median Age	34.7	40.5
2028 Population Projection	64,164	119,050
Annual Growth Rate (2023-2028 Projected)	2.03%	1.60%

Source: ESRI

CLIMATE

Annual Average Temperature	58.2° F
Average High Temperature	70.4° F
Average Low Temperature	46° F
Annual Average Precipitation	54.25
Annual Average Snowfall	0"
Prevailing Winds	Southerly
Mean Length of Freeze-Free Period (days)	180-220

TAX STRUCTURE

	City	County
LOCAL		
Property Taxes (2023)		
• Rate per \$100 value	\$0.739	\$1.91
Ratio of Assessment		
• Residential and Farm	25%	25%
• Commercial/Industrial	40%	40%
• Personal (Equipment)	30%	30%
Total Local Assessment (2022)	\$930,412,125	\$3,933,474,557
Hotel-Motel Tax	4%	5%
Motor Vehicle Wheel Tax Rate		\$25.00

Source: Tennessee Comptroller of the Treasury, Division of Property Assessments
 Source: County Technical Assistance Service, UTIPS

STATE

Sales Tax
• 4% tax on food and food ingredients
• 7% on all other tangible personal property unless specifically exempted
Local Sales Tax Rate
• 2.75%
Local and State Sales Tax Collected (FY2023)
• \$235,365,755
Income Tax
• Personal: Repealed beginning January 1, 2021
• Corporate Excise Tax: 6.5% of Tennessee taxable income
• Franchise Tax: .25% of the greater of the Tennessee portion of net worth or the book value of real and tangible property in Tennessee. The minimum tax is \$100
• Unemployment Tax: New employers is typically 2.7% (based on occupation) of first \$7,000

Source: Tennessee Department of Revenue

APPENDIX B: COUNTY OVERVIEW

2024 COMMUNITY DATA PROFILE

EDUCATION

District Name	Maury County
Type of Public School System	County
District Grades Served	Pre-K-12
Number of Schools	23
Number of Classroom Teachers	854
Student to Teacher Ratio	15:1
Additional Staff	118
Total Number of Students	12,782
Number of Private Schools	11
Total Number of Students	2,240
Number of Teachers	205
Number of High School Graduates (2023)	844
Graduation Rate	89.0%
Educational Attainment with a Degree (Adults Age 25+)	40.1%

Source: Tennessee Department of Education

REGIONAL HIGHER EDUCATIONAL INSTITUTIONS (within 30 miles)

- Columbia State Community College Columbia
- TN College of Applied Technology Hohenwald
- University of TN Southern Pulaski
- TN College of Applied Technology Pulaski
- TN College of Applied Technology Shelbyville

Source: National Center for Education Statistics

FastTrack Job Training Assistance Program Available	Yes
---	-----

Source: Tennessee Department of Economic and Community Development

GOVERNMENT

GOVERNING BODY

City	Mayor and Alderman Voting followed by Work Sessions begin at 6:00 p.m. on 1st and 3rd Mondays. City Hall, 199 Town Center Parkway
County	Mayor and County Commissioners Meets 3rd Monday at 6:30 p.m. Tom Primm Commission Room 6 Courthouse Square, Columbia

Fire Department	
• Full-time fire fighters in city	57
• City volunteers	0
• Full-time fire fighters in county	1
• County volunteers	100
• Fire stations in city	3
• City fire trucks	18
• Fire stations in county	12
• County fire trucks	26

Law Enforcement	
• Full-time police officers in city	71
• Full-time police officers in county & sheriff	95
• City patrol vehicles	81
• County patrol cars	132

	City	County
Insurance Rating	3	5/5X
Zoning Regulations	Yes	Yes
Planning Commission	Yes	Yes
Industrial Development Corp.	Yes	Yes

TRANSPORTATION

AIR SERVICE

Nearest General Aviation Location Identifier	Maury County Regional Airport MRC
Distance from Spring Hill	22 miles
Runway Length	6,003 feet asphalt; 2,000 feet turf
Surface	Asphalt/Turf
Lighting	MIRL/PAPI
Fuel	100LL/Jet A 24/7
Repairs	Major
Storage	Hangar, Tie Down
Transportation	Taxi, Rental and Courtesy Car
Nearest Commercial Service Location Identifier	Nashville International Airport BNA
Distance from Spring Hill	36 miles

Nashville International Airport (BNA) serves approximately 17 million total passengers annually. BNA is currently served by 22 major carriers, including international carriers. BNA offers 585+ daily flights and provides nonstop air service to more than 101 destinations.

HIGHWAYS

U.S. Highways	31
State Highways	840 & 396
Nearest Interstate	Interstate 65

COMMON CARRIERS

Air Freight Companies	
Motor Freight Companies	2
Terminal Facilities	1
Bus Services	
Inter-City	No
Local	No
Carrier Service	No

RAILROADS SERVED BY

CSX Transportation

NAVIGABLE WATERWAYS

River	Duck River
Channel Depth	9 feet
Nearest Port Facility	Nashville
Miles from Port	30

COMMUNICATIONS

Newspapers	The Daily Herald The Tennessean The Advertiser News Spring Hill Home Page
Telephone Companies	AT&T
Radio Stations	4 local (WKRM, WMCP, WMRB, WXRQ)
Television Networks	7
Cable Service Available	Yes
Channels	125
Provider	Charter Communications and AT&T
Internet Service Available	Yes
Provider	Charter Communications and AT&T, Columbia Power & Water Systems
Fiber Optics Available	Yes
Provider	Charter Communications and AT&T, Columbia Power & Water Systems

SPRING HILL-MAURY COUNTY, TENNESSEE

APPENDIX B: COUNTY OVERVIEW

2024 COMMUNITY DATA PROFILE

COMMUNITY FACILITIES *(citywide)*

Health Care		Recreation	
Doctors	33	Libraries	1
Dentists	24	Parks	6
Hospitals <i>(Columbia)</i>	1	Golf Courses	1
Beds	255	(Public & Private)	
TriStar Emergency Room		Swimming Pools	1
Beds	20	(Public & Private)	
Primary Care Clinics	9	Country Clubs	0
Specialty Care Clinics	17	Theaters	1
Nursing Homes	6	Bowling Alleys	0
Beds			
Retirement Homes	0	Hotels & Motels	3
Beds		Rooms	211
Residential/ Assisted Living	4	Bed & Breakfasts	0
Beds	261		
Home Health Care	2	Largest Meeting Room - Capacity	
Memory Care Facility	3	UAW Banquet Hall	250-325
		Restaurants (City)	96
		Restaurants (County)	240
Religious Organizations			
Protestant	40		
Catholic	3		
Jehovah's Witness	1		
Seventh Day Adventist	0		
Latter Day Saints	1		
Other			
Day Care Centers	13		
Day Care Centers (Co.)	58		
Day Care Homes	1		

FINANCIAL INSTITUTIONS

Banks:	Total Number of Institutions	8
	Total Number of Offices	26
	Deposits	2,373,000,000
Credit Unions:	Total Number of Branches	3
	Total Number of Offices	5
	Deposits	467,043,491
Countywide Combined Deposits		\$2,840,043,491
(Deposits for June 30, 2023)		

Source: Federal Deposit Insurance Corporation and National Credit Union Administration

INDUSTRIAL SUPPORT SERVICES

Service	Location	Distance (Miles)
Tool & Die	Mt. Pleasant	24
Heat Treating	Columbia	11
Foundry	Mt. Pleasant	24
Heavy Hardware	Columbia	11
Sheet Metal	Local	
Lubricants	Local	
Welding Supplies	Columbia	11
Abrasives	Columbia	11

SELECTED ECONOMIC INDICATORS

2023 ANNUAL AVERAGES (AGE 16+)

Labor Force	County	Labor Market Area*
Population	87,203	824,840
Employed	52,574	538,344
Unemployed	1,671	17,593
Unemployment Rate	3.1%	3.2%

* Drive Time: 45 minute radius from Spring Hill

Source: ESRI

2023 EMPLOYED POPULATION 16+ BY INDUSTRY

Agriculture/Mining	0.5%
Construction	7.9%
Manufacturing	14.7%
Wholesale Trade	1.4%
Retail Trade	11.0%
Transportation/Utilities	6.9%
Information	1.3%
Finance/Insurance/Real Estate	6.8%
Services	45.1%
Public Administration	4.3%

Source: ESRI

MANUFACTURING IN AREA (Annual Averages 2022)

Number of Units	123
Ann. Avg. Employment	6,512
Ann. Avg. Weekly Wage	\$1,552

Source: Tennessee Department of Labor and Workforce Development

PER CAPITA PERSONAL INCOME

Year	2023
Amount	\$41,095

Source: ESRI

MEDIAN HOUSEHOLD INCOME

Year	2023
Amount	\$74,379

Source: ESRI

AVERAGE HOME SALES

Year	2022
Number of Homes Sold	3,07
Average Cost	\$413,245
2023 Median Home Value	\$320,779

Source: Tennessee Housing Development Agency

RETAIL SALES

Year	2022
Amount	\$2,030,854,984

Source: Tennessee Department of Revenue

NATURAL RESOURCES

Minerals: Crushed stone and phosphate
Timber:

AGRICULTURAL

Crops: Hay, soybeans, corn, wheat and tobacco
Livestock: Equine, mules, cattle, goats, poultry

SPRING HILL-MAURY COUNTY, TENNESSEE

APPENDIX B: COUNTY OVERVIEW

2024 COMMUNITY DATA PROFILE

UTILITIES

WATER

Water Supplier City of Spring Hill
Phone 931.486.2252
Website www.springhilltn.org
Source Duck River
Capacity 4,500,000 GPD
Current Consumption 4,740,000 GGD
Storage Capacity 6,275,000 Gallons

SEWER

Sewer Provider City of Spring Hill
Phone 931.486.2252
Website www.springhilltn.org
Type of Treatment Activated sludge
Capacity 5,000,000 GPD
Current Usage 4,240,000 GPD
City Sewer Coverage 99.9%
Storm Sewer Coverage 25%
Solid Waste Disposal Type County Landfill

ELECTRICITY

Source Company Tennessee Valley Authority

LOCAL POWER COMPANY (City)

Columbia Power & Water System

Executive Director Jonathan Hardin
Address Post Office Box 379
 Columbia, Tennessee 38401-0379
Phone 931.388.4833
Fax 931.388.5287
Website www.cpws.com

LOCAL POWER COMPANY (County)

Duck River Electric Membership Corporation

President/CEO Scott Spence
Local Address 798 New Lewisburg Highway
 Columbia, Tennessee 38401
Phone 931.388.3131
Emergency 931.388.3482
Website www.dremc.com

Middle Tennessee Electric

President Chris Jones
District Address 555 New Salem Road
 Murfreesboro, Tennessee 37129
Phone 615.890.9762
Website www.mte.com

LOCAL GAS COMPANY (City and County)

Atmos Energy

Marketing Manager Danny Bertotti
District Address 810 Crescent Centre Dr. #600
 Franklin, Tennessee 37067
Phone 615.771.8300
Website www.atmosenergy.com
Fuel Oil Suppliers 0
Suppliers of LP Gas 3

MAJOR INDUSTRIAL MANUFACTURERS/DISTRIBUTION (Maury & Williamson Counties)

Firm	Product or Service	Total Employees	Union	Phone Number
GM Spring Hill Mfg.	Automotive	3,252	UAW	931.486.5000
Ryder Logistics	Logistics	1,001	UAW	931.487.6752
MAGNA Seating of America, Inc.	Automobile seats	595	None	931.548.3079
Armada Nutrition LLC	Lifestyle supplements nutrition	526	None	931.451.7808
Comprehensive Logistics	Sub assembly for GM	248	None	931.451.2000
Groove Life	Silicone active lifestyle accessories	220	None	888.981.5550
Tenneco Automotive Operating Co., Inc.	Motor vehicle parts and accessories	180	None	931.451.0832
Leadec Industrial Services	Manufacturing services	160	UAW	931.486.7988
Faurecia Interior Systems, Inc.	Auto parts manufacturer	175	None	248.786.7741
Timberland Cabinetry Co.	Cabinet manufacturer	128	None	931.499.7170
Premier Manufacturing Support Svcs.	Facility management, mfg., warehouse	50	None	931.486.5440
Phoenix Metals	Specialty metals distribution	47	None	931.486.1456
Pioneer	Dock equipment manufacturer	42	None	931.486.2296

For information on industrial sites and available industrial buildings contact:

Robert T. Bibb
Executive Director
 Middle TN Industrial
 Development Association
 2108 Westwood Avenue
 Nashville, Tennessee 37212
 Phone: 615.269.5233
mtida@mtida.org
www.mtida.org

Pamela S. Caskie
City Administrator
 City of Spring Hill
 199 Town Center Parkway
 Spring Hill, Tennessee 37174
 Phone: 931-451-0937
pcaskie@springhilltn.org
www.springhilltn.org

Jim Hagaman, Mayor
 City of Spring Hill
 199 Town Center Parkway,
 Spring Hill, Tennessee 37174
 Phone: 931.451.0936
jhagaman@springhilltn.org
www.springhilltn.org

Wil Evans, President
 Maury County Chamber &
 Economic Alliance
 106 West 6th Street
 Columbia, Tennessee 38402
 Phone: 931.388.2155
wevans@mauryalliance.com
www.mauryalliance.com



MTIDA represents the Local Electric Power and Natural Gas Distributors located in the 40 county region of Middle Tennessee.

SPRING HILL-MAURY COUNTY, TENNESSEE

The information contained herein was obtained from sources we consider reliable. We can not be responsible, however, for errors or change in information.

Updated January 2024

APPENDIX B: COUNTY OVERVIEW

[National Risk Index](#)

National Risk Index

July 09, 2024

Maury County, Tennessee

Summary

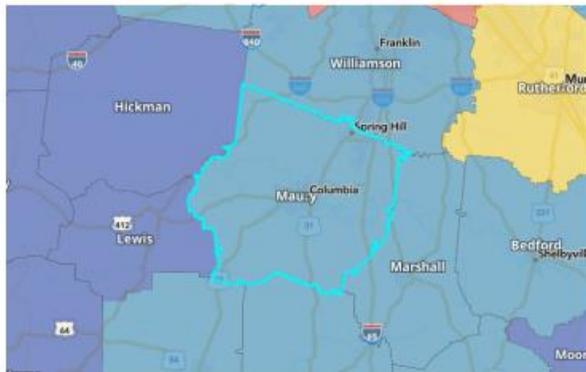


While reviewing this report, keep in mind that low risk is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience.

For more information about the National Risk Index, its data, and how to interpret the information it provides, please review the **About the National Risk Index** and **How to Take Action** sections at the end of this report. Or, visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Risk Index

The Risk Index rating is **Relatively Low** for **Maury County, TN** when compared to the rest of the U.S.



APPENDIX B: COUNTY OVERVIEW



Hazard Type Risk Index

Hazard type Risk Index scores are calculated using data for only a single hazard type, and reflect a community's Expected Annual Loss value, community risk factors, and the adjustment factor used to calculate the risk value.

Hazard Type	Risk Index Rating	Risk Index Score	National Percentile
Avalanche	Not Applicable	--	
Coastal Flooding	Not Applicable	--	
Cold Wave	No Rating	0	0 ----- 100
Drought	Very Low	26.6	0 ----- 100
Earthquake	Relatively Low	91	0 ----- 100
Hail	Very Low	39.7	0 ----- 100
Heat Wave	Relatively Low	60.6	0 ----- 100
Hurricane	Very Low	42.8	0 ----- 100
Ice Storm	Relatively Low	50.2	0 ----- 100
Landslide	Relatively Moderate	94.3	0 ----- 100
Lightning	Relatively Moderate	73.8	0 ----- 100
Riverine Flooding	Relatively Low	68.6	0 ----- 100
Strong Wind	Relatively High	93.5	0 ----- 100
Tornado	Relatively High	94	0 ----- 100
Tsunami	Not Applicable	--	
Volcanic Activity	Not Applicable	--	
Wildfire	Very Low	47.1	0 ----- 100
Winter Weather	Relatively Low	28.1	0 ----- 100

APPENDIX B: COUNTY OVERVIEW

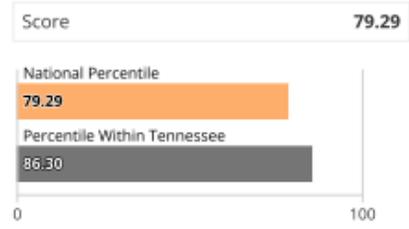
Risk Factor Breakdown

Hazard Type	EAL Value	Social Vulnerability	Community Resilience	CRF	Risk Value	Risk Index Score
Tornado	\$9,960,728	Relatively Low	Relatively High	1.1	\$10,774,571	94
Earthquake	\$3,295,965	Relatively Low	Relatively High	1.1	\$3,919,425	91
Strong Wind	\$2,170,163	Relatively Low	Relatively High	1.1	\$2,357,133	93.5
Riverine Flooding	\$1,070,344	Relatively Low	Relatively High	1.1	\$1,071,638	68.6
Landslide	\$220,755	Relatively Low	Relatively High	1.1	\$246,893	94.3
Lightning	\$223,185	Relatively Low	Relatively High	1.1	\$242,410	73.8
Heat Wave	\$145,410	Relatively Low	Relatively High	1.1	\$156,446	60.6
Hurricane	\$100,616	Relatively Low	Relatively High	1.1	\$109,725	42.8
Hail	\$62,143	Relatively Low	Relatively High	1.1	\$67,405	39.7
Ice Storm	\$60,676	Relatively Low	Relatively High	1.1	\$66,259	50.2
Wildfire	\$33,070	Relatively Low	Relatively High	1.1	\$34,019	47.1
Winter Weather	\$21,589	Relatively Low	Relatively High	1.1	\$23,456	28.1
Drought	\$2,611	Relatively Low	Relatively High	1.1	\$2,552	26.6
Cold Wave	\$0	Relatively Low	Relatively High	1.1	\$0	0
Avalanche	--	Relatively Low	Relatively High	1.1	--	--
Coastal Flooding	--	Relatively Low	Relatively High	1.1	--	--
Tsunami	--	Relatively Low	Relatively High	1.1	--	--
Volcanic Activity	--	Relatively Low	Relatively High	1.1	--	--

APPENDIX B: COUNTY OVERVIEW

Expected Annual Loss

In **Maury County, TN**, expected loss each year due to natural hazards is **Relatively Low** when compared to the rest of the U.S.



79% of U.S. counties have a lower Expected Annual Loss
86% of counties in Tennessee have a lower Expected Annual Loss

Expected Annual Loss Legend

- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- No Expected Annual Losses
- Not Applicable
- Insufficient Data

Composite Expected Annual Loss		\$17,367,256.44	
Composite Expected Annual Loss Rate National Percentile		53.9	
Building EAL	\$6,637,750.18	Population EAL	0.92 fatalities
Building EAL Rate	\$1 per \$2.29K of building value	Population EAL Rate	1 per 109.21K people
Agriculture EAL	\$10,820.38	Population Equivalence EAL	\$10,718,685.88
Agriculture EAL Rate	\$1 per \$4.83K of agriculture value		

Expected Annual Loss for Hazard Types

Expected Annual Loss scores for hazard types are calculated using data for only a single hazard type, and reflect a community's relative expected annual loss for only that hazard type.

14 of 18 hazard types contribute to the expected annual loss for **Maury County, TN**.

Hazard Type	Expected Annual Loss Rating	EAL Value	Score
Tornado	Relatively High	\$9,960,728	94.6
Earthquake	Relatively Low	\$3,295,965	89.5

APPENDIX B: COUNTY OVERVIEW

Hazard Type	Expected Annual Loss Rating	EAL Value	Score
Strong Wind	Relatively High	\$2,170,163	93.8
Riverine Flooding	Relatively Low	\$1,070,344	72.1
Lightning	Relatively Moderate	\$223,185	75.3
Landslide	Relatively Moderate	\$220,755	94.3
Heat Wave	Relatively Low	\$145,410	63.3
Hurricane	Very Low	\$100,616	42.3
Hail	Relatively Low	\$62,144	42.8
Ice Storm	Relatively Low	\$60,676	51.6
Wildfire	Very Low	\$33,070	47.8
Winter Weather	Relatively Low	\$21,589	32.0
Drought	Very Low	\$2,611	29.5
Cold Wave	No Expected Annual Losses	\$0	0.0
Avalanche	Not Applicable	--	--
Coastal Flooding	Not Applicable	--	--
Tsunami	Not Applicable	--	--
Volcanic Activity	Not Applicable	--	--

Expected Annual Loss Values

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Avalanche	--	--	--	--	--
Coastal Flooding	--	--	--	--	--
Cold Wave	\$0	\$0	\$0	0.00	\$0
Drought	\$2,611	n/a	n/a	n/a	\$2,611
Earthquake	\$3,295,965	\$2,313,080	\$982,885	0.08	n/a
Hail	\$62,143	\$28,216	\$33,101	0.00	\$826
Heat Wave	\$145,410	\$1,022	\$144,349	0.01	\$39
Hurricane	\$100,616	\$96,505	\$1,171	0.00	\$2,940
Ice Storm	\$60,676	\$44,157	\$16,519	0.00	n/a
Landslide	\$220,755	\$187,049	\$33,706	0.00	n/a
Lightning	\$223,185	\$37,382	\$185,804	0.02	n/a
Riverine Flooding	\$1,070,344	\$267,466	\$802,717	0.07	\$161

APPENDIX B: COUNTY OVERVIEW

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Strong Wind	\$2,170,163	\$931,022	\$1,238,204	0.11	\$937
Tornado	\$9,960,728	\$2,693,201	\$7,264,230	0.63	\$3,298
Tsunami	--	--	--	--	--
Volcanic Activity	--	--	--	--	--
Wildfire	\$33,070	\$29,334	\$3,732	0.00	\$4
Winter Weather	\$21,589	\$9,316	\$12,267	0.00	\$6

Exposure Values

Hazard Type	Total	Building Value	Population Equivalence	Population	Agriculture Value
Avalanche	--	--	--	--	--
Coastal Flooding	--	--	--	--	--
Cold Wave	\$0	\$0	\$0	0.00	\$0
Drought	\$23,377,456	n/a	n/a	n/a	\$23,377,456
Earthquake	\$1,186,472,528,000	\$15,174,128,000	\$1,171,298,400,000	100,974.00	n/a
Hail	\$1,185,782,620,917	\$15,174,354,183	\$1,170,556,000,000	100,910.00	\$52,266,734
Heat Wave	\$1,185,782,620,917	\$15,174,354,183	\$1,170,556,000,000	100,910.00	\$52,266,734
Hurricane	\$1,183,315,405,337	\$15,155,787,222	\$1,168,107,474,088	100,698.92	\$52,144,026
Ice Storm	\$1,185,205,275,933	\$15,169,492,074	\$1,170,035,783,859	100,865.15	n/a
Landslide	\$516,998,085,879	\$6,277,099,233	\$510,720,986,646	44,027.67	n/a
Lightning	\$1,185,730,354,183	\$15,174,354,183	\$1,170,556,000,000	100,910.00	n/a
Riverine Flooding	\$18,870,768,877	\$335,569,783	\$18,529,735,147	1,597.39	\$5,463,948
Strong Wind	\$1,185,782,620,917	\$15,174,354,183	\$1,170,556,000,000	100,910.00	\$52,266,734
Tornado	\$1,185,782,620,917	\$15,174,354,183	\$1,170,556,000,000	100,910.00	\$52,266,734
Tsunami	--	--	--	--	--
Volcanic Activity	--	--	--	--	--
Wildfire	\$623,402,288,921	\$7,316,122,814	\$616,058,206,503	53,108.47	\$27,959,604
Winter Weather	\$1,185,782,620,917	\$15,174,354,183	\$1,170,556,000,000	100,910.00	\$52,266,734

Annualized Frequency Values

Hazard Type	Annualized Frequency	Events on Record	Period of Record
Avalanche	--	--	--

APPENDIX B: COUNTY OVERVIEW

Hazard Type	Annualized Frequency	Events on Record	Period of Record
Coastal Flooding	--	--	--
Cold Wave	0 events per year	0	2005-2021 (16 years)
Drought	9.7 events per year	266	2000-2021 (22 years)
Earthquake	0.128% chance per year	n/a	2021 dataset
Hail	3.9 events per year	134	1986-2021 (34 years)
Heat Wave	0.1 events per year	2	2005-2021 (16 years)
Hurricane	0 events per year	3	East 1851-2021 (171 years) / West 1949-2021 (73 years)
Ice Storm	0.6 events per year	41	1946-2014 (67 years)
Landslide	0 events per year	2	2010-2021 (12 years)
Lightning	89.3 events per year	1,966	1991-2012 (22 years)
Riverine Flooding	1.9 events per year	46	1996-2019 (24 years)
Strong Wind	6.3 events per year	214	1986-2021 (34 years)
Tornado	0.6 events per year	15	1950-2021 (72 years)
Tsunami	--	--	--
Volcanic Activity	--	--	--
Wildfire	0.001% chance per year	n/a	2021 dataset
Winter Weather	1.1 events per year	17	2005-2021 (16 years)

Historic Loss Ratios

Hazard Type	Overall Rating
Avalanche	--
Coastal Flooding	--
Cold Wave	No Rating
Drought	Very Low
Earthquake	Relatively High
Hail	Very Low
Heat Wave	Relatively Low
Hurricane	Very Low
Ice Storm	Very Low
Landslide	Very Low
Lightning	Very Low

APPENDIX B: COUNTY OVERVIEW

Hazard Type	Overall Rating
Riverine Flooding	Very Low
Strong Wind	Relatively Low
Tornado	Relatively Moderate
Tsunami	--
Volcanic Activity	--
Wildfire	Relatively Low
Winter Weather	Very Low

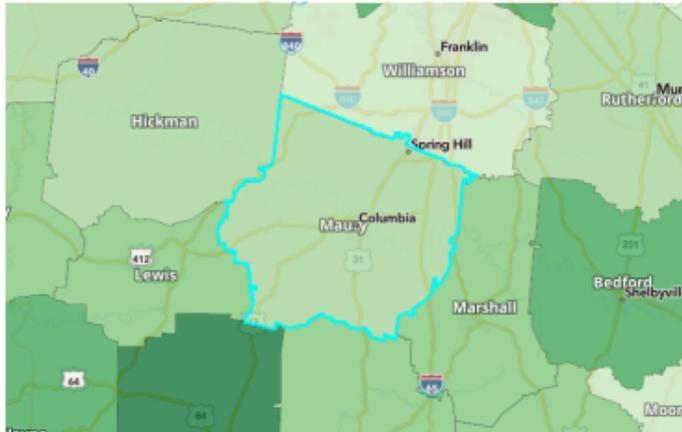
Expected Annual Loss Rate

Hazard Type	Building EAL Rate (per building value)	Population EAL Rate (per population)	Agriculture EAL Rate (per agriculture value)
Avalanche	--	--	--
Coastal Flooding	--	--	--
Cold Wave	--	--	--
Drought	--	--	\$1 per \$20.02K
Earthquake	\$1 per \$6.56K	1 per 1.19M	--
Hail	\$1 per \$537.79K	1 per 35.36M	\$1 per \$63.24K
Heat Wave	\$1 per \$14.85M	1 per 8.11M	\$1 per \$1.34M
Hurricane	\$1 per \$157.24K	1 per 999.36M	\$1 per \$17.78K
Ice Storm	\$1 per \$343.65K	1 per 70.86M	--
Landslide	\$1 per \$81.13K	1 per 34.73M	--
Lightning	\$1 per \$405.93K	1 per 6.30M	--
Riverine Flooding	\$1 per \$56.73K	1 per 1.46M	\$1 per \$325.45K
Strong Wind	\$1 per \$16.30K	1 per 945.37K	\$1 per \$55.80K
Tornado	\$1 per \$5.63K	1 per 161.14K	\$1 per \$15.85K
Tsunami	--	--	--
Volcanic Activity	--	--	--
Wildfire	\$1 per \$517.29K	1 per 313.62M	\$1 per \$13.67M
Winter Weather	\$1 per \$1.63M	1 per 95.42M	\$1 per \$9.36M

APPENDIX B: COUNTY OVERVIEW

Social Vulnerability

Social groups in **Maury County, TN** have a **Relatively Low** susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S.



Score **32.78**



33% of U.S. counties have a lower Social Vulnerability
16% of counties in Tennessee have a lower Social Vulnerability

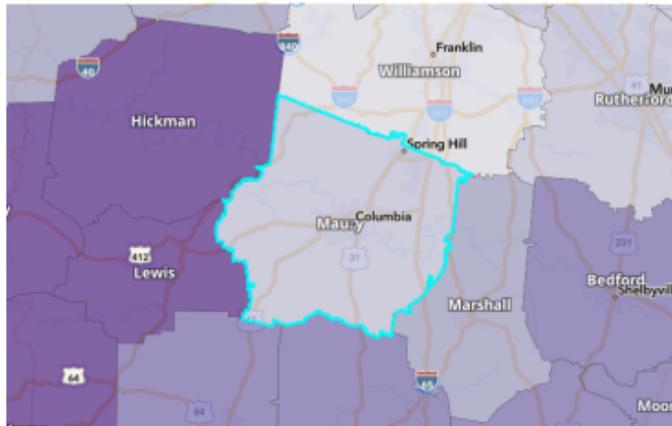
Social Vulnerability Legend

- Very High
- Relatively High
- Relatively Moderate
- Relatively Low
- Very Low
- Data Unavailable

APPENDIX B: COUNTY OVERVIEW

Community Resilience

Communities in **Maury County, TN** have a **Relatively High** ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S.



About the National Risk Index

The National Risk Index is a dataset and online tool to help illustrate the United States communities most at risk for 18 natural hazards: Avalanche, Coastal Flooding, Cold Wave, Drought, Earthquake, Hail, Heat Wave, Hurricane, Ice Storm, Landslide, Lightning, Riverine Flooding, Strong Wind, Tornado, Tsunami, Volcanic Activity, Wildfire, and Winter Weather.

The National Risk Index leverages available source data for Expected Annual Loss due to these 18 hazard types, Social Vulnerability, and Community Resilience to develop a baseline relative risk measurement for each United States county and Census tract. These measurements are calculated using average past conditions, but they cannot be used to predict future outcomes for a community. The National Risk Index is intended to fill gaps in available data and analyses to better inform federal, state, local, tribal, and territorial decision makers as they develop risk reduction strategies.

Explore the National Risk Index Map at hazards.fema.gov/nri/map.

Visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

Calculating the Risk Index

Risk Index scores are calculated using an equation that combines scores for Expected Annual Loss due to natural hazards, Social Vulnerability and Community Resilience:

APPENDIX B: COUNTY OVERVIEW

$$\text{Risk Index} = \text{Expected Annual Loss} \times \text{Social Vulnerability} + \text{Community Resilience}$$

Risk Index scores are presented as a composite score for all 18 hazard types, as well as individual scores for each hazard type.

For more information, visit hazards.fema.gov/nri/determining-risk.

Calculating Expected Annual Loss

Expected Annual Loss scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios for 18 hazard types:

$$\text{Expected Annual Loss} = \text{Exposure} \times \text{Annualized Frequency} \times \text{Historic Loss Ratio}$$

Expected Annual Loss scores are presented as a composite score for all 18 hazard types, as well as individual scores for each hazard type.

For more information, visit hazards.fema.gov/nri/expected-annual-loss.

Calculating Social Vulnerability

Social Vulnerability is measured using the Social Vulnerability Index (SVI) published by the Centers for Disease Control and Prevention (CDC).

For more information, visit hazards.fema.gov/nri/social-vulnerability.

Calculating Community Resilience

Community Resilience is measured at the County level using the Baseline Resilience Indicators for Communities (HVRI BRIC) published by the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI).

For more information, visit hazards.fema.gov/nri/community-resilience.

How to Take Action

There are many ways to reduce natural hazard risk through mitigation. Communities with high National Risk Index scores can take action to reduce risk by decreasing Expected Annual Loss due to natural hazards, decreasing Social Vulnerability, and increasing Community Resilience.

For information about how to take action and reduce your risk, visit hazards.fema.gov/nri/take-action.

Disclaimer

The National Risk Index (the Risk Index or the Index) and its associated data are meant for planning purposes only. This tool was created for broad nationwide comparisons and is not a substitute for localized risk assessment analysis. Nationwide datasets used as inputs for the National Risk Index are, in many cases, not as accurate as available local data. Users with access to local data for each National Risk Index risk factor should consider substituting

APPENDIX B: COUNTY OVERVIEW

the Risk Index data with local data to recalculate a more accurate risk index. If you decide to download the National Risk Index data and substitute it with local data, you assume responsibility for the accuracy of the data and any resulting data index. Please visit the [Contact Us](#) page if you would like to discuss this process further.

The methodology used by the National Risk Index has been reviewed by subject matter experts in the fields of natural hazard risk research, risk analysis, mitigation planning, and emergency management. The processing methods used to create the National Risk Index have produced results similar to those from other natural hazard risk analyses conducted on a smaller scale. The breadth and combination of geographic information systems (GIS) and data processing techniques leveraged by the National Risk Index enable it to incorporate multiple hazard types and risk factors, manage its nationwide scope, and capture what might have been missed using other methods.

The National Risk Index does not consider the intricate economic and physical interdependencies that exist across geographic regions. Keep in mind that hazard impacts in surrounding counties or Census tracts can cause indirect losses in your community regardless of your community's risk profile.

Nationwide data available for some risk factors are rudimentary at this time. The National Risk Index will be continuously updated as new data become available and improved methodologies are identified.

The National Risk Index Contact Us page is available at hazards.fema.gov/nri/contact-us.

APPENDIX C: ETSU/NOAA

APPENDIX C: HISTORICAL HAZARD DATA

ETSU CLIMATE TREND AND VARIATIONS REPORT:

Drought

The future risk of drought in Maury County is tied to changes in the precipitation and temperature patterns the county may experience due to climate trends and variations. The Fourth National Climate Assessment (2018, NCA4) states climate variability is expected to increase the average temperature and the number of high-heat days in the southeastern United States and intensify the hydrologic cycle, leading to an increase in both extreme precipitation events and periods of drought in the southeastern United States. The Climate Mapping Risk Assessment (CMRA) Report for Maury County shows that while overall annual precipitation may increase, the number of dry days is expected to increase through the 21st century. Also, high-heat days are expected to increase, which could favor short-term periods of drought.

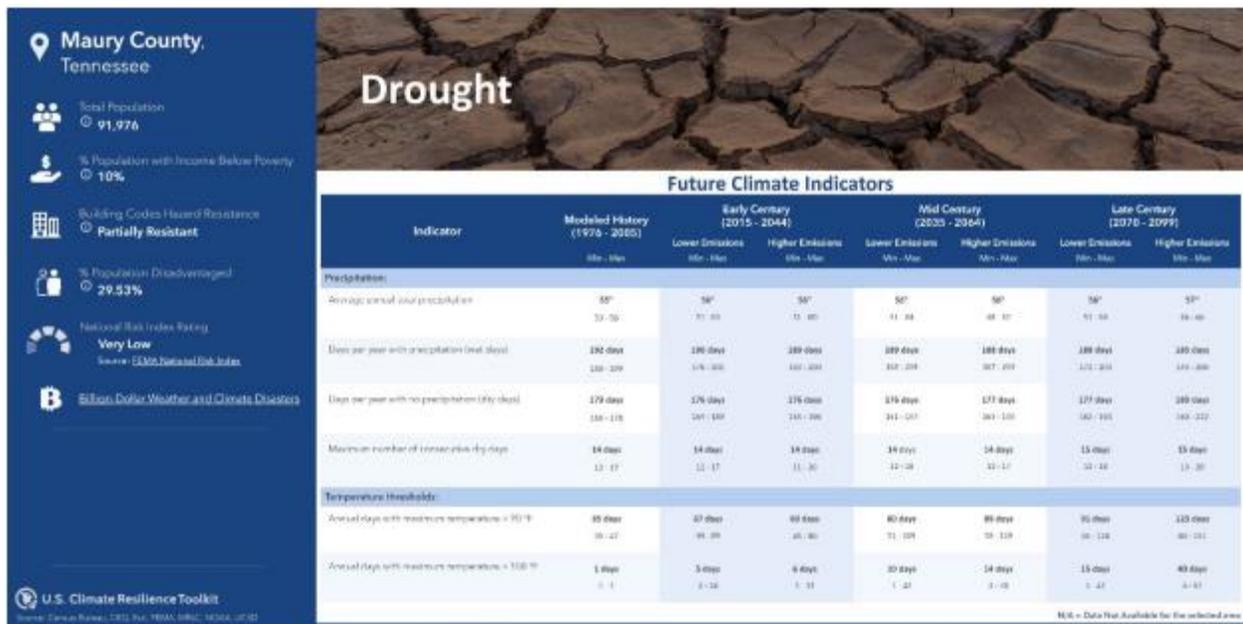


Figure 1: Climate Mapping Risk Assessment Report for Drought in Maury County.
(Source: US Climate Resilience Toolkit)

The increasing trends in average temperature and total precipitation in Maury County are also supported by observed historical data available from the NOAA National Centers for Environmental Information Climate-at-a-Glance tool (refer to subsequent figures). The trends of increasing temperature and annual precipitation have been more pronounced over the past several decades compared to the longer-term (1895-2023) trend. The long-term trend in temperature is slightly positive at +0.1°F per decade due to several warm decades in the early 20th century followed by a cool period from the 1950's to the early 1980's, and then years that were mostly warmer than the 20th century average after 1985. The medium term (1961-2023) shows an increased warming trend of +0.4°F per decade and the short term (1991-2023) shows a trend of +0.5°F per decade. Additionally, the county's climate stripes graphics from NOAA show that aside from a few warmer than normal years early in

APPENDIX C: ETSU/NOAA

the period, most of the above average temperature years have occurred in the past two decades. This indicates that warming has substantially increased in Maury County and, based on the NCA4, this trend is expected to continue in the future.

Total precipitation has also been increasing in Maury County, with the long-term (1895- 2023) trend in precipitation having a +0.67” increase per decade, and the medium-term (1961-2023) shows a slightly moderated trend of +0.55” increase per decade. However, the short-term (1991-2023) shows a decreasing trend of -0.21” per decade. This indicates that precipitation has largely remained neutral in Maury County, although based on the NCA4, a modest increasing trend in precipitation is expected in the future. Refer to Figures 19-21 in the Flood section for additional information. An increasing trend in precipitation may infer a decrease in drought potential; however, the observed pattern has been highly variable year-to-year and on shorter time periods. As temperatures increase, there can be more rapid evapotranspiration, potentially leading to more rapid onset of drought occurrences (i.e., Flash Droughts).

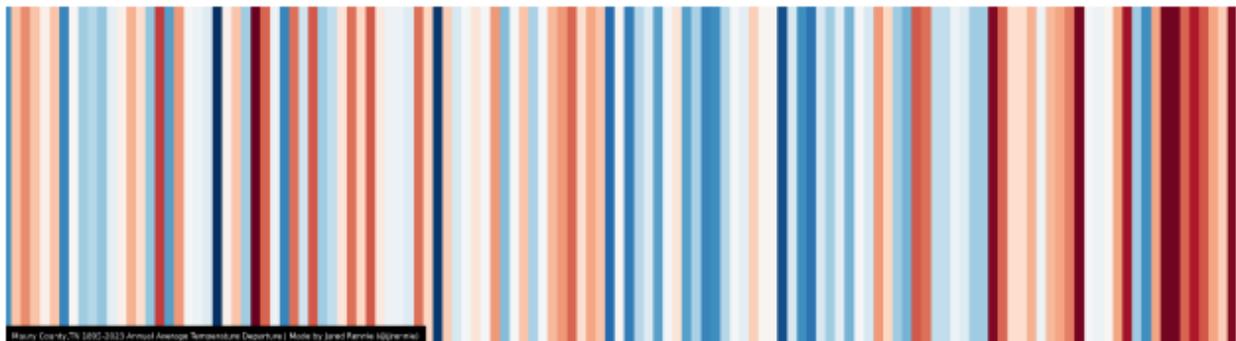


Figure 2: Observed (1895-2022) Annual Temperature for Maury County, Tennessee, Compared to the 20th Century Average with Darkening Shades of Blue for Below Average Temperature and Darkening Shades of Red for Above Average Temperature.
(Source: NOAA NCEI)



Figure 3: Observed (1895-2022) Annual Precipitation for Maury County, Tennessee, Compared to the 20th Century Average with Darkening Shades of Brown for Below Average Precipitation and Darkening Shades of Green for Above Average.
(Source: NOAA NCEI)

APPENDIX C: ETSU/NOAA

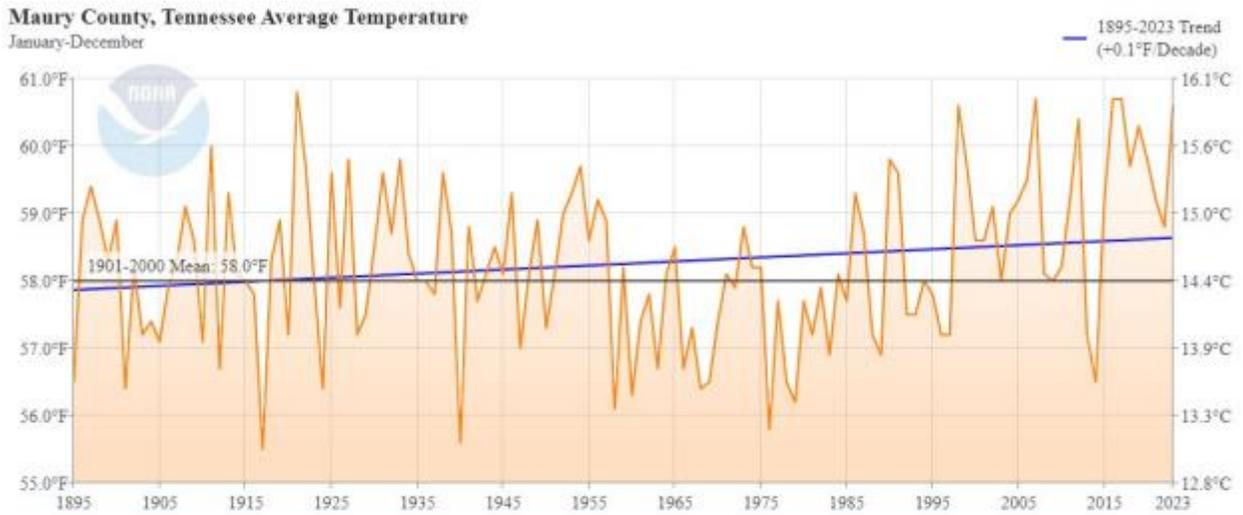


Figure 4: Annual Average Temperature for Maury County Tennessee, Showing a +0.1°F Increase per Decade Since 1895.

(Source: NOAA NCEI, Climate-at-a-Glance: County Time Series)

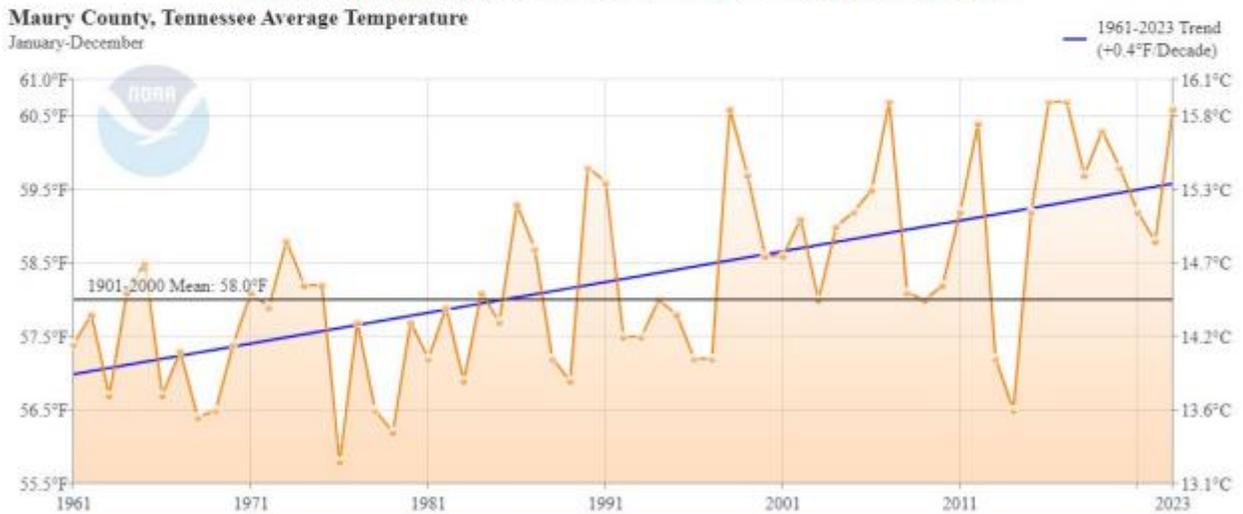


Figure 5: Annual Average Temperature for Maury County, Tennessee, Showing a +0.4°F Increase per Decade Since 1961.

(Source: NOAA NCEI, Climate-at-a-Glance: County Time Series)

APPENDIX C: ETSU/NOAA



Figure 6: Annual Average Temperature for Maury County, Tennessee, Showing a +0.5°F Increase per Decade Since 1991.
 (Source: NOAA NCEI, Climate-at-a-Glance: County Time Series)

The U.S. Drought Monitor (USDM) provides a weekly snapshot of drought conditions across the United States, starting in January of 2000 and continuing through the present. Using the timeline of drought conditions from the USDM, the cyclical nature of drought in Maury County is clear. Several periods of drought were recorded in this time, with the most intense drought seen in 2007, but several other short periods of severe drought observed, including in the later parts of 2023. The Tennessee Climate Office (TCO) analyzed trends in the USDM throughout Tennessee from 2000 to 2023. County-level trends were developed based on the amount of each county that was covered in D1 (Moderate Drought) or worse, D2 (Severe Drought) or worse, D3 (Extreme Drought) or worse, and D4 (Exceptional Drought) each week. Trends were assessed using space-time cube analysis tools in ArcGIS Pro, with the results shown subsequently. There was no significant trend in the amount of time that Maury County spent in drought conditions over this period.

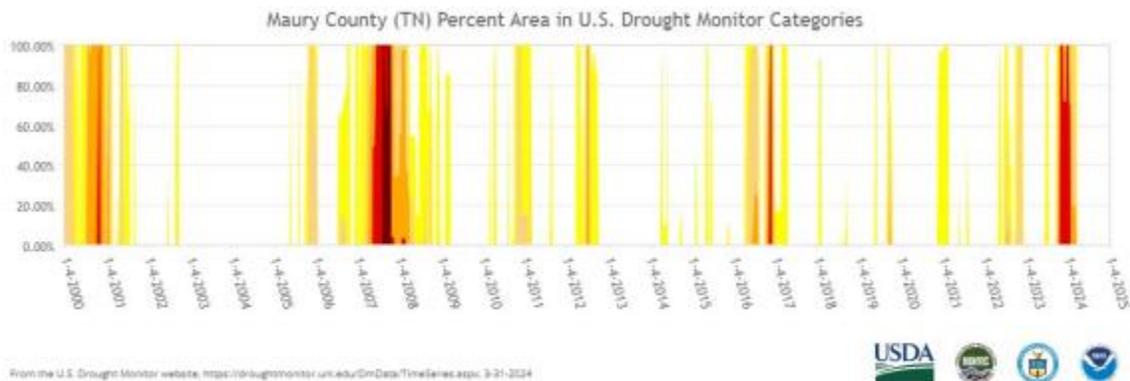


Figure 7: Timeline of drought conditions from the U.S. Drought Monitor from 2000 – 2023 for Maury County.

APPENDIX C: ETSU/NOAA

Trend Analysis of U.S. Drought Monitor Drought Categories 2000 to 2023

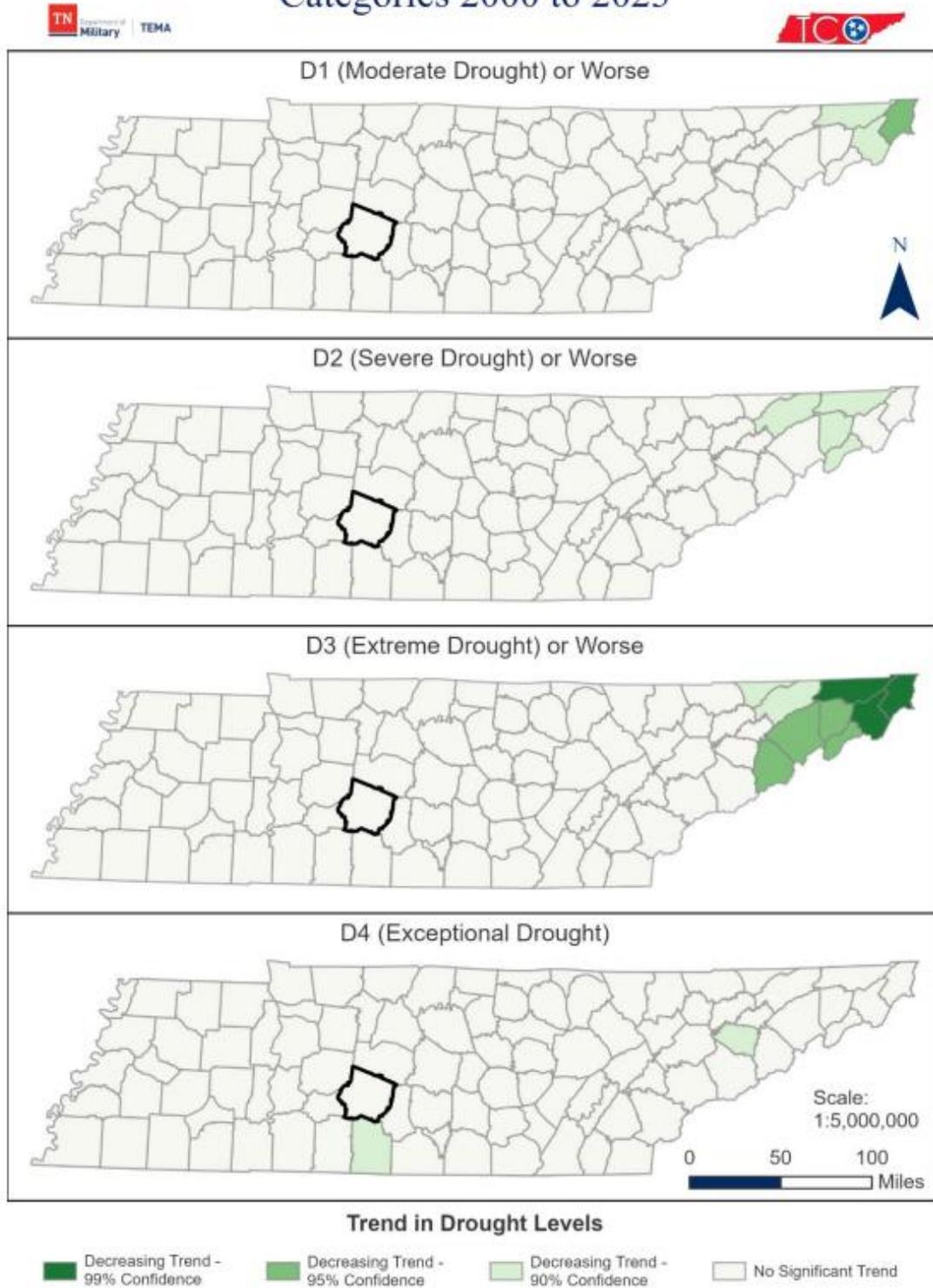


Figure 8: Trend Analysis of U.S. Drought Monitor from 2000 – 2023, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

Since the USDM only dates back to 2000, other metrics must be used to examine longer trends in drought occurrences. The Standardized Precipitation Index (SPI) is another metric that can quantify drought and periods of wetness by capturing how observed precipitation deviates from the climatological average. Drought.gov provides a timeline of the SPI derived from the Global Historical Climatology Network (GHCN), with data back to 1895 for the contiguous U.S. Red hues indicate drier conditions, while blue hues indicate wetter conditions. With this longer dataset the cyclical nature of dry and wet periods across Maury County is even more apparent.

Looking at the longer-term Standardized Precipitation Index (SPI) from the NCEI nClimGrid-monthly dataset (starting 1895) there is an increasing trend in the 3-month SPI value, indicating an increasing trend in precipitation (averaged over 3-months) across all of Tennessee with moderate to strong increases in values across Maury County. A gridded SPI dataset is also available at a 5km resolution from NCEI. This gridded dataset with data from 1895 to 2022 was used to analyze the linear trend in 3-month SPI values (SPI value calculated from the dryness or wetness values of the previous 3 months), shown in the following figure. All areas of Tennessee had an increasing trend in SPI values over this time period, indicating an increasing trend in precipitation that is consistent with other observed records and climate models signifying that Tennessee is seeing a decrease in the risk for longer-term droughts. The overall trend in increasing wetness will not prevent future periods of drought, especially short-duration high-intensity Flash Droughts.

Table 1: SPI Category and Value Definitions.

SPI Category	SPI Value	Description
D4	≤ -2	Exceptionally Dry
D3	-1.6 to -1.9	Extremely Dry
D2	-1.3 to -1.5	Severely Dry
D1	-0.8 to -1.2	Moderately Dry
D0	-0.5 to -0.7	Abnormally Dry
W0	+0.5 to +0.7	Abnormally Wet
W1	+0.8 to +1.2	Moderately Wet
W2	+1.3 to +1.5	Severely Wet
W3	+1.6 to +1.9	Extremely Wet
W4	≥ 2.0	Exceptionally Wet

APPENDIX C: ETSU/NOAA

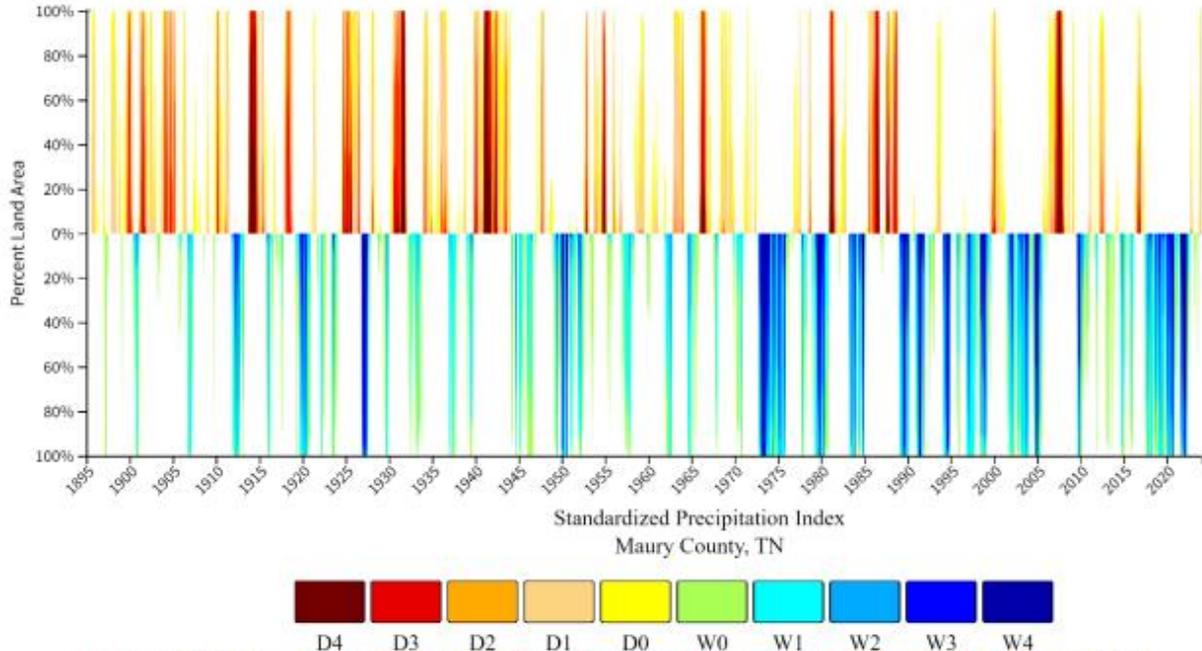
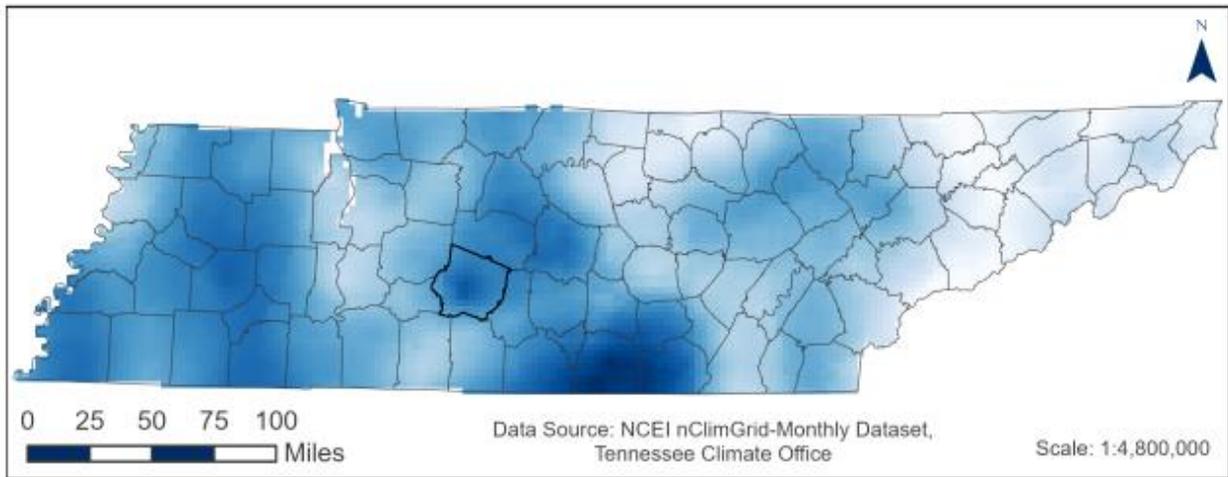


Figure 9: Periods of Drought and Wetness in Maury County, Tennessee from 1895 to 2023.
 (Source: Drought.gov)

3-Month SPI Value Trend from 1895-2023



TEMA

Increasing SPI Value Trend

Weaker Stronger

Figure 10: SPI Value Trend for 3-Months from 1895 to 2023, Maury County Outlined in Bold.

The previous trends are based on observed historical data, but the Climate Mapping for Resilience and Adaptation (CMRA) Assessment tool provides county-level output from future climate projections. Data from this tool indicates Maury County could

APPENDIX C: ETSU/NOAA

expect an increase in the number of dry days per year due to climate variability. However, the tool provides a range of possible outcomes, with higher and lower greenhouse gas emission scenarios, for Early-Century (2015-2044), Mid-Century (2035-2064), and Late Century (2070-2099) time periods, and maximum, minimum, and mean projected values. The following table shows the projected change in the number of dry days per year for Maury County. The Early-, Mid-, and Late-Century values represent the increase (positive values) or decrease (negative values) in dry days per year compared to the number of dry days per year from modeled history. In the mean projection, Maury County could see an increase of 3.4 to 4.5 dry days per year by Mid-Century and an increase of 4.0 to 7.4 dry days per year by Late-Century.

Table 2: Possible Change in the Number of Dry Days per Year for Maury County, Tennessee.

High Emissions Scenario	Modeled History (1976-2005)	Early Century (2015-2044)	Mid Century (2035-2064)	Late Century (2070-2099)
Driest Projection	177.6	+18.3	+20.9	+44.8
Mean Projection	172.9	+3.2	+4.5	+7.4
Wettest Projection	166.2	-0.8	-3.6	-6.7
Low Emissions Scenario	Modeled History (1976-2005)	Early Century (2015-2044)	Mid Century (2035-2064)	Late Century (2070-2099)
Driest Projection	177.6	+11.9	+19.8	+15.2
Mean Projection	172.9	+2.6	+3.4	+4.0
Wettest Projection	166.2	-2.2	-4.7	-4.1

The projected increase in high-heat days and the intensification of the hydrologic cycle will likely lead to more Flash Droughts, defined by the rapid onset or intensification of drought conditions. Flash Droughts in the southeastern United States are often connected to short periods of time (a couple of weeks or months) with much higher-than-normal temperatures and much lower-than-normal precipitation leading to the rapid depletion of soil moisture and streamflow. September 2019 and October 2023 are prime examples of recent Flash Droughts in Tennessee, and more broadly across the Southeast. During the 2023 fall flash drought, Maury County went from 61% of the county in Moderate Drought conditions (D1) on the October 3rd release of the U.S. Drought Monitor to 100% of the county being in Extreme Drought (D3) conditions on the November 7th release of the US Drought Monitor.

APPENDIX C: ETSU/NOAA

November 7, 2023
 compared to
 October 3, 2023

U.S. Drought Monitor Class Change - Tennessee
 5 Week

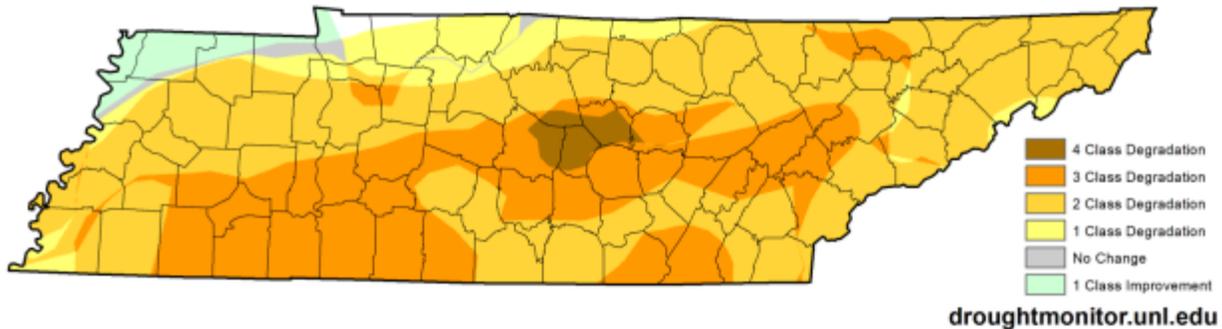


Figure 11: U.S. Drought Monitor Five Week Class Change in the State of Tennessee from October 3, 2023 to November 7, 2023.

(Source: National Drought Mitigation Center)

A study conducted by the U.S. Department of Agriculture (USDA) and U.S. Forest Service Office of Sustainability and Climate compared the length of a 10-year Drought, defined as a once in a decade drought as measured by the number of consecutive dry days (days with less than 0.1 inches of rain) during the summer season (May – September) between historical data and future climate models. For this study, the historical period was based on observed data from 1975 to 2005, and the future scenario was for the 2080’s based on the RCP8.5 (higher emissions) ensemble mean of 20 global climate models from the CMIP5 experiment. The output of this study, shown in the following figure, indicates that most areas of Tennessee could expect a 10-year Drought (10% annual probability of occurrence) to maintain its current length or increase by as much as 6 days in the 2080’s compared to a 1-year Drought from 1975-2005. In Maury County, a 10-year drought could increase in length from 0.1 to 4 days compared to the modeled history. This demonstrates that although the average annual precipitation amount may increase in Tennessee and in Maury County, periods between precipitation events could get longer, leading to flash droughts or shorter-term drought periods.

APPENDIX C: ETSU/NOAA

Change in the Length of a 10-Year Summer Drought

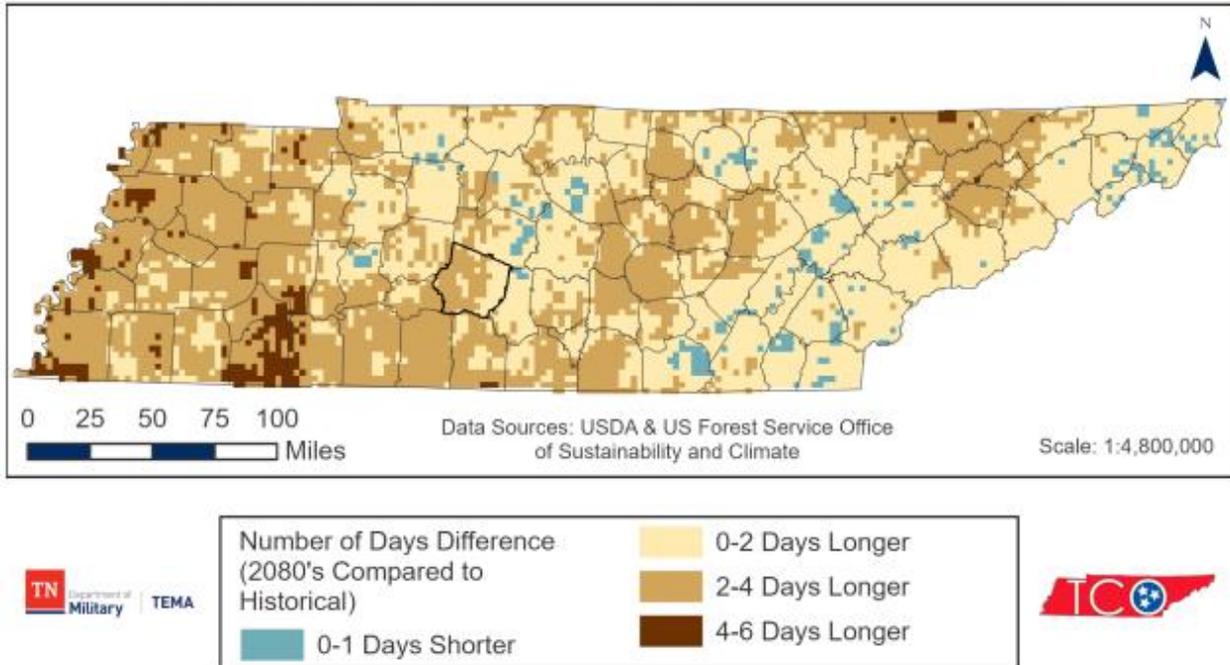


Figure 12: Change in the Length of a 10-Year (10% Annual Probability of Occurrence) Drought from Historical Data (1975-2005) to a 10-Year Drought in the 2080s (RCP8.5 Scenario), Maury County Outlined in Bold.

In addition to the variable climate, population growth and development in Tennessee means that the state will be at a higher risk for hydrological and socioeconomic droughts in the future as water demand increases.

Extreme Temperature

The Fourth National Climate Assessment (2018, NCA4) states climate variability is expected to increase the average temperature and the number of high-heat days in the southeastern United States and intensify the hydrologic cycle, leading to an increase in both extreme temperature and precipitation events in the southeastern United States. The increasing trend in average temperature in Maury County is also supported by observed historical data available from the NOAA National Centers for Environmental Information Climate-at-a-Glance tool (refer to Figures 4-6 in the Drought section of this appendix), and based on the NCA4, this trend is expected to continue in the future.

Heat

The Climate Mapping Risk Assessment (CMRA) Report for Maury County shows the potential for an increase in high heat days, when examining temperature thresholds and annual temperatures. By mid-century, Maury County could experience between 80 and 89 days of maximum temperatures exceeding 90°F, compared to an historical (1976-2005) average of 35 days. There could be 10-14 days of maximum temperatures exceeding 100°F by mid-century, compared to an historical average of

APPENDIX C: ETSU/NOAA

1 day per year. Additionally, the annual single highest maximum temperature could be 104-105°F by mid-century, compared to an historical average of 99°F.



Figure 13: Climate Mapping Risk Assessment Report for Extreme Heat in Maury County.
(Source: US Climate Resilience Toolkit)

Trend analysis of heat advisories/excessive heat warnings showed a significant increasing trend for Maury County at the 90% confidence level, meaning that these types of advisories and warnings (issued by the National Weather Service) have increased between 2005 and 2021. Maury County was also identified as an oscillating hot spot for advisories/excessive heat warnings; meaning that it has been significantly more and less likely than other areas of the state to receive these types of advisories during different years of this analysis, but for less than 90% of the time.

APPENDIX C: ETSU/NOAA

Trend in the Number of Heat Advisories/Excessive Heat Warnings Issued per Year (2005-2023)

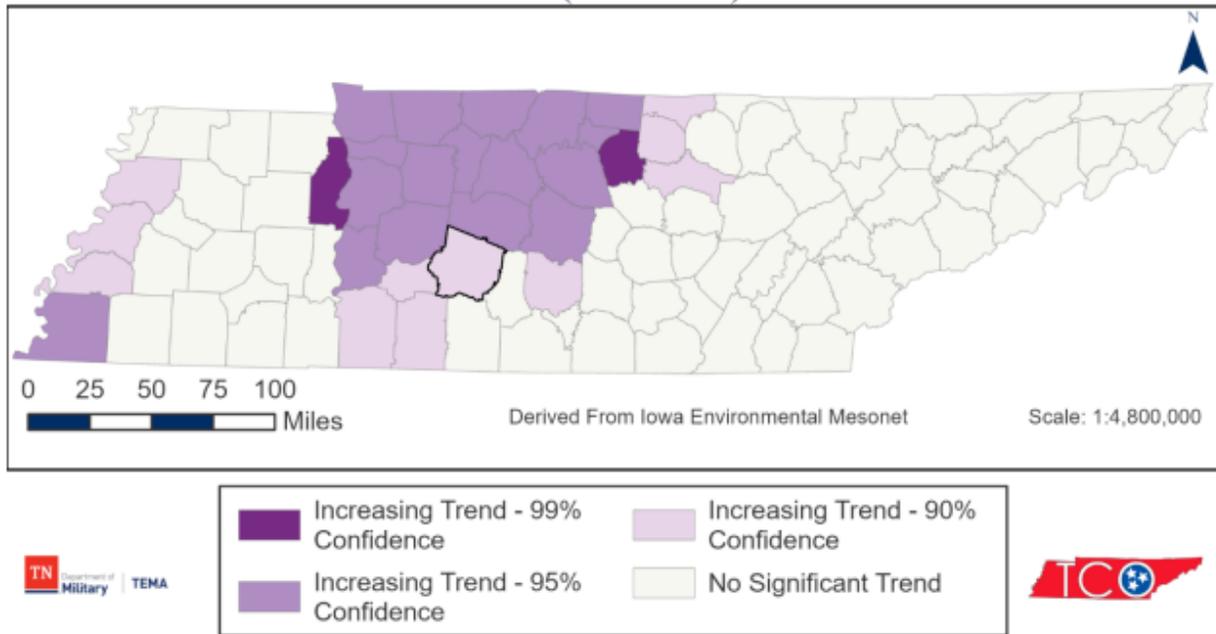


Figure 14: Trend in the Number of Heat Advisories/Excessive Heat Warnings Issued per Year, Maury County Outlined in Bold.

Emerging Hot Spot Analysis of Heat Advisories and Warnings (2005-2023)

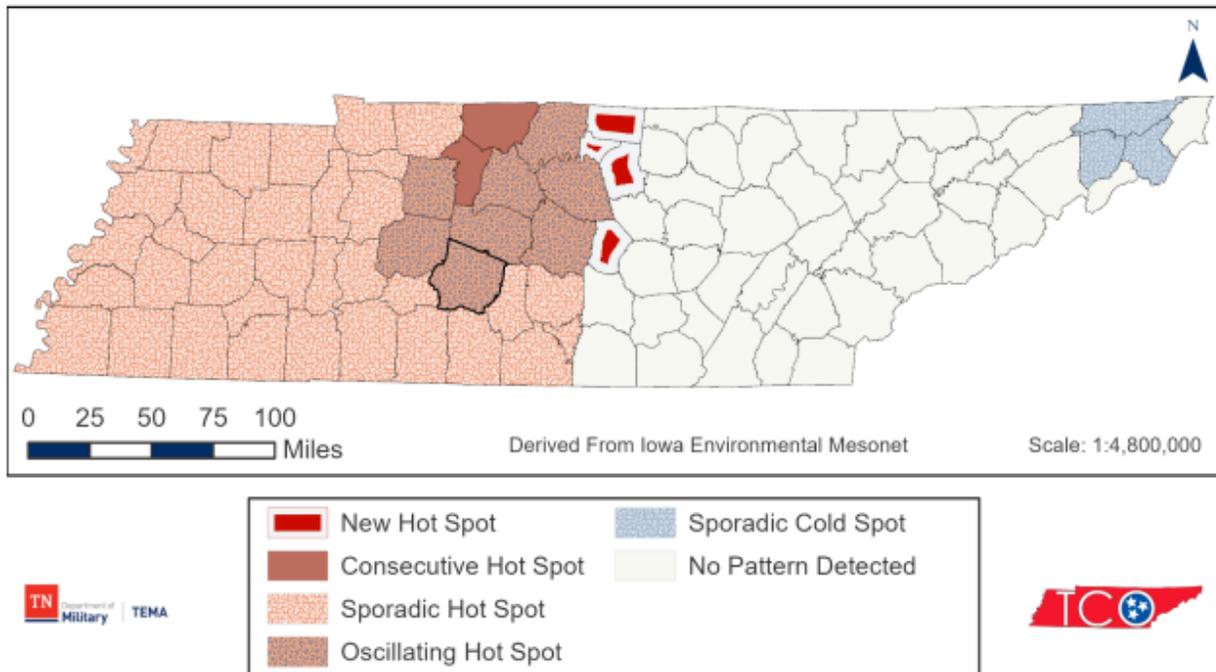


Figure 15: Emerging Hot Spot Analysis of Heat Advisories/Warnings Issued per Year, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

Cold

Trend analysis of cold/windchill advisories and extreme cold/extreme windchill warnings showed an increasing trend for Maury county and several neighboring counties in southwest Middle Tennessee at the 90% confidence level. This means that the number of these types of warnings and advisories has increased from 2005-2022. Maury County not identified as an emerging hot or cold spot for cold temperature or wind chill-based advisories or warnings; meaning it was not statistically more or less likely to have heat advisories or warnings than other parts of the state.

Trend in the Number of Cold/Windchill Advisories and Extreme Cold/Extreme Windchill Warnings Issued per Year (2005-2022)



Figure 16: Trend in the Number of Cold/Windchill Advisories and Extreme Cold/Extreme Windchill Warnings Issued per Year, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

Emerging Hot Spot Analysis of Cold/Windchill Advisories and Warnings (2005-2022)

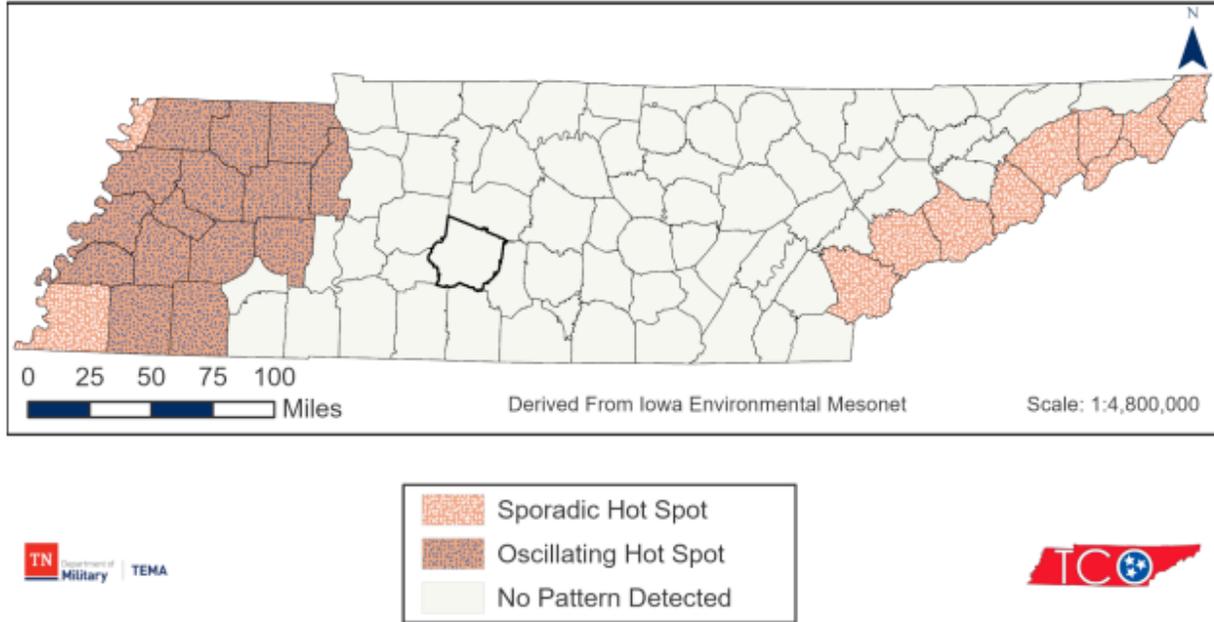


Figure 17: Emerging Hot Spot Analysis of Cold/Windchill Advisories/Warnings, Maury County Outlined in Bold.

Flooding

The future risk of flooding in Maury County is tied to predicted changes in the precipitation patterns. Tennessee and Maury County have increasing trends in observed precipitation, and the Fourth National Climate Assessment (2018) reports that the broader Southeast region has seen an increase in the frequency and intensity of extreme rainfall events. There is high confidence that this trend will continue in the future. According to the Climate Mapping Risk Assessment (CMRA) Report, Maury County is expected to experience a modest increase in various flood indicators by mid- and late-century. Both the increase in total precipitation and extreme rainfall events will increase the risk of flooding in Maury County. The long-term (1895-2023) trend in annual precipitation shows an increase of +0.67" per decade, the medium-term (1961-2023) trend in precipitation shows a slightly moderated increasing trend of +0.55" per decade, but the short-term (1991-2023) trend shows a decrease of -0.21" per decade. This indicates that precipitation has increased in Maury County over the long and medium terms, but has shown a slight decreasing trend in the past three. There is also a large amount of inter-annual variation with some of the wettest and driest years on record for the county occurring since 2000.

APPENDIX C: ETSU/NOAA

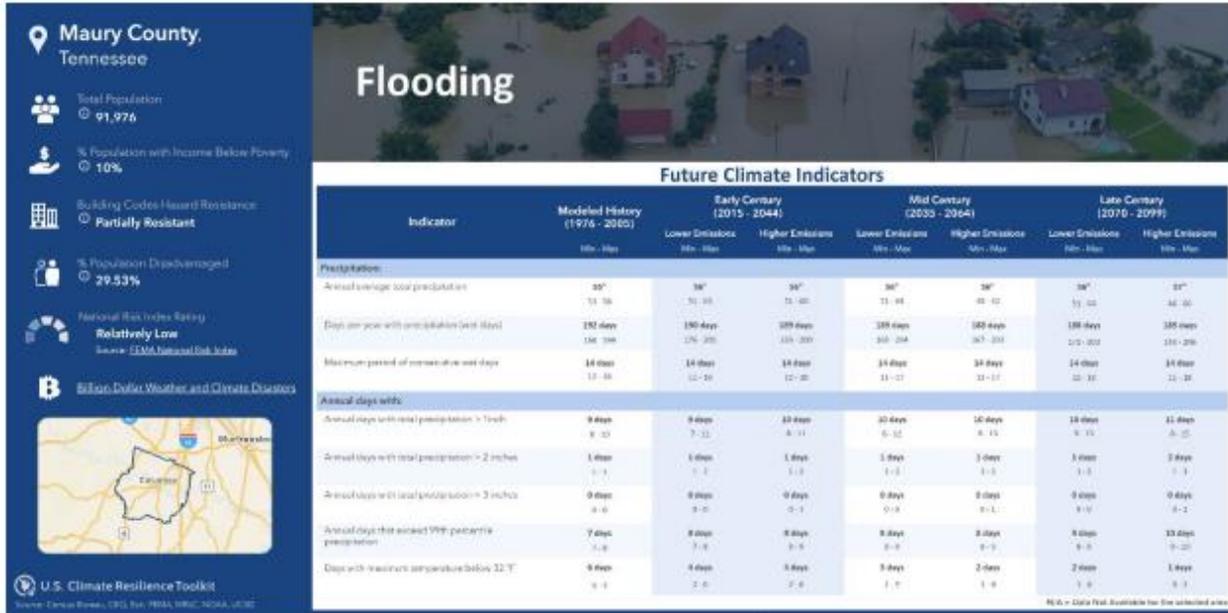


Figure 18: Climate Mapping Risk Assessment Report for Flooding in Maury County.
 (Source: US Climate Resilience Toolkit)

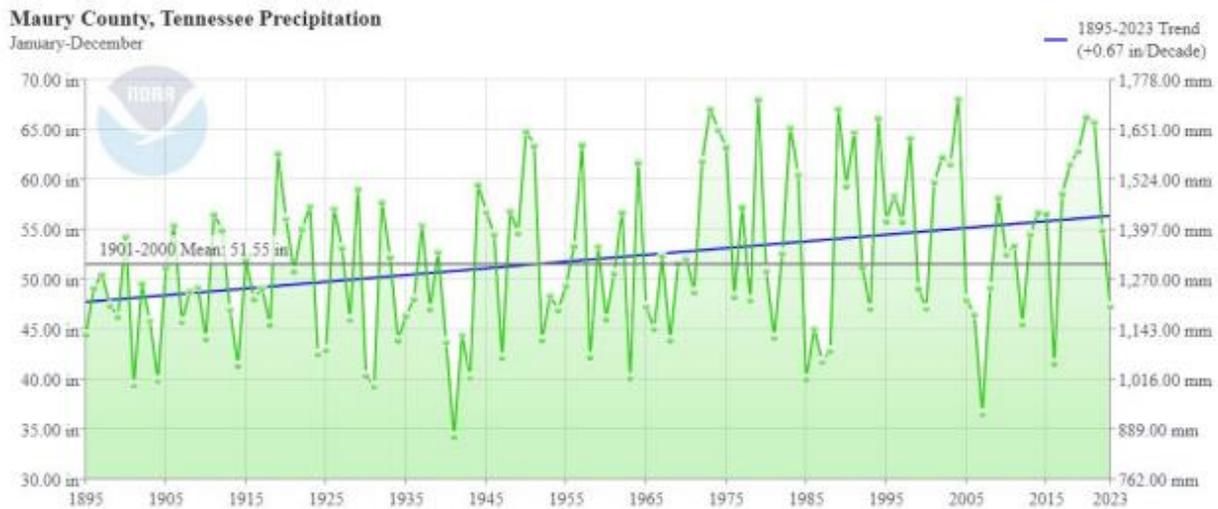


Figure 19: Total Annual Precipitation for Maury County, Tennessee, Showing a +0.67-inch Increase per Decade Since 1895.
 (Source: NOAA NCEI, Climate at a Glance: County Time Series)

APPENDIX C: ETSU/NOAA



Figure 20: Total Annual Precipitation for Maury County, Tennessee, Showing a +0.55-inch Increase per Decade Since 1961.
(Source: NOAA NCEI, Climate at a Glance: County Time Series)



Figure 21: Total Annual Precipitation for Maury County, Tennessee, Showing a -0.21-inch Decrease per Decade Since 1991.
(Source: NOAA NCEI, Climate at a Glance: County Time Series)

Using the NOAA Storm Events Database, flood events and flood damages (dollars) were examined for trends between 1996 and 2022. Maury County showed an increasing trend in the number of flood events, significant to the 95% confidence level in the Storm Events Database, but no significant trend for the dollar amount of flood damages in this time period. The trends in flood events and flood damages presented above are for riverine flooding, but as overall rainfall increases and trends towards higher intensity precipitation events continue flash flooding may become a higher concern for parts of Tennessee, including Maury County. The TCO analyzed trends in flash flood events and flash flood related damages from the NOAA Storm

APPENDIX C: ETSU/NOAA

Events Database from 1996 to 2022. Maury County showed no significant trend in the number of these events, but did show an increasing trend in the damages caused by flash flooding events which was significant to the 95% confidence level.

Trend Analysis of Flood Events and Flood Damages 1996 - 2022

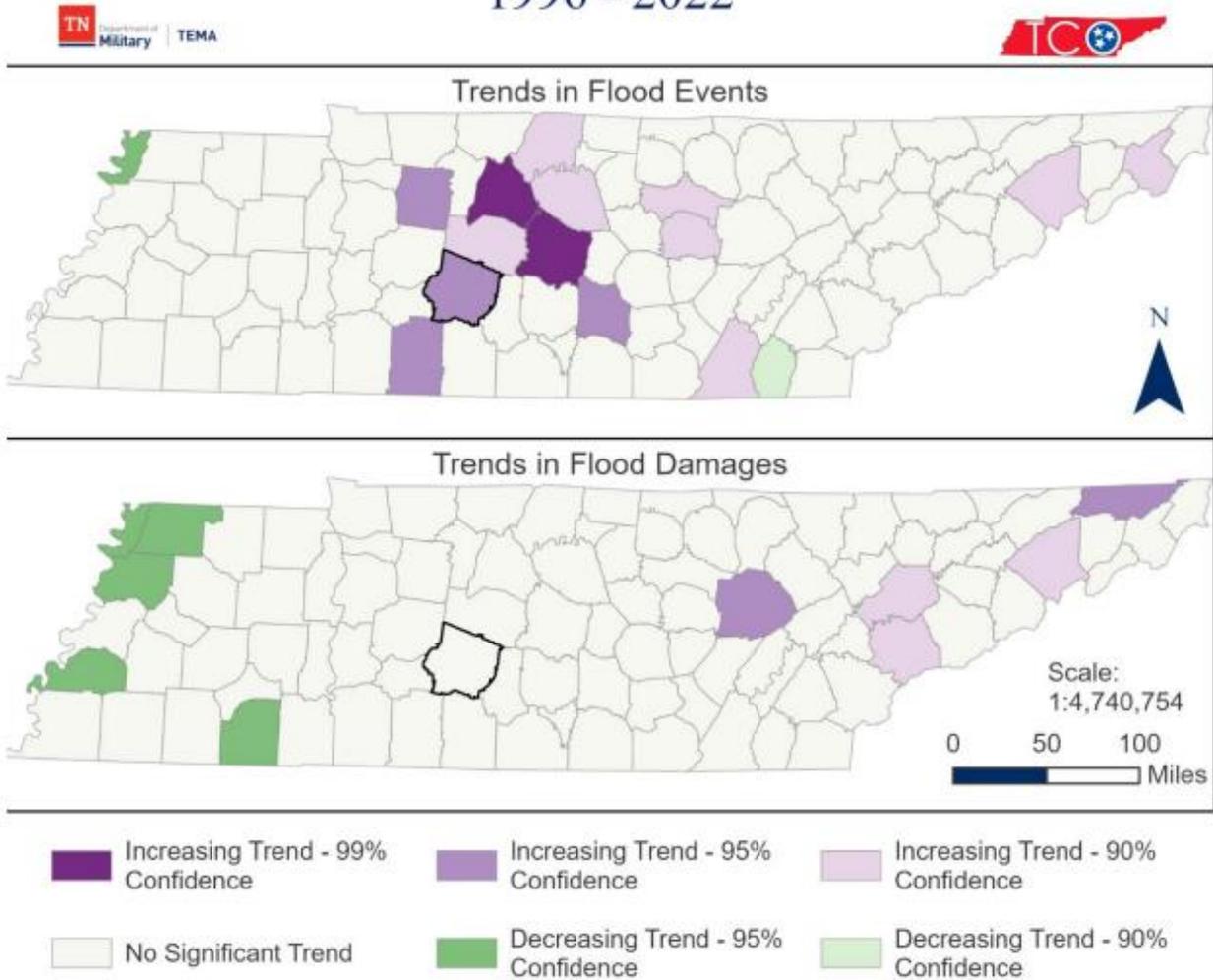


Figure 22: Trend in Flood Events and Flood Damages Reported in the NCEI Storm Events Database from 1996 to 2022, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

Trend Analysis of Flash Flood Events and Damages 1996 - 2022

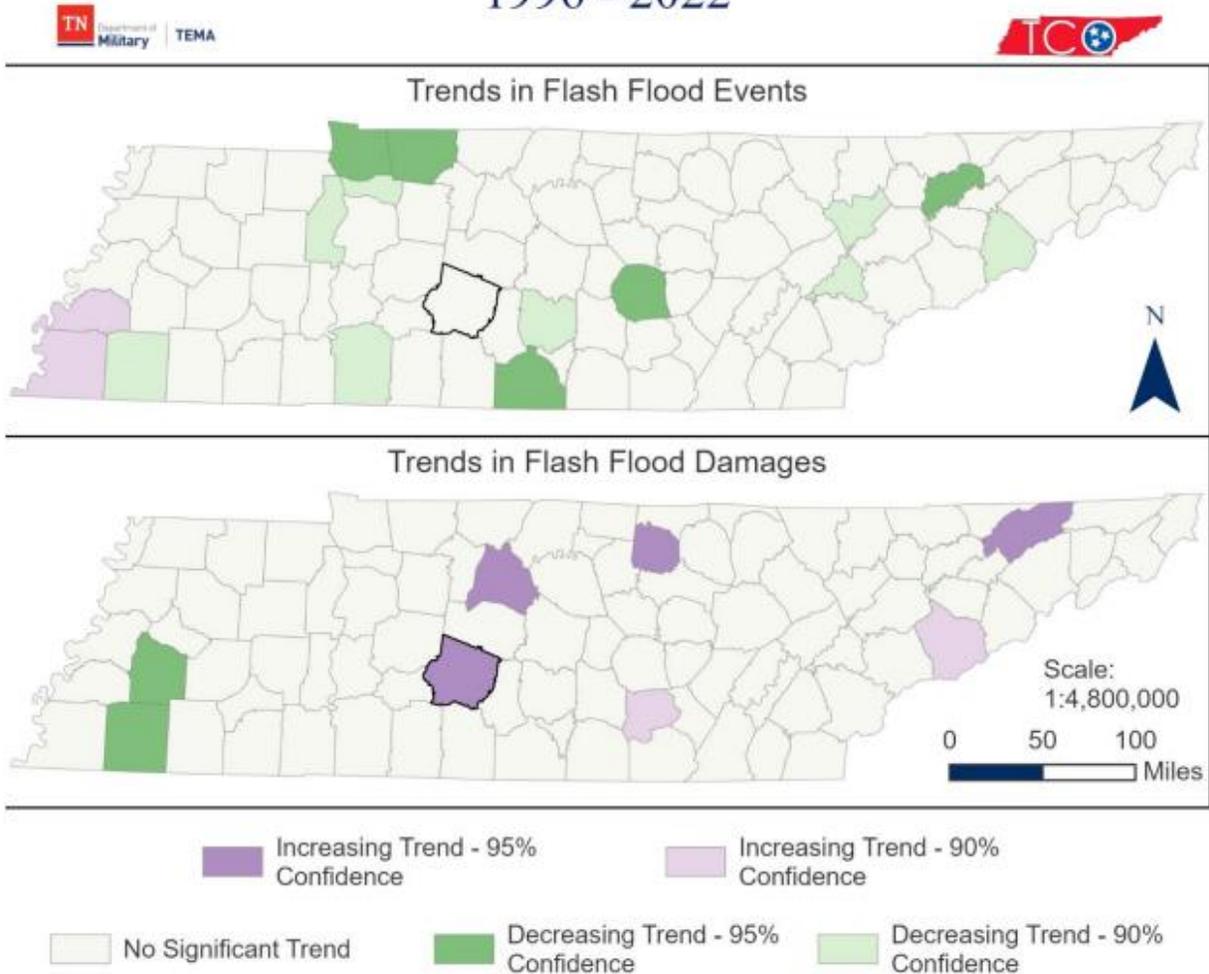


Figure 23: Trend in Flash Flood Events and Flash Flood Damages Reported in the NCEI Storm Events Database from 1996 to 2022, Maury County Outlined in Bold.

Extreme rainfall events are often categorized based on how much above or below their amounts were compared to the 100-year, or 1% annual probability, rainfall amounts. For Maury County, a 100-year 1-hour extreme rainfall total would be approximately 3.41-4.00 inches, with the higher amounts in the southern end of the county. For a 100-year 24-hour extreme rainfall event, Maury County would experience 7-8 inches of rain.

APPENDIX C: ETSU/NOAA

1-Hour Extreme Rainfall Amounts (100-year / 1% Annual Probability)

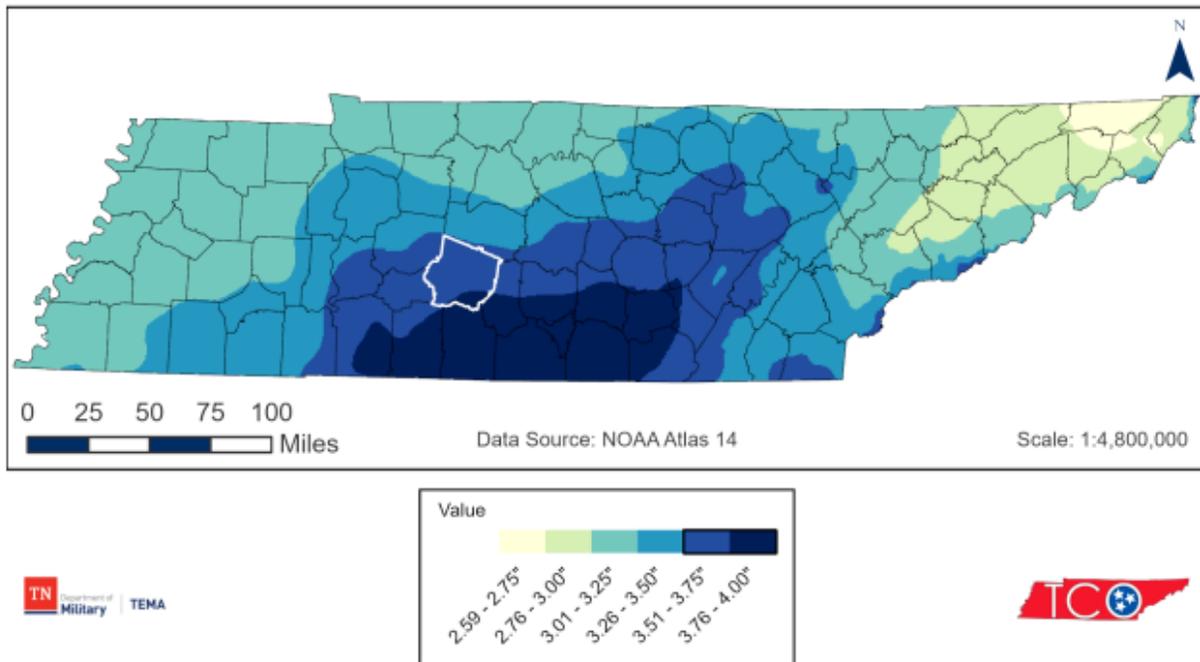


Figure 24: 1-hour Extreme Rainfall Estimates for 100-year Return Period (1% Annual Probability of Exceedance) using NOAA Atlas 14, Maury County, Outlined in White.

24-Hour Extreme Rainfall Amounts (100-year / 1% Annual Probability)

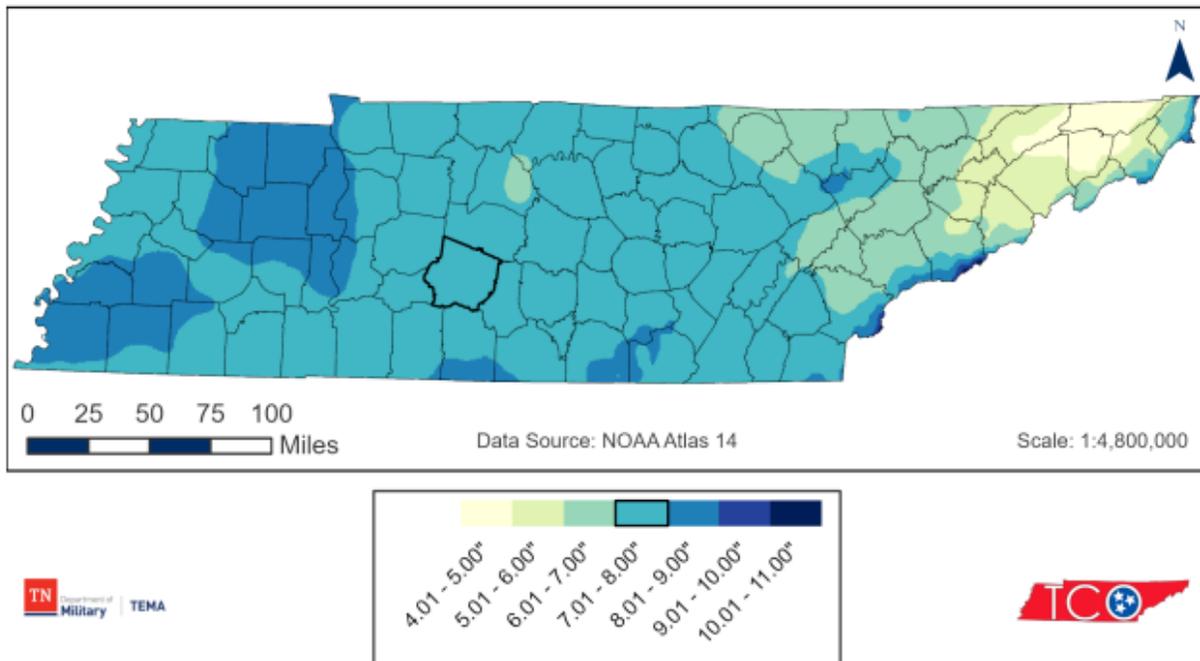


Figure 25: 24-hour Extreme Rainfall Estimates for 100-year Return Period (1% Annual Probability of Exceedance) using NOAA Atlas 14, Maury County, Outlined in Bold.

The TCO analyzed trends in heavy precipitation days per year in counties across Tennessee, these were the number of days that daily rainfall totals exceeded a 1-

APPENDIX C: ETSU/NOAA

year (100% chance of annual probability), 2-year (50% chance of annual probability), or 5-year (20% chance of annual probability) event. Maury County showed no significant trend for these heavy precipitation events.

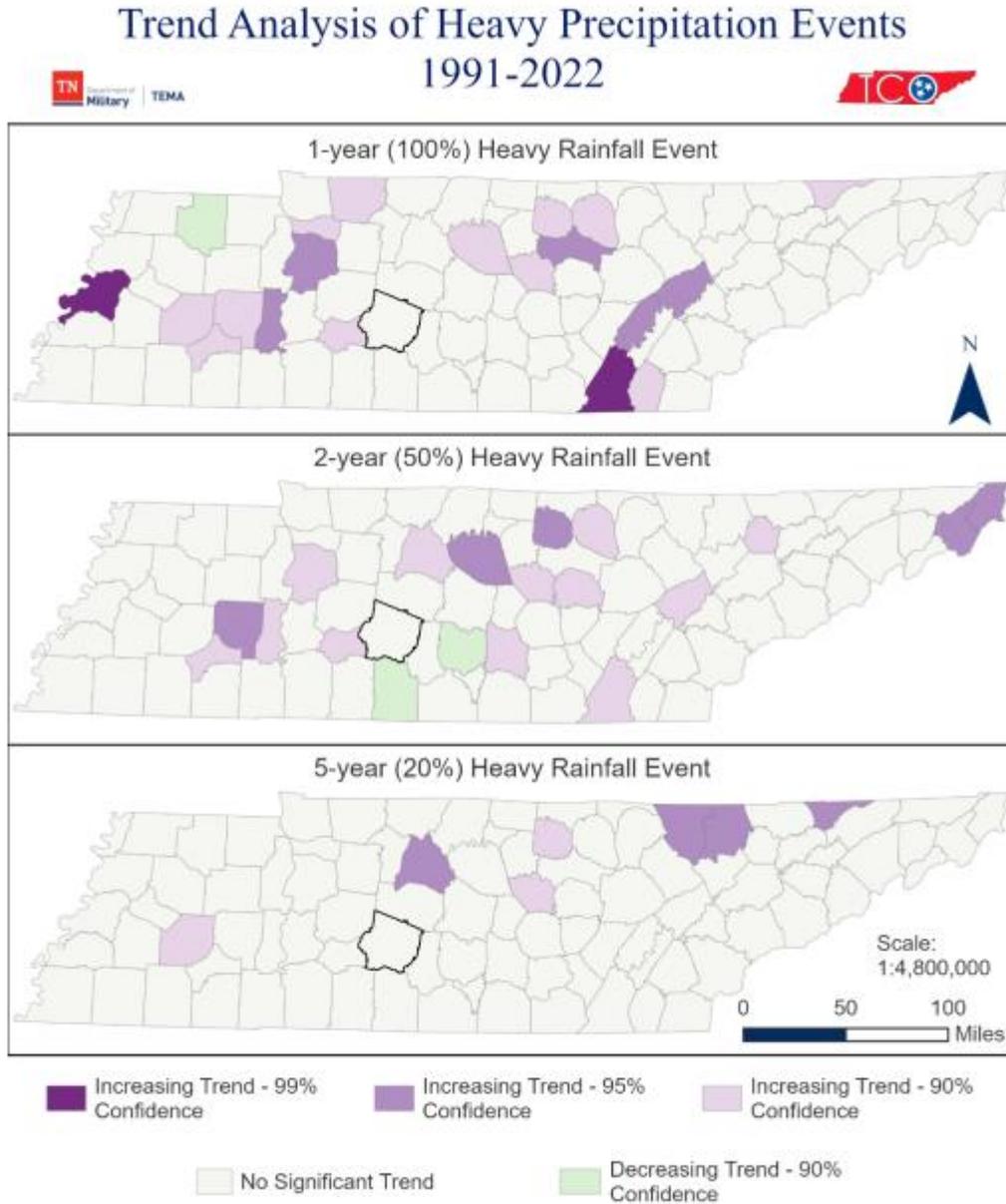


Figure 26: Trend in Heavy Precipitation Events (1-year, 2-year, and 5-year Return Period Exceedance Events), Maury County Outlined in Bold.

Additional data from the CMRA report for Maury County predicts an increase in the number of days per year with extreme precipitation throughout the 21st century. Based on analysis by the NCICS and NOAA, Columbia (the county seat of Maury County) currently has a 100- year 24-hour extreme rainfall amount of 7.74 inches and that amount is predicted to rise by as much as 1.29 inches (to 9.03") by 2055.

APPENDIX C: ETSU/NOAA

Table 3: Possible Change in the Number of Days per Year with Precipitation Exceeding 99th Percentile (Extreme Precipitation Days).

High Emissions Scenario	Modeled History (1976-2005)	Early Century (2015-2044)	Mid Century (2035-2064)	Late Century (2070-2099)
Driest Projection	6.6	+1.0	+1.3	+2.7
Mean Projection	6.9	+1.3	+1.5	+2.9
Wettest Projection	7.5	+1.3	+1.6	+3.0
Low Emissions Scenario	Modeled History (1976-2005)	Early Century (2015-2044)	Mid Century (2035-2064)	Late Century (2070-2099)
Driest Projection	6.6	+0.6	+1.0	+1.5
Mean Projection	6.9	+0.7	+1.2	+1.8
Wettest Projection	7.5	+0.7	+1.2	+1.9

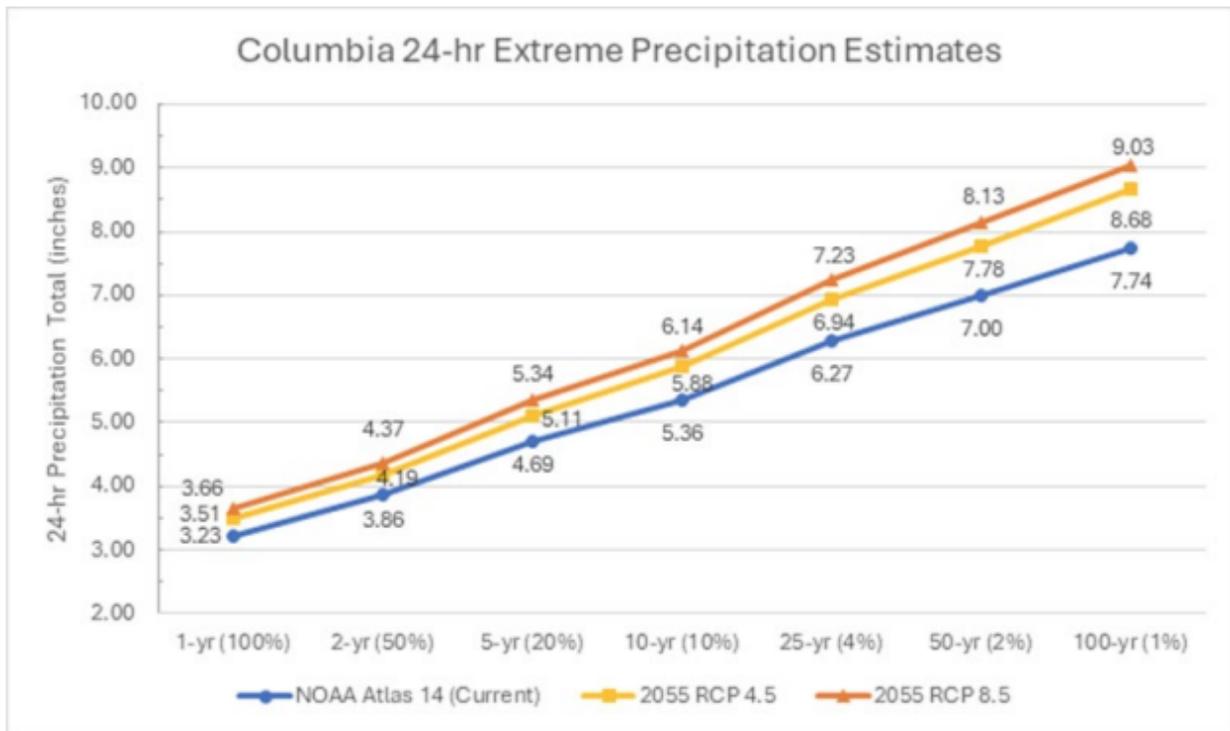


Figure 27: 24-hour Extreme Rainfall Estimates for 1-year, 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year Return Periods using NOAA Atlas 14 (historical data) and Mid-Century Values for 2055 using RCP4.5 and RCP8.5 Emission Scenarios.

The US Department of Agriculture and US Forest Service created a report based on models and projection data from Multivariate Adaptive Constructed Analogs (MACA), that show most of Tennessee is expected to see an increase in annual precipitation by the late 21st century. Maury County is projected to see an increase of 2-4% in annual precipitation by the late 21st century. However, potential changes in precipitation are not expected to be spread equally across all four seasons. The largest change for Maury County is projected to come in the spring season, with an increase of 6-10% compared to the historical average for spring. Summer is the only season where precipitation is projected to decrease in Maury County, with 0.1-4% lower precipitation amounts projected, fall precipitation is projected to increase by 4-

APPENDIX C: ETSU/NOAA

6%, and winter precipitation is projected to increase by 2-4% compared to the historical average for those seasons in Maury County.

Percent Change in Annual Precipitation by Late 21st Century

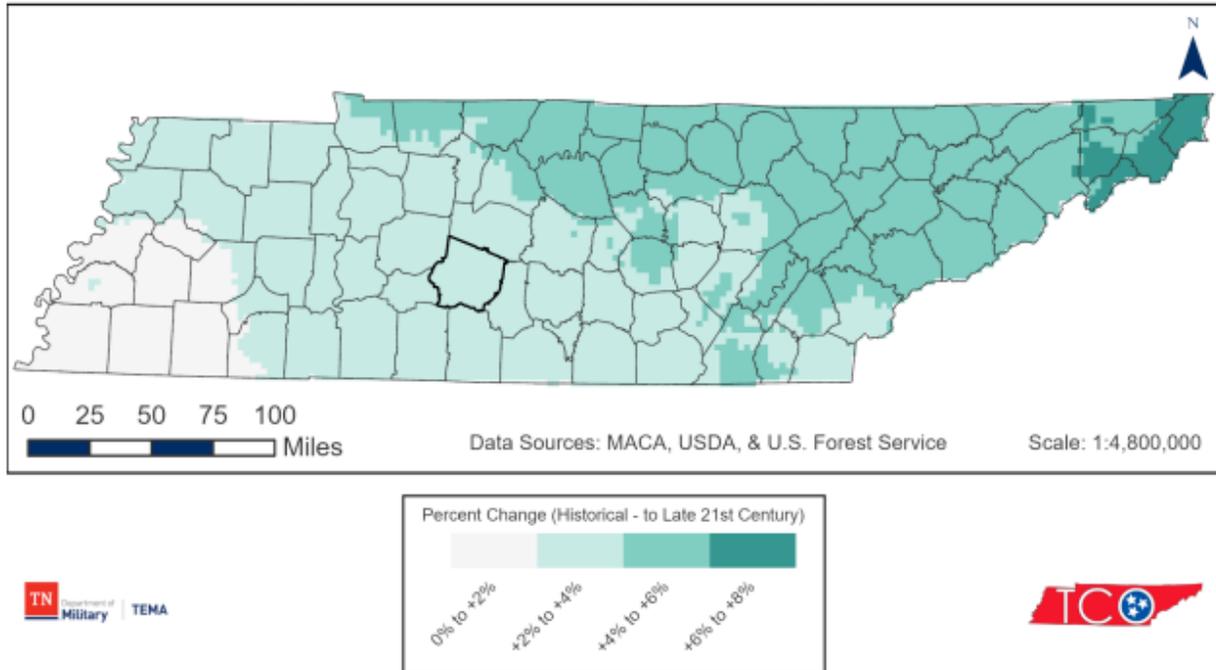


Figure 28: Projected Change in Annual Precipitation for Tennessee, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

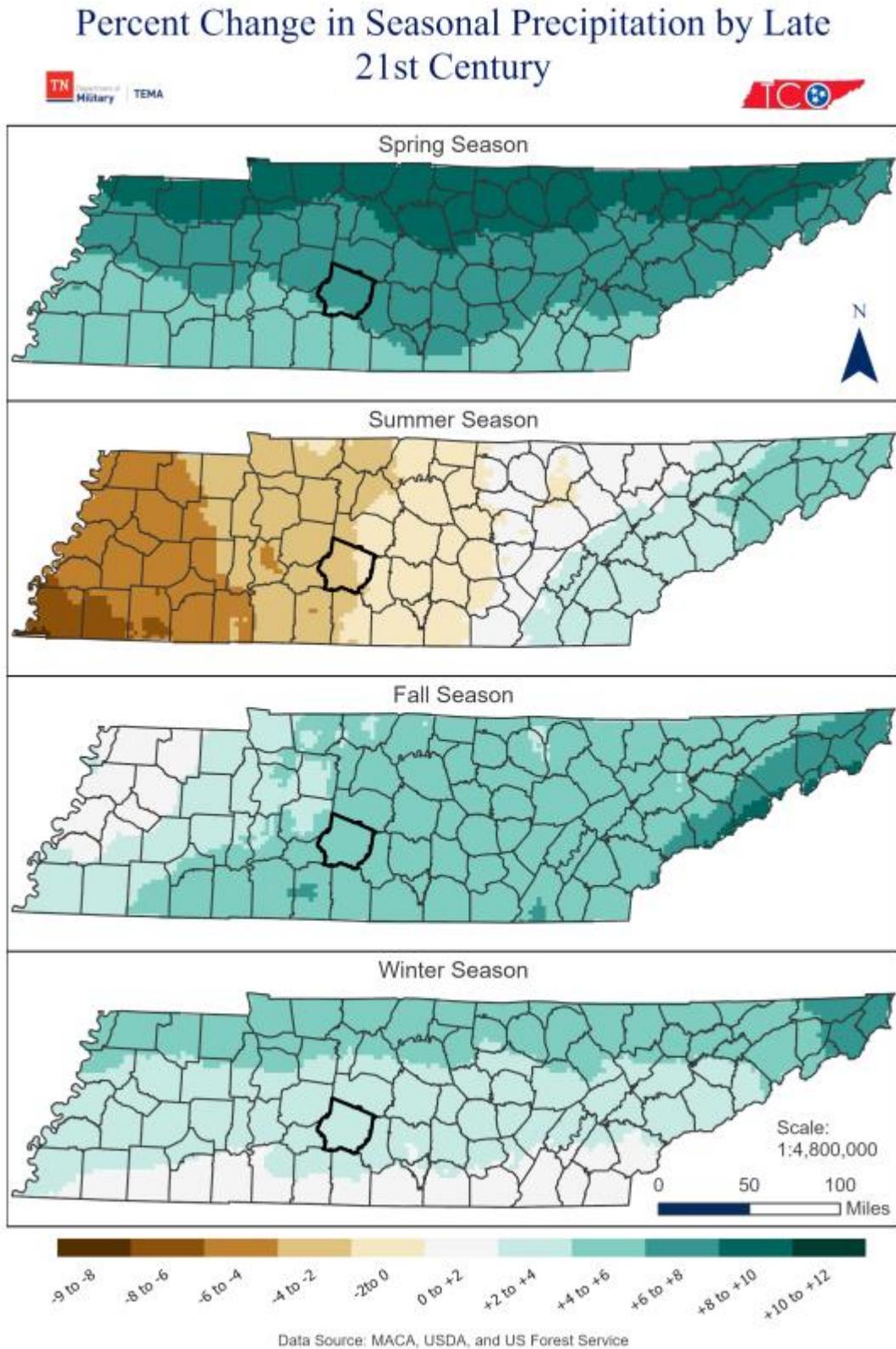


Figure 29: Projected Change in Seasonal Precipitation for Tennessee, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

Geologic Hazards

Specific impacts of climate on geologic hazards may vary depending on the local geological conditions of the area. Other factors, such as land use practices and human interventions, can interact with climate to influence the occurrence and severity of geologic hazards. Increased precipitation can result in greater soil moisture content, causing expansive soils to swell more and potentially lead to landslides and damage to infrastructure. Conversely, increased frequency and severity of drought can cause soils to shrink and crack, leading to subsidence and foundation problems in structures. The impacts of climate on landslides would be increased water from intense rainfalls that would weaken the soil's stability due to an increase in saturation which increases pore water pressure. Landslides and other types of mass wasting events can be triggered by weather events like extreme rainfall or repeated freeze-thaw cycles that destabilize slopes and cause fracturing in exposed rock surfaces. Climate variability is expected to increase the number and severity of extreme precipitation events in the Southeast U.S. (see the Flood section for more details about expected changes in extreme precipitation), which could increase the likelihood of landslides in parts of Maury County. Climate can also alter vegetation patterns which could drastically impact landslides since vegetation plays a crucial role in stabilizing slopes, and any changes can affect slope stability, potentially leading to increased landslide occurrences.

A study conducted by the USDA and U.S. Forest Service Office of Sustainability and Climate found that the frost-free season (the longest period of the year during which the temperature does not drop below freezing) could increase in length by 47 to 53 days in Maury County by the late 21st century. The lengthening of the frost-free season and overall decrease in number of days with temperatures below freezing would reduce the amount of time during the year rock surfaces and soils would be exposed to freeze-thaw cycles. This reduction could reduce the number of localized rock falls in Maury County. See the Winter Weather sub-section of Severe Weather section of this appendix for more information on observed and expected changes to winter temperatures in Maury County.

Changes in precipitation patterns and groundwater recharge rates can alter water table levels. These fluctuations in the water table can lead to the dissolution of soluble rocks, potentially increasing the formation of sinkholes in areas of Maury County with underlying karst geology.

Severe Weather

Climate trends and variations may lead to an increase in frequency and intensity of certain types of severe storms. Warmer air temperatures can contribute to more moisture in the atmosphere, providing fuel for stronger rainfall events and potentially more intense thunderstorms. The increased energy in the atmosphere can also contribute to the development of more powerful storms. Climate trends can also result in altered precipitation patterns influencing the distribution, timing, and intensity of rainfall during storms. Climate trends can influence the paths and tracks of severe storms too. Changes in atmospheric circulation patterns may lead to shifts in the regions where storms typically form or move, potentially affecting the areas

APPENDIX C: ETSU/NOAA

that are historically vulnerable to specific types of storms. This can result in new areas being exposed to severe storms while other areas experience a decrease. Research by Ashley et al. (2023) into supercell thunderstorm formation compared historical data (1990-2005) and future climate models for the late 21st century (2085 – 2100), which indicate that the mid-South region of the U.S. could see an increase in the number of supercell thunderstorms capable of producing severe thunderstorm hazards and tornadoes. These increases were mostly found in the late winter to early spring months of February, March, and April. Additionally, they found that an increasing number of supercell thunderstorms in this region could form in the late afternoon to overnight hours. Climate trends can contribute to compound events where multiple extreme weather events can occur simultaneously or in succession. These compound events can amplify the overall impacts on communities and ecosystems, making them more challenging to manage and recover from.

Severe Thunderstorms (Convective Wind, Hail, and Lightning)

Using data from the NOAA Storm Prediction Center severe storm reports archive from 1980- 2022, Maury County has a relatively low number of severe thunderstorm wind damage and moderate number of severe hail reports compared to other parts of the state. Maury County averages less than 0.5 severe thunderstorm wind damage report per square mile for most of the county, and 0.1-0.2 severe hail reports per square mile. The Tennessee Climate Office (TCO) analyzed trends for thunderstorm winds (convective wind) and severe hail reports in counties across Tennessee using the NOAA Storm Events Database with data from 1996 to 2022, and lightning strikes per county from 1996 to 2021 from the NOAA Severe Weather Data Inventory (SWDI). The trend analysis for convective wind reports showed an increasing trend at the 90% confidence level, and severe hail reports shows no significant trend in Maury County. Maury County, has a moderately high number of lightning strikes per year compared to other parts of the state averaging 10-15 strikes per square mile each year. However, trend analysis for lightning strikes showed a decreasing trend for the county that was significant to the 90% confidence level.

APPENDIX C: ETSU/NOAA

Thunderstorm Wind Reports

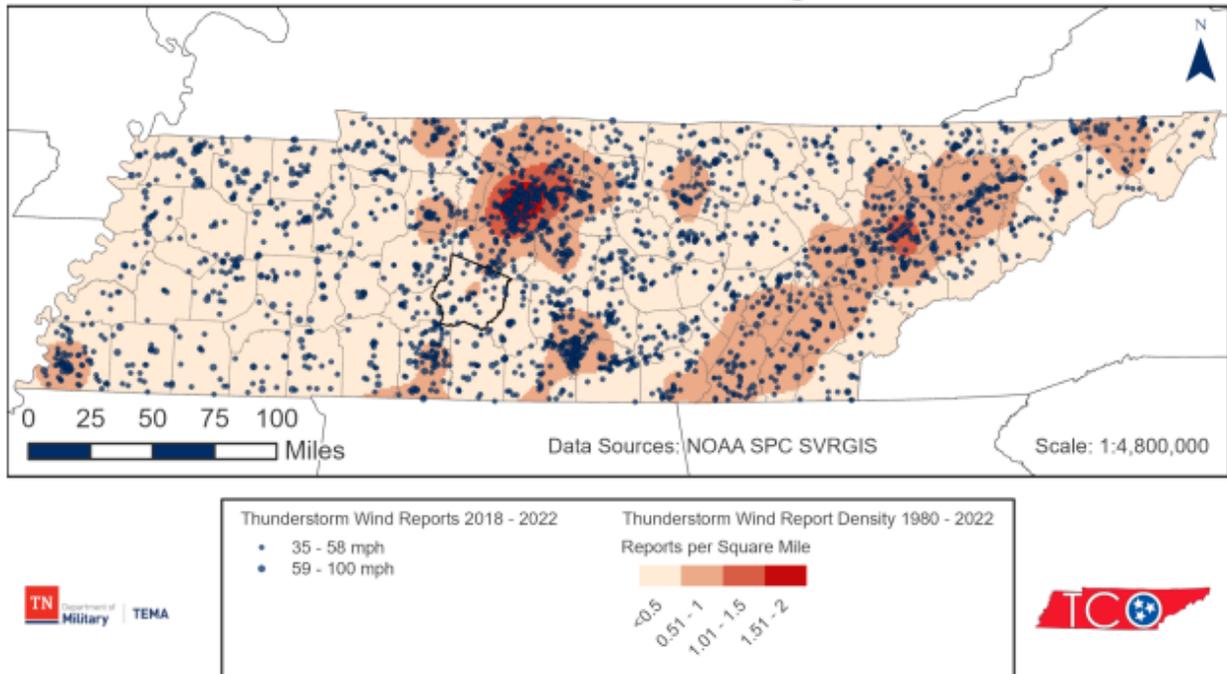


Figure 30: Severe Thunderstorm Wind Reports from 2018-2022 and Severe Thunderstorm Wind Report Density from 1980-2022, Maury County Outlined in Bold.

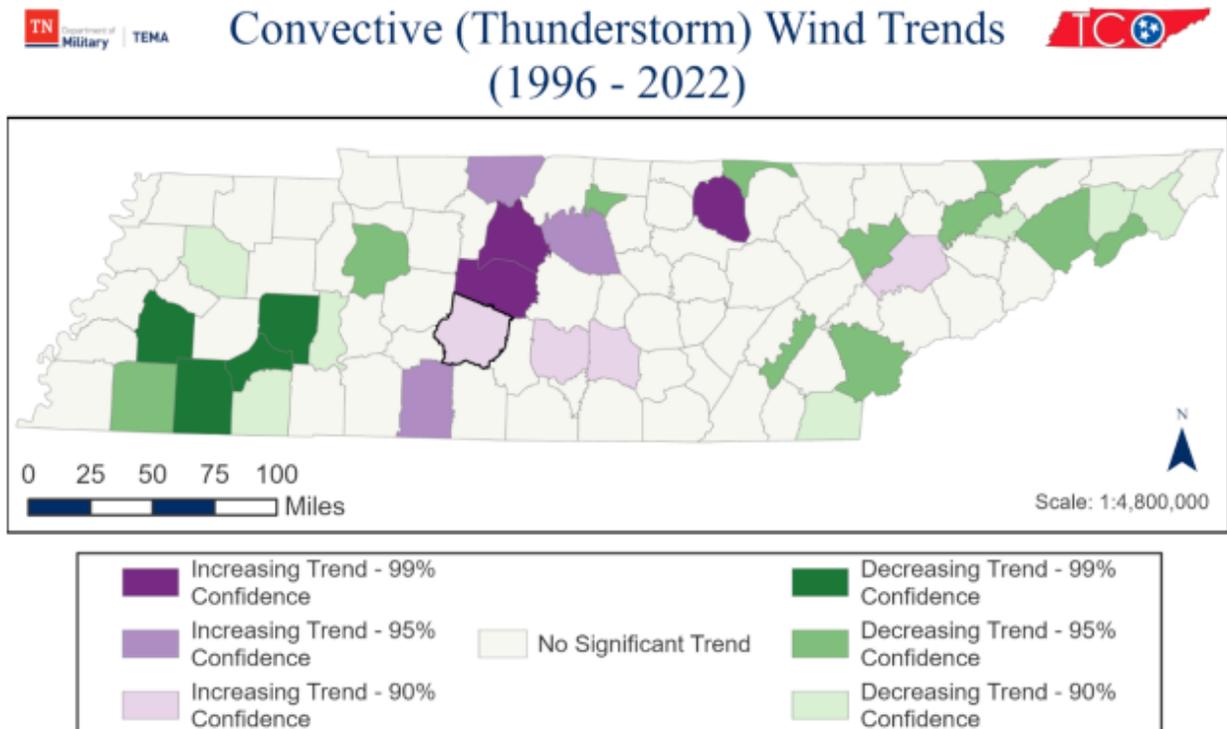


Figure 31: Trends in the Number of Thunderstorm Wind Events Recorded in the NCEI Storm Events Database from 1996 to 2022, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

Severe Hail Reports

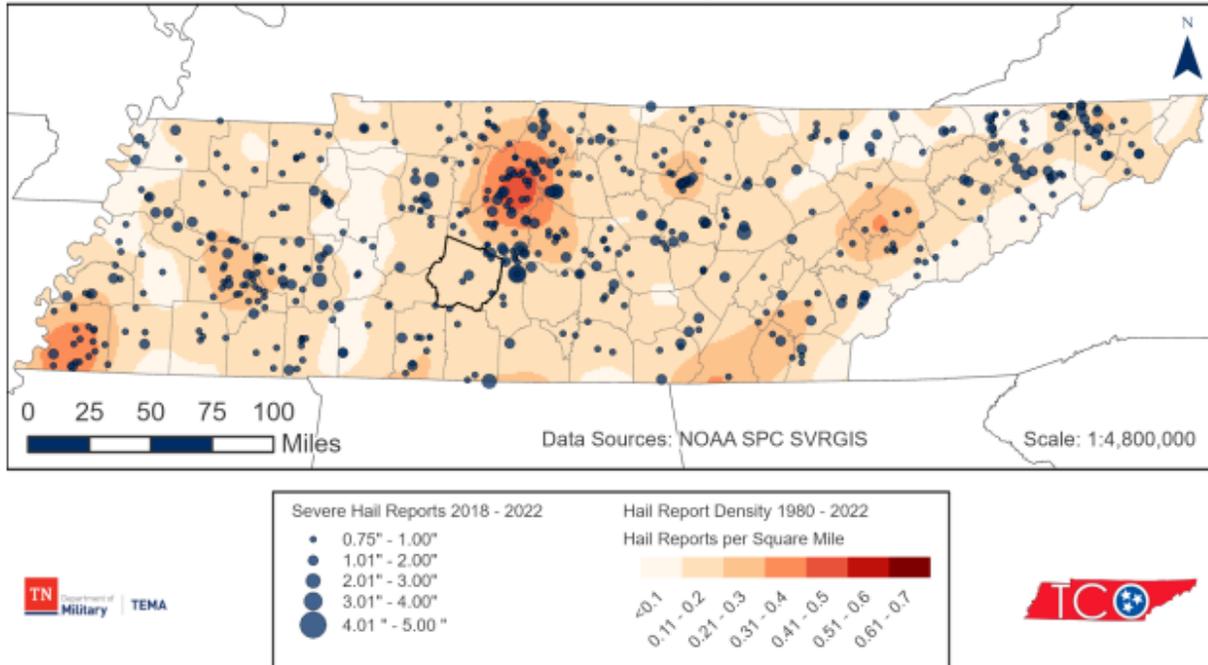


Figure 32: Severe Hail Reports from 2018-2022 and Severe Hail Density from 1980-2022, Maury County Outlined in Bold.

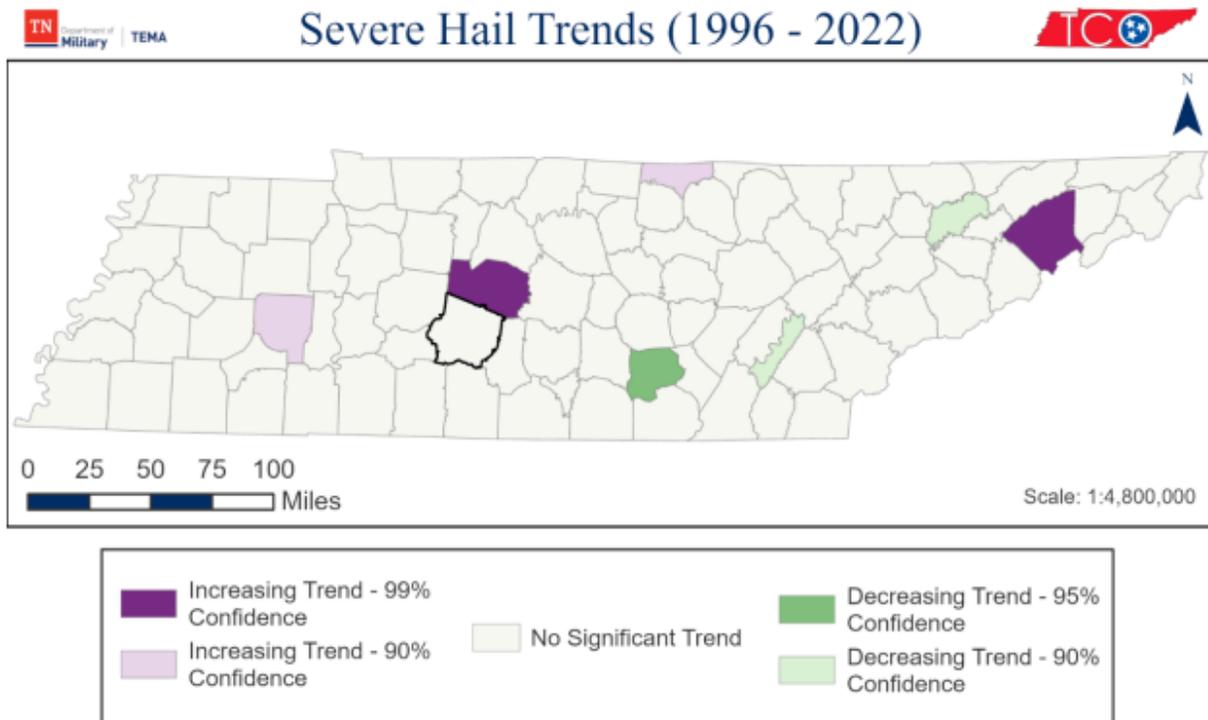


Figure 33: Trends in the Number of Severe Hail Events Recorded in the NCEI Storm Events Database from 1996 to 2022, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

Average Lightning Strikes per Year (1996-2021)

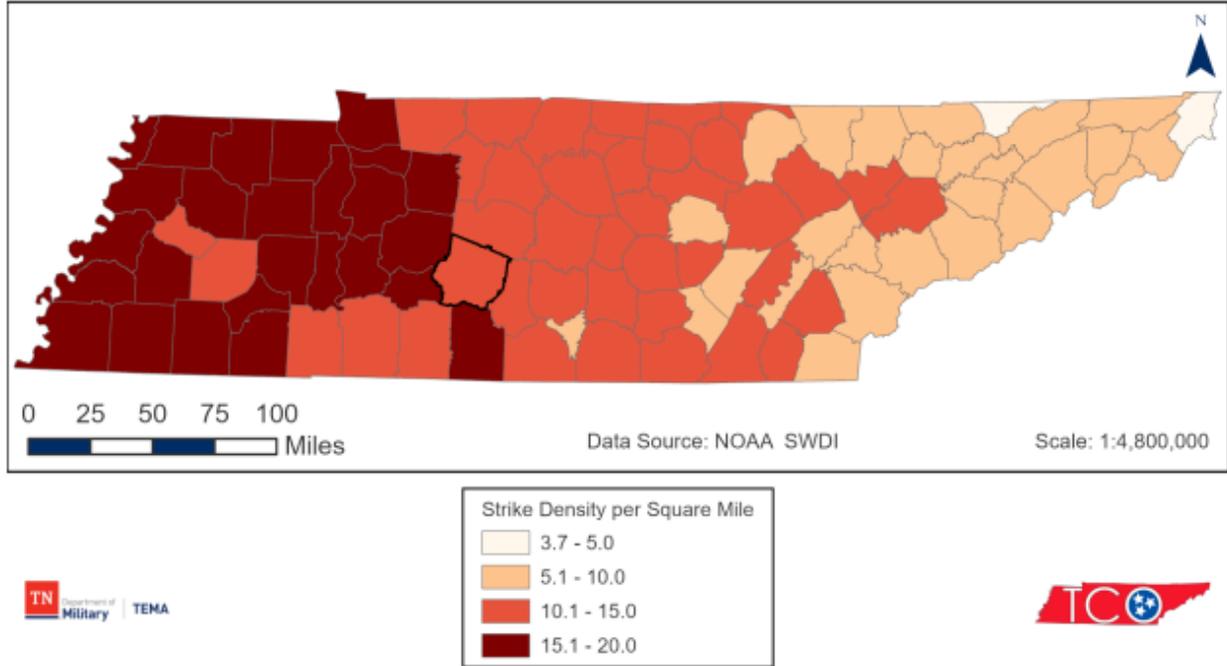


Figure 34: Average Annual Number of Lightning Strikes per Square Mile from 1996 to 2021, Maury County Outlined in Bold.

Trend in Lightning Strikes (1996 - 2021)

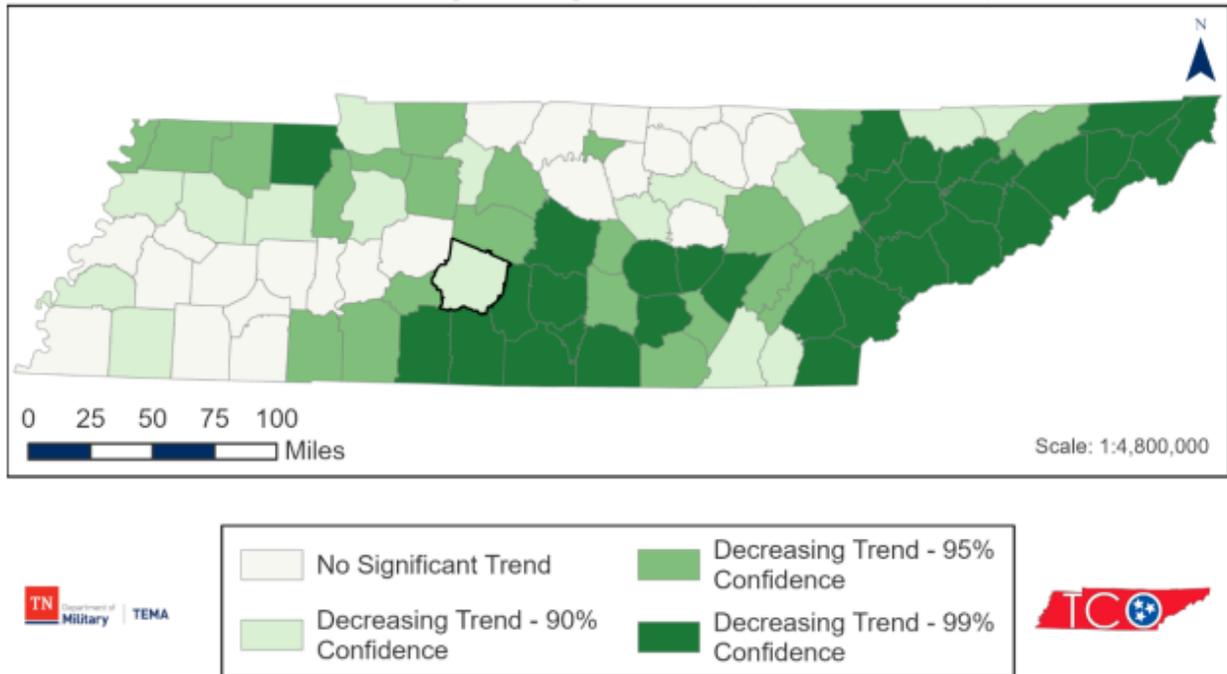


Figure 35: Trends in the Number of Lightning Strikes per County Recorded in the NOAA Severe Weather Data Inventory from 1996 to 2021, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

Non-Thunderstorm Winds

Tennessee Climate Office (TCO) also analyzed trends for non-convective (non-thunderstorm) wind reports in counties across Tennessee using the NOAA Storm Events Database with data from 1996 to 2022, and Maury County showed no significant trend in non-convective wind events during this time.

Non-Convective Wind Trends (1996-2022)

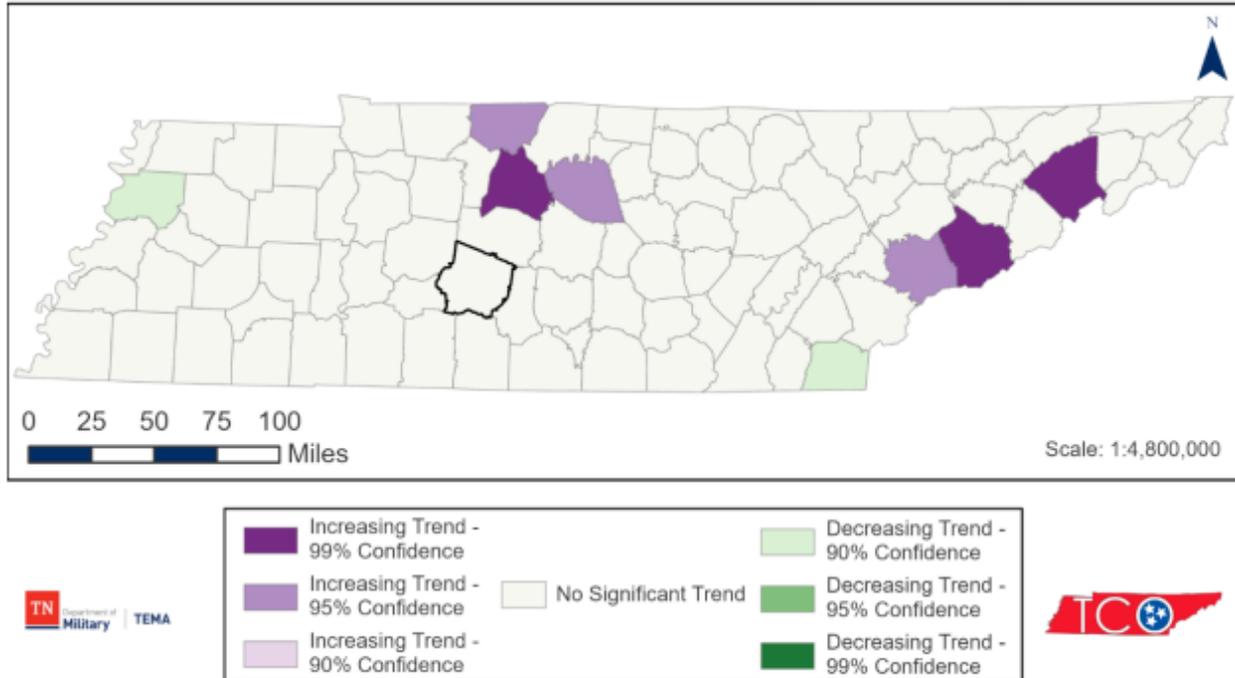


Figure 36: Trends in the Number of Non-Convective Wind Events Recorded in the NCEI Storm Events Database from 1996 to 2022, Maury County Outlined in Bold.

Winter Weather

Data from the National Weather Service NOHRSC National Gridded Snowfall Analysis webpage covering the winters of 2008-2009 to 2022-2023 (the last 15-years) indicates that the average annual snowfall for Maury County ranges from 4 to 6-inches per year. Using data from the NOAA Storm Events Database, trend analysis was performed on winter weather-related storms from 1996 to 2022 across the state of Tennessee. In this time period there was an increasing trend in the number of winter storms impacting Maury County, this trend was significant to the 99% confidence level.

APPENDIX C: ETSU/NOAA

Average Annual Snowfall

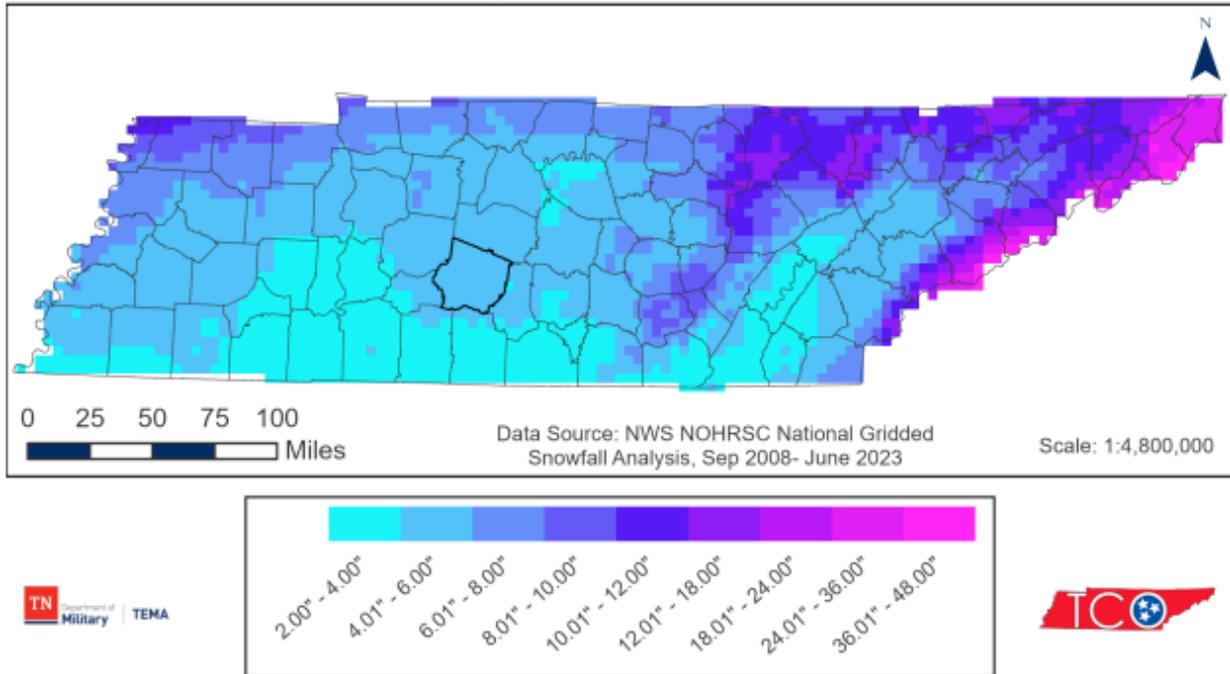


Figure 37: Average Annual Snowfall from the Winter of 2008/2009 to the Winter of 2022/2023, Maury County Outlined in Bold.

Trend in Winter Weather Events (1996 - 2022)

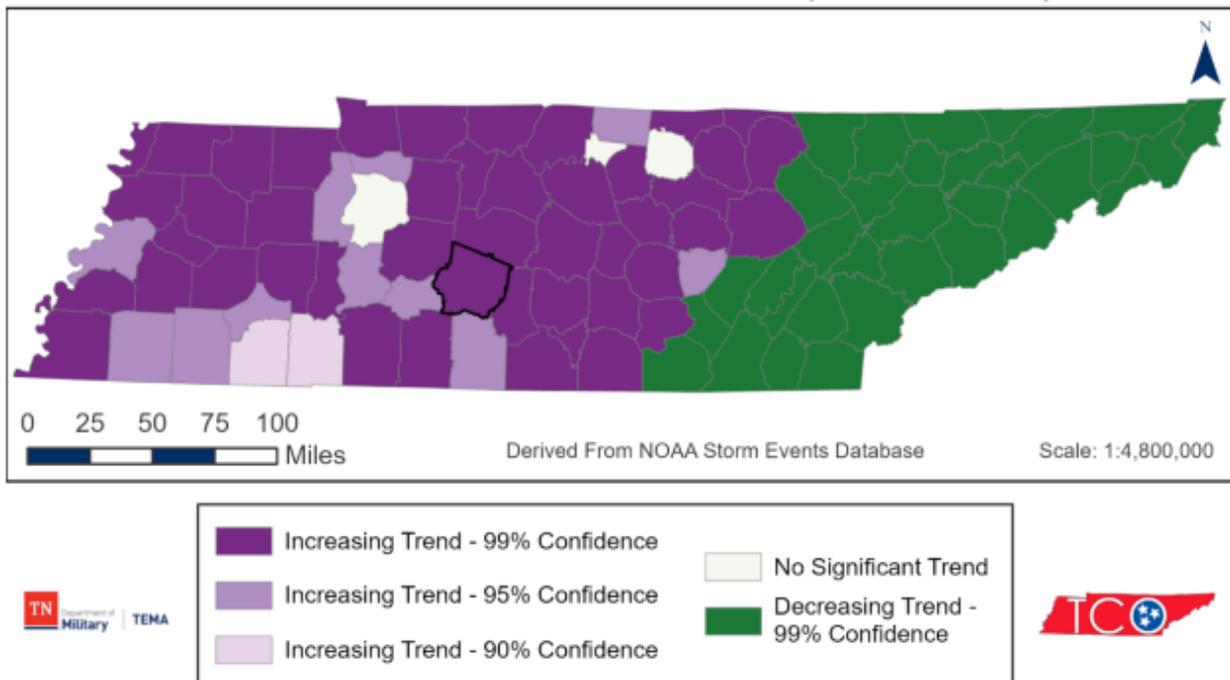


Figure 38: Trends in the Number of Winter Weather-Related Events Recorded in the NCEI Storm Events Database from 1996 to 2022, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

Climate trends and variability will impact the future likelihood of winter weather events or severe winter storms in Tennessee, likely decreasing but not eliminating the overall risk. Average annual temperatures are expected to increase across the Southeast US, including temperatures during the winter season. Maury County has an observed warming trend of +0.2°F per decade from 1896 to 2024 throughout the meteorological/climatological winter season (December – February). In the medium-term (1961 - 2024) the winter temperature trend shows greater warming at +0.8°F per decade, however the short-term (1991 - 2024) trend shows slightly moderated warming of +0.6°F per decade during the winter season. The moderation was caused by the exclusion of the very cold winters of 1963-1964, 1970, and 1977-1979.

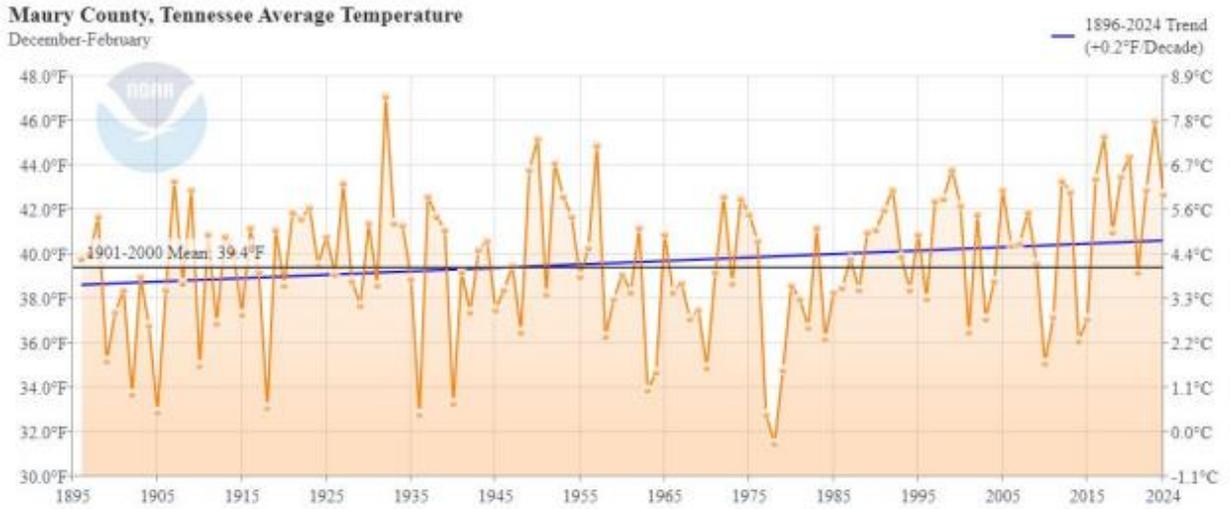


Figure 39: Winter (December to February) Mean Temperature for Maury County, Tennessee, Showing a +0.2°F Increase per Decade Since 1895.
 (Source: NOAA NCEI, Climate-at-a-Glance: County Time Series)

APPENDIX C: ETSU/NOAA

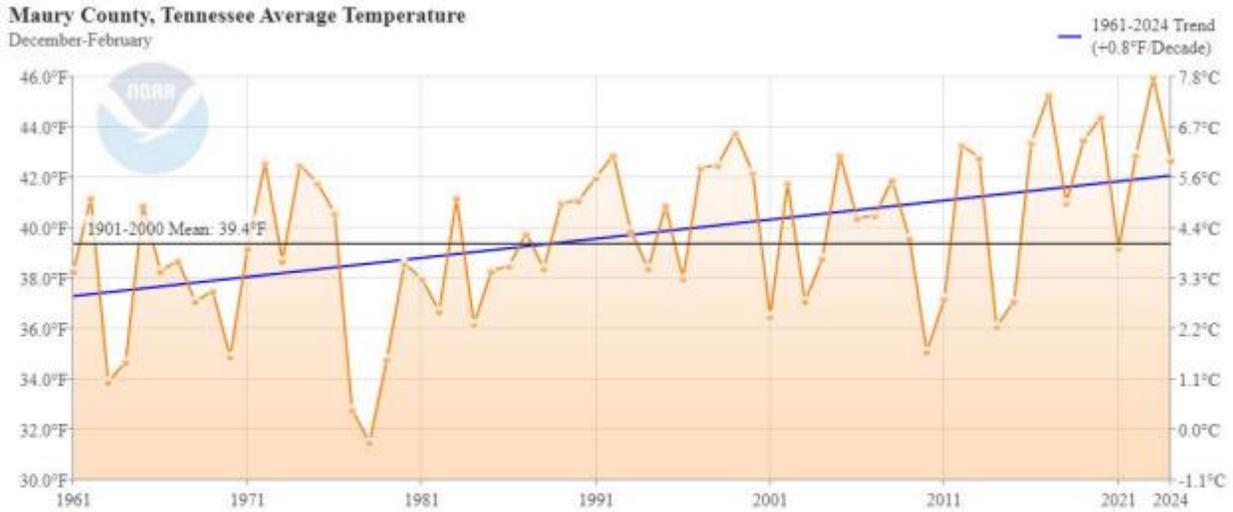


Figure 40: Winter (December to February) Mean Temperature for Maury County, Tennessee, Showing a +0.8°F Increase per Decade Since 1961.
(Source: NOAA NCEI, Climate-at-a-Glance: County Time Series)

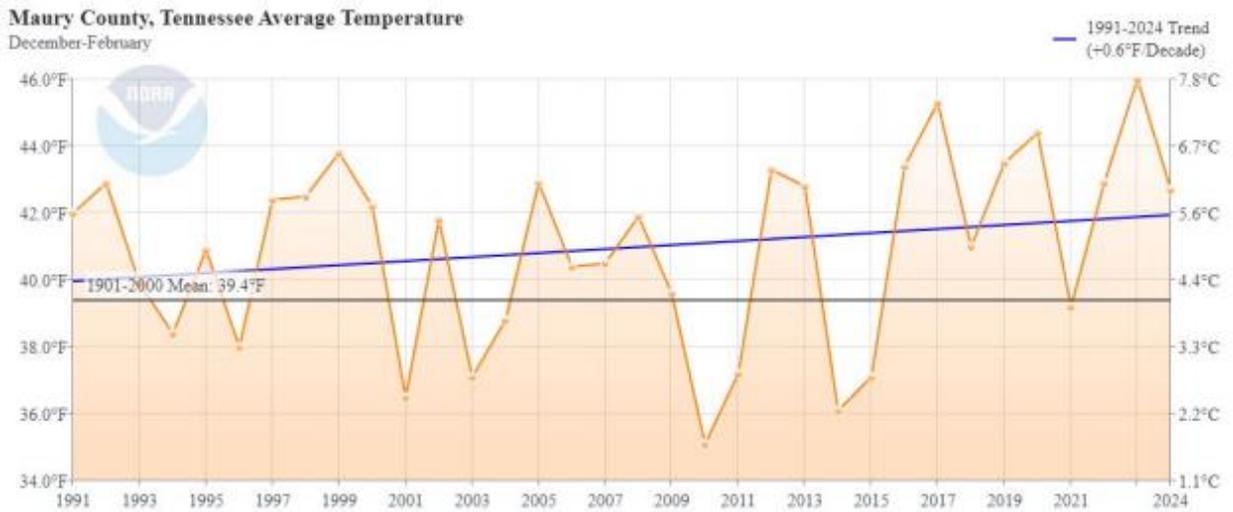


Figure 41: Winter (December to February) Mean Temperature for Maury County, Tennessee, Showing a +0.6°F Increase per Decade Since 1991.
(Source: NOAA NCEI, Climate-at-a-Glance: County Time Series)

In addition to the increasing average annual and winter temperatures, the USDA and U.S. Forest Service Office of Sustainability and Climate projects that the length of the frost-free season will increase by 47-53 days across Maury County by the late 21st century. This means that the amount of time during the year where winter weather is possible will decrease. Currently, the average frost season in Maury County lasts for about five and a half months of the year (from late October until early April), but

APPENDIX C: ETSU/NOAA

by the late 21st century that is projected to decrease to just about four months of the year. In the following two figures the historical and projected number of Frost Days (days with a minimum temperature below freezing) and Icing Days (days with a maximum temperature below freezing) are shown for Maury County from the U.S. Climate Resilience Toolkit Climate Explorer. The mean projection for the low emissions scenario indicates that Maury County could have 32 fewer Frost Days per year by the end of the century, while the mean projection for the high emissions scenario indicates there could be 48 fewer Frost Days per year than the 1961- 1990 observed average number of frost days. The mean projection for the low emissions scenario shows that Maury County could observe approximately five fewer Icing Days per year, while the high emissions scenario shows that there could be approximately six fewer Icing Days per year by the end of the century compared to the 1961-1990 observed average.

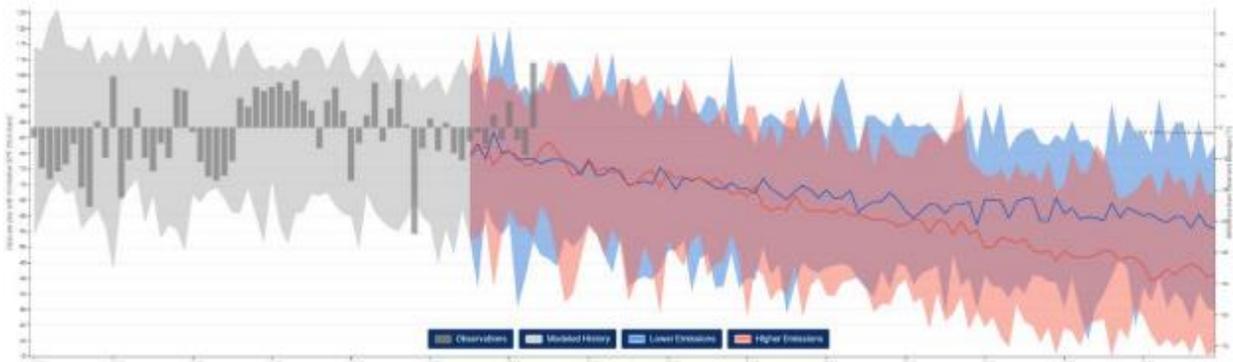


Figure 42: Days Per Year with Minimum Temperature Below 32°F (Frost Days) with Historical Observations from 1950 to 2013 and High (red) and Low (blue) Emission Scenarios Going to 2100 for Maury County, Tennessee.

(Source: U.S. Climate Resilience Toolkit Climate Explorer)

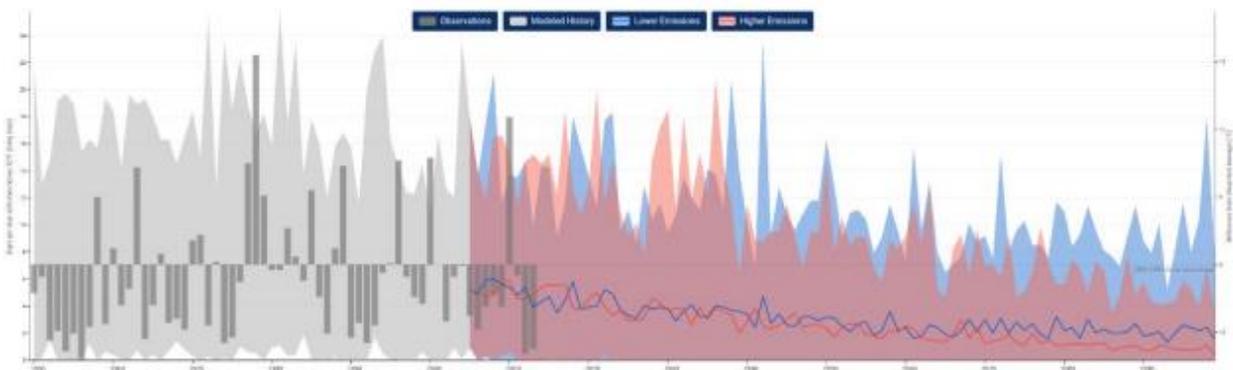


Figure 43: Days per Year with a Maximum Temperature Below 32°F (Icing Days) With Historical Observations from 1950 to 2013 and High (red) and Low (blue) Emission Scenarios Going to 2100 for Maury County, Tennessee.

(Source: U.S. Climate Resilience Toolkit Climate Explorer)

Additionally, the USDA forecasted changes in plant hardiness zones for the Southeast U.S. The following figure, from the Fourth National Climate Assessment (2018)

APPENDIX C: ETSU/NOAA

indicates that Maury County may transition from Plant Hardiness Zone 6b/7a (historical data, 1976-2005) to Plant Hardiness Zone 8a by 2070-2099, based on climate models using the RCP8.5 (higher emissions) greenhouse gas emissions scenario. That would correlate to a warming of approximately 10-15 degrees in the average coldest temperature expected in parts of the county, from historical values of -5°F to +5°F to future values of +10°F to +15°F.

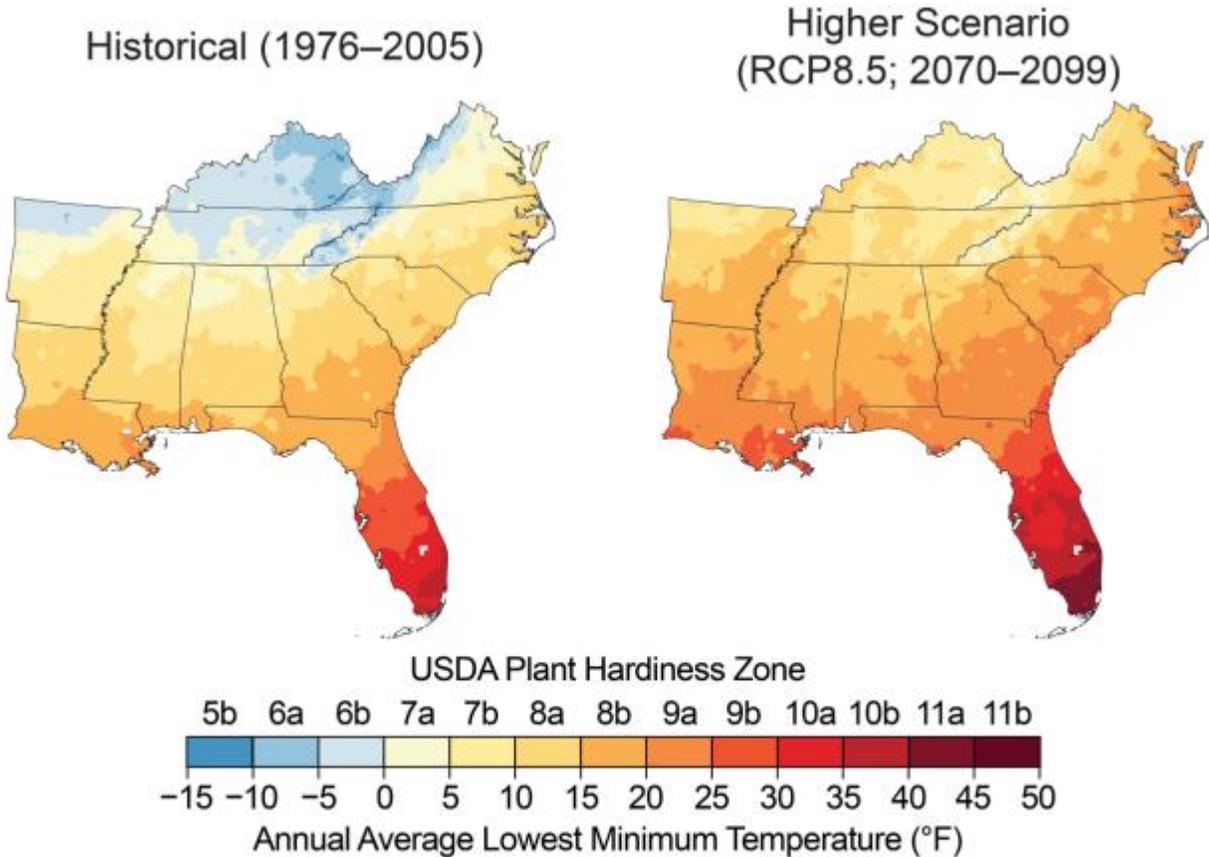


Figure 44: Comparison of Plant Hardiness Zones Across the Southeast U.S. from Historical Averages and Projected Values for Late Century using RCP8.5 (high emissions) Scenario Models. (Source: Fourth National Climate Assessment (Southeast Chapter))

Tornado

It is uncertain how climate trends will impact the overall frequency of tornadoes, with convective storms (from which tornadoes form) being the least well understood extreme events when it comes to attributing future changes to climate trends and variations. However, some studies suggest that the number of days conducive to severe thunderstorms, which can spawn tornadoes, may increase in certain regions. Additionally, warmer temperatures can provide more energy to storms, potentially leading to more intense tornadoes. Tornado formation depends on the interaction of multiple atmospheric factors, including temperature, humidity, wind shear, and instability. While climate trends may alter some of these factors, the precise impact on tornado formation remains uncertain. Warmer temperatures and increased moisture content in the atmosphere can contribute to more favorable conditions for

APPENDIX C: ETSU/NOAA

tornado formation, but other factors like wind shear patterns may also change and reduce the chances for tornado formation.

Using historical data from 1980 to 2022, Maury County has a low to moderate density for tornadoes in Tennessee, with an average of 0.11 to 0.2 tornado tracks per square mile in the southern half of the county and less than 0.10 tornado tracks per square mile in the northern half of the county.

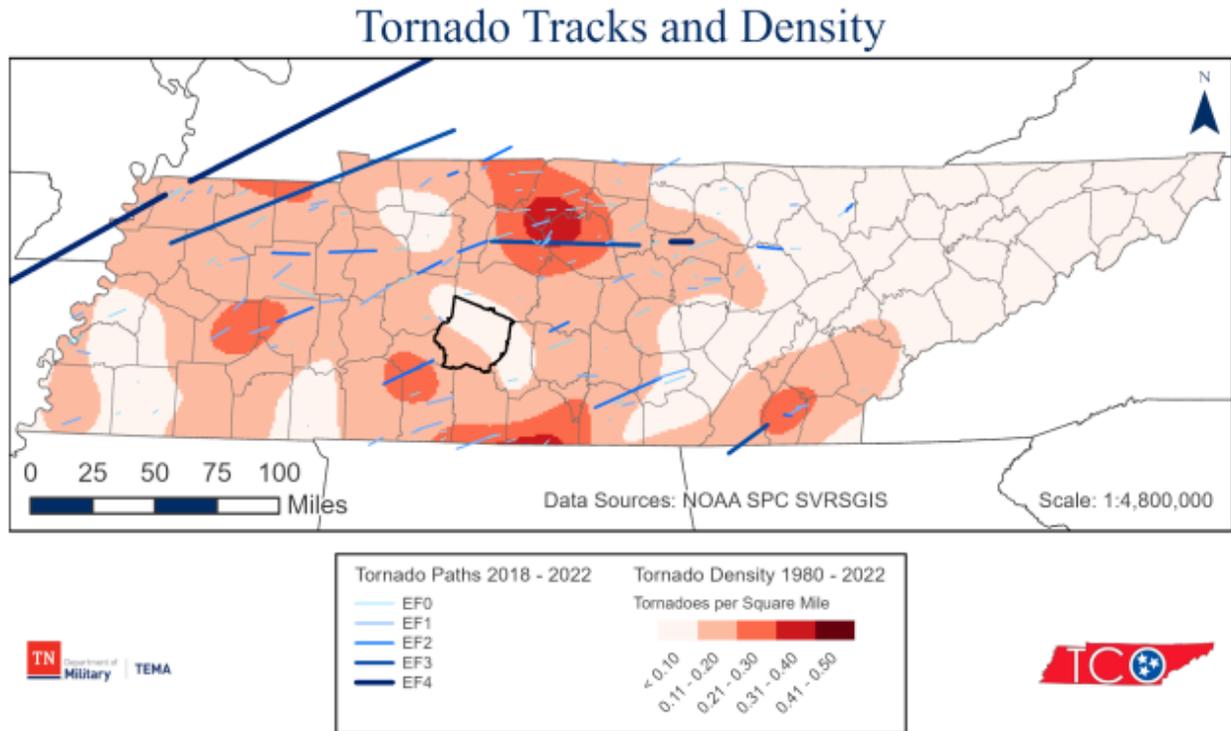


Figure 45: Tornado Tracks from 2018-2022 and the Density of Tornado Tracks across Tennessee from 1980 to 2022, Maury County Outlined in Bold.

Using data from the NOAA Storm Events Database, trend analysis and emerging hotspot analysis were performed on the number of tornadoes reported in each county of Tennessee from 1996 to 2021. There was no significant increasing or decreasing trend in the number of tornadoes observed in Maury County and it was not identified as an emerging hot spot. These results indicate that while there are a moderate number of tornadoes occurring in Maury County, there is not a significant increasing or decreasing trend in the number of tornadoes observed per year over the past 27 years.

APPENDIX C: ETSU/NOAA

Trend in Tornadoes (1996 - 2022)

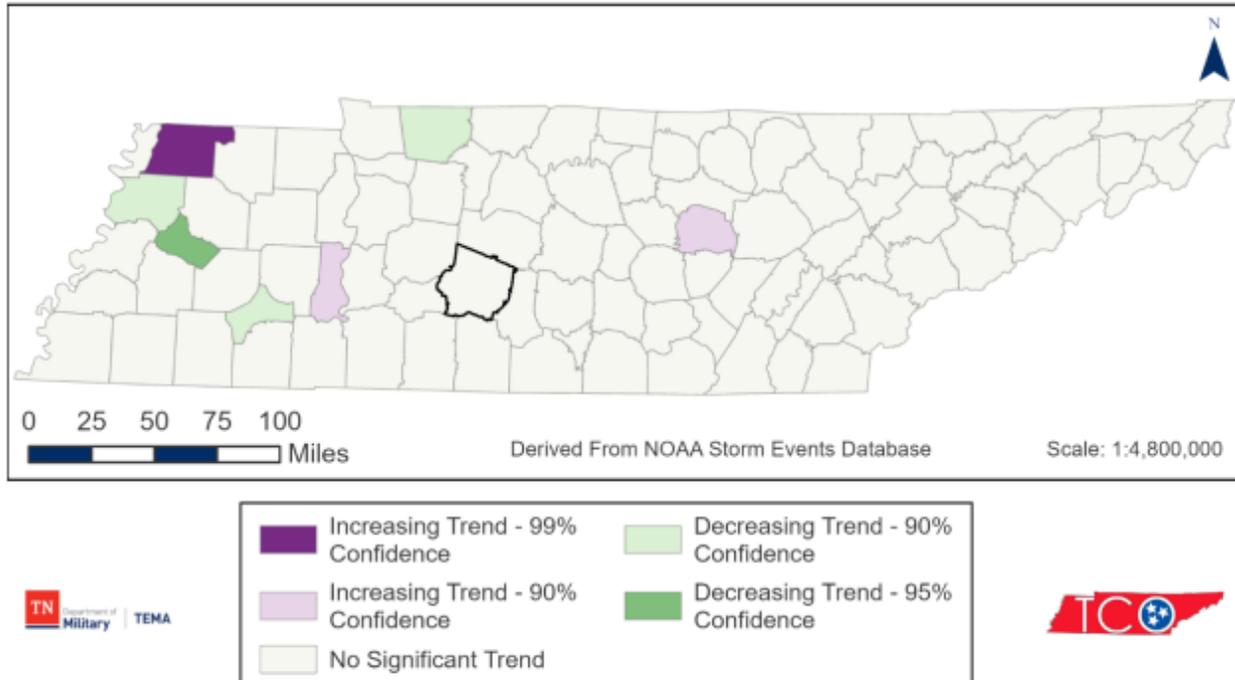


Figure 46: Trends in the Number of Tornadoes Recorded in the NCEI Storm Events Database from 1996 to 2022, Maury County Outlined in Bold.

Emerging Hot Spot Analysis of Tornadoes (1996 - 2022)

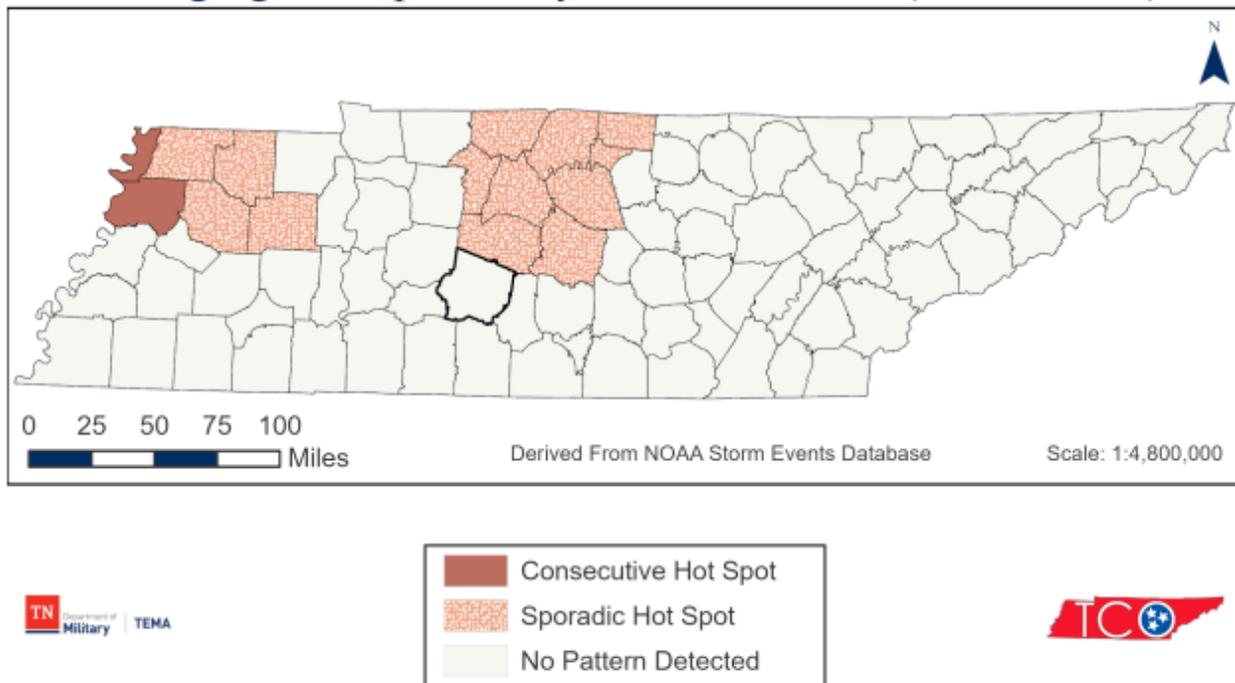


Figure 47: Emerging Hot Spot Analysis based on the Number of Tornadoes per Year Recorded in the NCEI Storm Events Database from 1996 to 2022, Maury County Outlined in Bold.

APPENDIX C: ETSU/NOAA

NOAA - Hail, Maury County, TN, 1950 – 2023

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	EVENT_NARRATIVE
1086436	MAURY CO.	COLUMBIA	4/28/2023	213	Hail	1.00	A tspotter on Twitter reported quarter size hail near Columbia.
1079637	MAURY CO.	SPRING HILL	4/1/2023	8	Hail	1.00	Estimated quarter size hail fell from a tornado-warned thunderstorm in Spring Hill.
950560	MAURY CO.	COLUMBIA	3/27/2021	1741	Hail	1.25	
950561	MAURY CO.	SPRING HILL	3/27/2021	1752	Hail	1.00	
950562	MAURY CO.	SPRING HILL	3/27/2021	1752	Hail	1.00	
768994	MAURY CO.	WESTWOOD	6/15/2018	1747	Hail	1.00	Videos from Maury County Emergency Management and Twitter showed quarter size hail fell along Old Sunnyside Lane in southwest Columbia.
688253	MAURY CO.	COLUMBIA	3/27/2017	1818	Hail	0.88	A tspotter Twitter report indicated nickel size hail fell in Columbia.
687898	MAURY CO.	HAMPSHIRE	3/21/2017	1453	Hail	1.00	
686136	MAURY CO.	WESTWOOD	3/9/2017	2312	Hail	1.00	Maury County 911 Center reported quarter size hail and strong winds in southwest Columbia.
634904	MAURY CO.	SPRING HILL	7/6/2016	1620	Hail	1.00	Numerous reports from Spring Hill indicated hail fell ranging from pea to quarter size.
623408	MAURY CO.	WESTWOOD	3/31/2016	1630	Hail	1.75	Golfball size hail was reported on the west side of Columbia.
440044	MAURY CO.	WILLIAMSPORT	4/11/2013	1052	Hail	0.75	
409309	MAURY CO.	STIVERSVILLE	9/2/2012	1655	Hail	0.75	
375354	MAURY CO.	COLUMBIA	5/19/2012	1611	Hail	0.88	
375330	MAURY CO.	COLUMBIA	5/6/2012	305	Hail	0.88	
367657	MAURY CO.	COLUMBIA	3/31/2012	1250	Hail	1.75	
367687	MAURY CO.	COLUMBIA MAURY ARPT	3/31/2012	1300	Hail	2.00	
367684	MAURY CO.	SCREAMER	3/31/2012	1311	Hail	2.75	
367661	MAURY CO.	COLUMBIA	3/31/2012	1330	Hail	1.00	
367686	MAURY CO.	COLUMBIA	3/31/2012	1330	Hail	1.25	
364913	MAURY CO.	COLUMBIA MAURY ARPT	3/15/2012	1215	Hail	0.75	
367187	MAURY CO.	COLUMBIA MAURY ARPT	3/15/2012	1300	Hail	1.00	
367173	MAURY CO.	COLUMBIA	3/15/2012	1530	Hail	1.00	
367174	MAURY CO.	COLUMBIA	3/15/2012	1535	Hail	0.88	

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	EVENT_NARRATIVE
367183	MAURY CO.	COLUMBIA	3/15/2012	1540	Hail	1.25	Some minor damage to vehicles observed. Details concerning specific minor damage to specific vehicles were unknown.
367168	MAURY CO.	COLUMBIA	3/15/2012	1540	Hail	1.00	
364449	MAURY CO.	DUKES STORE	3/2/2012	1705	Hail	0.88	
362278	MAURY CO.	ROCKDALE	2/1/2012	1925	Hail	0.88	A trained spotter reported nickel size hail covering the ground on Highway 43 near the Maury/Lawrence County line.
362280	MAURY CO.	FOUNTAIN HGTS	2/1/2012	1939	Hail	0.88	
342076	MAURY CO.	MT PLEASANT	8/18/2011	1745	Hail	1.00	
320544	MAURY CO.	COLUMBIA	6/15/2011	1555	Hail	1.00	
320554	MAURY CO.	SPRING HILL	6/15/2011	1818	Hail	1.25	Half dollar size hail was reported 2 miles east of Spring Hill.
261578	MAURY CO.	COLUMBIA	10/12/2010	1410	Hail	1.00	
240096	MAURY CO.	SPRING HILL	6/9/2010	1515	Hail	0.75	
181593	MAURY CO.	GODWIN	6/17/2009	1620	Hail	1.00	Quarter size hail was reported.
179967	MAURY CO.	THETA	6/2/2009	1309	Hail	0.75	Penny size hail was reported.
177042	MAURY CO.	COLUMBIA	6/1/2009	1602	Hail	0.88	Nickel size hail was reported by the public.
177043	MAURY CO.	COLUMBIA	6/1/2009	1604	Hail	0.75	One inch hail was reported by a trained spotter.
177046	MAURY CO.	GODWIN	6/1/2009	1610	Hail	0.88	Nichel size hail was reported by a trained spotter.
177047	MAURY CO.	COLUMBIA	6/1/2009	1628	Hail	1.00	Quarter size hail was reported by the public.
164583	MAURY CO.	COLUMBIA	4/10/2009	1034	Hail	0.75	Penny size hail was reported in Columbia.
164498	MAURY CO.	FRIERSON TOWN	4/10/2009	1108	Hail	0.75	Penny size hail was reported near the Maury, Giles, and Lawrence County Lines.
164576	MAURY CO.	COLUMBIA	4/10/2009	1159	Hail	0.88	Nickel size hail was reported on Tom J. Hitch Parkway.
164483	MAURY CO.	COLUMBIA	4/10/2009	1203	Hail	0.88	Nickel size hail was reported halfway between Columbia and Interstate 65.
158447	MAURY CO.	CROSS BRIDGES	3/27/2009	1724	Hail	1.75	Golfball size hail was reported.
158433	MAURY CO.	COLUMBIA	3/27/2009	1724	Hail	1.75	A thunderstorm produced golfball size hail.
18201	MAURY CO.	COLUMBIA	4/11/2007	1125	Hail	1.00	Trained spotter reported quarter size hail.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	EVENT_NARRATIVE
15878	MAURY CO.	COLUMBIA	4/3/2007	2030	Hail	0.75	Spotter reported penny size hail at Tindall lane.
5506492	MAURY CO.	COLUMBIA	5/26/2006	1917	Hail	0.75	
5500631	MAURY CO.	SPRING HILL	4/7/2006	1430	Hail	1.75	
5497313	MAURY CO.	SPRING HILL	4/2/2006	2220	Hail	2.00	Hail the size of a hen egg was reported. Newspaper story related that 100 homes were damaged by the hail in Spring Hill, causing \$100,000 worth of damage.
5495827	MAURY CO.	SPRING HILL	3/31/2006	1905	Hail	1.00	
5473662	MAURY CO.	MT PLEASANT	8/5/2005	1732	Hail	1.50	
5440436	MAURY CO.	COLUMBIA	3/30/2005	2324	Hail	0.88	Nickel size hail reported just north of Columbia.
5436754	MAURY CO.	COLUMBIA	2/21/2005	430	Hail	0.75	
5395912	MAURY CO.	COLUMBIA	5/10/2004	1400	Hail	1.00	General public reported quarter size hail.
5395915	MAURY CO.	COLUMBIA	5/10/2004	1400	Hail	1.00	Public reported hail the size of quarters.
5395913	MAURY CO.	POTTSVILLE	5/10/2004	1400	Hail	1.00	Public reported quarter size hail.
5369871	MAURY CO.	COLUMBIA	7/13/2003	1627	Hail	0.75	Volunteer fireman reported penny size hail.
5369858	MAURY CO.	COLUMBIA	7/12/2003	2025	Hail	1.00	Spotter reported quarter size hail.
5362953	MAURY CO.	COLUMBIA	6/11/2003	1345	Hail	0.75	Ham radio report of penny size hail.
5356770	MAURY CO.	SPRING HILL	5/5/2003	1510	Hail	1.00	Quarter size hail was observed.
5356769	MAURY CO.	SPRING HILL	5/5/2003	1513	Hail	0.75	Penny size hail was reported.
5356854	MAURY CO.	MT PLEASANT	5/5/2003	1612	Hail	0.88	Nickel size hail was observed.
5357124	MAURY CO.	COLUMBIA MAURY ARPT	5/5/2003	1613	Hail	0.75	Penny size hail observed at the airport.
5356051	MAURY CO.	MT PLEASANT	5/2/2003	1614	Hail	0.75	Penny size hail observed.
5350395	MAURY CO.	MT PLEASANT	4/29/2003	1610	Hail	0.88	Public report of nickel size hail.
5351011	MAURY CO.	COLUMBIA	4/25/2003	1505	Hail	1.00	Spotter reported quarter size hail.
5321932	MAURY CO.	SPRING HILL	11/10/2002	1503	Hail	1.00	Spotter reported quarter size hail.
5322014	MAURY CO.	STIVERSVILLE	11/10/2002	1628	Hail	1.00	Spotter reported quarter size hail along Highway 31.
5313455	MAURY CO.	SPRING HILL	8/4/2002	1615	Hail	0.75	Trained spotter reported dime size hail.
5288086	MAURY CO.	SAWDUST	4/28/2002	1430	Hail	0.88	Spotter reported nickel size hail.
5288087	MAURY CO.	COLUMBIA	4/28/2002	1430	Hail	1.00	Spotter reported quarter size hail.
5288176	MAURY CO.	COLUMBIA	4/28/2002	1438	Hail	3.00	Spotter reported hail the size of a tea cup at the intersection of U.S. Highway 43 and U.S. Highway 412.
5251976	MAURY CO.	SPRING HILL	6/3/2001	906	Hail	0.75	Dime size hail reported.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	EVENT_NARRATIVE
5251976	MAURY CO.	SPRING HILL	6/3/2001	906	Hail	0.75	Dime size hail reported.
5689087	MAURY CO.	COLUMBIA	2/9/1999	1515	Hail	1.00	Sheriff's office reported quarter size hail.
5684096	MAURY CO.	COLUMBIA	1/17/1999	2055	Hail	1.00	Quarter size hail reported.
5659136	MAURY CO.	EAST PORTION	6/20/1998	1600	Hail	1.00	SKYWARN Spotter reported quarter size hail along I-65 at mile marker 39 in eastern Maury county.
5641012	MAURY CO.	COLUMBIA	4/16/1998	1840	Hail	0.75	Local law enforcement reported dime size hail.
5640712	MAURY CO.	CULLEOKA	4/8/1998	1755	Hail	0.75	Public report of dime size hail.
5640359	MAURY CO.	COUNTYWIDE	4/3/1998	1630	Hail	0.75	Dime size hail reported throughout the county by local law enforcement.
5640358	MAURY CO.	SPRING HILL	4/3/1998	1650	Hail	0.75	SKYWARN Spotter reported dime size hail at the Saturn auto plant.
5622139	MAURY CO.	SANTA FE	11/30/1997	1250	Hail	0.75	Dime size hail was reported by local law enforcement.
5589112	MAURY CO.	WILLIAMSPORT	1/24/1997	1552	Hail	0.75	
5589113	MAURY CO.	COLUMBIA	1/24/1997	1600	Hail	0.75	
5589101	MAURY CO.	COLUMBIA	1/24/1997	1610	Hail	0.75	
5545049	MAURY CO.	COLUMBIA	4/29/1996	1320	Hail	1.00	
5544861	MAURY CO.	COLUMBIA	4/20/1996	600	Hail	0.75	
10349389	MAURY CO.	Southern Maury Co	5/18/1995	1459	Hail	1.75	,Many trees were blown down. A stock barn was damaged.
10349390	MAURY CO.		5/18/1995	1514	Hail	1.25	,Many trees were blown down. A stock barn was damaged.
10349391	MAURY CO.	Williamsport	5/18/1995	1514	Hail	3.00	Several houses had windows broken and numerous cars were damaged.
10349393	MAURY CO.	Culleoka	5/18/1995	1624	Hail	1.75	
10349386	MAURY CO.		3/20/1995	1900	Hail	0.88	
10349384	MAURY CO.	Columbia	11/27/1994	2000	Hail	1.50	
10123257	MAURY CO.		3/25/1982	1205	Hail	0.75	
10126378	MAURY CO.		12/4/1977	2130	Hail	2.75	
10123610	MAURY CO.		4/22/1970	1340	Hail	1.00	
10127503	MAURY CO.		8/8/1964	1600	Hail	1.00	
10125236	MAURY CO.		4/15/1961	1400	Hail	1.50	
10125237	MAURY CO.		4/15/1961	1415	Hail	2.00	

APPENDIX C: ETSU/NOAA

Lightning, Maury County, TN, 1950 – 2023

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	EVENT_NARRATIVE
5313632	MAURY CO.	COLUMBIA	8/24/2002	1430	Lightning	A 16-year-old girl was struck by lightning. She was working at the Taco Bell, and when it began to rain, she ran outside to roll up the windows on her pickup truck. After she rolled the windows up, she began to lock the door, then the lightning struck the truck. The electrical charge went through her arm and knocked her down. She was taken across the street to Maury Regional Hospital. She was kept overnight as a precaution. Ms. Ruby Nicole Byrd's comment after her ordeal was I would like to tell everyone that if it's thundering and lightning
5412876	MAURY CO.	COLUMBIA	7/14/2004	1330	Lightning	Lightning struck a home at 1818 Sunset Avenue and another home across the street at 1815 Sunset Ave. The lightning did set fire to the homes.
5427498	MAURY CO.	SPRING HILL	10/12/2004	100	Lightning	20 heads of cattle were killed by a lightning strike at the University of Tennessee Experimental Farm.
5463976	MAURY CO.	COLUMBIA	7/30/2005	1100	Lightning	Sheriff said that lightning strikes damaged a dishwasher at the jail which cost \$16,000 and destroyed a transformer, the lighting and communications systems at the jail.
5495010	MAURY CO.	MT PLEASANT	3/9/2006	1630	Lightning	A home was struck by lightning and received moderate to heavy damage. No one was home at the time of the blaze.
5515223	MAURY CO.	COLUMBIA	6/23/2006	1205	Lightning	Lightning struck Parks Motor Company, injuring one employee who was repairing a computer during the storm. He was taken to Maury Regional Hospital in fair condition.
37142	MAURY CO.	COLUMBIA	7/20/2007	330	Lightning	Lightning struck the roof of a house in the Stoneybrook subdivision, located at 106 Hogan Lane. Firefighters responded within 15 minutes, but the fire had already spread quickly through the house. Firefighters spent 6 hours fighting the fire and securing the area. The fire fully-engulfed the house, and a 1964 Lincoln Continental in the driveway with 102,000 miles. There were no injuries in this blaze.
35920	MAURY CO.	MT PLEASANT	7/25/2007	1200	Lightning	Emergency Management official said lightning struck a house. There was roof and structural damage to the house, costing about \$100k.
240665	MAURY CO.	WILLIAMSPORT	6/17/2010	1554	Lightning	Man was struck by lightning in Williamsport. Details concerning the type and extent of injuries associated with the lightning strike were unknown.
257389	MAURY CO.	COLUMBIA	8/5/2010	1100	Lightning	Expert Tire at 509 North Garden Street was struck by lightning, burning the motor in the building's central heating and cooling unit. Otherwise, no other damage to the building was reported.
605207	MAURY CO.	SPRING HILL	10/1/2015	1400	Lightning	A doctor's office in Spring Hill was struck by lightning. The amount of damage to the office is unknown.
605206	MAURY CO.	KEDRON	10/1/2015	1500	Lightning	Lightning struck a home on Clara Mathis Drive in Spring Hill around 3:00 PM CDT and started a fire. As emergency crews were fighting the fire, lightning struck the home again around 4:00 PM CDT. The amount of fire damage to the home is unknown.
671708	MAURY CO.	BIGBYVILLE	12/28/2016	1846	Lightning	Lightning struck near a 500 gallon propane tank and traveled underground, which ruptured the gas line, then traveled towards a home blowing a hole in the refrigerant line on the HVAC.
687909	MAURY CO.	COLUMBIA	3/21/2017	1515	Lightning	Maury County emergency management reported three lightning strikes to buildings in the Columbia city limits on Polk Street, Scott Hollow Drive, and Haylong Avenue. Minimal damage was reported to all structures.
888621	MAURY CO.	KLEBURNE	4/9/2020	15	Lightning	A reported positive lightning strike caused a barn fire near the corner of Beechcroft Road at Charles Lane in Spring Hill, and the barn was completely destroyed.

APPENDIX C: ETSU/NOAA

Wind, Maury County, TN, 1950 – 2023, Damages > \$10,000

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
5685259	MAURY CO.	COLUMBIA	1/17/1999	2005	Thunderstorm Wind		\$ 4,000,000.00	About 350 homes and 25 businesses received damage from the straight line winds in Columbia. A large tree fell on a house. 30 to 40 homes and businesses received serious damage. At Columbia's Shady Brook Mall huge panes of glass at the entrance were blown in, and there was extensive roof damage. 40 mature trees were uprooted at the Graymere Country Club. There was \$400,000 worth of damage to the Pepsi Cola plant alone.
897262	MAURY CO.	COLUMBIA	5/3/2020	1530	Thunderstorm Wind	56	\$ 717,630.00	Numerous trees and power lines were blown down with power outages across Maury County, including across Columbia where one tree fell onto a house on Mockingbird Lane.
1073899	MAURY (ZONE)		3/3/2023	1145	High Wind	59	\$ 700,000.00	An AWOS station at Columbia Airport measured a peak non-thunderstorm wind gust of 68 mph. Several hours of severe non-thunderstorm winds resulted in numerous damage reports, including downed and uprooted trees, downed powerlines, and roof and other property damage across all of Maury County. Damages are estimated.
5596740	MAURY CO.	PORTERS CHAPEL	2/21/1997	740	Thunderstorm Wind		\$ 300,000.00	
164605	MAURY CO.	GLENDALE	4/10/2009	345	Thunderstorm Wind	60	\$ 100,000.00	Multiple trees were reported down county wide. The most concentrated damage was on Valley Creek Road west of Culleoka where numerous trees were snapped off aloft and siding of a roof of a house was taken off.
770565	MAURY CO.	KEDRON	6/28/2018	927	Thunderstorm Wind	52	\$ 100,000.00	Maury County Emergency Management received numerous reports of trees blown down across Spring Hill. One tree fell through a house on Neeleys Bend leaving it uninhabitable, and a large tree branch fell onto another house on Neeleys Bend causing significant roof damage.
771071	MAURY CO.	MT PLEASANT	6/28/2018	1152	Thunderstorm Wind	61	\$ 100,000.00	Numerous trees were blown down in and around Mount Pleasant with one tree falling onto a home making it uninhabitable.
75454	MAURY (ZONE)		1/29/2008	1914	High Wind	56	\$ 60,000.00	A thirty inch diameter tree fell on a house in Columbia on Dalton Ave. Power outages were occurring at Mt. Pleasant. A newspaper story said that east of Columbia on Iron Ridge Road, a shed was blown away about 100 feet from its original location. Numerous trees were down. The side of a barn was ripped off. In Santa Fe, a maple tree fell on a 148-year-old church causing roof damage. The Sugar Creek House of Worship will be rebuilt. The church was built in 1859 and was called Union Church.
431042	MAURY CO.	SCREAMER	1/30/2013	310	Thunderstorm Wind	70	\$ 60,000.00	Microburst with maximum winds around 85 mph caused significant roof damage to a residence along Ashwood rd and downed approximately 100 trees from Ashwood rd to Canaan rd. Elsewhere, a lot of trees were downed across the county especially in and around Mount Pleasant.
186988	MAURY CO.	DARKS MILL	7/12/2009	1913	Thunderstorm Wind	55	\$ 50,000.00	Numerous trees were downed. One tree fell on a barn. Several trees blocked area roadways. Power lines were downed.
1113845	MAURY CO.	SPRING HILL	8/26/2023	1556	Thunderstorm Wind	56	\$ 50,000.00	Severe thunderstorm winds damaged the roof of a Shell Gas Station along Main Street in Spring Hill. Part of the roof fell on a car that was parked at a gas pump. No injuries reported. Damages are a rough estimate.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
5434080	MAURY CO.	SANTA FE	1/13/2005	830	Thunderstorm Wind	57	\$ 35,000.00	Sheriff's office reported wind damage to buildings. Newspaper article stated that 2 metal sheds were picked up and thrown by the wind at 2315 Arthur Hutchinson Road. One shed was 10 feet long and the other was 130 feet long. The larger shed was hurled 150 feet. Damage to the sheds alone were about \$30,000. Shingles were blown off roofs, and other sheds were damaged in the Knob Creek area as well. Knob Creek is near Arthur Hutchinson Rd. There was minor damage to the Cytec Industries building at Mt. Pleasant. News article stated that there was moderate damage to 6 homes and mild damage to 12 homes. Areas affected were Knob Creek, Theta, Chestnut Ridge, and Mount Joy.
256796	MAURY CO.	COLUMBIA	8/21/2010	1910	Thunderstorm Wind	55	\$ 30,000.00	Numerous trees were blown down in Culleoka. Roof damage was also reported to a home in this area, along with a trailer that was moved off of its cement blocks. Type of trailer and degree of damage to trailer was unknown. Newspapers also reported that some fencing was taken out at a farm on fronting Frank Moore Road.
300717	MAURY CO.	SPRING HILL	4/4/2011	1410	Thunderstorm Wind	60	\$ 25,000.00	Roof was blown off a building. Specific details concerning the type of building was unknown.
302559	MAURY CO.	SANDY HOOK	4/27/2011	424	Thunderstorm Wind	55	\$ 25,000.00	A tree were blown down on a house on William and Earl Road near Mt. Pleasant. Other trees were blown down countywide. Specific details concerning any damage to the home was unknown.
313013	MAURY CO.	WESTWOOD	5/25/2011	2145	Thunderstorm Wind	55	\$ 25,000.00	Multiple trees were uprooted with two houses having trees on them near Hidden Lake Circle. Specific details concerning any damage to the two houses along with any associated damage cost were unknown.
815065	MAURY CO.	KEDRON	3/30/2019	1747	Thunderstorm Wind	70	\$ 25,000.00	A NWS storm survey determined a 1 mile long by 300 yards wide microburst caused significant wind damage in southern Spring Hill just south of Saturn Parkway. A few trees were blown down along Timberline Drive at the start of the path. One barn was destroyed, several others were damaged, a farm house suffered broken windows, fences were blown down, and numerous trees were snapped and uprooted along John Lunn Road between Timberline Road and Tom Lunn Road. Winds were estimated up to 80 mph.
834923	MAURY CO.	LANTON	6/20/2019	217	Thunderstorm Wind	52	\$ 25,000.00	Tree fell onto and destroyed a mobile home on Greens Mill Road. Occupant was not injured.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
18204	MAURY CO.	MT PLEASANT	4/11/2007	1124	Thunderstorm Wind	50	\$ 22,000.00	A newspaper article reported roof damage in the downtown area. There was damage to a chain link fence. Also, a stop sign was blown down. The roof was blown off a building housing Attorney Gary Howell and the State Probation Office on North Main St. The roof blew across the street and hit two parked cars. Then, the roof crashed through Jim Bailey's vacant drug store. There were several trees down on Main St. Power lines were down at one house. Trees were down on Mt. Zion Road. A tree fell near a house on Mt. Joy Road and damaged some electrical lines. There was minor roof damage to a school in Mt. Pleasant. In Columbia, the severe thunderstorm took off a section of the red tin roof covering the second and third grade hall at Woodward Elementary School. No one was in class at the time because of spring break.
5461533	MAURY CO.	COLUMBIA	6/27/2005	1600	Thunderstorm Wind	50	\$ 20,000.00	Newspaper story about trees and power lines being down in Columbia. Trees knocked down at least 6 power lines. One tree fell on a house at 514 West 12th St. Mr. James Pillow, Jr., who was in the home at the time, was treated and released for falling drywall in the house. The tree sliced the home from corner-to- corner.
95093	MAURY CO.	NEAPOLIS	5/8/2008	1240	Thunderstorm Wind	70	\$ 20,000.00	A few trees were uprooted in a microburst. There was damage to some gas pumps at a Shell gasoline station.
694908	MAURY (ZONE)		5/4/2017	100	Strong Wind	43	\$ 20,000.00	Trees and power lines were blown down throughout Maury County with some roads blocked. Trees were blown down on Dry Creek Road southwest of Mount Pleasant and on Sunnyside Drive southwest of Columbia. A tree was snapped and barely missed hitting a house on Hampshire Pike west of Columbia. Two other large trees were blown down southeast of Spring Hill.
295394	MAURY CO.	SPRING HILL	4/4/2011	1240	Thunderstorm Wind	60	\$ 15,000.00	Roof was blown off a building. Specific information concerning type of building and associated cost were unknown.
312561	MAURY CO.	RIDLEY	5/25/2011	2235	Thunderstorm Wind	55	\$ 15,000.00	Several trees were downed blocking U.S. Highway 43 just south of the Maury County Airport.
517380	MAURY CO.	SPRING HILL	6/7/2014	1915	Thunderstorm Wind	61	\$ 15,000.00	A microburst blew down numerous trees and power lines on the Maury County side of Spring Hill. Trees were blown down on Beechcroft Road and Kedron Parkway, and a tree fell on a car on Main Street. 11 power poles were blown down near the GM Plant on Highway 31. Winds were estimated up to 70 mph.
770605	MAURY CO.	WESTWOOD	6/28/2018	1041	Thunderstorm Wind	61	\$ 15,000.00	Numerous trees and power lines were blown down on the south side of Columbia with some trees falling on houses.
1098024	MAURY CO.	COLUMBIA	6/30/2023	2010	Thunderstorm Wind	50	\$ 15,000.00	Multiple trees and power lines were reported downed across Maury County from thunderstorm outflow. Damages are a rough estimate.
1099251	MAURY CO.	WESTWOOD	7/8/2023	1548	Thunderstorm Wind	50	\$ 15,000.00	Severe thunderstorm winds downed trees along Campbellsville Pike in Columbia. One of these trees fell on a truck, causing minor injuries to two people inside the truck. Damages are a rough estimate.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
1160800	MAURY (ZONE)		3/25/2024	1745	Strong Wind	35	\$ 15,000.00	Facebook video showed a tree falling onto a car along Stiversville Road just west of Toll Dugger Road near Culleoka. No injuries were reported. Strongest winds measured across the area were about 30 to 40 mph. Damages are a rough estimate.
154855	MAURY CO.	SPRING HILL	2/11/2009	1130	Thunderstorm Wind	55	\$ 12,000.00	Trees were blown down in Spring Hill.
303989	MAURY CO.	COLUMBIA	4/20/2011	320	Thunderstorm Wind	51	\$ 12,000.00	Several trees needed to be cleared from area roads.
10349388	MAURY CO.	Western Maury Co	5/14/1995	2030	Thunderstorm Wind	0	\$ 10,000.00	Many trees were blown down. Some of the trees fell on top of houses and cars.
10349395	MAURY CO.		7/14/1995	1600	Thunderstorm Wind	0	\$ 10,000.00	Numerous trees were knocked down.
10349397	MAURY CO.	Columbia	8/8/1995	1300	Thunderstorm Wind	0	\$ 10,000.00	A tree fell on house.
5596541	MAURY CO.	COLUMBIA	2/21/1997	710	Thunderstorm Wind		\$ 10,000.00	
5596726	MAURY CO.	MT PLEASANT	2/21/1997	740	Thunderstorm Wind		\$ 10,000.00	
177050	MAURY CO.	GODWIN	6/1/2009	1604	Thunderstorm Wind	55	\$ 10,000.00	Trees down blocking road was reported by the public.
256630	MAURY CO.	COLUMBIA	8/14/2010	1815	Thunderstorm Wind	55	\$ 10,000.00	A few trees were downed in Columbia.
262804	MAURY CO.	COLUMBIA MAURY ARI	10/24/2010	1825	Thunderstorm Wind	55	\$ 10,000.00	Five power poles were snapped by straight line winds.
262821	MAURY CO.	ASHWOOD	10/24/2010	1830	Thunderstorm Wind	55	\$ 10,000.00	Trees were reported down at the intersection of Ashwood Road and Cannon Drive.
300715	MAURY CO.	WESTWOOD	4/4/2011	1305	Thunderstorm Wind	69	\$ 10,000.00	Part of the roof was removed from Woodard Elementary School near Columbia.
301580	MAURY CO.	ARMOUR VLG	4/26/2011	107	Thunderstorm Wind	55	\$ 10,000.00	Several trees were blown down near the intersection of U.S. Highway 412 and Zion Road.
312649	MAURY CO.	COLUMBIA	5/25/2011	2245	Thunderstorm Wind	55	\$ 10,000.00	A few trees were downed on a carport near the intersection of U.S. Highway 91 and U.S. Highway 31. Specific details concerning any damage to the carport and associated damage costs were unknown.
368126	MAURY CO.	RALLY HILL	3/2/2012	1713	Thunderstorm Wind	55	\$ 10,000.00	A tree fell onto a house on Rally Hill Road. Specific details concerning any damage caused to the home were unknown.
392878	MAURY CO.	ARROW	7/2/2012	1604	Thunderstorm Wind	55	\$ 10,000.00	A few trees and power lines were blown down.
480291	MAURY (ZONE)		10/31/2013	1200	Strong Wind	43	\$ 10,000.00	Trees were blown down across Maury County. Power lines were blown down in Spring Hill.
512984	MAURY CO.	COLUMBIA	6/5/2014	30	Thunderstorm Wind	52	\$ 10,000.00	Numerous trees were blown down all across Maury County.
546281	MAURY CO.	COLUMBIA	10/13/2014	1700	Thunderstorm Wind	52	\$ 10,000.00	Trees were blown down all across Maury County including on Neeley Hollow Road, Campbellsville Pike, Santa Fe Pike, and Mt. Pleasant Pike.
607954	MAURY (ZONE)		12/28/2015	1100	Strong Wind	43	\$ 10,000.00	Numerous trees were blown down across Maury County including one tree down blocking traffic at 1852 Highway 166. The Columbia Airport AWOS measured a peak wind gust of 49 mph.
623406	MAURY CO.	CROSS BRIDGES	3/31/2016	1618	Thunderstorm Wind	70	\$ 10,000.00	A NWS storm survey team determined that straight line winds were the cause of damage in western Maury County. An old barn was destroyed along Cecil Farm Road along with dozens of trees uprooted or downed along Cross Bridges Road. The swath of straight line wind damage was about 1 mile long and winds were estimated at 80 mph.
623407	MAURY CO.	WESTWOOD	3/31/2016	1633	Thunderstorm Wind	56	\$ 10,000.00	Maury County emergency management reported 15 to 20 trees were blown down on the south side of Columbia, including on Hidden Lake Circle.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	MAGNITUDE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
834828	MAURY CO.	POTTSVILLE	6/17/2019	1715	Thunderstorm Wind	56	\$ 10,000.00	Maury County EMA conducted a damage survey from a microburst that struck an area along Hardison Mill Road and Highway 431 around the Hardison Mill Farm in far eastern Maury County along the Marshall County line. Numerous trees and power lines were snapped but no building damage occurred.
834978	MAURY CO.	COLUMBIA	6/21/2019	1919	Thunderstorm Wind	52	\$ 10,000.00	Trees and power lines were blown down across Maury County with power outages county-wide. Fire and sheriff departments were assisting in removing trees from main roadways.
957696	MAURY CO.	COLUMBIA	5/6/2021	1635	Thunderstorm Wind	50	\$ 10,000.00	Trees and power lines were blown down across the county with power outages county-wide. Approximately 2,700 people were without power.
1024781	MAURY CO.	COLUMBIA	4/13/2022	1839	Thunderstorm Wind	56	\$ 10,000.00	More than 2,000 customers were without power due to snapped power poles and downed power lines. Several roads were also blocked due to downed trees across the road.
1101600	MAURY CO.	COLUMBIA	7/18/2023	1510	Thunderstorm Wind	52	\$ 10,000.00	The emergency manager reported that numerous trees were downed across Maury County due to severe thunderstorm winds. Damages are a rough estimate.

APPENDIX C: ETSU/NOAA

Winter Weather, Maury County, TN, 1950 – 2023

EVENT_ID	CZ_NAME_STR	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
1017798	MAURY (ZONE)	3/11/2022	2100	Winter Weather	\$ -	Snow totals up to 3.5 inches fell across Maury County. CoCoRaHS station Columbia 1.2 SSW measured 3.5 inches of snow, and CoCoRaHS station Columbia 1.2 SSW measured 2.8 inches of snow. The COOP observer in Mount Pleasant measured 2.0 inches of snow.
1006137	MAURY (ZONE)	1/28/2022	1700	Winter Weather	\$ -	Up to 1 inch of snow fell across the county. CoCoRaHS station Columbia 6.6 NNE measured 0.6 of snow, and CoCoRaHS station Columbia 1.2 SSW measured 0.5 of snow.
1006329	MAURY (ZONE)	1/16/2022	300	Winter Storm	\$ -	Up to 8 inches of snow fell across the county. CoCoRaHS station Hampshire 2.7 SW measured 8.0 inches of snow, CoCoRaHS station Columbia 1.2 SSW measured 3.5 inches of snow, and CoCoRaHS station Columbia 6.6 NNE measured 1.7 inches of snow. Social media reports indicated 7.5 inches of snow fell 7 miles WNW of Mount Pleasant.
1006104	MAURY (ZONE)	1/6/2022	800	Winter Storm	\$ -	Up to 4 inches of snow fell across the county. CoCoRaHS station Columbia 1.2 SSW measured 4.0 inches of snow, and CoCoRaHS station Hampshire 2.7 SW measured 2.0 inches of snow.
1006066	MAURY (ZONE)	1/2/2022	1500	Winter Storm	\$ -	Up to 4 inches of snow fell across the county. CoCoRaHS station Columbia 1.2 SSW measured 3.5 inches of snow, and CoCoRaHS station Hampshire 2.7 SW measured 2.0 inches of snow.
946092	MAURY (ZONE)	2/17/2021	1600	Winter Storm	\$ -	Snow totals up to 4 inches were reported across the county. CoCoRaHS station Columbia 1.2 SSW measured 3.2 inches of snow.
946045	MAURY (ZONE)	2/14/2021	1900	Winter Storm	\$ -	A wintry mix of snow and sleet brought snow accumulations up to 1/2 inch and sleet accumulations up to 2.5 inches across the county. Roads were ice covered and impassable, with most businesses and schools closed for the entire week.
944707	MAURY (ZONE)	2/6/2021	2200	Winter Weather	\$ -	Up to 0.5 inches of snow fell across Maury County. Social media reports indicated 0.5 inches of snow fell in Culleoka.
941547	MAURY (ZONE)	1/7/2021	1700	Winter Storm	\$ -	Up to 5 inches of snow fell across Maury County, mainly in western portions of the county. CoCoRaHS station Hampshire 2.7 SW measured 5.0 inches of snow, and CoCoRaHS station Columbia 1.2 SSW measured 1.5 inches of snow.
879249	MAURY (ZONE)	2/6/2020	2100	Winter Weather	\$ -	Up to 0.5 inches of snow fell across Maury County. CoCoRaHS station Columbia 1.2 SSW measured 0.5 inches of snow.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
798632	MAURY (ZONE)	12/11/2018	0	Freezing Fog	\$ -	Freezing fog was reported in several areas of Maury County, with ice crystals from the freezing fog coating most elevated surfaces.
736510	MAURY (ZONE)	1/16/2018	400	Winter Weather	\$ -	CoCoRaHS and social media reports indicated 1 to 3 inches of snow fell across Maury County. A Facebook report indicated 2.8 inches of snow fell 7 miles WNW of Mount Pleasant, 2.5 inches of snow fell 2 miles ESE of Spring Hill, 2 inches of snow fell in Columbia, and 1.7 inches of snow fell 7 miles N of Lynnville. 6 miles northeast of Lewisburg. CoCoRaHS station Columbia 1.2 SSW measured 2.5 inches of snow.
686834	MAURY (ZONE)	3/11/2017	1800	Winter Weather	\$ -	Total snow amounts across Marshall County ranged from 1 inch up to nearly 2 inches. CoCoRaHS station Columbia 1.2 SSW measured 2.0 inches of snow.
677327	MAURY (ZONE)	1/6/2017	600	Winter Weather	\$ -	Reports indicated 2 to 2.5 inches of snow fell across Maury County. The highest amount was measured in Culleoka.
620626	MAURY (ZONE)	2/8/2016	1200	Winter Weather	\$ -	Snow amounts up to around 1 inch were measured across Maury County. CoCoRaHS station Columbia 1.2 SSW measured 0.9 inches of snow.
616947	MAURY (ZONE)	1/21/2016	2100	Winter Storm	\$ -	Snow totals between 1 and 4 inches were measured across Maury County. Emergency management reported 4 inches of snow 9 miles NNW of Columbia, and a Facebook report indicated 3 inches of snow in the Culleoka community 7 miles north of Lynnville. CoCoRaHS station Columbia 0.9 SE measured 2.5 inches of snow, and CoCoRaHS station Columbia 1.2 SSW measured 2.0 inches of snow. A COOP observer measured 1.5 inches of snow 3 miles WNW of Columbia.
616386	MAURY (ZONE)	1/20/2016	0	Winter Weather	\$ -	Light freezing rain up to 1/5 of an inch fell across Maury County. Twitter reports indicated around 0.15 inches of ice accumulated on elevated surfaces in Spring Hill, and emergency management indicated a light glaze of ice on bridges and overpasses in Spring Hill, Mount Pleasant, and along I-65 through the county.
566776	MAURY (ZONE)	3/4/2015	1700	Winter Weather	\$ -	Precipitation totals across Maury County reached up to 2 of combined ice, sleet and snow. A CoCoRaHS observer measured 2.0 inches of combined ice, sleet and snow 1.2 miles SSW of Columbia. A Facebook report indicated 2 inches of snow fell in Williamsport.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
561422	MAURY (ZONE)	2/25/2015	1200	Winter Weather	\$ -	Snow amounts up to 2 inches were reported across Maury County. Emergency management reported 1.5 inches of snow fell in Columbia, and a CoCoRaHS observer measured 1.5 inches of snow 1.2 miles SSW of Columbia.
560884	MAURY (ZONE)	2/20/2015	1200	Winter Weather	\$ -	Snow and sleet accumulations up to 1.0 fell during the late afternoon on February 20, followed by freezing rain with ice accumulations around 0.10 from the evening on February 20 into the early morning hours on February 21. A CoCoRaHS observer 1.2 miles SW of Columbia measured 1.0 of snow and sleet.
559546	MAURY (ZONE)	2/18/2015	100	Winter Weather	\$ -	Snow amounts up to 1 inch was reported across Maury County. A CoCoRaHS observer measured 1.0 inch of snow 1.2 miles SSW of Columbia.
559482	MAURY (ZONE)	2/16/2015	0	Winter Storm	\$ 50,000.00	Precipitation totals across Maury County ranged from 0.5 to 3 of combined ice and sleet. A COOP observer in Spring Hill measured 0.25 of ice and 0.4 of sleet, while a CoCoRaHS observer 1.2 miles SW of Columbia measured 3.0 of combined ice and sleet. Numerous trees and power lines were knocked down across the county, and many roads and schools were closed.
554358	MAURY (ZONE)	1/23/2015	1800	Winter Weather	\$ -	Snow amounts around 1.0 inch were reported across Maury County. 1.0 inch of snow was measured 1.2 miles south-southwest of Columbia.
507362	MAURY (ZONE)	3/2/2014	1900	Winter Weather	\$ -	Lots of trees were reported down with a few power outages across northwest Maury County.
495993	MAURY (ZONE)	2/12/2014	600	Winter Weather	\$ -	CoCoRaHS and social media reports indicated around one half inch to nearly 3 inches of snow fell across Maury County, with the highest amounts in southeastern parts of the county. CoCoRaHS station Columbia 0.9 SE measured 1.5 inches of snow, and CoCoRaHS station Columbia 1.2 SSW measured 0.5 inches of snow. Facebook reports indicated 2.5 inches of snow fell in Culleoka, and 1 inch of snow fell in parts of Columbia.
440409	MAURY (ZONE)	3/25/2013	700	Winter Weather	\$ -	Around eight tenths of an inch of snow was on the grass in Spring Hill. One half inch of snow was on elevated surfaces along Highway 31. This resulted in a significant impact to commerce and transportation in and around Spring Hill.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
423716	MAURY (ZONE)	1/31/2013	2130	Winter Weather	\$ -	Three quarters of an inch of total snowfall accumulation occurred across the county. This resulted in a significant impact to commerce and transportation across the county through the late evening hours.
424726	MAURY (ZONE)	1/17/2013	1241	Winter Weather	\$ 10,000.00	Automobile accidents with unknown number of injuries at South James Campbell Boulevard and Brookmeade Drive due to slick roads from a sleet and snow mix. Specific details concerning amount and type of damage, associated repair costs, and the exact amount of injuries that occurred, were unknown.
424620	MAURY (ZONE)	1/14/2013	1620	Winter Weather	\$ 3,000.00	Automobile accident due to ice accumulations from freezing rain on bridge at the intersection of State Highway 7 and State Highway 247. Specific details concerning amount and type of damage, associated repair costs, and if any injuries occurred, were unknown.
362322	MAURY (ZONE)	2/19/2012	800	Winter Weather	\$ -	CoCoRaHS observers measured up to 0.5 inches of total snow accumulation across the county.
353110	MAURY (ZONE)	12/7/2011	600	Winter Weather	\$ -	Up to one half inch of snow accumulation occurred across Maury County, resulting in some travel problems and school closures.
282699	MAURY (ZONE)	2/9/2011	1400	Winter Weather	\$ -	Two and one half inches of total snowfall accumulation occurred across the county. This total snowfall accumulation resulted in closures or postponement of civic engagements across the county for the remainder of that day and night on Wednesday, February 9th, as travel across roads throughout the county became hazardous due to the accumulating snowfall.
278932	MAURY (ZONE)	1/26/2011	130	Winter Weather	\$ -	One and three tenths of an inch of total snowfall accumulation on average occurred across the county. This total snowfall accumulation resulted in public and some private primary, secondary, and higher education school closures across the county on Wednesday, January 26th, along with closures or postponement of other civic engagements across the county for the remainder of that day, as travel across roads throughout the county became hazardous due to the accumulating snowfall.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
277383	MAURY (ZONE)	1/20/2011	1530	Winter Weather	\$ -	One inch of total snowfall accumulation on average occurred across the county. This total snowfall accumulation resulted in closures or postponement of various civic engagements across the county through the evening hours on Thursday, January 20th, as travel across roads throughout the county became hazardous due to the accumulating snowfall.
273030	MAURY (ZONE)	12/25/2010	0	Winter Weather	\$ -	One half of an inch of total snowfall accumulation occurred across the county. This total snowfall accumulation resulted in roads throughout the county becoming hazardous due to the snowfall accumulation.
274152	MAURY (ZONE)	12/15/2010	1750	Winter Weather	\$ -	Freezing rain accumulations of around one eighth of an inch were reported on residences porches, sidewalks, and cars in Columbia. Freezing rain was still falling at the time of this report. This total ice accumulation resulted in public and some private primary, secondary, and higher education school closures in Columbia and the surrounding areas on Thursday, December 16th, along with closures or postponement of other civic engagements across the county during the late afternoon and evening hours on Wednesday, December 15th and throughout Thursday, December 16th, as travel across roads throughout the county became hazardous due to the ice accumulations on them.
272611	MAURY (ZONE)	12/12/2010	600	Winter Weather	\$ -	Up to three inches of total snowfall accumulation was reported in Mount Pleasant. A newspaper also reported that there were at least eight wrecks in Columbia Sunday afternoon and evening due to the weather conditions. Details concerning the amount of damage caused and any injuries were unknown. This total snowfall accumulation resulted in public and some private primary, secondary, and higher education school closures across the county, along with closures or postponement of other civic engagements across the county for the remainder of that day and into the early morning hours on Monday, December 13th, as travel across roads throughout the county became hazardous due to the accumulating snowfall.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
216296	MAURY (ZONE)	2/8/2010	1700	Winter Weather	\$ -	Total snowfall accumulation, estimated at two inches, occurred across the county. This resulted in multiple roads across the county becoming snow covered, causing hazardous driving conditions and numerous wrecks. Details on any damage amounts or injuries associated with these wrecks were unknown.
213012	MAURY (ZONE)	1/29/2010	1530	Ice Storm	\$ 100,000.00	One quarter to one half of an inch of ice accumulations on trees, power lines, and other exposed surfaces caused scattered to widespread power outages across the county. Newspaper reported that county emergency management officials had determined that an ice covered tree killed a woman when the weight of ice on tree limbs above the women's bedroom caused the tree to collapse into the family trailer and land on her. Newspaper also reported that Columbia Power and Water System reported that about 800 customers lost power near Tom J. Hitch Parkway in Columbia.
158185	MAURY (ZONE)	2/28/2009	2133	Winter Weather	\$ -	Turn over to all snow reported with a dusting of accumulation on the grass across the entire county. Snowfall was making driving visibilities poor countywide also.
90936	MAURY (ZONE)	3/7/2008	1800	Winter Storm	\$ -	A mixture of sleet, snow and freezing rain hit the county. Snow accumulations were about 2 to 3 inches across the county by 10 AM CST Sat. March 8. Driving was treacherous due to the snow and ice.
5430731	MAURY (ZONE)	12/22/2004	2100	Winter Storm	\$ -	
5674791	MAURY (ZONE)	12/24/1998	0	Winter Storm	\$ -	Numerous trees and power lines down. Numerous vehicular accidents.
5537106	MAURY (ZONE)	1/6/1996	550	Winter Storm	\$ -	
5537131	MAURY (ZONE)	1/6/1996	1700	Winter Storm	\$ -	

APPENDIX C: ETSU/NOAA

Tornados, Maury County, TN, 1950 – 2023

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	TOR_F_SCALE	INJURIES_DIRECT	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
10126351	MAURY CO.		1/10/1963	2355	Tornado	F3	4	\$ 2,500,000.00	
10123068	MAURY CO.		7/15/1966	1600	Tornado	F1	1	\$ 25,000.00	
10110948	MAURY CO.		5/6/1971	1826	Tornado	F0	0	\$ -	
10124281	MAURY CO.		4/3/1974	1630	Tornado	F1	0	\$ 25,000.00	
10119574	MAURY CO.		5/7/1984	1425	Tornado	F1	0	\$ -	
5632418	MAURY CO.	BRYANT STATION	3/8/1998	1605	Tornado	F0	0	\$ -	A woman saw a tornado from her home.
5641234	MAURY CO.	CULLEOKA	4/16/1998	1710	Tornado	F3	8	\$ 4,000,000.00	The heaviest damage was in the Culleoka-Tice Town area. An 18 wheeler was blown over. Many homes were damaged, trees and power lines were down. Several trailers were destroyed or damaged.
5146455	MAURY CO.	WILLIAMSPORT	5/25/2000	220	Tornado	F1	0	\$ -	Trees were down. The hardest hit area was the southern part of Greenfield Bend Rd.
5146456	MAURY CO.	COLUMBIA	5/25/2000	226	Tornado	F1	0	\$ -	Trees were down. The hardest hit area was at the intersection of Morel Road and Cross Bridges Road.
5146457	MAURY CO.	FOUNTAIN HGTS	5/25/2000	235	Tornado	F2	0	\$ -	The tornado started near Goose Creek Road and Old Highway 50. Many large trees...including well established oak trees...were uprooted. A garage was demolished near Fountain Heights.
5234296	MAURY CO.	MT PLEASANT	2/25/2001	40	Tornado	F0	0	\$ -	Law enforcement reported trees blown down.
5288180	MAURY CO.	MT PLEASANT	4/28/2002	1442	Tornado	F0	0	\$ -	A ham radio operator, who is also a trained spotter, saw a tornado drop down on 1st Ave. and U.S. Highway 43, and then lift back up.
5481498	MAURY CO.	SPRING HILL	11/15/2005	1825	Tornado	F0	0	\$ -	Trained spotter observed a tornado. This storm moved into Williamson County and was later observed in Williamson County as another tornado by a NWS Co-op observer.
439765	MAURY CO.	SCRIBNER	3/18/2013	1022	Tornado	EFO	0	\$ 50,000.00	An EFO Tornado with maximum sustained winds of 80 mph touched down on McKnight Road east of Culleoka where several trees were blown down and one mobile home had minor siding damage. A few more trees were blown down on Old Brush Creek Road. Numerous trees were snapped or uprooted in all directions along side roads north of Old Brush Creek Road. A few more trees were blown down on Joe Reeves Road and an old barn lost part of its roof.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_LOCATION	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	TOR_F_SCALE	INJURIES_DIRECT	DAMAGE_PROPERTY_NUM	EVENT_NARRATIVE
607152	MAURY CO.	ROCKDALE	12/23/2015	1948	Tornado	EF1	0	\$ 100,000.00	This strong, long-track EF3 tornado touched down just east of the Hardin County/Wayne County line about 2.5 miles southwest of the town of Lutts. At touchdown, hundreds of trees were snapped and uprooted before the tornado reached its peak strength about one half mile west-southwest of Lutts along Lutts Road where the tornado reached a width of 800 yards and EF3 strength. A post office and church, both brick buildings, were destroyed along with multiple homes swept from their foundations. Four people were injured here in Lutts. As the tornado continued northeast, hundreds of trees were snapped and uprooted along its path to where a concentrated area of trees were destroyed about 5 miles north of Collinwood. The tornado continued snapping and uprooting trees until the Highway 64 and Natchez Trace Parkway intersection. At this location, an outbuilding was destroyed along with the roof of a mobile home. Further northeast into Lawrence County along Napier Road, a house was swept off its foundation where 3 people were injured. As the tornado traveled northeast, several homes with roofs completely removed or damaged heavily were found along Linville Road. The tornado weakened as it crossed Lewis County into Maury County where a barn was destroyed and many trees were snapped and uprooted along Joy Road, 2 miles southwest of Mount Pleasant. The total path length of the tornado across Wayne, Lawrence, Lewis and Maury Counties was 48.51 miles. This is the first tornado on record to occur in Wayne County, Lewis County, and Maury County in the month of December. Lawrence County previously had one tornado in the month of December, which occurred on December 7, 1951. In addition, this was the strongest tornado to occur in the NWS Nashville county warning area since April 10, 2009.
719850	MAURY CO.	ARROW	8/31/2017	1611	Tornado	EF0	0	\$ 10,000.00	A multiple vortex EF-0 tornado associated with Tropical Depression Harvey touched down just southwest of Mt. Pleasant and traveled to the northwest for about 3.5 miles. This tornado was captured on video by several residents, and was on the ground intermittently for up to 10 minutes. Several trees were uprooted and many large tree limbs snapped on Webb Williams Road and Highway 166. Sheet metal was blown off several farm outbuildings at Gillian Farms on Highway 166 at Old Gibson Hollow Road, and sheet metal was peeled off the large porch of a home at 1586 Highway 66. Maximum winds were estimated up to 75 mph.
793725	MAURY CO.	WILLIAMSPORT	11/5/2018	2310	Tornado	EF0	0	\$	This EF-0 tornado touched down just east of the Natchez Trace Parkway in an open field in extreme eastern Hickman County, then moved northeast where trees were damaged and uprooted along two fence lines. Several 2000 pound hay bales were rolled and stacked along one fence line. The tornado continued northeast across the Duck River and into Maury County briefly before moving back into Hickman County, where it crossed Highway 50 and peeled tin off of the front porch of a house. In addition, a large magnolia tree was uprooted along with several hardwood and softwood trees at the residence. The tornado then crossed the Natchez Trace Parkway again, knocking down numerous trees in farm fields before lifting in a field next to Johnson Branch. The total path length was 2.1 miles.

APPENDIX C: ETSU/NOAA

EVENT_ID	CZ_NAME_STR	BEGIN_DATE	BEGIN_TIME	EVENT_TYPE	DEATHS_DIRECT	EVENT_NARRATIVE	EPISODE_NARRATIVE
257493	MAURY (ZONE)	8/4/2010	1200	Excessive Heat	0	Afternoon temperatures around 100 degrees and unusually high humidity led to heat index values between 110 and 115 degrees on August 4th.	Afternoon heat index readings ranged from 110 to 115 degrees over much of Middle Tennessee on August 4th. Around the Nashville Metropolitan area, a couple dozen people were hospitalized suffering from heat exhaustion along with several others being hospitalized suffering from burnt feet. There were no known fatalities. There were also numerous reports of damage from the heat, including exploding tires on automobiles.
274485	MAURY (ZONE)	12/13/2010	600	Extreme Cold/Wind Chill	1	The Maury County Sheriff's Department reported that a 73 year old woman was found dead from freezing to death after locking herself out of her home in northwest Maury County.	With temperatures in the middle teens during the morning hours on Monday, December 13th, a 73 year old woman who had mistakenly locked herself out of her house, died due to hypothermia.
1061317	MAURY (ZONE)	12/23/2022	310	Extreme Cold/Wind Chill	0	An AWOS station in Columbia measured a minimum wind chill of -24 degrees.	An abnormally strong and cold upper-level low pressure system plunged southward through much of the central and eastern United States, bringing a blast of Arctic air. These historically cold temperatures impacted all of Middle Tennessee beginning late on December 22, 2022. As the Arctic front swept eastward through the area, temperatures plummeted with low temperatures on the morning of December 23rd in the single digits and even below zero. This front also brought strong winds, and the combination of very cold air and strong winds resulted in brutal wind chills with values of -15 degrees to -30 degrees common areawide through December 24th. While snow was observed with this system, it did not last long and snow accumulations of only 1 to 2 inches was found approximately in areas north of Interstate 40. However, this snow resulted in significant impacts by early December 23rd with numerous traffic accidents and road closures reported.
1098040	MAURY (ZONE)	6/30/2023	1200	Excessive Heat	0	A CWOP station in Mount Pleasant measured a maximum heat index value of 117 degrees.	The first part of the day on June 30, 2023, was characterized by dangerous hot and humid conditions across most of Middle Tennessee as heat index values soared to 115 to 125 degrees. With these hot temperatures, an abundant amount of instability was in place across the area. With a mesoscale convective system (MCS) developing over Illinois and Indiana and diving southward, it moved into an environment that was favorable for severe thunderstorms. Damaging winds were the main hazards with this line of thunderstorms with several wind damage reports received through the evening hours.

APPENDIX D: HAZUS/FIRM PANELS

APPENDIX D: HAZUS/FIRM PANELS



Hazus: Flood Global Risk Report

Region Name: Maury_100yr

Flood Scenario: Maury_100yr

Print Date: Friday, February 23, 2024

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.



FEMA

RiskMAP
Increasing Resilience Together

APPENDIX D: HAZUS/FIRM PANELS



Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	
General Building Stock	4
Essential Facility Inventory	5
Flood Scenario Parameters	6
Building Damage	
General Building Stock	7
Essential Facilities Damage	9
Induced Flood Damage	10
Debris Generation	
Social Impact	10
Shelter Requirements	
Economic Loss	12
Building-Related Losses	
Appendix A: County Listing for the Region	15
Appendix B: Regional Population and Building Value Data	16



Flood Global Risk Report



Page 2 of 16

APPENDIX D: HAZUS/FIRM PANELS



General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Tennessee

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is approximately 37 square miles and contains 2,517 census blocks. The region contains over 40 thousand households and has a total population of 100,910 people. The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 41,887 buildings in the region with a total building replacement value (excluding contents) of 15,171 million dollars. Approximately 91.09% of the buildings (and 63.96% of the building value) are associated with residential housing.



Flood Global Risk Report



Page 3 of 16

APPENDIX D: HAZUS/FIRM PANELS



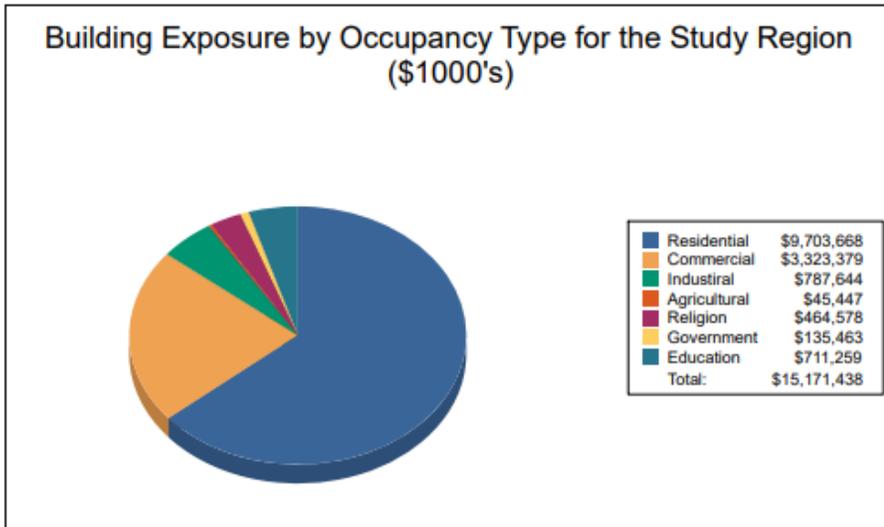
Building Inventory

General Building Stock

Hazus estimates that there are 41,887 buildings in the region which have an aggregate total replacement value of 15,171 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

**Table 1
Building Exposure by Occupancy Type for the Study Region**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	9,703,668	64.0%
Commercial	3,323,379	21.9%
Industrial	787,644	5.2%
Agricultural	45,447	0.3%
Religion	464,578	3.1%
Government	135,463	0.9%
Education	711,259	4.7%
Total	15,171,438	100%



Flood Global Risk Report



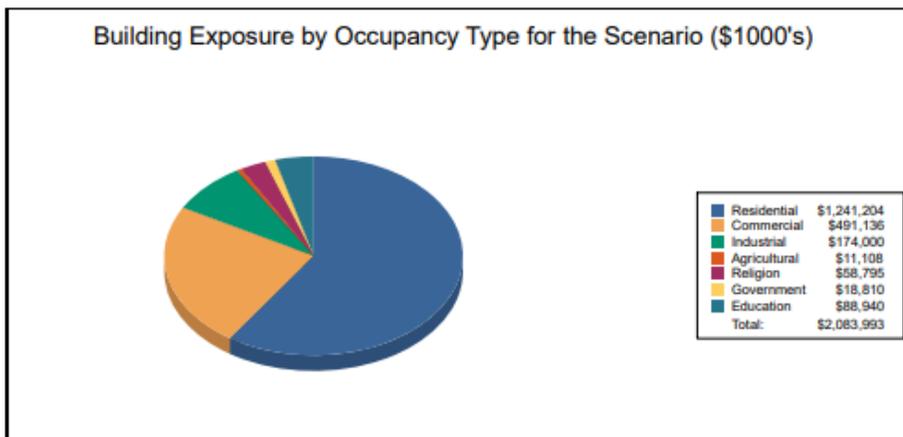
Page 4 of 16

APPENDIX D: HAZUS/FIRM PANELS



Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	1,241,204	59.6%
Commercial	491,136	23.6%
Industrial	174,000	8.3%
Agricultural	11,108	0.5%
Religion	58,795	2.8%
Government	18,810	0.9%
Education	88,940	4.3%
Total	2,083,993	100%



Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 255 beds. There are 32 schools, 17 fire stations, 4 police stations and 1 emergency operation center.



Flood Global Risk Report



Page 5 of 16

APPENDIX D: HAZUS/FIRM PANELS



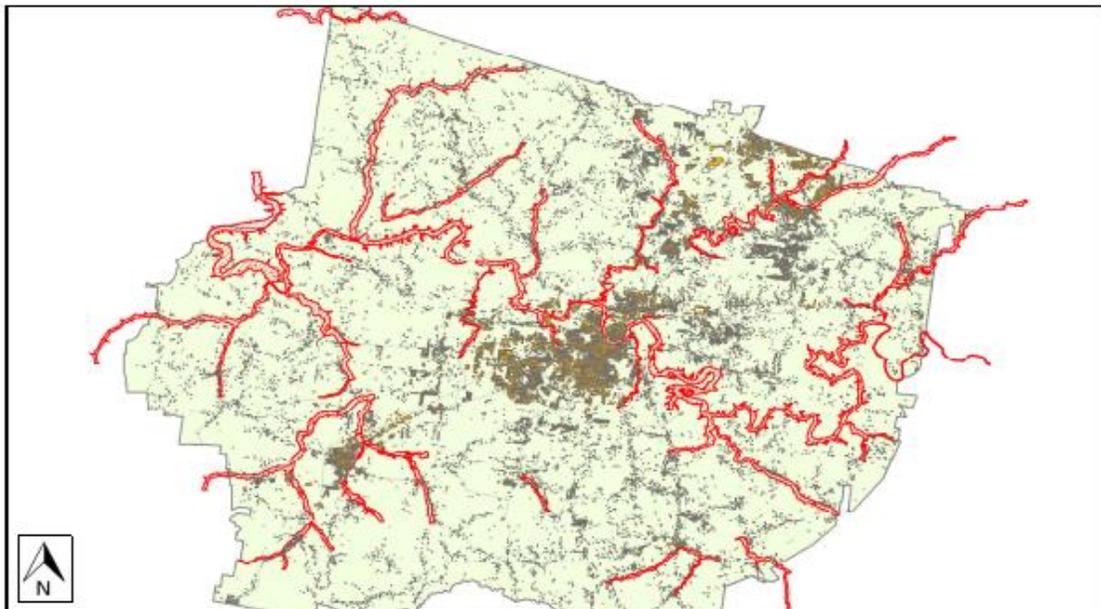
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Maury_100yr
Scenario Name:	Maury_100yr
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



Flood Global Risk Report



Page 6 of 16

APPENDIX D: HAZUS/FIRM PANELS

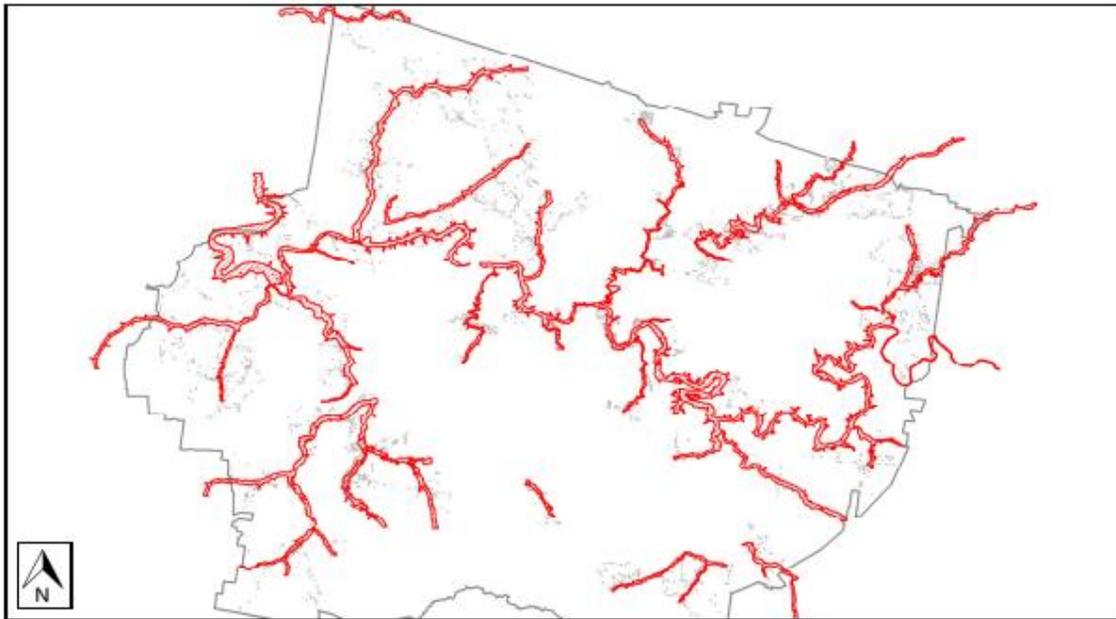


Building Damage

General Building Stock Damage

Hazus estimates that about 68 buildings will be at least moderately damaged. This is over 60% of the total number of buildings in the scenario. There are an estimated 3 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = \$300K) Overview Map



Flood Global Risk Report



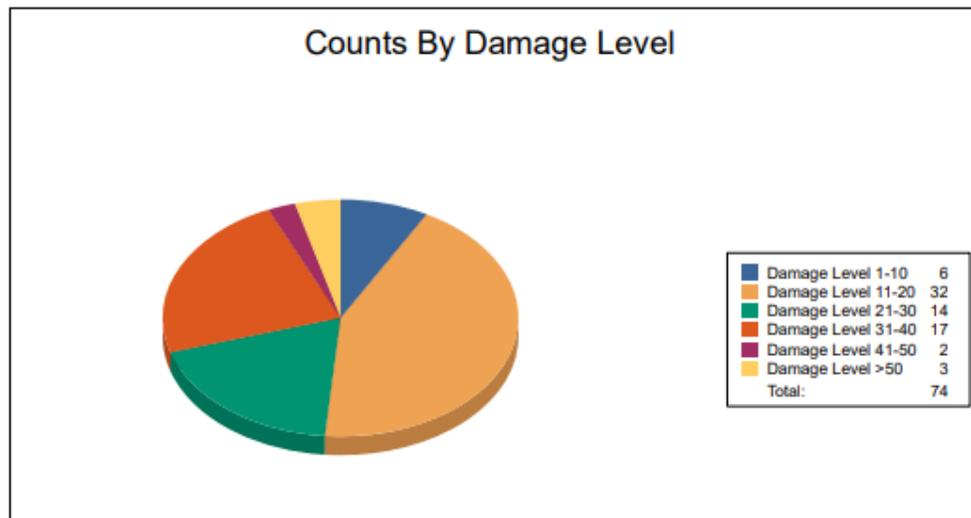
Page 7 of 16

APPENDIX D: HAZUS/FIRM PANELS



Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	1	17	2	33	1	17	2	33	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0
Religion	0	0	4	100	0	0	0	0	0	0	0	0
Residential	5	8	26	41	13	20	15	23	2	3	3	5
Total	6		32		14		17		2		3	



APPENDIX D: HAZUS/FIRM PANELS



Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)										
Concrete	0	0	0	0	0	0	0	0	0	0	0	0
ManufHousing	0	0	0	0	0	0	0	0	0	0	3	100
Masonry	0	0	2	67	0	0	1	33	0	0	0	0
Steel	0	0	0	0	0	0	1	100	0	0	0	0
Wood	5	8	27	43	13	21	16	25	2	3	0	0



APPENDIX D: HAZUS/FIRM PANELS



Essential Facility Damage

Before the flood analyzed in this scenario, the region had 255 hospital beds available for use. On the day of the scenario flood event, the model estimates that 255 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	# Facilities			
	Total	At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	1	0	0	0
Fire Stations	17	0	0	0
Hospitals	1	0	0	0
Police Stations	4	0	0	0
Schools	32	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.



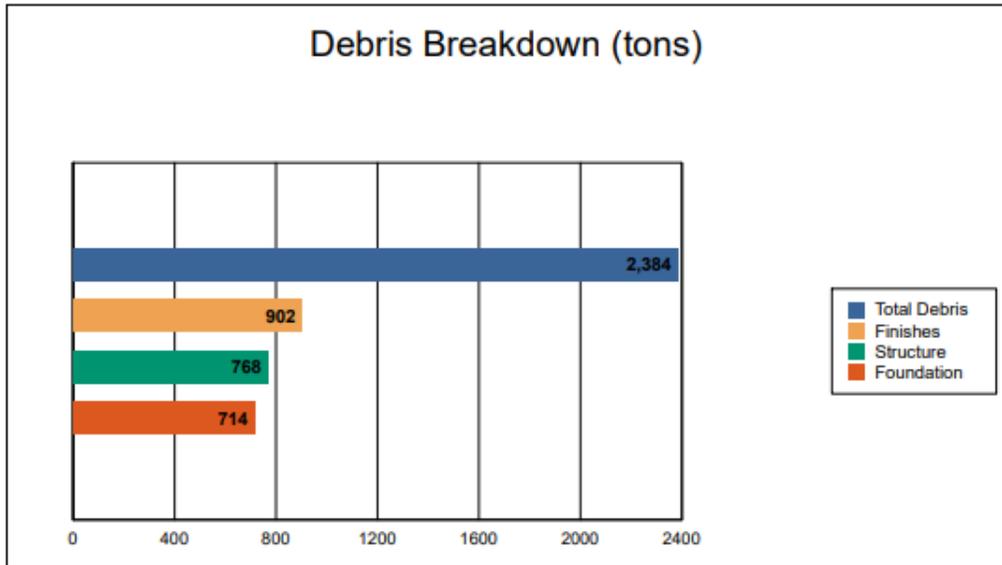
APPENDIX D: HAZUS/FIRM PANELS



Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.



The model estimates that a total of 2,384 tons of debris will be generated. Of the total amount, Finishes comprises 38% of the total, Structure comprises 32% of the total, and Foundation comprises 30%. If the debris tonnage is converted into an estimated number of truckloads, it will require 96 truckloads (@25 tons/truck) to remove the debris generated by the flood.



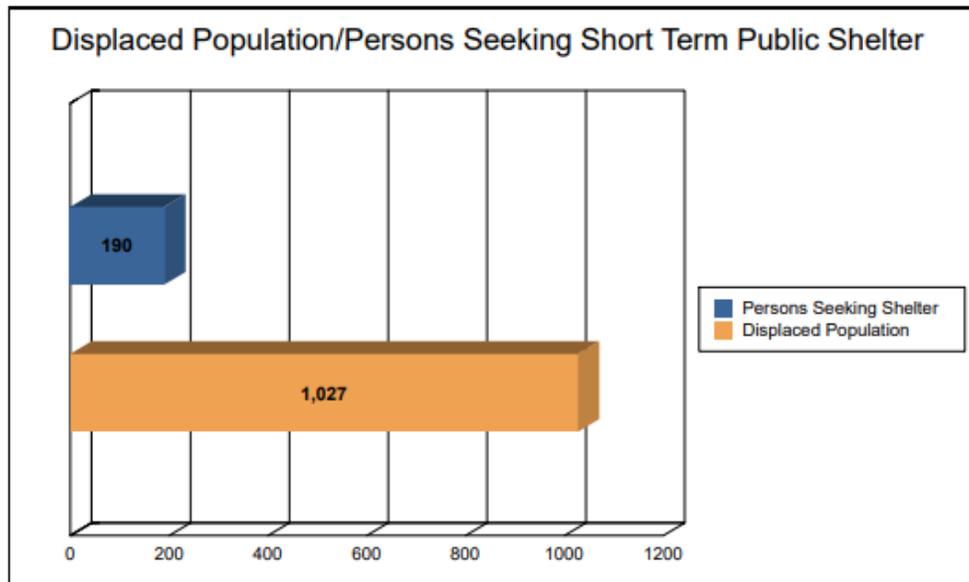
APPENDIX D: HAZUS/FIRM PANELS



Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 342 households (or 1,027 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 190 people (out of a total population of 100,910) will seek temporary shelter in public shelters.



APPENDIX D: HAZUS/FIRM PANELS



Economic Loss

The total economic loss estimated for the flood is 185.96 million dollars, which represents 8.92 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 96.63 million dollars. 48% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 19.44% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.



Flood Global Risk Report



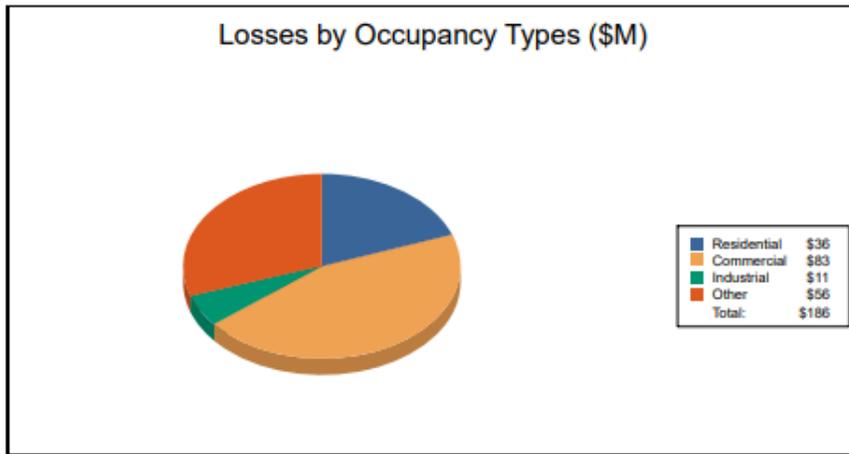
Page 13 of 16

APPENDIX D: HAZUS/FIRM PANELS



Table 6: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	19.11	13.49	2.87	3.48	38.94
	Content	9.48	22.23	6.21	15.04	52.95
	Inventory	0.00	3.02	1.00	0.72	4.74
	Subtotal	28.59	38.74	10.08	19.23	96.63
Business Interruption						
	Income	0.06	22.57	0.12	5.05	27.79
	Relocation	5.67	5.50	0.18	2.64	13.99
	Rental Income	1.70	4.21	0.02	0.20	6.13
	Wage	0.14	12.15	0.21	28.93	41.42
	Subtotal	7.56	44.42	0.52	36.83	89.33
ALL	Total	36.15	83.16	10.60	56.05	185.96



APPENDIX D: HAZUS/FIRM PANELS



Appendix A: County Listing for the Region

- Tennessee
- Maury



Flood Global Risk Report



Page 15 of 16

APPENDIX D: HAZUS/FIRM PANELS



Appendix B: Regional Population and Building Value Data

	Population	Building Value (thousands of dollars)		
		Residential	Non-Residential	Total
Tennessee				
Maury	100,910	9,703,668	5,467,770	15,171,438
Total	100,910	9,703,668	5,467,770	15,171,438
Total Study Region	100,910	9,703,668	5,467,770	15,171,438



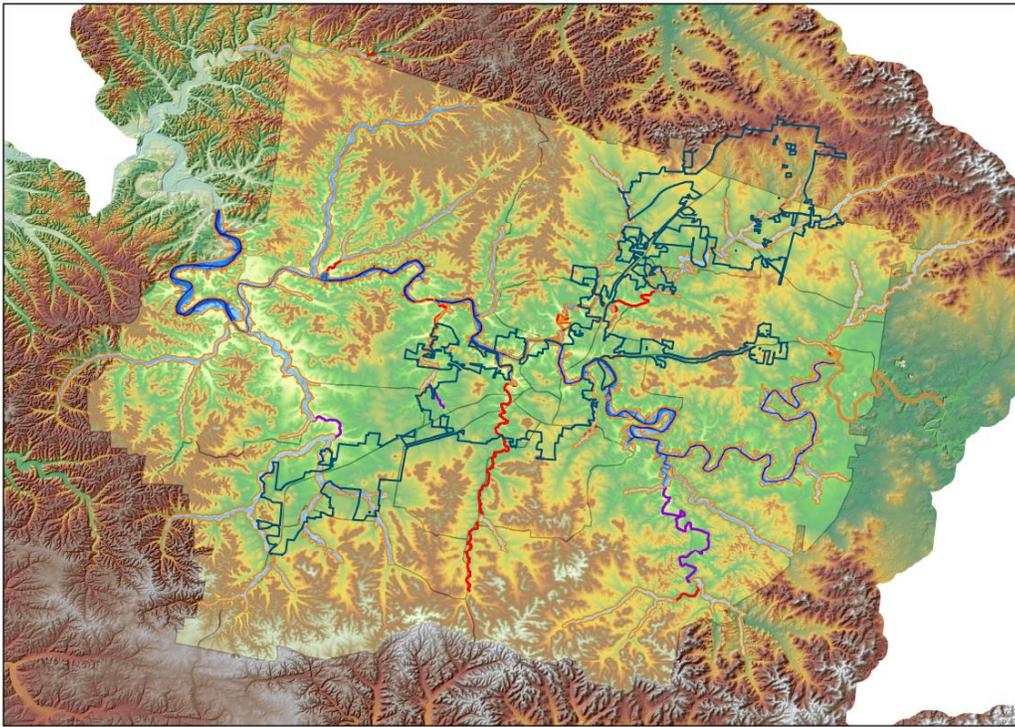
Flood Global Risk Report



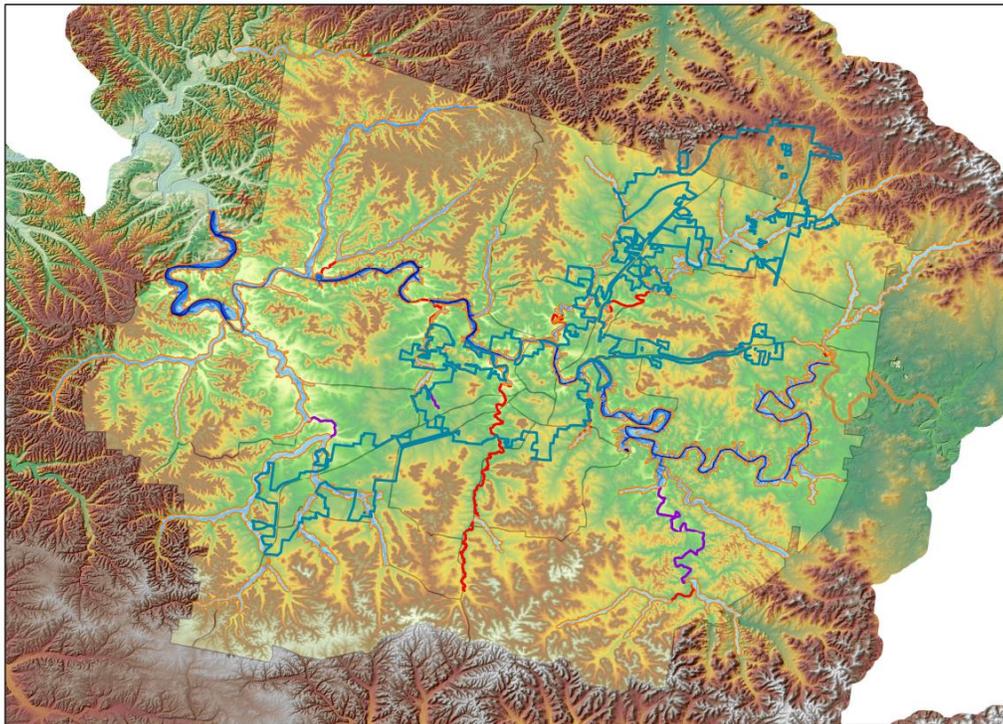
Page 16 of 16

APPENDIX D: HAZUS/FIRM PANELS

Maury County 100yr Flood



Maury County 500yr Flood



APPENDIX D: HAZUS/FIRM PANELS



Hazus: Flood Global Risk Report

Region Name: Maury_500yr
Flood Scenario: Maury_500yr
Print Date: Tuesday, February 27, 2024

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific Flood. These results can be improved by using enhanced inventory data and flood hazard information.



FEMA

RiskMAP
Increasing Resilience Together

APPENDIX D: HAZUS/FIRM PANELS



Table of Contents

Section	Page #
General Description of the Region	3
Building Inventory	
General Building Stock	4
Essential Facility Inventory	5
Flood Scenario Parameters	6
Building Damage	
General Building Stock	7
Essential Facilities Damage	9
Induced Flood Damage	10
Debris Generation	
Social Impact	10
Shelter Requirements	
Economic Loss	12
Building-Related Losses	
Appendix A: County Listing for the Region	15
Appendix B: Regional Population and Building Value Data	16



APPENDIX D: HAZUS/FIRM PANELS



General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- Tennessee

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is approximately 37 square miles and contains 2,517 census blocks. The region contains over 40 thousand households and has a total population of 100,910 people. The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 41,887 buildings in the region with a total building replacement value (excluding contents) of 15,171 million dollars. Approximately 91.09% of the buildings (and 63.96% of the building value) are associated with residential housing.



APPENDIX D: HAZUS/FIRM PANELS



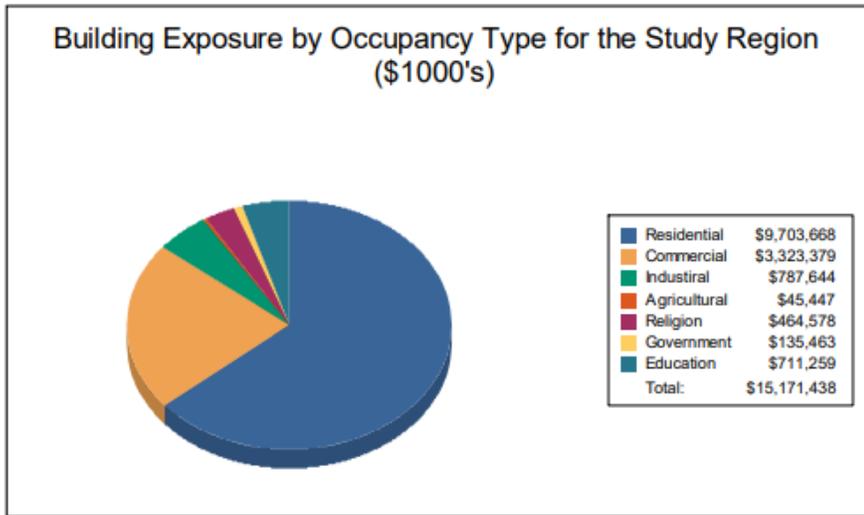
Building Inventory

General Building Stock

Hazus estimates that there are 41,887 buildings in the region which have an aggregate total replacement value of 15,171 million dollars. Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

Table 1
Building Exposure by Occupancy Type for the Study Region

Occupancy	Exposure (\$1000)	Percent of Total
Residential	9,703,668	64.0%
Commercial	3,323,379	21.9%
Industrial	787,644	5.2%
Agricultural	45,447	0.3%
Religion	464,578	3.1%
Government	135,463	0.9%
Education	711,259	4.7%
Total	15,171,438	100%

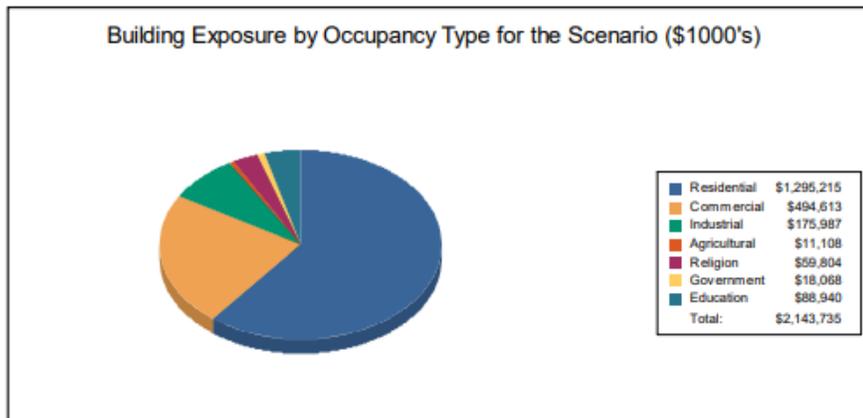


APPENDIX D: HAZUS/FIRM PANELS



Table 2
Building Exposure by Occupancy Type for the Scenario

Occupancy	Exposure (\$1000)	Percent of Total
Residential	1,295,215	60.4%
Commercial	494,613	23.1%
Industrial	175,987	8.2%
Agricultural	11,108	0.5%
Religion	59,804	2.8%
Government	18,068	0.8%
Education	88,940	4.1%
Total	2,143,735	100%



Essential Facility Inventory

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 255 beds. There are 32 schools, 17 fire stations, 4 police stations and 1 emergency operation center.



Flood Global Risk Report



Page 5 of 16

APPENDIX D: HAZUS/FIRM PANELS



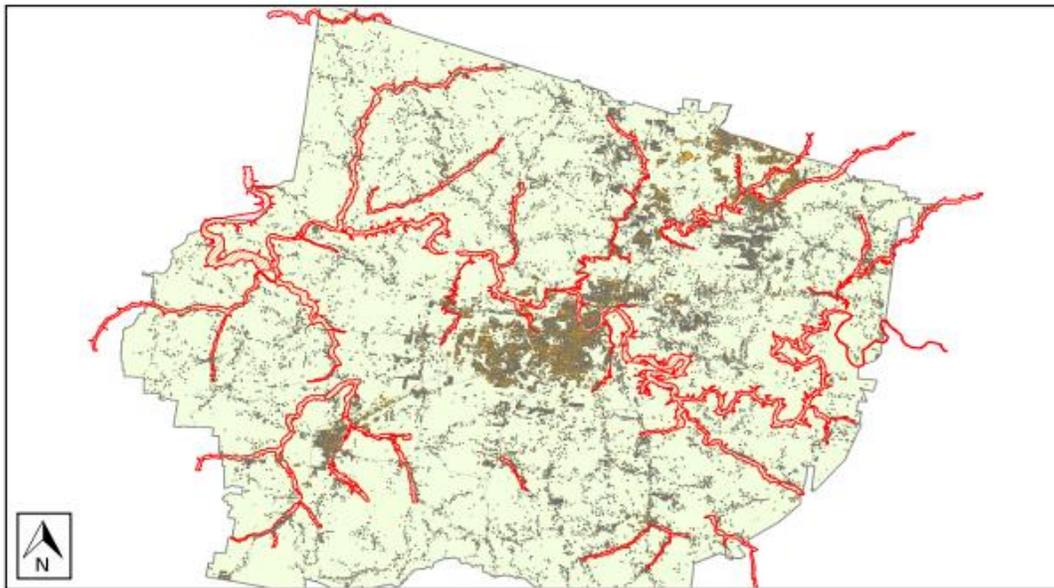
Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Maury_500yr
Scenario Name:	Maury_500yr
Return Period Analyzed:	500
Analysis Options Analyzed:	No What-Ifs

Study Region Overview Map

Illustrating scenario flood extent, as well as exposed essential facilities and total exposure



Flood Global Risk Report



Page 6 of 16

APPENDIX D: HAZUS/FIRM PANELS

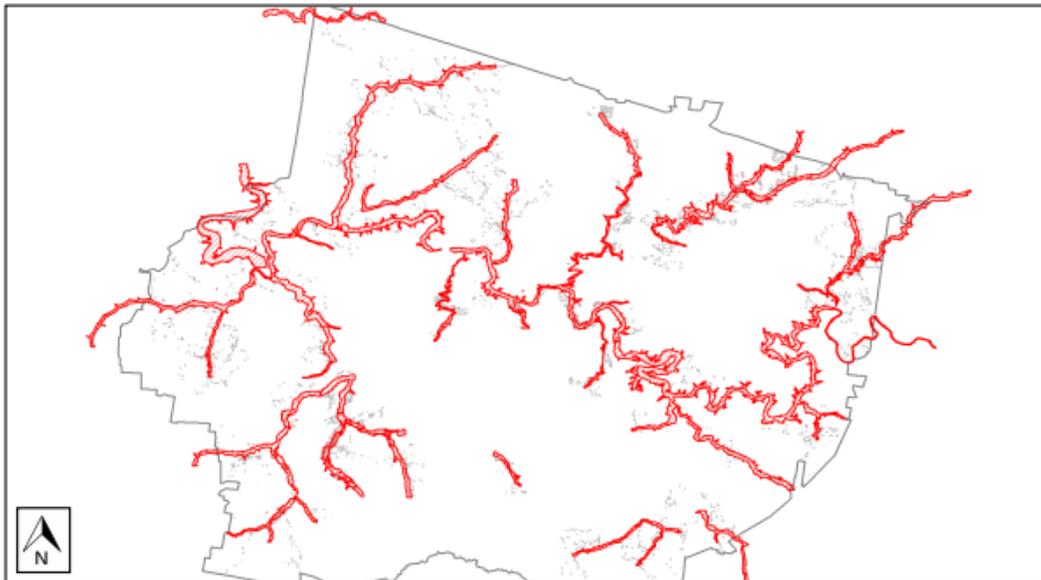


Building Damage

General Building Stock Damage

Hazus estimates that about 70 buildings will be at least moderately damaged. This is over 56% of the total number of buildings in the scenario. There are an estimated 4 buildings that will be completely destroyed. The definition of the 'damage states' is provided in the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Total Economic Loss (1 dot = \$300K) Overview Map



Flood Global Risk Report



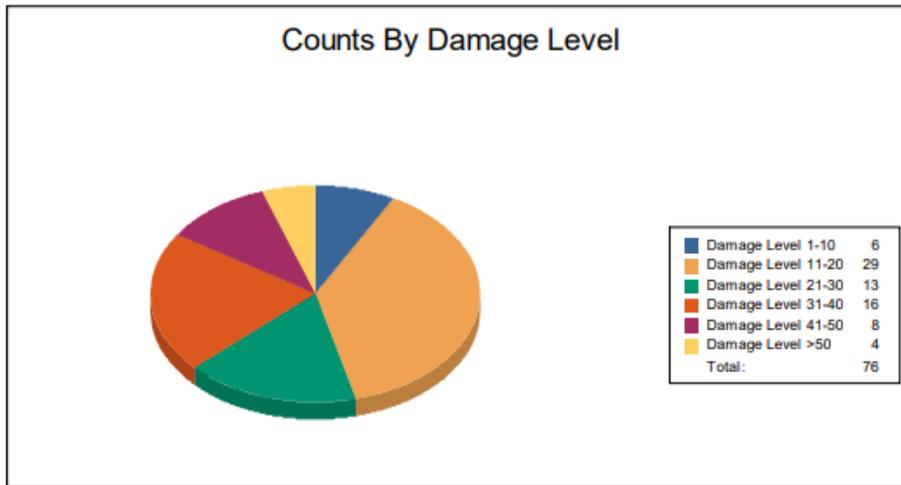
Page 7 of 16

APPENDIX D: HAZUS/FIRM PANELS



Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	1	17	2	33	1	17	2	33	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0
Government	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0
Religion	0	0	3	100	0	0	0	0	0	0	0	0
Residential	5	7	24	36	12	18	14	21	8	12	4	6
Total	6		29		13		16		8		4	



APPENDIX D: HAZUS/FIRM PANELS



Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		>50	
	Count	(%)										
Concrete	0	0	0	0	0	0	0	0	0	0	0	0
Manuf/Housing	0	0	0	0	0	0	0	0	0	0	4	100
Masonry	0	0	1	50	0	0	1	50	0	0	0	0
Steel	0	0	0	0	0	0	1	100	0	0	0	0
Wood	5	8	25	38	12	18	15	23	8	12	0	0



Flood Global Risk Report



Page 9 of 16

APPENDIX D: HAZUS/FIRM PANELS



Essential Facility Damage

Before the flood analyzed in this scenario, the region had 255 hospital beds available for use. On the day of the scenario flood event, the model estimates that 255 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Emergency Operation Centers	1	0	0	0
Fire Stations	17	0	0	0
Hospitals	1	0	0	0
Police Stations	4	0	0	0
Schools	32	0	0	0

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.



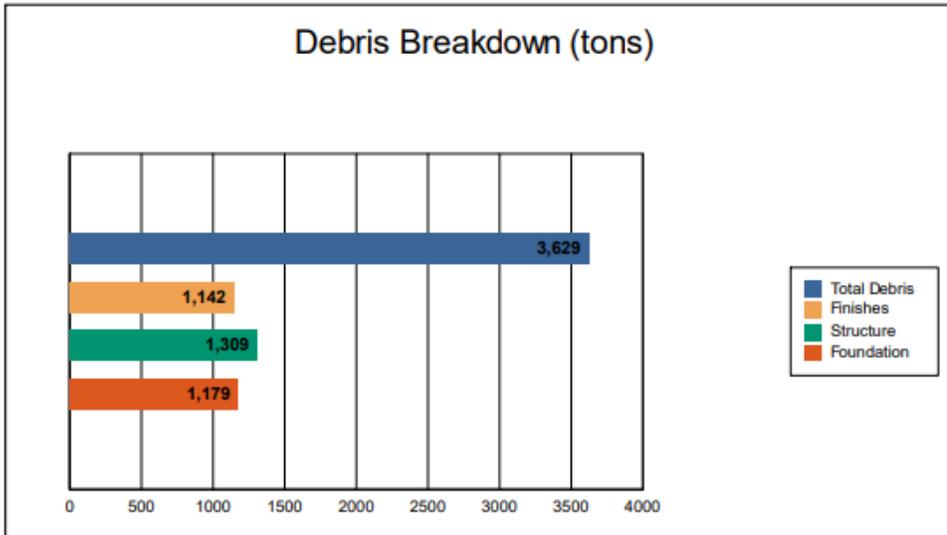
APPENDIX D: HAZUS/FIRM PANELS



Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.



The model estimates that a total of 3,629 tons of debris will be generated. Of the total amount, Finishes comprises 31% of the total, Structure comprises 36% of the total, and Foundation comprises 32%. If the debris tonnage is converted into an estimated number of truckloads, it will require 146 truckloads (@25 tons/truck) to remove the debris generated by the flood.



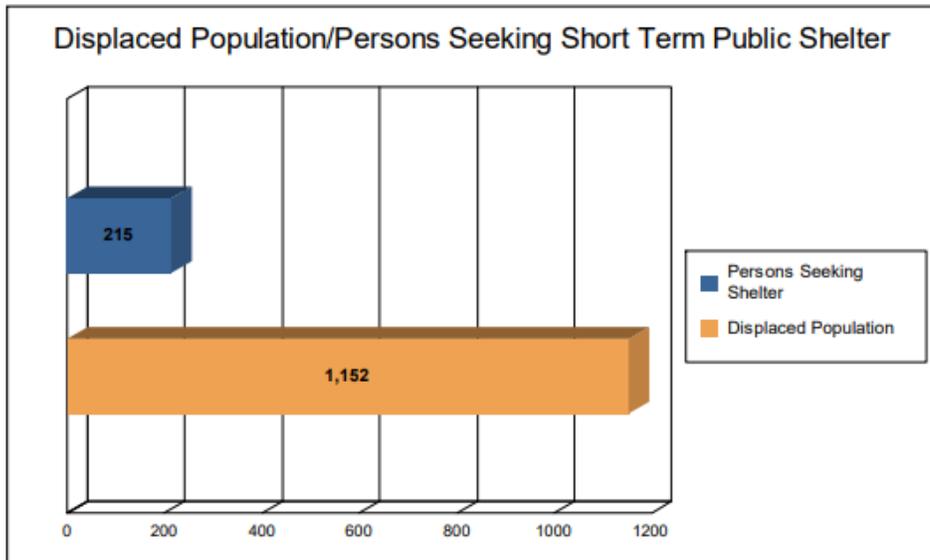
APPENDIX D: HAZUS/FIRM PANELS



Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 384 households (or 1,152 of people) will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 215 people (out of a total population of 100,910) will seek temporary shelter in public shelters.



APPENDIX D: HAZUS/FIRM PANELS



Economic Loss

The total economic loss estimated for the flood is 223.37 million dollars, which represents 10.42 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 118.82 million dollars. 47% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 20.22% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

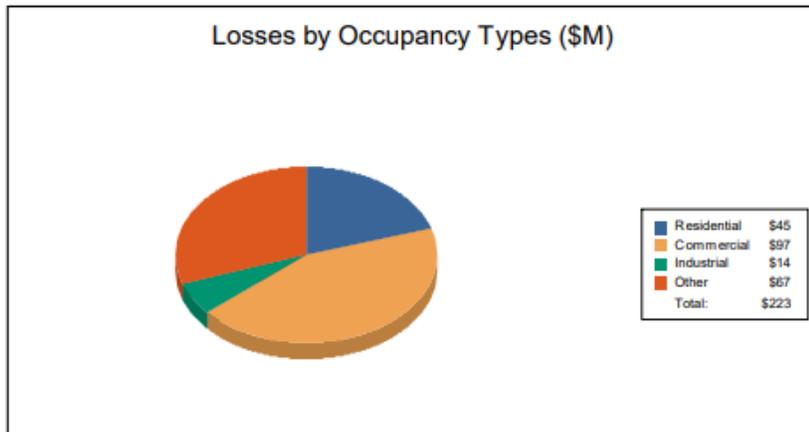


APPENDIX D: HAZUS/FIRM PANELS



Table 6: Building-Related Economic Loss Estimates
(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
Building Loss						
	Building	24.16	16.09	3.75	4.78	48.78
	Content	12.05	25.89	7.96	18.52	64.42
	Inventory	0.00	3.43	1.27	0.93	5.63
	Subtotal	36.20	45.41	12.98	24.23	118.82
Business Interruption						
	Income	0.15	26.33	0.16	6.23	32.87
	Relocation	6.44	6.22	0.23	3.23	16.11
	Rental Income	2.03	4.76	0.03	0.24	7.06
	Wage	0.35	14.39	0.27	33.50	48.51
	Subtotal	8.97	51.71	0.68	43.19	104.55
ALL	Total	45.17	97.12	13.66	67.42	223.37



APPENDIX D: HAZUS/FIRM PANELS



Appendix A: County Listing for the Region

Tennessee
- Maury



Flood Global Risk Report



Page 15 of 16

APPENDIX D: HAZUS/FIRM PANELS



Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
Tennessee				
Maury	100,910	9,703,668	5,467,770	15,171,438
Total	100,910	9,703,668	5,467,770	15,171,438
Total Study Region	100,910	9,703,668	5,467,770	15,171,438

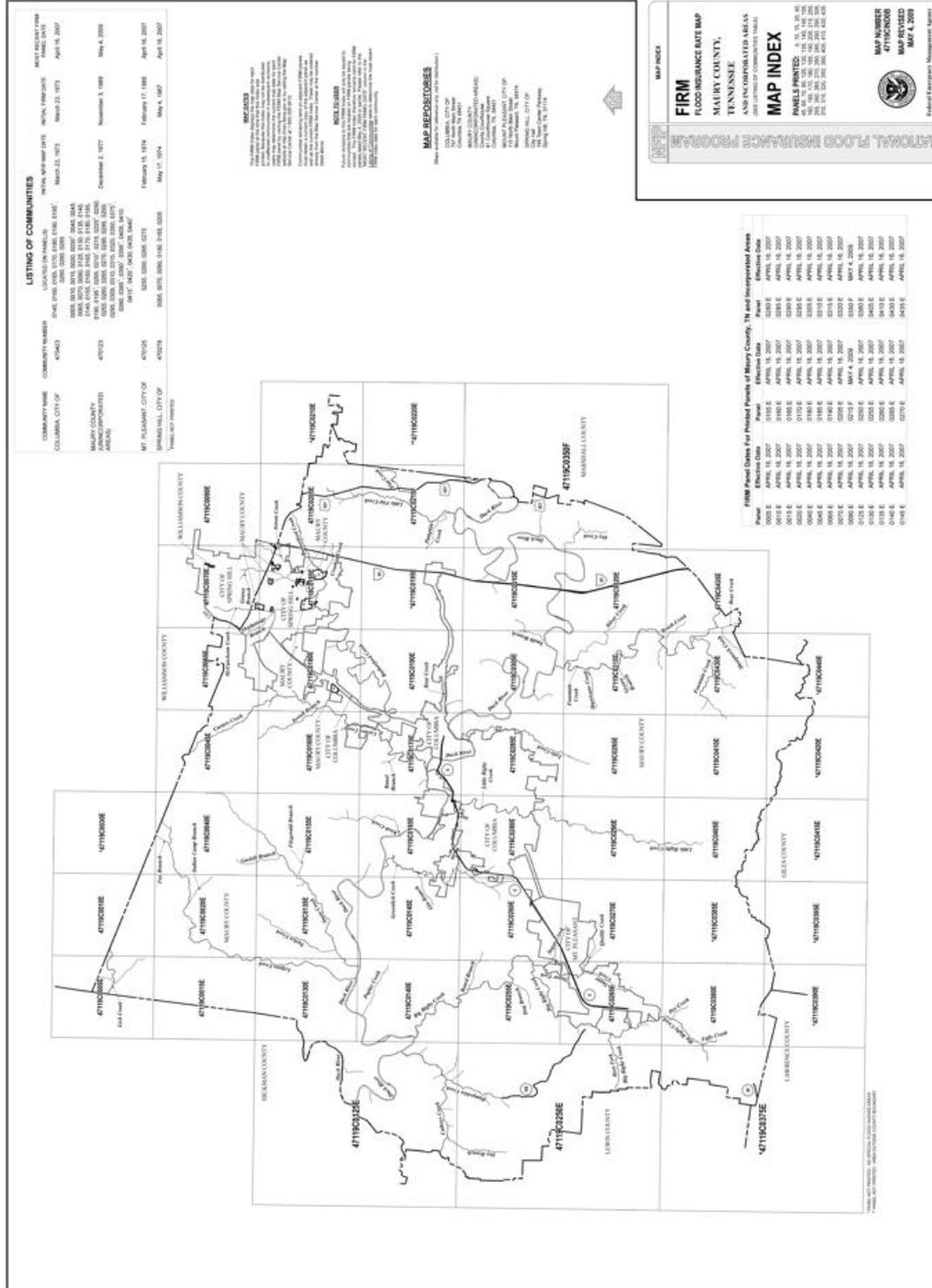


Flood Global Risk Report



Page 16 of 16

APPENDIX D: HAZUS/FIRM PANELS



LISTING OF COMMUNITIES

COMMUNITY NAME	COMMUNITY NUMBER	LOCATION OR PANEL ID	MAP DATE	MAP NUMBER	MAP INDEX
COLUMBIA CITY OF	47043	0145 0100 0100 0100 0100 0100	March 23, 1973	March 23, 1973	April 18, 2007
MAURY COUNTY	47023	0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000	December 2, 1977	November 3, 1988	May 4, 2009
MT PLEASANT CITY OF	47005	0000 0000 0000 0000 0000 0000	February 17, 1988	February 17, 1988	April 18, 2007
SPRING HILL CITY OF	47028	0000 0000 0000 0000 0000 0000	May 17, 1974	May 4, 1987	April 18, 2007

NOTICES
 This map was prepared by the Federal Emergency Management Agency (FEMA) under contract to the United States Department of Homeland Security. It is intended for use in the National Flood Insurance Program (NFIP) and is not to be used for any other purpose. The map is based on the best available information and is not a warranty of accuracy. The map is subject to change without notice. The map is not to be used for any other purpose. The map is subject to change without notice. The map is not to be used for any other purpose. The map is subject to change without notice.

MAP REVISIONS
 This map was prepared by the Federal Emergency Management Agency (FEMA) under contract to the United States Department of Homeland Security. It is intended for use in the National Flood Insurance Program (NFIP) and is not to be used for any other purpose. The map is based on the best available information and is not a warranty of accuracy. The map is subject to change without notice. The map is not to be used for any other purpose. The map is subject to change without notice. The map is not to be used for any other purpose. The map is subject to change without notice.

MAP INDEX
FIRM
 FLOOD INSURANCE RATE MAP
 MAURY COUNTY,
 TENNESSEE
 AND INCORPORATED AREAS
MAP INDEX
 MAP NUMBER: 47119C231E
 MAP DATE: MAY 4, 2009
 Federal Emergency Management Agency

FIRM Panel Dates for Principal Panels of Maury County, TN and Incorporated Areas

Panel	Effective Date	Panel	Effective Date
0000E	APRIL 18, 2007	0100E	APRIL 18, 2007
0001E	APRIL 18, 2007	0101E	APRIL 18, 2007
0002E	APRIL 18, 2007	0102E	APRIL 18, 2007
0003E	APRIL 18, 2007	0103E	APRIL 18, 2007
0004E	APRIL 18, 2007	0104E	APRIL 18, 2007
0005E	APRIL 18, 2007	0105E	APRIL 18, 2007
0006E	APRIL 18, 2007	0106E	APRIL 18, 2007
0007E	APRIL 18, 2007	0107E	APRIL 18, 2007
0008E	APRIL 18, 2007	0108E	APRIL 18, 2007
0009E	APRIL 18, 2007	0109E	APRIL 18, 2007
0010E	APRIL 18, 2007	0110E	APRIL 18, 2007
0011E	APRIL 18, 2007	0111E	APRIL 18, 2007
0012E	APRIL 18, 2007	0112E	APRIL 18, 2007
0013E	APRIL 18, 2007	0113E	APRIL 18, 2007
0014E	APRIL 18, 2007	0114E	APRIL 18, 2007
0015E	APRIL 18, 2007	0115E	APRIL 18, 2007
0016E	APRIL 18, 2007	0116E	APRIL 18, 2007
0017E	APRIL 18, 2007	0117E	APRIL 18, 2007
0018E	APRIL 18, 2007	0118E	APRIL 18, 2007
0019E	APRIL 18, 2007	0119E	APRIL 18, 2007
0020E	APRIL 18, 2007	0120E	APRIL 18, 2007

APPENDIX E: Man Made Hazards

APPENDIX E: Man Made Hazards

Communicable Diseases

A. Hazard Overview

Communicable disease (infectious disease) is defined as an illness caused by a specific infectious agent or its toxic product that results from transmission of that agent or its products from an infected person, animal, or reservoir to a susceptible host, directly or indirectly either through an intermediate plant or animal host, vector, or inanimate environment. Vector-borne diseases include bacterial and viral diseases transmitted by mosquitoes, ticks, and fleas.

B. County Profile

Historically, examples of communicable disease outbreaks in Tennessee are West Nile Virus (mosquito-borne), bed bugs, and pertussis (whooping cough). The most recently declared worldwide communicable disease emergency that affected Tennessee was the COVID-19 (coronavirus) pandemic in 2019. Communicable disease cases are reported to the [Tennessee Department of Health](#) which provides reporting guidance and resources for communicable disease outbreaks within the state. Within Tennessee 12 diseases are categorized as immediate notification and 25 as next business day notification.

Past Occurrences

2009 H1N1 Pandemic: In the spring of 2009, a strain of H1N1 spread quickly across the U.S. and the globe. The U.S. government declared H1N1 (swine flu) a public health emergency in April 2006. By November 2009, 48 states reported cases of H1N1, mostly in children and young adults. The CDC estimates that 43 million to 89 million people had H1N1 between April 2009 and April 2010, resulting in an estimated 8,870 and 18,300 H1N1-related deaths.

2014 Ebola Outbreak: During the 2014 West African Ebola outbreak, 11 people were treated for Ebola Virus Disease (EVD) in the U.S., two of whom died. The majority were infected with the Ebola virus outside of the U.S. and either medically evacuated into the U.S. for treatment or entered the country as airline passengers.

2019 Coronavirus Pandemic: In December 2019, a coronavirus disease (COVID-19) outbreak was identified in Wuhan, China. In 2020, COVID-19 quickly spread to the United States, and in March 2020, the World Health Organization characterized COVID-19 as a pandemic. The United States declared a national emergency. It is estimated that over 775 million people were infected worldwide, resulting in 5,378 COVID19-related deaths in Maury County.

[Worldwide Covid-19 fatalities](#)

[Maury County Covid-19 fatalities](#)

C. Risk Assessment

The entirety of Maury County including all assets located within the County can be considered at risk. Vulnerable and underserved populations have a higher risk of severe illness following disease infections. Historically, these populations include

APPENDIX E: Man Made Hazards

adults aged 65 or older, infants under 2 years old, marginalized populations experiencing health or social inequities, and individuals with medical conditions. While a pandemic outbreak will not directly impact critical facilities and infrastructure, it could severely impact local healthcare services, with clinical systems and 911 becoming overwhelmed. A severe pandemic may result in an interruption of services and a shortage of supplies.

The [Social Vulnerability Index \(SVI\)](#) is a dataset that uses 16 census variables that help local officials identify communities that may need support before, during or after disasters. Unfortunately, the National Risk Index does not capture non-natural disaster impacts, therefore, using the SVI can help public health officials and local planners better prepare for and respond to emergency events such as disease outbreaks.

Social Vulnerability Index Score for Maury County: Relatively Low

Although the Social Vulnerability Index (SVI) is a well-valued resource it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

Table E1: Communicable Disease Risk based on selected FEMA Lifelines

Communicable Disease Risk	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
County							
Columbia							
Mount Pleasant							
Spring Hill							
Colors indicate lifeline or component conditions:							
Red	Significant Impact, Multiple Required Resources						
Yellow	Some Impact, Some Outside Resources Required						
Green	Little to No Impact, No Outside Resources Required						

APPENDIX E: Man Made Hazards

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

During the COVID-19 pandemic, all jurisdictions within Maury County experienced strained resources due to the increased utilization of hospitals, public health services, emergency services, and personal protective equipment. While resources within the county are prepared for low-level, everyday events, more global events such as COVID-19 require careful mitigation actions to ensure better preparedness.

D. Land Use & Development

Considering that the entire County is at risk of communicable disease, increased development, and population growth can reasonably translate to increased impacts due to these events. The population in Maury County is expected to rise similarly to its surrounding counties and Tennessee. An increase in population may lead to an increased risk of infection and new and improved business, which in turn means an increase in the number and value of assets at risk of economic disruption.

E. Multi-Jurisdictional Differences

The entirety of Maury County and the incorporated jurisdictions, including all assets located within, can be considered equally at risk of communicable disease outbreaks. This includes the entire population, all critical facilities, buildings (commercial and residential), and infrastructure.

F. Summary

Maury County is subject to communicable diseases through plant or animal host, vector, or inanimate environments. Communicable diseases can spread, leading to deaths, local business impacts and closures, and supply chain disruptions. Infections and hospitalizations due to communicable diseases can overwhelm local healthcare services.

APPENDIX E: Man Made Hazards

Dams

A. Hazard Overview

A dam is a barrier across flowing water that obstructs, directs, or slows the flow, often creating a reservoir, lake, or impoundment. Most dams have a section called a spillway or weir, over or through, in which water flows, intermittently or continuously. According to Tennessee Safe Dams Program, a dam is a structure at least 20 feet high or can impound at least 30 acre-feet of water.

Dams fail in two ways, a controlled spillway release to prevent total failure or the partial or complete collapse of the dam itself. In each instance, an overwhelming amount of water and potential debris is released. Dam failures are rare, but when they occur can cause loss of life and immense damage to infrastructure and the environment.

Common reasons for dam failure are the following:

- Sub-standard construction materials/techniques;
- Spillway design error;
- Geological instability caused by changes to water levels during filling or poor surveying;
- Sliding of a mountain into the reservoir;
- Poor maintenance, especially of outlet pipes (Extreme inflow);
- Human, computer, or design error;
- Internal erosion, especially in earthen dams;
- Earthquakes.

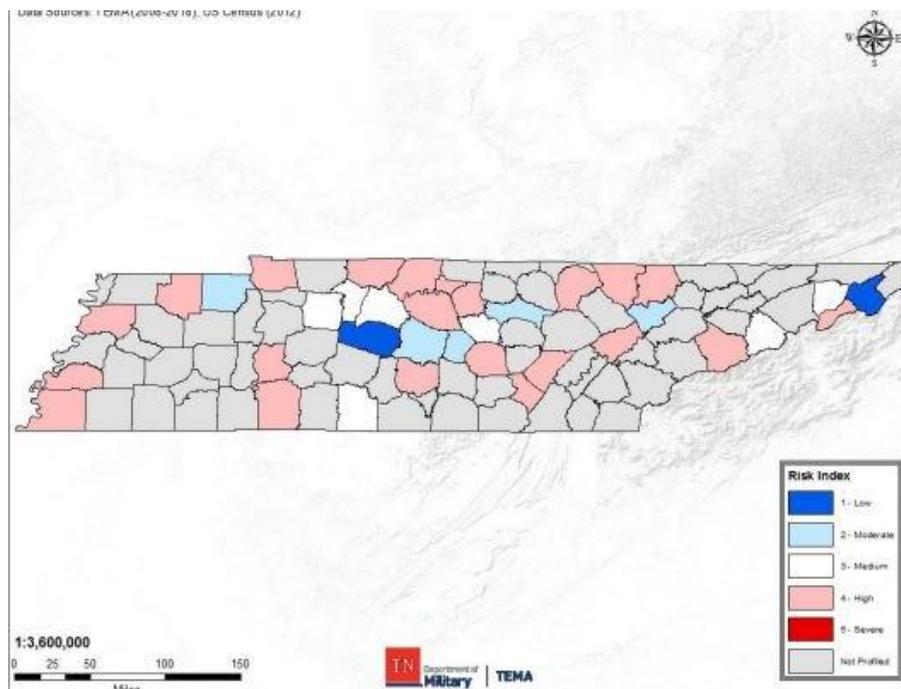


Figure E2 – Tennessee Dam Failure Hazard Risk

APPENDIX E: Man Made Hazards

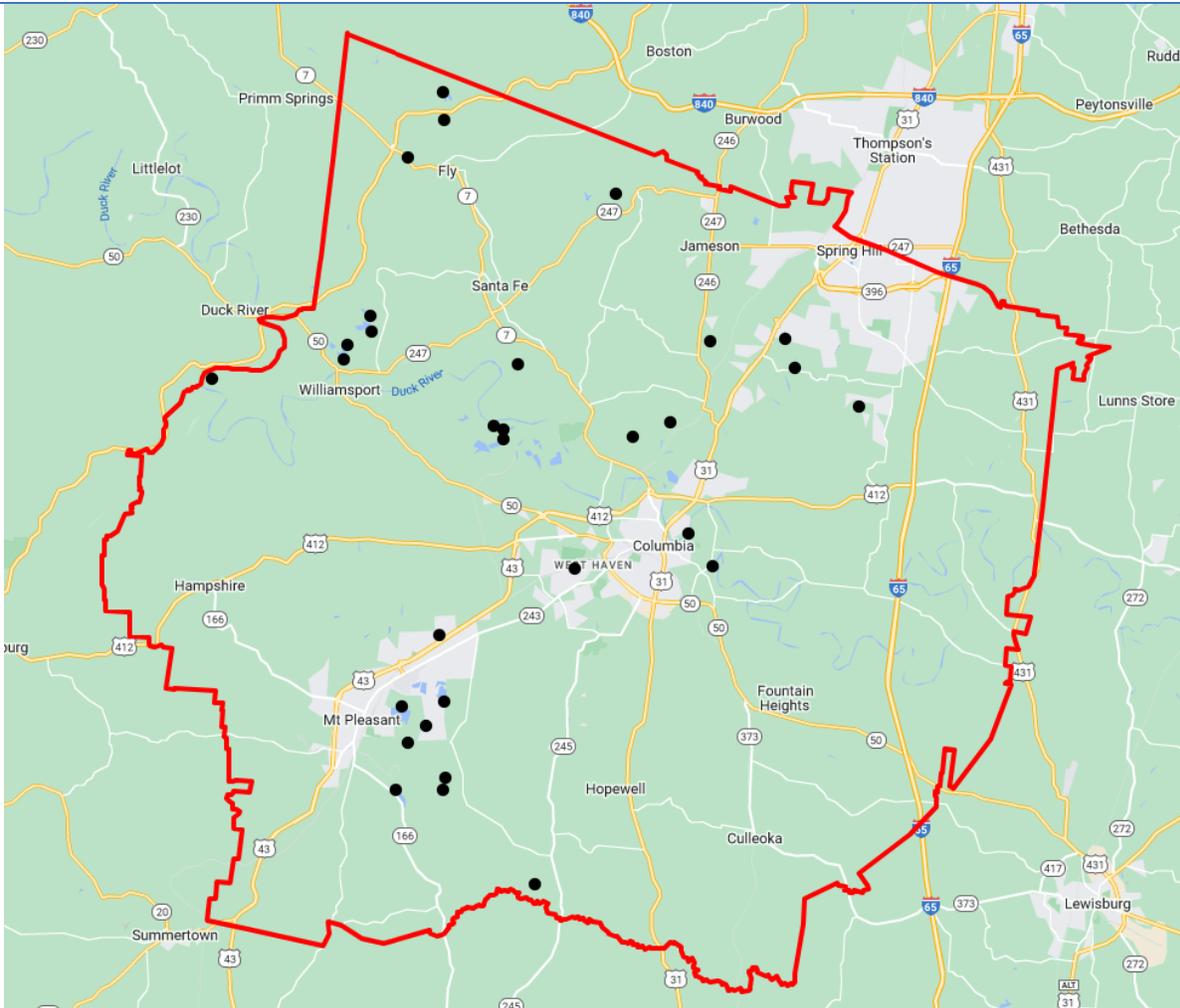


Figure E3: – Maury County Dam Locations (Source: [NID](#))

B. County Profile

Dam failures can occur with little warning. Intense storms may produce a flood in a few hours or even minutes from upstream locations. A dam failure can occur within hours of the first signs of breaching. Although the floodwaters will drain, the area will be affected by flooding from the dam failure for days to weeks, and the destruction will affect the area for years. Tennessee has a total of 1200 dams and levees within its borders, with 660 being state regulated. Roughly 93% are earth dams less than 50 feet tall, 40 of these dams are made of concrete, and 37 of the state’s dams are over 100 feet tall. 64% of the state’s dams are privately owned, 15% locally, 12% by the state, 8% federally, and 1% by a public utility. Of those, 276 are considered a high-hazard potential, with 207 significant and 305 low hazards. The focus of mitigation efforts is on high-hazard dams owned by the state and local governments and privately owned dams. Tennessee does not consider Federally regulated dams for hazard mitigation due to the inability to conduct projects on those dams.

APPENDIX E: Man Made Hazards

Table E4: Maury County High Hazard Dams

Name - Owner	Hazard Potential Classification
Big Oak - OAK LAKE ESTATES HOA, INC.	High
Whippoorwill Lake - TWRA	High
Arrow Lake - STARLINK LOGISTICS, INC.	High
Bluecat Lake - TWRA	High
Bob's #2 - BAIN, DR. ROBERT A.	High
Bob's #1 - BAIN, DR. ROBERT A.	High
Tomlin Lake - BEAMAN, LEE	High
Walker - WALKER, SR., WILLIAM	High
Miller - LO, HONWAI & TERESA	High

[National Inventory of Dams \(army.mil\)](http://army.mil)

Past Occurrences

The prime illustration of dam failure in the state is the 2008 Kingston Plant retention pond dam failure. The 40-acre pond was used by the Tennessee Valley Authority to hold a slurry of ash generated by the coal-burning plant. The break caused a release of a frigid mix of water, ash, and mud that damaged 12 homes and put hundreds of acres of rural land under water. This incident caused significant interruptions to the surrounding infrastructure, agriculture, and major soil and water quality issues for miles downstream. The Kingston incident displays the second and third-order effects that can occur from a dam failure beyond just flooding and emphasizes the necessity of mitigating the potential of failure through maintenance and downstream projects.

According to the Association of State Dam Safety, there have been no recorded history [of any dam incidents](#) in Maury County. The database is not considered comprehensive of all dam safety incidents, both historical and current, and reflects only the data that ASDSO has been able to collect. Much of the identifying information on specific dams is obtained from the National Inventory of Dams. Although there have been no dam failures, significant water releases have resulted in areas in the [county having substantial flooding](#).

Probability of Future Events - *Unlikely*

Complete dam failure can be triggered by heavy rainfall, earthquakes, and flooding. With several areas in the county increasing in population and infrastructure (both public and private), this could damage a significant amount of infrastructure, property values, and commerce disruption.

C. Risk Assessment

Many buildings and the majority of infrastructure networks throughout the county can be vulnerable to dam failure. The risk of this is incredibly low, but the nature of the mechanics of a dam failure is complicated to predict. Therefore, the committee found it essential to include this natural hazard in their plan.

The [Social Vulnerability Index \(SVI\)](#) is a dataset that uses 16 census variables that help local officials identify communities that may need support before, during or after

APPENDIX E: Man Made Hazards

disasters. Unfortunately, the National Risk Index does not capture non-natural disaster impacts, therefore, using the SVI can help public health officials and local planners better prepare for and respond to emergency events such as dam failure.

Social Vulnerability Index Score for Maury County = Relatively Low

Although the Social Vulnerability Index is a well-valued resource it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

Table E5: Dam Failure Risk based on selected FEMA Lifelines

Dam Failure Risk	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Maury County							
Columbia							
Mounty Pleasant							
Spring Hill							
Colors indicate lifeline or component conditions:							
Red	Significant Impact, Multiple Required Resources						
Yellow	Some Impact, Some Outside Resources Required						
Green	Little to No Impact, No Outside Resources Required						

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

D. Land Use & Development

Dams are assigned potential hazard categories that reflect the threat to life and property in the event of a failure. Safety inspections of dams are performed by Safe Dams staff for one, two, and three years, respectively, for these categories of dams. The responsibility of building and maintaining a dam rests solely with the owner. The dam owner is liable for the water stored behind the dam. A failure resulting in an uncontrolled reservoir release can have a devastating effect on people

APPENDIX E: Man Made Hazards

and property downstream. It can impair many other infrastructure systems, such as roads, bridges, and water systems. Additionally, a dam failure could mean the loss of a vital resource to the owner. Therefore, proper construction, operation, maintenance, repair, and rehabilitation of a dam are critical elements in preventing failure, limiting the owner's liability, and maintaining the water resource.

E. Multi-Jurisdictional Differences

Due to the locations of dams in Maury County, Maury County is the area most at risk for dam failures. However, if there is a complete failure of any of the county dams, then all incorporated jurisdictions are susceptible.

F. Summary

To improve public safety and resilience, the risk and consequences of dam failure must be lowered. Progress requires better planning for mitigating the effects of failures; increased regulatory oversight of the safety of dams; improving coordination and communication across governing agencies; and the development of tools, training, and technology. Dam failures risk public safety and can cost our economy millions of dollars in damage.

APPENDIX E: Man Made Hazards

Earthquakes

There is little to no direct impact of climate trends and variations on the earthquake risk in Maury County. However, there are some USGS and NASA scientists who believe melting glaciers in mountainous regions and at the poles could induce tectonic activity due to the tremendous amount of weight that is shifted on the earth's crust as water melts and runs off. This newly freed crust can experience post-glacial isostatic uplift, which could cause seismic plates to slip and stimulate seismic activity as it returns to its original, pre-glacial shape. These shifts in tectonic plates would not directly impact Tennessee, but changes to stress/strain in other parts of the North American tectonic plate could impact existing faults/seismic zones in Tennessee indirectly. Additionally, secondary impacts of earthquakes such as liquefaction or mass wasting may increase due to soils that have been saturated from repetitive or extreme precipitation.

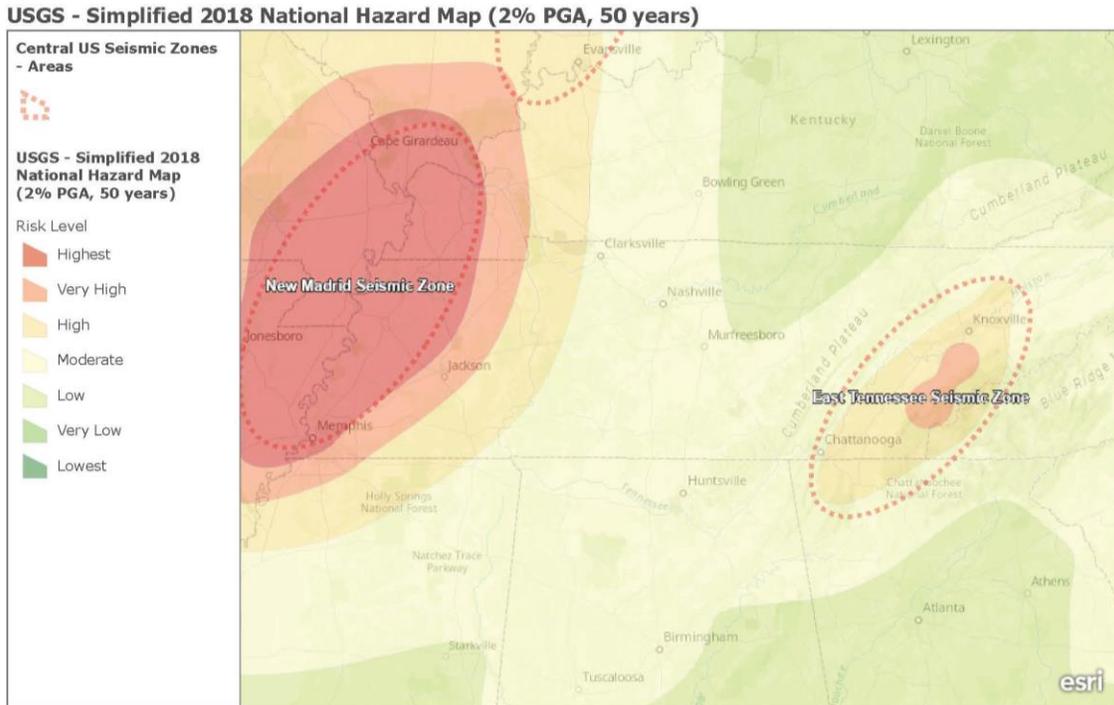
A. Hazard Overview

An earthquake results from a sudden release of energy in the Earth's crust that creates seismic waves. The energy originates from a subsurface fault. A fault is a fracture or discontinuity in a volume of rock along tectonic plates. In the most general sense, the word earthquake describes any event that generates seismic waves. Earthquakes are typically caused by the rupturing of geological faults. Occasionally, they are also caused by other events such as volcanic activity, landslides, mine blasts, and nuclear tests. An earthquake's point of initial rupture is called its focus or hypocenter. The epicenter is the point at ground level directly above the hypocenter.

B. County Profile

Maury County is near the major intraplate (within a tectonic plate) seismic zone known as the New Madrid Seismic Zone. The New Madrid Seismic Zone (NMSZ) is an approximately 120-mile-long fault system that stretches across five states, including Western Tennessee. Maury County is near the East Tennessee Seismic Zone (ETSZ) which stretches across three states. The figure below illustrates the risk level of the NMSZ/ETSZ within the state.

APPENDIX E: Man Made Hazards



Earthquake hazard map showing peak ground accelerations having a 2 percent probability of being exceeded in 50 years, for a firm rock site.

Esri, USGS | Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS

Figure E6: New Madrid Seismic Zone (Source: [CUSEC](#))

The Tennessee area has experienced 6332 small magnitude (1.0 or greater) earthquakes in the past 20 years, or approximately 316 per year for the past 20 years, with the strongest, a 4.4 in Decatur, TN on December 12, 2018.

The NMSZ is known for producing four of the largest North American earthquakes in recorded history, all of which would have been felt in Maury County. This includes the noted three-month period between December 1811 and February 1812 that had at least four earthquakes which are understood by scientists to be greater than a M7.0. During this period, there were dozens of strong earthquakes ranging between M6.0 and M7.5. Thousands of smaller shocks were documented. Similar to the 1811-12 New Madrid earthquake sequence which created Reelfoot Lake in Lake County, Tennessee, very large magnitude earthquake sequences are believed to have occurred in pre-historic times as well. Paleo-liquefaction and geologic evidence suggests large earthquake sequences occurred in the New Madrid Seismic Zone in 1450 AD and 900AD.

Based on geologic research on the paleo seismic record of past earthquakes, the USGS estimates that there is a 7 to 10 percent chance of a New Madrid earthquake the size of those in 1811-12 occurring in the next 50 years. However, the occurrence of even a moderate-sized earthquake located in close proximity to urban centers such as Memphis or St. Louis could be locally devastating. The last magnitude-6 earthquake struck near Charleston, Missouri, in 1895. The chance of such an earthquake occurring in the New Madrid region in the next 50 years is 25 to 40 percent.

APPENDIX E: Man Made Hazards

These probabilities are derived from the USGS National Seismic Hazard Maps, which are developed from geologic information about faults, evidence of prehistoric earthquakes, instrumental and historical earthquake catalogs generated by seismic monitoring, and ground deformation measurements. The National Seismic Hazard Maps are used to estimate probabilities of large earthquakes and the ground shaking to be expected if those earthquakes occur.

The Eastern Tennessee Seismic Zone (ETSZ), a zone of small earthquakes stretching from northeastern Alabama to southwestern Virginia. The ETSZ is the second-most active natural seismic zone in the central and eastern United States, behind the New Madrid Seismic Zone in the Mississippi River region that produced the 1811-1812 magnitude 7+ earthquakes. In historic times, the ETSZ has not produced earthquakes larger than magnitude 4.8, however scientists believe the ETSZ is capable of generating magnitude 6 or greater. The ETSZ region is home to several nuclear power plants and hydroelectric dams related to the Tennessee Valley Authority, along with major population centers such as Knoxville and Chattanooga.

Table E7: Richter Scale Classification (Source: USGS)

Richter Scale for Earthquakes		
Magnitudes	Description	Typical Impacts
< 2.0	Micro	Not felt.
2.0-2.9	Slight	Generally, not felt but recorded.
3.0-3.9	Minor	Often felt, but rarely causes damage.
4.0-4.9	Light	Noticeable shaking of indoor items and rattling noises. Significant damage is likely.
5.0-5.9	Moderate	It can cause major damage to poorly constructed buildings in small regions. At most slight damage to well-designed buildings.
6.0-6.9	Strong	It can be destructive in areas up to about 100 miles across populated areas.
7.0-7.9	Major	It can cause serious damage over larger areas.
8.0-8.9	Great	It can cause severe damage in areas several hundred miles across.
9.0-9.9	Epic	They are devastating in areas several thousand miles across.

Since 1812, the most significant recorded earthquakes from the New Madrid Zone were in 1895 and 1968. Since seismic measurement instruments were installed in and around the zone in the 1970s, more than 4,000 small earthquakes have been recorded, with the vast majority being too small to be felt.

APPENDIX E: Man Made Hazards

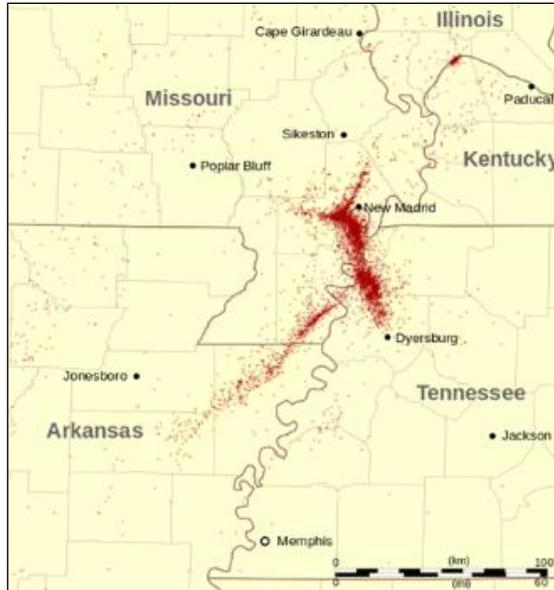


Figure E8: NMSZ Earthquakes Recorded Since 1974 (Source: USGS)

According to a 2008 FEMA report, a severe earthquake in the NMSZ could result in the highest economic loss due to a natural disaster in U.S. history. Based on this report, a 7.7 magnitude quake in the NMSZ would result in thousands of fatalities, hundreds of billions of dollars in damage to structures, and total disruption of vital infrastructure in Western Tennessee, including Maury County.

Probability of Future Events – Likely

Many buildings and the majority of infrastructure networks throughout the county could be vulnerable to earthquake impacts. Maury County’s building stock can be broken down into the following percentage categories: 63.2% residential, 20.8% commercial, 9.9% industrial, 1% agricultural, 2.8% religious, 0.9% governmental, and 1.5% educational. Throughout the county, all buildings and infrastructure are vulnerable to earthquake impacts.

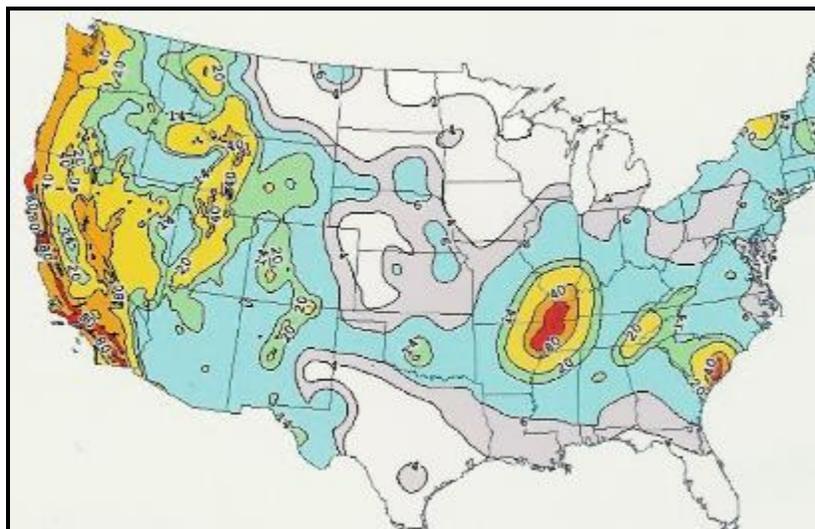


Figure E9: National Seismic Hazard Map (Source: USGS)
Ground Motions with a 2% Chance of Occurring in 50 Years

APPENDIX E: Man Made Hazards

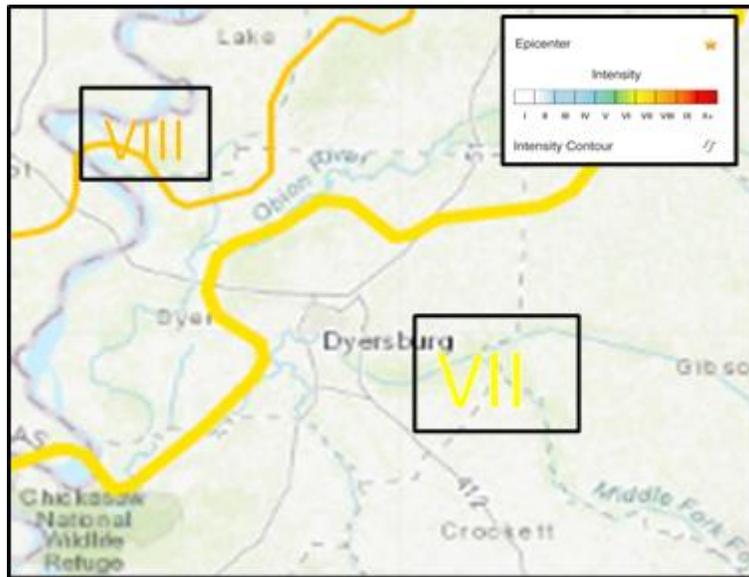


Figure E10: Mercalli Intensity Zones In Maury County (Source: [USGS](#))

As indicated in the above maps, all of Maury County’s jurisdictions and districts sit within intensity zones VII (strong) to VIII (severe) of the Modified Mercalli Intensity Scale due to its proximity to the NMSZ/ETSZ.

According to the Central United States Earthquake Consortium (CUSEC), Maury county is at a very low level of risk for liquefaction following an earthquake.

APPENDIX E: Man Made Hazards

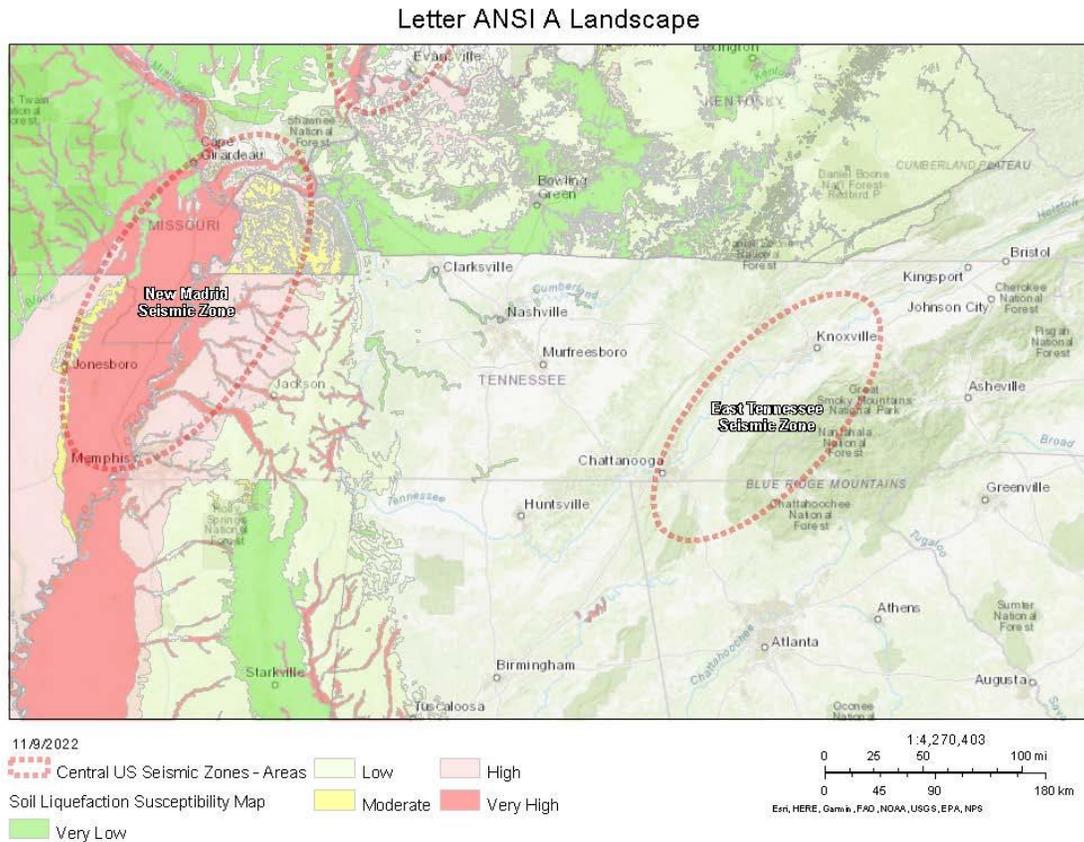


Figure E11: Earthquake Induced Liquefaction (Source: [CUSEC](#))

C. Risk Assessment

The [National Risk Index](#) is a dataset and online tool to help illustrate the United States communities most at risk for natural hazards. It was built and designed by FEMA in close collaboration with various stakeholders and partners in academia; local, state and federal government. The Risk Index leverages available source data for natural hazards and community risk factors to develop a baseline relative risk assessment for each county and census trace. Some of these community risk factors include social vulnerability which is determined by the data pulled from the Census performed every ten years. A higher social vulnerability score is proportional to a higher risk score.

National Risk Index Score for Earthquake = relatively low

Although the National Risk Index is a well-valued tool it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

APPENDIX E: Man Made Hazards

Table E12: Earthquake Risk based on selected FEMA Lifelines

Earthquake Risk	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Maury County							
Columbia							
Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

D. Land Use and Development Trends

Heavily populated or industrialized centers are at a higher risk for catastrophic earthquake damage. Maury County, like much of Tennessee, is experiencing rapid growth increasing the likelihood of significant impacts to life and property from a significant earthquake.

E. Multi-Jurisdictional Differences

Counties predominantly in the West Portion of Tennessee will be more likely impacted by the New Madrid Zone. However, a significant magnitude earthquake can cause primary and secondary effects across the state.

F. Summary

Due to its proximity to the New Madrid Fault, the entirety of Maury County could be subject to an earthquake. This includes the entire County population and all infrastructure. A significant earthquake event would result in a substantial loss of life and billions of dollars in damages.

APPENDIX E: Man Made Hazards

Hazardous Materials

A. Hazard Overview

Hazardous materials are substances or materials determined to pose an unreasonable risk to health, safety, and property when transported in commerce. These materials include various forms of flammable, combustible, poisonous, and radioactive substances.

Hazardous materials represent a public health and safety threat if they are unintentionally released due to transportation or chemical facility accidents. Hazardous material incidents typically occur as either fixed facility incidents or transportation incidents.

Fixed Hazardous Materials

Fixed hazardous material incidents are the accidental release of chemical substances or mixtures which threatens public health or safety during production or handling at a fixed facility. A hazardous substance may cause damage to persons, property, or the environment when released into the soil, water, or air.

Transportation Hazardous Materials

Transportation hazardous material incidents are the accidental release of chemical substances or mixtures that threaten public health or safety during transportation.

HazMat incidents can also occur as a result of or in tandem with natural hazard events, such as floods, hurricane’s, tornadoes, and earthquakes, which in addition to causing incidents, can also hinder response efforts.

B. County Profile

Due to the prevalence of hazardous materials in transportation and industry, much of Middle Tennessee is at risk. There are 317 facilities (Tier II info) that house and use hazardous materials in Maury County.

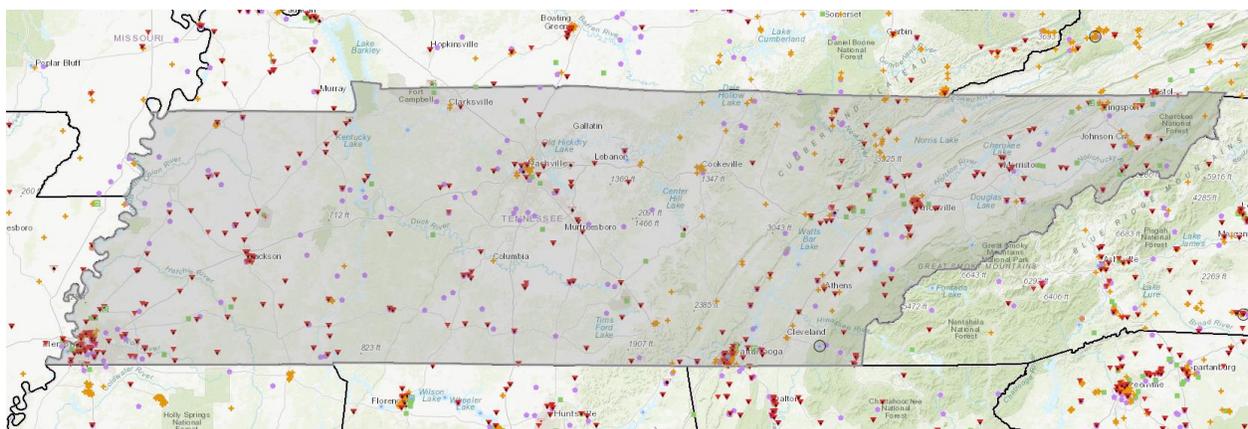


Figure E13: Hazardous Materials Incidents and Cleanups in the State of Tennessee (EPA)

APPENDIX E: Man Made Hazards

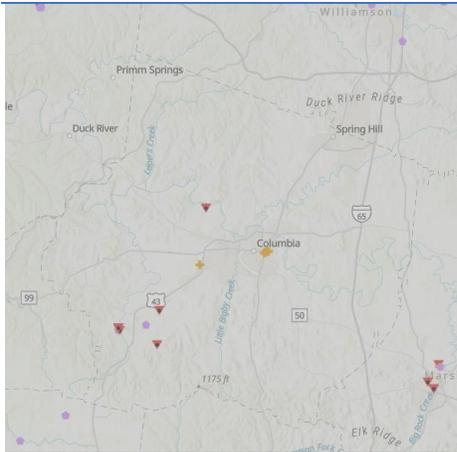


Figure E14: EPA Cleanup Map

https://cimc.epa.gov/ords/cimc/f?p=cimc:MAP:::71:P71_WELSEARCH:TN|State|TN||true|true|true|true|true|true|-1|sites|N|basic

C. Risk Assessment

The entirety of the Maury County could be considered at risk for a hazardous material incident. However, areas that contain Industrial Parks and Tier II facilities are at a higher likelihood of incident, as are any roadways that see heavy and consistent interstate traffic.

The [Social Vulnerability Index \(SVI\)](#) is a dataset that uses 16 census variables that help local officials identify communities that may need support before, during or after disasters. Unfortunately, the National Risk Index does not capture non-natural disaster impacts, therefore, using the SVI can help public health officials and local planners better prepare for and respond to emergency events such as hazardous material releases.

Social Vulnerability Index Score for Maury County = Relatively Low

Although the Social Vulnerability Index is a well-valued resource it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was amid-level impact of the identified hazard. The results are below:

APPENDIX E: Man Made Hazards

Table E15: Hazardous Materials Risk based on selected FEMA Lifelines

Hazardous Material Release	FEMA Lifelines					
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation
Columbia						
County						
Mount Pleasant						
Spring Hill						

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

D. Land Use & Development

Submission of Tier II forms is required under Section 312 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). This form aims to supply officials and the public with specific information on potential hazards relating to hazardous chemicals at certain thresholds. Hazardous materials incidents are often accidental and can occur anytime and without warning. Most incidents are handled well before becoming a disaster. Clean-up time is variable, depending on the nature of the incident. Serious incidents may require long-term environmental remediation.

E. Multi-Jurisdictional Differences

The entirety of Maury County and its incorporated jurisdictions are at risk of hazardous materials incidents. However, hazardous materials usage and releases are more prevalent around major Interstate systems (I-65, State Highway 43) that converge in the county or Mt. Joy Area in Mt. Pleasant.

APPENDIX E: Man Made Hazards

F. Summary

Hazardous materials include substances or materials that pose risks to health, safety, and property when released in transport or at a fixed facility. Depending on the location, magnitude, and type of material involved, hazardous materials incidents may lead to spills, leaks, explosions, injuries, or the potential of an immediate threat to life, the environment, or property. Because many past incidents have occurred on or near public roadways, all critical facilities are at risk. Clean-up time is variable, depending on the nature of the incident. Serious incidents may require long-term environmental remediation.

APPENDIX E: Man Made Hazards

Terrorism

A. Hazard Overview

Terrorism is the use of force or violence against persons or property with the intent to intimidate or coerce. Acts of terrorism include threats of terrorism, assassinations; kidnappings; hijackings; bomb scares and bombings; cyber-attacks and chemical, biological, nuclear, and radiological weapons. Various types of terrorism are listed below.

- Armed Attacks and Assassinations
- Arson and Firebombing
- Bioterrorism
- Bombings
- Cyber Terrorism
- Ecoterrorism
- Hijackings and Skyjackings
- Kidnappings and Hostage-Takings
- Nuclear Terrorism

B. County Profile

Terrorist attacks can occur anywhere. Targets typically include critical infrastructures such as utilities, roadways, bridges, tunnels, hospitals, schools, civic centers, and other high-profile venues.

Previous Occurrences

The most significant terrorist incident in the United States occurred adjacent to New Jersey in Lower Manhattan, New York, when a radical terrorist group hijacked two commercial airplanes and flew them into Towers 1 and 2 of the World Trade Center. Additionally, a simultaneous attack occurred in Washington D.C., where a plane crashed into the Pentagon.

- In August of 2019, a 17 year old that attended Hampshire Unit School was arrested and charged with the commission of an act of terrorism for planning to harm the school. ([Source](#))
- In February of 2018, two students were arrested, with one of them allegedly made "terrorist threats" against Central High School. ([Source](#))
- In July of 2016, an individual was charged with six counts of terrorism following threats made to government officials. ([Source](#))

Probability of Future Events – Likely

While the potential for future terrorism incidents is difficult to predict, the combination of past incidents and potential terrorist targets makes a terrorism incident possible. Local, state, and federal officials must coordinate efforts to prevent future terrorist incidents.

C. Risk Assessment

The effect of a terrorist event can vary depending on the type of attack and the magnitude of the event or events.

APPENDIX E: Man Made Hazards

The [Social Vulnerability Index \(SVI\)](#) is a dataset that uses 16 census variables that help local officials identify communities that may need support before, during or after disasters. Unfortunately, the National Risk Index does not capture non-natural disaster impacts, therefore, using the SVI can help public health officials and local planners better prepare for and respond to emergency events such as terrorism.

Social Vulnerability Index Score for Maury County = Relatively Low

Although the Social Vulnerability Index is a well-valued resource it fails to properly show the feedback from the participating jurisdictions. Therefore, all identified hazards were evaluated in regard to risk in FEMA lifelines per jurisdiction. The scenario that local jurisdictions would evaluate the conditions off of was a mid-level impact of the identified hazard. The results are below:

Table E16: Terrorism Risk based on selected FEMA Lifelines

Terrorism Risk	FEMA Lifelines						
Jurisdiction	Safety & Security	Food, Water & Shelter	Health & Medical	Energy	Communications	Transportation	Hazardous Materials
Maury County							
Columbia							
Mount Pleasant							
Spring Hill							

Colors indicate lifeline or component conditions:	
Red	Significant Impact, Multiple Required Resources
Yellow	Some Impact, Some Outside Resources Required
Green	Little to No Impact, No Outside Resources Required

Given the information above it becomes vital that all participating jurisdictions are able to prioritize the necessity of mitigation actions in the following lifeline categories so that they can become more resilient in the whole community that they serve.

APPENDIX E: Man Made Hazards

D. Land Use and Development Trends

Maury County has experienced significant growth in the past five years. Population centers and areas of heavy industrialization have the potential to be targets of terrorist activity.

E. Multi-Jurisdictional Differences

Areas containing critical infrastructure or those that are heavily populated are at a higher risk for terrorist attack.

F. Summary

The entirety of Maury County could be subject to a terrorist attack. This includes the entire County population and all critical facilities, buildings, and infrastructure. While all assets are considered at varying levels of risk from this hazard, a terrorist attack could be executed through various mechanisms inflicting a variety of damage to buildings, infrastructure, and citizens.