

RESOLUTION 19-39

**A RESOLUTION TO ADOPT THE
MAURY COUNTY HAZARD MITIGATION PLAN**

WHEREAS, the City of Spring Hill recognizes the threat that natural hazards pose to people and property; and

WHEREAS, undertaking Hazard Mitigation actions before disasters occur will reduce the potential for harm to people and property and save taxpayer dollars; and

WHEREAS, an adopted Hazard Mitigation Plan is required as a condition of future grant funding for mitigation projects; and

WHEREAS, Maury County participated jointly in the planning process with the other local units of government within the County including the City of Spring Hill to prepare the Hazard Mitigation Plan attached hereto as an exhibit to this Resolution.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Mayor and Aldermen of the City of Spring Hill hereby adopts the Maury County Hazard Mitigation Plan as an official plan; and

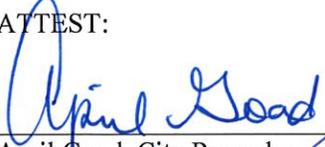
BE IT FURTHER RESOLVED, that Maury County Emergency Management Agency will submit on behalf of the participating municipalities that include the City of Spring Hill the adopted Maury County Multi-jurisdiction Hazard Mitigation Plan to Federal Emergency Management Agency (FEMA) for final review and approval.

Passed and adopted by the Board of Mayor and Aldermen of the City of Spring Hill, Tennessee on this 18th day of March, 2019.



Rick Graham, Mayor

ATTEST:



April Goad, City Recorder

LEGAL FORM APPROVED:



Patrick Carter, City Attorney



REQUEST: Approval of Resolution 19-39

SUBMITTED BY: Chuck Downham, Assistant City Administrator

DATE: March 18, 2019

RE: Resolution 19-39 Resolution to Adopt Maury County Hazard Mitigation Plan

ATTACHMENTS: Resolution 19-39 and supporting documents

PURPOSE:

To approve Resolution 19-39, a Resolution to adopt the Maury County Hazard Mitigation Plan (2018).

BACKGROUND:

In October 2017, Maury County Emergency Management facilitated a meeting with county and municipal officials to begin the process of updating the Hazard Mitigation Plan for Maury County. Maury County, City of Mt. Pleasant, and City of Spring Hill participated in the update process. The City of Columbia decided not to participate in the update process. Input was received from each of the participating jurisdictions in the preparation of the draft Hazard Mitigation Plan. Opportunities were provided during the preparation of the Hazard Mitigation Plan for public input. The resulting Hazard Mitigation Plan was developed in accordance with state and federal rules and regulations governing local hazard mitigation plans.

The primary purposes of the Plan are to 1) identify the possible risks and hazards that may affect Maury County, 2) prioritize loss reduction and emergency preparedness activities for various types of disasters, and 3) develop strategies and best practices to avoid and mitigate impacts of hazards.

The Plan is organized into nine (9) sections covering a myriad of community information, risk assessment, hazard analysis, community vulnerability, community capabilities, mitigation strategies and ongoing plan maintenance measures to ensure the plan remains complete and up-to-date.

Following the initial presentation of the Plan to the Board of Mayor and Aldermen, the City received input from a citizen regarding the content of the Plan. City staff contacted representatives of the Maury County Emergency Management Agency to discuss the comments received. Maury County officials noted that there is an amendment process available (see

Section 5.3.3.4 Plan Amendment Process) following adoption of the Plan where the comments and input received can be properly addressed. The comments and items identified that need to be addressed do not materially impact the assessment of community capabilities and hazard mitigation strategies which are among the most important elements of the Plan in identifying various hazards and corresponding mitigation strategies and the management and deployment of community resources during hazard events. Maury County officials recommend the Board of Mayor and Aldermen move forward with adoption of the Plan with the understanding that the items noted from citizen input would be addressed either through the amendment process or in subsequent updates to the Plan which typically occur during a 5-year plan review cycle.

FINANCIAL IMPACT:

There is no direct financial impact or obligation upon the City of Spring Hill as a result adoption of the Plan. Having a Plan in place will assist the City in reducing potential vulnerability to disasters and enhance the City's response to disasters that may reduce costs incurred by the City in responding to various scenarios. As noted in the Plan, DMA2K legislation requires all local and county governments to develop a hazard mitigation plan for their respective communities in order to be eligible to receive Hazard Mitigation Grant Program (HMGP) funds for planning, project and technical assistant grants to further assist the County and participating jurisdictions.

STAFF RECOMMENDATION:

Staff recommends approval of Resolution 19-39 to adopt the Maury County Hazard Mitigation Plan 2018 that is attached as an exhibit to the Resolution.



FEMA

January 25, 2019

Mr. Doug Worden
State Hazard Mitigation Officer
Tennessee Emergency Management Agency
3041 Sidco Drive
Nashville, Tennessee 37204

Reference: Multi-jurisdictional Hazard Mitigation Plan: Maury County

Dear Mr. Worden:

This is to confirm that we have completed a Federal review of the draft Maury County Hazard Mitigation Plan Update for compliance with the Federal hazard mitigation planning requirements contained in 44 CFR 201.6(b)-(d). Based on our review and comments, Maury County developed and submitted all the necessary revisions. Our staff has reviewed and approved these revisions. We have determined the revised Maury County Hazard Mitigation Plan Update is now compliant with Federal requirements, subject to formal community adoption.

In order for our office to issue formal approval of the plan, Maury County must submit adoption documentation and document that the final public meeting occurred. Upon submittal of these items to our office, we will issue formal approval of the Maury County Hazard Mitigation Plan Update. Please have Maury County submit a final copy of their Plan, without draft notations and track changes.

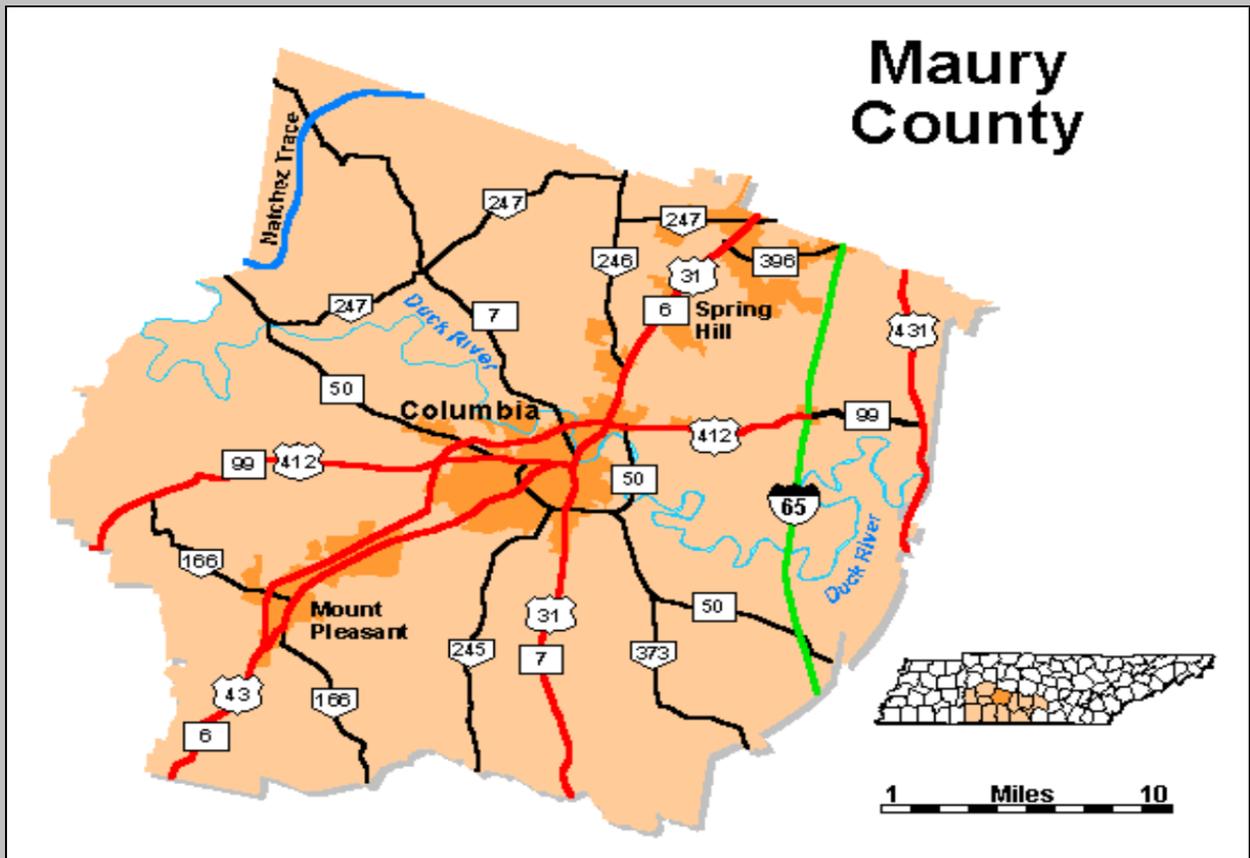
For further information, please do not hesitate to contact Harlie Clark of the Hazard Mitigation Assistance Branch, at (770) 220-5219 or Robin Berzins, of my staff, at (678) 822-8516.

Sincerely,

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

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

MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN DRAFT



MAURY COUNTY TENNESSEE 2018



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SECTION 1 PLAN INTRODUCTION

This section provides a general introduction to the Maury County Multi-Jurisdictional, All-Hazard Risk Mitigation Plan. It consists of the following:

- Overview
- Emergency Management Background
- Legislative Background
- Purpose
- Scope
- Authority
- Plan Outline

1.1 Overview

Maury County and its participating municipalities has, and may have in the future, experience a variety of natural and man-made hazards that cause loss of life and damage to property. The Maury County Office of Emergency Management has prepared a countywide hazard mitigation plan that re-shapes Maury County and local communities into a more resilient framework, enabling it to recover more quickly and easily from disasters. Through the use of this plan, Maury County and the local jurisdictions will decrease the community's vulnerability to disasters and enhance their response to disasters and public threats.

The plan update provides a framework on which to base comprehensive mitigation of hazards for all Maury County political jurisdictions. Risk management tools were used to prioritize and identify vulnerabilities to hazards. The overall hazard analysis determines which areas of the community are affected by hazards, how likely it is that a disaster may occur, and what impact a disaster might have. By assessing the vulnerability countywide, it can be determined which government and private facilities are at risk and to what degree they may be impacted.

Natural and man-made hazards pose a threat to every citizen and community within Maury County and participating municipalities on some level and frequency. Often, the reality of potential hazards to a community is not fully understood or realized until a major disaster occurs. It is then that a community experiences the extreme hardship of significant human and economic losses. The process of all-hazard mitigation planning is the first step toward protecting a community from losses associated with hazards and resulting disasters. The following definitions are provided by FEMA with regard to Hazard Mitigation Planning:

- Hazard Mitigation - Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.
- Planning - The act or process of making or carrying out plans, specifically, the establishment of goals, policies, and procedures for a social or economic unit.

The process of hazard mitigation planning is a critical part of any community's planning program. Because most hazards occur infrequently, mitigation programs for hazards are usually initiated and funded as a reaction to recover from the most recent disaster event. This form of hazard mitigation response is typically more costly, both in property and human losses, on a long-term basis than is pre-disaster planning and mitigation.

1.2 Emergency Management Background

Over the past fifty years, the meaning and scope of homeland security and emergency management has significantly evolved in response to changes in political, military, and natural environments. Emergency management has grown from a narrow civil defense focus, to its present position of providing a wide array of services in response to natural and man-made hazards, including aspects of homeland security. This evolution has resulted in a shift from federal-based initiatives to one of fostering both local and state developed and delivered programs. Within this framework, local emergency management organizations work to implement local, state, and federal emergency management and homeland security policy. By working collaboratively with governmental agencies, private industry, and citizens, and by providing technical assistance and support, local emergency management organizations are expanding capabilities to contribute a broad spectrum of professional services.

Historically, federal and state perspectives have shaped the focus, scope, and policy of emergency management. Prior to and extending through the 1930s, emergency management programs did not exist except for some “New Deal” social programs, administered by federal agencies, that provided assistance in response to specific disasters.

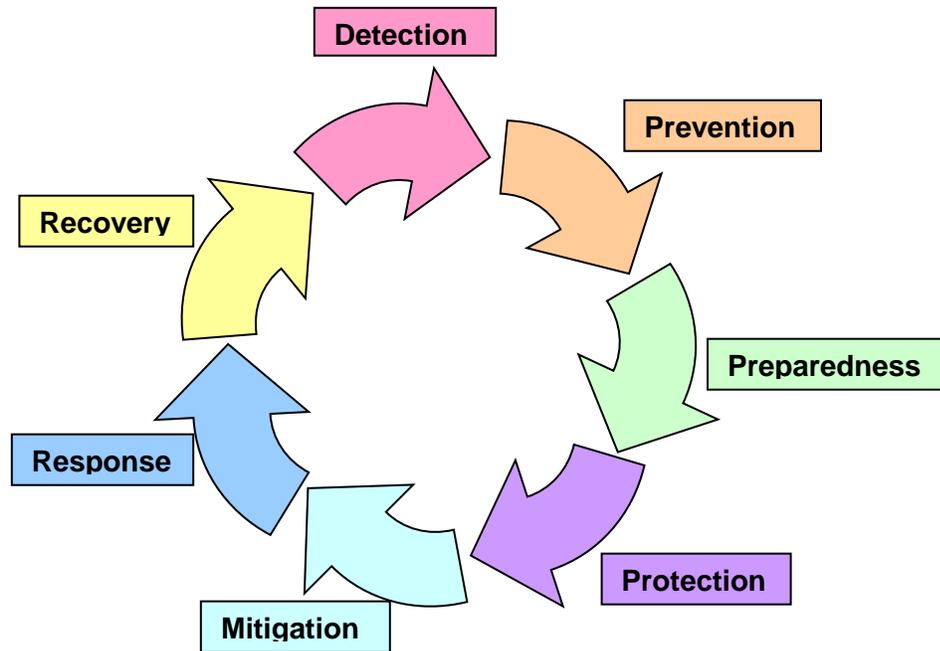
Emergency Management found its beginning and was developed immediately after World War II, as a response to military attack. The federal government created a nationwide shelter program under the provisions of the Civil Defense Act. The first federal assistance to state and local governments was provided under civil defense programs. At the Federal level, response and recovery from natural and man-made disasters were thought to be within the jurisdiction of state and local governments. These disasters were philosophically and legally separate from “war-related” emergencies until the late 1970s.

In 1979, the Federal Emergency Management Agency (FEMA) was established to assist in responding to war-caused emergencies, nuclear events and natural and man-made disasters. In the 1980s, response and recovery efforts from other than war-caused disasters became eligible for federal funding. This was the first effort to view emergency management as a comprehensive set of services encompassing four phases - mitigation, preparedness, response, and recovery.

Emergency Management also experienced a key policy shift. Focus shifted from one of nuclear war preparedness to a more balanced focus on natural and man-made hazards and disasters. An “all-hazards” approach was emphasized. Federal assistance became available for preparedness, direct response and recovery efforts. The increasing demand on federal funds for disaster recovery assistance prompted a change in federal policy to emphasize mitigation and providing technical assistance to build state and local government capabilities to more independently deal with emergencies and disasters that occur within their jurisdictions.

In the 1990s, federal, state, and local governments recognized the increasing threat of terrorism. Domestic and foreign events, including the bombing of the New York World Trade Center in February 1993; the April 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City; the bombing of the Khobar Towers in Saudi Arabia in June 1996; and the bombing of the U.S.S. Cole in Yemen in October 2000, demonstrated terrorists’ willingness to use weapons of mass destruction. Federal agencies began to examine the causes and effects of these events, to shape U.S. policy, and fund domestic anti-terrorism preparedness activities.

The September 11, 2001 terrorist attacks on the New York World Trade Center and the Pentagon was a defining moment in the war on terrorism. This is witnessed by the development of domestic and foreign policy, nationwide initiatives to detect and prevent terrorist attacks, and protect national critical infrastructure and systems. At the federal level, anti-terrorism activities resulted in the creation of the Department of Homeland Security. This expanded the view of emergency management as a comprehensive set of services encompassing seven phases – detection, prevention, preparedness, protection, mitigation, response, and recovery.



Seven Phases of Homeland Security and Emergency Management

1.3 Hazard Mitigation Legislative Background

Disaster Mitigation Act of 2000: In support of the expanded role of emergency management, Congress approved the Disaster Mitigation Act of 2000, (DMA2K), commonly known as the 2000 Stafford Act. Section 322 is the amendment to the Stafford Act that primarily deals with the development of local hazard mitigation plans. The DMA2K legislation was signed into law on October 30, 2000 (Public Law 106-390). The Interim Final Rule for planning provisions (implemented at 44 CFR Part 201) was initially published in the Federal Register in February 2002 and again in October 2002. Local hazard mitigation planning requirements are implemented in 44 CFR Part 201.6. The purpose of DMA2K was to amend the Stafford Act to establish a national program for pre-disaster mitigation, streamline administration of disaster relief at both the federal and state level, and control federal costs of disaster assistance. Congress envisioned that implementation of these new requirements would result in the following key benefits:

- Reduction of loss of life and property, human suffering, economic disruption, and disaster costs.

- Prioritization of hazard mitigation planning at the local level, with an increased emphasis placed on planning and public involvement, assessing risks, implementing loss reduction measures, and ensuring critical services/facilities survive a disaster.
- Establishment of economic incentives, awareness and education to state, tribal, and local governments that result in forming community-based partnerships, implementing effective hazard mitigation measures, leveraging additional non-federal resources, and establishing commitments to long-term hazard mitigation efforts.

The DMA2K legislation requires all local, county and tribal governments to develop a hazard mitigation plan for their respective communities in order to be eligible to receive Hazard Mitigation Grant Program (HMGP) funds. Each community's hazard mitigation plan must be submitted to and approved by the state and FEMA by November 1, 2004. DMA2K requires that each plan, must at minimum address or include the following general items:

- Plan Update Adoption by all Jurisdictions
- Planning Process including Public Involvement
- Hazard Identification and Risk Assessment
- Mitigation Strategy
- Plan Update Implementation and Maintenance Procedures
- Any Specific State Requirements

Hazard Mitigation Grant Program: In 1988, Congress established the HMGP by enactment of Section 404 of the Stafford Act. In 2002, regulations pertaining to the HMGP to reflect the Disaster Mitigation Act of 2000 were changed by 44 CFR Part 206, Subpart N. An Interim Final Rule was issued in October 2002, wherein the final compliance date was revised from November 1, 2003 to November 1, 2004. The HMGP assists states and local communities in implementing long-term hazard mitigation measures by providing federal funding following a major disaster declaration. Eligible applicants include state and local agencies, tribal organizations, and certain non-profit organizations. Examples of typical HMGP eligible projects include:

- Property acquisition and relocation projects
- Structural retrofitting to minimize damages from high winds, earthquake, flood, wildfire, or other natural hazards
- Elevation of flood-prone structures
- Vegetative management programs

Pre-Disaster Mitigation Program: The Pre-Disaster Mitigation (PDM) Program was authorized by section 203 of the 2000 Stafford Act, 42 USC (Public Law 106-390). Funding for the program is provided through the National Pre-Disaster Mitigation Fund to assist state, local, and Tribal governments in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program. Two types of grants are offered under the PDM Program.

- Planning Grants - allocated funds to be used for hazard mitigation plan development.
- Competitive Grants - distributed funds using a competitive application process wherein all state, local, and Indian Tribal governments interested in obtaining grant funds can submit applications to be reviewed and ranked by FEMA using pre-determined criteria.

The minimum eligibility requirements for receiving competitive PDM funds include:

- Participation in the National Flood Insurance Program (NFIP)
- Must not be suspended or on probation from the NFIP.
- A local jurisdiction must have a FEMA approved Hazard Mitigation Plan.
- Flood Mitigation Assistance Program: The Flood Mitigation Assistance Program (FMA) was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the NFIP. Funding for the program is provided through the National Flood Insurance Fund. FMA provides funding to assist states and communities in implementing measures to:
 - Reduce the number of repetitively or substantially damaged structures and the associated claims on the National Flood Insurance Fund.
 - Encourage long-term, comprehensive mitigation planning.
 - Respond to the needs of communities participating in the NFIP to expand their mitigation activities beyond floodplain development review and permitting.
 - Complement other federal, state and local mitigation programs with similar, long-term mitigation goals.

There are three types of grants available under FMA:

FMA Planning Grants are available to states and communities to prepare Flood Mitigation Plans. NFIP-participating communities with approved Flood Mitigation Plans can apply for FMA Project Grants.

FMA Project Grants are available to states and NFIP participating communities to implement measures to reduce flood losses. Ten percent of the Project Grant is made available to states.

Technical Assistance Grants are a part of Project Grants. Up to 10% of the Project Grants is made available to the states for technical assistance. These funds may be used by the state to help administer the program.

Eligible communities may apply for an FMA planning grant. The NFIRA stipulates that to be eligible to receive an FMA grant, a community must have a FEMA-approved mitigation plan and must be participating in the NFIP. Examples of eligible FMA projects include:

- Acquisition of NFIP-insured structures and underlying real property.
- Demolition of NFIP-insured structures on acquired or restricted real property.

- Minor physical flood mitigation projects that do not duplicate the flood-prevention activities of other federal agencies, that lessen the frequency or severity of flooding, and decrease predicted flood damages in local flood areas. These include modification of existing culverts and bridges, installation or modification of floodgates, stabilization of stream banks, and creation of small debris or flood/storm water retention basins in small watersheds. Construction or improvement of major structural flood-control structures such as dikes, levees, dams, seawalls, groins, and jetties, and projects consisting of channel widening or stream alignment are not eligible, as indicated in Section 1366.

Other activities that bring an NFIP-insured structure into compliance with the authorized statutory floodplain management requirements of 44 CFR Part 60.3.

- Relocation of NFIP-insured structures from acquired or restricted real property to sites not prone to flood hazards.
- Elevation of NFIP-insured residential structures, and elevation or dry flood proofing of NFIP-insured non-residential structures, in accordance with 44 CFR Part 60.3

1.4 Plan Purpose

The key purposes of this plan update are:

- To involve members of the county, cities, public and other agencies to draft and adopt an action plan that serves as the blueprint for future development and preparedness activities across the county.
- To identify the possible risks and hazards that may affect Maury County through a systematic hazard identification and risk assessment process.
- To prioritize loss reduction and emergency preparedness activities for disasters.
- To determine areas within Maury County that may be vulnerable to various hazards.
- To develop strategies and the best practices to avoid and mitigate impact of hazards.

1.5 Plan Scope

This Hazard Mitigation Plan will be updated and maintained by Maury County Emergency Management to continually address hazards determined to be of high and moderate risk through the detailed vulnerability assessment for Maury County and participating municipalities. Other hazards that pose a low or negligible risk will continue to be evaluated for future updates to the Plan, but they may not be fully addressed until they are determined to be of high or moderate risk. The geographic scope (i.e., the planning area) for the Plan update includes all incorporated and unincorporated areas of Maury County. This includes the following three governmental jurisdictions:

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

1.6 Plan Authority

This Hazard Mitigation Plan has been adopted by Maury County and its participating incorporated municipal jurisdictions in accordance with the authority and powers granted to counties and cities as defined by the State of Tennessee. Copies of all local resolutions to adopt the Plan are included in Appendix A (pages 191 – 197).

This Plan Update was developed in accordance with current state and federal rules and regulations governing local hazard mitigation plans. The Plan Update shall be routinely monitored and revised to maintain compliance with the following provisions, rules, and legislation:

Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390); and FEMA's Interim Final Rule published in the Federal Register on February 26, 2002, at 44 CFR Part 201.

1.7 Plan Update Outline

Section 1: Introduction provides the overview scope and purpose of the plan update and planning process.

Section 2: Planning Process describes the process used to develop Maury County's Multi-Jurisdictional, All-Hazard Risk Mitigation Plan Update. The description provides a general overview of local hazard mitigation planning as well as the specific procedures used by Maury County to prepare its Plan Update. It includes a description of who was involved as members of the planning team, and documents the outcomes of meetings. It also demonstrates the opportunities for the public and other stakeholders to participate in the plan update development process.

Section 3: Community Profile describes the general makeup of Maury County and its participating local jurisdictions, including prevalent geographic, demographic and economic characteristics. Building characteristics and land use patterns are presented along with some general historical disaster data. This baseline information provides a snapshot of the countywide planning area and thereby assists Maury County in recognizing those social, environmental, and economic factors that ultimately play a role in determining community vulnerability to hazards.

Section 4: Risk Assessment - Hazard Identification identifies those hazards that may potentially impact the jurisdiction. Hazard identification describes the various natural and manmade hazards and is used as initial input into hazard analysis.

Section 5: Risk Assessment – Hazard Analysis

The Hazard Analysis builds on hazard identification and documents available historical data from past hazard occurrences and establishes hazard-by-hazard profiles. After historic information is documented an analysis is done to determine if any hazards exist that do not have historical data and if so are added to the hazard analysis. This section culminates in a hazard risk ranking based on conclusions about the frequency of occurrence, spatial extent, and potential impact of each hazard.

Section 6: Risk Assessment – Community Vulnerability

Each hazard is assessed together with the jurisdictions to determine the vulnerability of each jurisdiction to a given hazard. A loss methodology such as FEMA's HAZUSMH is used in evaluating some hazard risks by their relative long-term cost in expected damages. The information generated through the risk assessment serves a critical function as communities seek to determine the most appropriate mitigation actions to pursue and implement. Thus, enabling communities to prioritize and focus their efforts on those hazards of greatest concern and those structures or areas facing the greatest risk.

Section 7: Capabilities addressed in this section include planning and regulatory capability, administrative capability, technical capability and fiscal capability. Information was obtained through the use of detailed survey questionnaires for local officials and an inventory and analysis of existing plans, ordinances and relevant documents. The purpose of this assessment is to identify any existing gaps, weaknesses or conflicts in programs or activities that may hinder mitigation efforts, and to identify those activities that should be built upon to establish a successful and sustainable hazard mitigation program. The community profile, risk assessment, and capability assessment collectively serve as a basis for determining the goals for the Hazard Mitigation Plan Update, each contributing to the development, adoption and implementation of a meaningful Mitigation Strategy that is based on accurate background information.

Section 8: Mitigation Strategies is made up of two subsections: Mitigation Strategic Goals and Mitigation Actions. Strategic goals consists of broad, countywide goal statements for each local jurisdiction participating in the planning process to strive for in achieving, as well as a general description of the mitigation tools and techniques available for further consideration. The strategy provides the foundation for identifying and prioritizing mitigation actions. Mitigation Actions are action plans specific to each local jurisdiction, and link proposed mitigation actions for each to locally assigned implementation mechanisms and target completion dates. This section is designed to make the Plan both strategic, through the identification of long-term goals, and functional through the identification of short-term and immediate actions that will guide day-to-day decision-making and project implementation.

Section 9: Plan Maintenance includes the measures Maury County and its participating local jurisdictions will take to ensure the Plan's continuous long-term implementation. The procedures also include the manner in which the Plan will be regularly evaluated and updated to remain a current and meaningful planning document.

SECTION 2: PLANNING PROCESS

This section of the Plan describes the mitigation planning process undertaken by Maury County in preparation of the Hazard Mitigation Plan Update. It consists of seven subsections:

- Overview of Hazard Mitigation Planning
- Preparing the Plan Update
- The Planning Team
- Community Meetings and Workshops
- Involving the Public
- Involving Stakeholders
- Multi-Jurisdictional Participation

2.1 Overview of Hazard Mitigation Planning

Local hazard mitigation planning is the process of organizing community resources, identifying and assessing hazard risks, and determining how to best minimize or manage those risks. This process results in a hazard mitigation plan that identifies specific mitigation actions, each designed to achieve both short-term planning objectives and a long-term community vision. To ensure the functionality of each mitigation action, responsibility is assigned to a specific individual, department or agency, along with a schedule for action implementation. Plan maintenance procedures are established for the monitoring of implementation progress, and the evaluation and enhancement of the mitigation plan. These plan maintenance procedures ensure that Maury County's Hazard Mitigation Plan remains a current, dynamic and effective planning document over time. Mitigation planning offers many benefits, including:

- Saving lives and property.
- Saving money.
- Speeding recovery following disasters.
- Reducing future vulnerability through wise development and post-disaster recovery and reconstruction.
- Expediting the receipt of pre- and post-disaster grant funding.
- Demonstrating a commitment to improve community health and safety.

Typically, mitigation planning has the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster loss. A core assumption of hazard mitigation is that pre-disaster investments will significantly reduce the demand for post-disaster assistance by lessening the need for emergency response, repair, recovery, and reconstruction. Mitigation practices will enable residents, businesses, and industries to recover in the wake of a disaster, to ensure the community economy is re-established quicker and with less interruption.

The benefits of mitigation planning go beyond reducing hazard vulnerability. Measures such as the acquisition or regulation of land in known hazard areas can help achieve multiple community goals such as preserving open space, maintaining environmental health, and enhancing recreational opportunities. Thus, it is vitally important that any local mitigation planning process be integrated with other local planning efforts, and any proposed mitigation strategies be congruent with other existing community goals or initiatives.

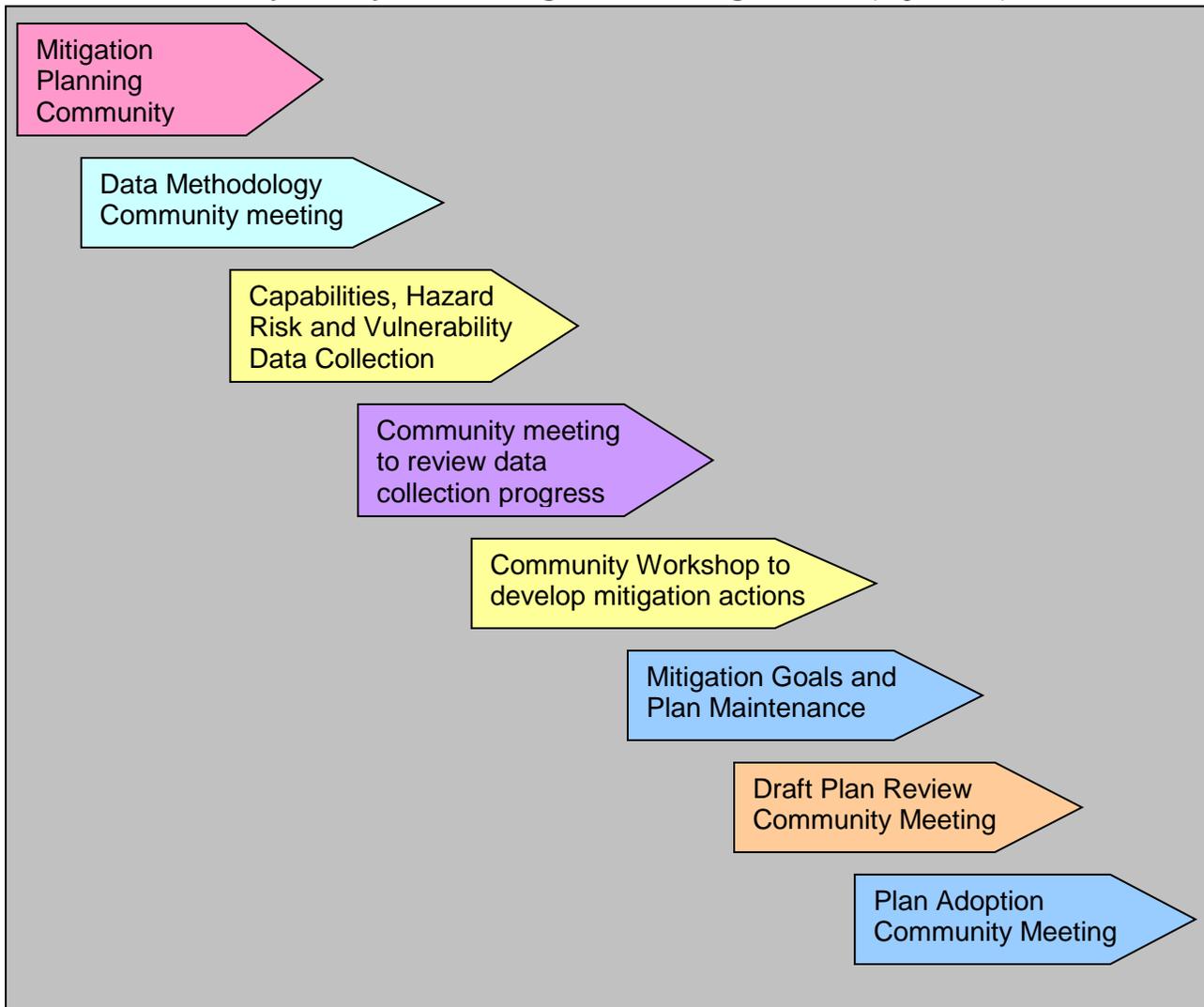
2.2 Preparing the Plan Update

In preparing this Plan, Maury County utilized a multi-jurisdictional planning process consistent with the one recommended by FEMA (Publication Series 386) and used during the 2012 Plan. A Local Mitigation Plan Crosswalk, found in Appendix D (pages 243-257), provides a summary of FEMA's current minimum standards of acceptability for compliance with the Disaster Mitigation Act of 2000 and notes the location of where each requirement is met within the Plan. These standards are based upon FEMA's Interim Final Rule as published in the Federal Register on February 26, 2002, in Part 201 of the Code of Federal Regulations (CFR). The process for the update was the same as the original plan.

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

The planning process included eight major steps that were completed during the development of the Plan. These steps are illustrated in Figure 2.1.

Maury County Hazard Mitigation Planning Process (Figure 2.1)



2.3 The Planning Team

A community-based planning team developed this Plan Update in cooperation with the Tennessee Emergency Management Agency (TEMA) and Planning Ops Chief Duane Winningham. The planning team engaged government officials in local meetings and planning workshops to discuss and complete tasks associated with preparing the Plan Update. This working group coordinated all aspects of the plan development process and became formally recognized as the Maury County Mitigation Planning Committee. In addition to regular meetings, committee members routinely communicated and were kept informed through a dedicated e-mail distribution group. Additional participation and input from county residents and other identified stakeholders was sought through the distribution of public notices and the facilitation of public meetings.

The Maury County Hazard Mitigation Committee consisted of participants representing all areas of the county and was responsible for the development of the Plan Update. The designated primary and alternate points of contact were the Maury County Emergency Management Director and the Emergency Management Deputy Director. These points of contact provided the interface for Duane Winningham and the Tennessee Emergency Management Agency to the Maury County Mitigation Committee.

MAURY COUNTY POINT OF CONTACTS		
	Primary	Alternate
Name	Mark Blackwood	Duane Winningham
Title	Emergency Management Director	Planning Ops Chief
Department	Emergency Management	Emergency Management
Phone	Office: 931-375-6800	Office: 931-375-6804
Mobile	931-698-4710	931-981-4014
Fax	931-840-0113	931-840-0113
Email	mblackwood@maurycounty-tn.gov	dwinningham@maurycounty-tn.gov
Street Address	One Public Square	One Public Square
City, State, Zip	Columbia, TN 38401	Columbia, TN 38401

A Maury County Mitigation Steering Committee was formed. This committee primarily consisted of the decision makers from Maury County and participating municipalities. These decision makers are key department heads, mayors, and city managers. The role of the steering committee was to ensure consistent progress toward project completion and provide oversight in the development of jurisdictional goals and activities.

MAURY COUNTY STEERING COMMITTEE			
Member Name	Representing	Role	Focus
Mark Blackwood	Emergency Management	Plan Coordinator	Hazard Mitigation
Duane Winningham	Emergency Management	Planning/Ops Chief	Hazard Mitigation
Bill Wells	Maury County I.T. Department	Decision Maker	Mitigation Planning
Charles Norman	Maury County Mayor	Decision Maker	Mitigation Planning
Terry Hood	Chief/ Spring Hill Fire Dept.	Decision Maker	Mitigation Planning

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Don Brite	Chief/ Spring Hill Police Dept.	Decision Maker	Mitigation Planning
Chuck Downham	Asst. City Administrator Spring Hill	Decision Maker	Mitigation Planning
Phillip Grooms	Chief/Mt. Pleasant Fire Dept.	Decision Maker	Mitigation Planning
Michael Hay	Chief/Mt. Pleasant Police Dept.	Decision Maker	Mitigation Planning

The overall Maury County Hazard Mitigation Planning Committee had the function of updating the mitigation plan in conjunction with TEMA and the Planning Ops Chief. Committee members were primarily responsible for collecting and documenting hazard and mitigation data from various sources. The committee was divided into three sub-committees that worked in parallel to expedite the mitigation planning process. These sub-committees were The Jurisdiction Profile and Capabilities Committee, The Hazard and Risk Assessment Committee, and The Mitigation and Plan Maintenance Committee. Within these committees, individuals were tasked to collect and provide to the committee point of contact, data and documents to be forwarded to Duane Winningham for verification and assimilation into the Risk Mitigation Plan. These sub-committees met and communicated on a frequent basis to ensure progress was being made to provide all required data on a timely basis. Serving on these committees were:

MAURY COUNTY MITIGATION COMMITTEE			
		Role	Focus
Member Name	Representing	Decision maker contributor writer member etc.	Research hazards mitigation planning etc.
Chuck Downham	Assistant City Administrator	Contributor Member	Research Hazards
Phillip Grooms	Mt. Pleasant Fire Department	Contributor Member	Research Hazards
Mark Blackwood	Emergency Management	Contributor Member	Hazards Mitigation
Mark Gandee	Maury County 911 Director	Contributor Member	Research Hazards
Phillip Johnson	Maury County OEM	Contributor Member	Mitigation Planner

2.4 Community Meetings and Workshops

The preparation of the Plan Update required a series of meetings and workshops for facilitating discussion and data collection efforts with the planning team and local community officials. More importantly, the meetings and workshops prompted continuous input and feedback throughout the drafting stages of the Plan Update. Below is a summary of the key meetings and community workshops for the Maury County Mitigation Committee. Additional meetings were held by the participating jurisdictions to accomplish planning tasks specific to their community, such as specific hazards and mitigation actions for inclusion in their Mitigation Action Plan Update.

Specific meeting dates, attendees and minutes are included in this plan in Appendix B.

Planning the Plan Update Meeting was an initial meeting with officials from Maury County and participating entities. During this meeting designees were identified to facilitate the Hazard Mitigation Plan Update. Mark Blackwood, Emergency Management Chief, and Charles R. Norman, Maury County Mayor, represented Maury County. Planning Ops Chief Duane Winningham also attended this initial meeting.

Discussions at the meeting focused on the overall project approach, in which emphasis was placed on the steps necessary to meet the requirements of the DMA2K and building on work already completed at the state and local level. Additional discussions focused on the specific roles and responsibilities for all parties involved in the planning process. In addition to representatives from each of the participating municipal jurisdictions, it was determined that representatives from fire and law enforcement agencies, GM (Saturn), private businesses, voluntary agencies, and the public should be invited to participate in the planning process. It was decided that the first public meeting would be scheduled to coincide with the project “kickoff” meeting. Duane Winningham provided draft Public Notices that could be the basis of the notices that Maury County and the other municipalities could use. The Public notices would be published in the local newspapers and posted in public buildings.

The Initial Project Meeting was held just prior to the project “kickoff” meeting with key decision makers from the county and the participating jurisdictions. Potential outreach strategies for engaging outside agencies, and ideas for generating public interest and involvement throughout the mitigation planning process were discussed. It was also decided that the completed draft plan update would be presented to local officials and the public for further comment prior to local adoption. This draft plan update presentation would be consistent with both the requirements of the DMA2K and the plan adoption procedures for local governments in Tennessee.

Critical “next steps” were discussed, including the need for ongoing coordination throughout the entire planning process. Specific data collection tools were reviewed, including the Capability Assessment Survey and Hazard and Mitigation templates. Specific issues including the need to gather, analyze and incorporate any existing information that may be helpful to the planning effort such as mitigation or hazard-related plans, policies, programs, studies, reports and technical documentation. Future meetings were discussed, including the first official meeting of the Mitigation Committee and the Mitigation Methodology Workshop that would review data collection processes and mitigation methodology.

The Mitigation Plan Update “Kickoff” Meeting was held and Mitigation Planning Overview was presented to all participating municipal jurisdictions attendees and invited stakeholders. The intent of this meeting was to educate participants on the mitigation planning process and to explain DMA2K multi-jurisdictional planning requirements. The meeting also served to initiate the preliminary data collection efforts for the risk and capability assessment tasks associated with the development of the Plan Update. The meeting began with a detailed presentation of the mitigation planning process led by Mark Blackwood and Duane Winningham. The presentation introduced the concept of hazard mitigation and detailed the mitigation planning process to be followed. Ideas on how to improve and/or expedite the process were solicited from committee members.

Data Collection Methodology was presented and specific data collection needs were explained, including the need for any local hazard risk data available that was unique to Maury County. Data collection efforts were launched through the distribution and explanation of the Capability Assessment Survey to each member of the committee. Each committee member was assigned the task of meeting with appropriate officials from their respective agency or jurisdiction to update any pertinent information. Committee issues that were raised during the meeting and presentations were addressed by Duane Winningham and Maury County Emergency Management. These primarily related to the methodologies and data requirements for updating the risk and capability assessments and the types of mitigation actions each jurisdiction should consider for inclusion in their Mitigation Action Plans.

Concern was expressed regarding the formal adoption of the plan update by each of the jurisdictions at the end of the process. It was explained by Maury County Emergency Management that each of the committee members shared a role in being ambassadors for mitigation, along with the responsibility of educating elected officials and other stakeholders in their communities. Continued education, awareness, and public involvement efforts will enhance support and general consensus on agreeable mitigation action alternatives for Maury County. A draft project plan/timeline was presented to focus the Mitigation Committee on the required tasks and timeline to complete the Mitigation Plan Update.

The Data Collection Review and Mitigation Process consisted of a detailed presentation of the data collection review by Duane Winningham and mitigation-planning.

General findings were presented and discussed during the process. The following hazards were determined to be of most concern:

- Flooding
- Thunderstorms
- Tornados
- Wildfires
- Winter Storms
- Earthquake
- Dam Failure
- Hazardous Material incidents
- Terrorism
- Urban Fires
- Pandemic/Epidemic/Vectors
- Heat/Drought

Concerned citizens in Maury County were asked to fill out a survey form. A copy of this form is located in this updated plan in Appendix B4. Additional comments will be solicited and documented from all attendees at public hearings.

The mitigation-planning workshop was in the form of a strategic planning workshop. As a group, the mitigation committee defined preliminary mitigation goals, objectives and actions. The mitigation committee was tasked to formally draft the results of the workshop and review the results with the county and municipality decision makers to obtain concurrence and suggestions for any additions or enhancements.

The process and methodology for jurisdictions to formally adopt a resolution recognizing mitigation planning and the Mitigation Planning Committee were finalized.

The Plan Adoption Public Meeting will be held just prior to formal adoption by the Maury County Commission. Public notices will be published according to county requirements and copies of the plan will be made available on the counties' website. Copies of the plan will be distributed to the participating municipalities and will be made available to the public prior to adoption by the participating municipalities. During the public meeting and the various adoption meetings, comments will be solicited and documented from the meeting attendees.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY MITIGATION PLAN UPDATE PROJECT PLAN				
Project Planning and Task Completion Timelines				
Task	Acton/Description	Responsible	Deliverable	Target Date
1	Conducted Kickoff meeting with all jurisdictions	Emergency Management	Designate Lead Personnel from each jurisdiction	July 2017
2	Form a steering committee of key decision makers from all jurisdictions	Emergency Management	Key Decision Maker Roster	July 2017
3	Review current mitigation plan requirements, format and develop key data collection processes	Emergency Management and Planning Ops Chief	Appropriate strategy and process for data collection and plan completion	July 2017
4	Form a planning committee	Emergency Management and Planning Ops Chief	Designate Lead Personnel from each jurisdiction	July 2017
5	Gather Data	Lead Personnel & Planning Ops Chief	Review plan and provide necessary changes to current plan	November 2017
6	Mid-plan status update meeting	Mitigation Committee	Provide status update	November 2017
7	Distribute public survey forms	Mitigation Committee	Survey Forms	November 2017
8	Analysis of public survey forms	Mitigation Committee	Results of Public Survey Forms	December 2017
9	Development of updated mitigation plan and submission to the Mitigation Committee	Mitigation Committee	Mitigation Plan Draft	January 2018
10	Submit a draft copy of Mitigation Plan to TEMA for review	Planning Ops Chief	Mitigation Plan Draft	January 2018
11	Submit draft copy to FEMA for review/approval	TEMA	Mitigation Plan Draft	February 2018
12	Adoption of plan by local entities	Mitigation Committee	Final Mitigation Plan	April 2018

2.5 Involving the Public

2.5.1 Public Participation during Plan Construction

A fundamental component of Maury County's community-based mitigation planning process involves public participation. Citizen involvement provides the Mitigation Committee with a greater understanding of local concerns and ensures a higher degree of mitigation success by developing community "buy-in" from those directly affected by the planning decisions of public officials. As citizens become more involved in decisions that affect their life and safety, they are more likely to gain a greater appreciation of the hazards present in their community and take personal steps to reduce the potential impact. Public awareness is a key component of an overall mitigation strategy aimed at making a home, neighborhood, school, business, or city safer from the potential effects of natural hazards. Public input was sought using three methods: (1) surveys; (2) open public meetings; and (3) publicizing the availability of the draft hazard mitigation plan at government offices and public accessible facilities, i.e., county and cities' websites. (See Appendix B, pages 198-216)

44 CFR Requirement

44 CFR Part 201.6(b) (1): The planning process shall include an opportunity for the public to comment on the plan during the drafting stage and prior to plan approval.

A Public Participation Survey was designed to capture additional information from residents of Maury County. Surveys were provided to citizens who attended public meetings. County and municipal officials distributed additional copies of the survey as well as posted public notices in their local newspaper via an online survey form.

County-level meetings and/or public surveys were conducted at various stages of the planning process including: the initial "kickoff" meeting, data collection review and mitigation planning meetings, and the plan adoption process. The countywide public surveys were conducted to garner public input regarding unique hazard concerns and possible mitigation actions that could be included in the Hazard Mitigation Plan. The current mitigation process and progress were discussed.

Concerns that were raised at the meetings included flash flooding events in rural areas such as the May 2010 flood and subsequent hazardous materials releases.

The public meeting notice was printed in local newspapers including the Daily Herald and The Journal. These publications have widespread local circulation, which ensured that local officials, residents, businesses, academia and other private interests throughout Maury County were invited to participate in the local mitigation planning process.

2.5.2 Public Participation during Final Review

Prior to plan submittal to TEMA, copies of the plan update were provided to all jurisdictions. The jurisdictions made the copies available to the citizens of the individual jurisdictions at the appropriate city halls/county courthouse. Additionally, the plan was available electronically via the county's official website for review and comment. (See appendix B, pages 198-216)

2.5.3 Public Participation during Final Approval

Following plan update approval by FEMA, comments were solicited from the public during the formal adoption process of each jurisdiction. After each jurisdictional government adopted the Maury County Multi-Jurisdictional Hazard Mitigation Plan Update, copies of the certified resolutions were collected and included into the plan update. (See Appendix A, pages 191-197)

2.6 Involving Stakeholders

A range of stakeholders were invited and encouraged to participate in the development of the Hazard Mitigation Plan Update. Stakeholder involvement was encouraged through notifications and invitations to select agencies or individuals to participate in the hazard mitigation planning process. These included representatives from each of Maury County's incorporated municipalities, private sector businesses, voluntary agencies, non-profit agencies, and citizens. In addition to the Mitigation Committee meetings, Maury County encouraged open and widespread participation in the mitigation planning process through the publication of newspaper notices promoting open public meetings. These media advertisements and survey instruments provided local officials, residents, businesses, academia, non-profit, and other private interests in Maury County, participating jurisdictions and neighboring counties and communities the opportunity to be involved and offer input throughout the local mitigation planning and drafting process.

44 CFR Requirement
44 CFR Part 201.6(b)(2): The planning process shall include an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process.

Maury County also encouraged continued stakeholder involvement by reminding all participating jurisdictions to make announcements and notifications consistent with their existing local plan adoption procedures. It was the responsibility of each participating jurisdiction and their local governing bodies to determine if and how any additional specific stakeholder groups or individuals should be involved in the planning process.

Other departments, agencies, and individuals are mini-stakeholders; contacted to provide information as the committee gathered and updated data for capability and vulnerability assessments, these "external participants", which included Emergency Management Directors from neighboring counties, played a vital role in the completion of this Plan Update.

The Maury County Office of Emergency Management works with surrounding counties in the ongoing updating of the Maury County Multi-Jurisdictional, All-Hazards Risk Mitigation Plan. Since the effects of hazards do not stop at geographical boundaries and the effects of large-scale events can be reasonably expected to involve or overlap multiple counties, a district approach has been implemented. The intent of this district or combined multi-county approach has been to ensure that the impact of hazards common to all participating counties is reduced.

2.7 Multi-Jurisdictional Participation

The Maury County Hazard Mitigation Plan Update is multi-jurisdictional and includes the participation of Maury County and two of its incorporated municipalities. Plan participants are:

- | | <u>LAT</u> | <u>LONG</u> |
|------------------------|---------------------|----------------------|
| ▪ Maury County | | |
| ▪ City of Mt. Pleasant | <u>N35 32'3.29"</u> | <u>W87 12'26.63"</u> |
| ▪ City of Spring Hill | <u>N35 44'56.5"</u> | <u>W86 56'30.0"</u> |

44 CFR Requirement

44 CFR Part 201.6(a)(3):
Multi-jurisdictional plans may be accepted as long as each jurisdiction has participated in the planning process.

To satisfy multi-jurisdictional participation requirements, each of the participating local jurisdictions was required to perform the following tasks:

- Designate appropriate officials to serve on the Mitigation Advisory Committee;
- Participate in all mitigation planning meetings and workshops;
- Provide best available data for the risk assessment portion of the Plan Update. This data includes all appropriate existing plans, studies etc.;
- Complete the Capability Assessment Survey and provide copies of any mitigation or hazard-related documents for review and incorporation into the Plan Update;
- Support the development of a countywide mitigation strategy, including the design and adoption of general goal statements for all jurisdictions to pursue;
- Develop a Mitigation Action Plan Update with specific mitigation actions for its' jurisdiction;
- Review and provide timely comments on all draft components of the Plan Update;
- Adopt the Maury County Multi-Jurisdictional, All-Hazards Risk Mitigation Plan Update, including its' specific local Mitigation Action Plan Update.

2.8 Review and Incorporation of Existing Plans

Through the completion of tasks associated with the completion of the Maury County Multi-Jurisdictional, Multi-Hazard Risk Mitigation Plan Update, each participating municipality fully participated with Maury County in the development of this Plan Update. Each section of the updated plan was fully reviewed and analyzed throughout the process.

Each participating jurisdiction provided Ordinances, regulations, resolutions, existing plans and studies for review and incorporation of pertinent information into the Maury County Mitigation plan update. Planning Ops Chief and Maury County Emergency Management reviewed the data from the following documents to ensure applicability to the overall planning effort and to ensure their incorporation into this plan update and other local and state plans:

- Jurisdictional Ordinances, Regulations, and Resolutions
- Maury County Emergency Operations Plan
- Maury County Pandemic Plan
- Maury County Urban Growth Plan
- Maury County Schools Emergency Response/Crisis Management Plan
- SARA Title II facilities reporting documents and site emergency plans
- State of Tennessee Hazard Mitigation Plan
- Governor's Office of Homeland Security "A Strategy for Tennessee"
- A NATION PREPARED: FEMA Strategic Plan Fiscal Years 2003-2008
- National Incident Management System (NIMS)
- U.S. Department of Homeland Security National Response Plan (Base Plan and Appendices)
- FEMA National Flood Insurance (NFIP): Program Description
- National Weather Service: Operations Present and Future
- FEMA State and Local Mitigation Planning How-to Guides
 - Getting Started
 - Developing the Mitigation Plan
 - Integrating Human-Caused Hazards into Mitigation Planning
 - Bringing the Plan to Life
- Tennessee One Call System Emergency Responder Handbook for Pipeline Emergencies
- The Pipeline Group Emergency Response Manual
- CSX Local Community Emergency Action Plan for Hazardous Material Incidents

These documents, on file at the Maury County Office of Emergency Management, in electronic or hard copy format, provided valuable guidance in the planning process.

Some served to acquaint committee members with the many roles of Emergency Management. Planning guides helped to tie together the phases of mitigation planning for committee members from a broad range of backgrounds outside mitigation and Emergency Management.

State and federal response and homeland security documents were referenced to ensure Maury County's goals supported these plans and promoted compliance with requirements. The State of Tennessee Hazard Mitigation Plan (2004) formed the basis for identifying and analyzing the natural hazards that could affect Maury County and the participating jurisdictions. The Maury County Emergency Operations Plan (2004) provided insight into the jurisdictional response to disasters and was used to develop and validate mitigation goals, objectives, and actions. The Maury County Urban Growth Plan, adopted by all jurisdictions in March 2001, served to identify future land use and development trends.

In some cases, these documents identified areas for needed mitigation actions; for example, after review of the ordinances, regulations, and resolutions of each jurisdiction, the Legal and Regulatory Capabilities Summary Table at Section 5.1.3.1 was prepared. This summary made evident some jurisdictions lacked ordinances and regulations important to control hazards and reduce risk. Goal Actions 1.1.6 and 1.1.7 were included to improve jurisdictional abilities to prepare for, mitigate, respond to, and recover from all disasters.

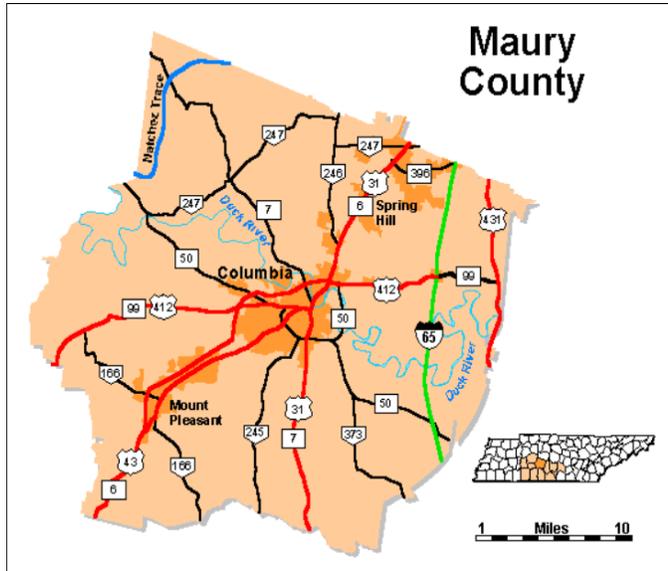
SECTION 3 JURISDICTION PROFILES

3.1 Jurisdiction Descriptions

Maury County

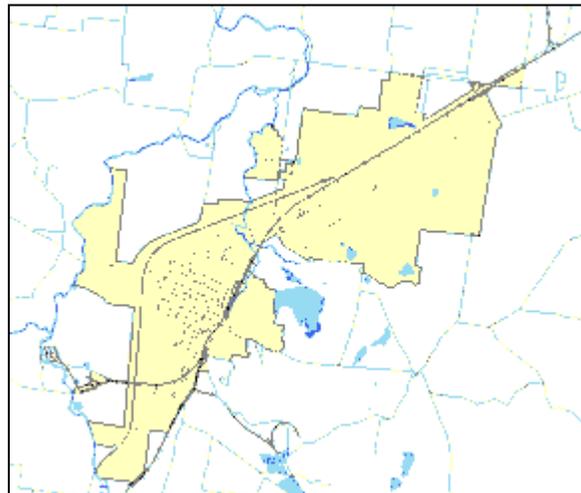
Maury County was created on November 24, 1807. Maury County is part of about 613 square miles of Tennessee's Central Basin, which was once a prehistoric lake. The Highland Rim, reaching 1200-1500 ft. in altitude, formed the ridge around the ancient lake. Duck River, which flows through Maury County, provided a major drain for the bottom of the lake. It ranks 10th in the state as to land area.

The incorporated participating municipalities in the county are: Mount Pleasant and Spring Hill. Other non-incorporated communities are Culleoka, Hampshire, Santa Fe, Water Valley, and Williamsport. Maury County's early industry focused on the agricultural products of the area. The county had one of the state's first newspapers and was part of the railroad system as early as 1859. Approximately 15 turnpikes served the county, most centering in Columbia. Navigation occurred on the Duck River. The discovery of phosphate in the county before the turn of the century led to mining. Mount Pleasant became the center of the phosphate industry, and through the years, the production of elemental phosphorus has brought wide industrialization of the county and a strong economy. In the mid-1980's, Maury County's economic future was shaped by the announcement that the nationally sought after Saturn auto plant was coming to northern Maury County. Today, Maury County boasts a diversified economy.



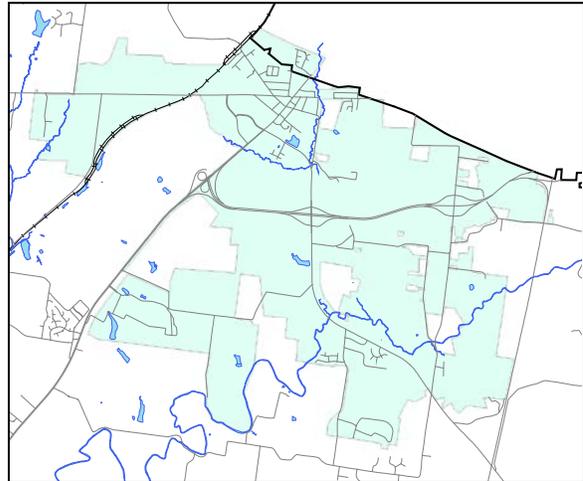
City of Mt. Pleasant

The City of Mt Pleasant has a land area: 11.0 square miles and is located in the southern part of the county. In 1824, the city of Mt. Pleasant was incorporated and became a favorite stagecoach stop on one of the nation's first federal highways - the military road. In the early 1890's, phosphate was discovered in the Mt. Pleasant area. Mt. Pleasant is located in the south central portion of middle Tennessee and the southwestern portion of southern Maury County. The city is 50 miles southwest of Nashville, Tennessee and 60 miles northwest of Huntsville. Mt. Pleasant is a full-service city with its own spring-fed water system, wastewater facilities, natural gas system and full-time police/fire departments and planning commission.



City of Spring Hill

The City of Spring Hill has a land area of 27.67 square miles and is located in Maury and adjacent Williamson County. Once a beautiful wilderness, Spring Hill was an ideal hunting ground, claimed by the Cherokee. Tribes of Choctaw, Chickasaw, Creek and Shawnee also hunted in the area. The first settlers arrived in 1808 and began to clear land and build log cabins. By 1809, a settlement had been established. The settlement was named Spring Hill in 1825. Spring Hill is located 30 miles South of Nashville, Tennessee and situated in Maury and Williamson Counties. In 1985, the town was suddenly thrust into the national and international spotlight when General Motors announced Spring Hill as the site for the new Saturn automobile plant. Developers began buying and developing the land. Saturn Parkway, a direct link to Interstate-65, was opened in 1989. Convenient to I-65 Interstate via Saturn Parkway, Spring Hill boasts of rich historical sites, lush farmland, businesses, industry and booming residential growth.



3.2 Jurisdiction Demographics

3.2.1 Population

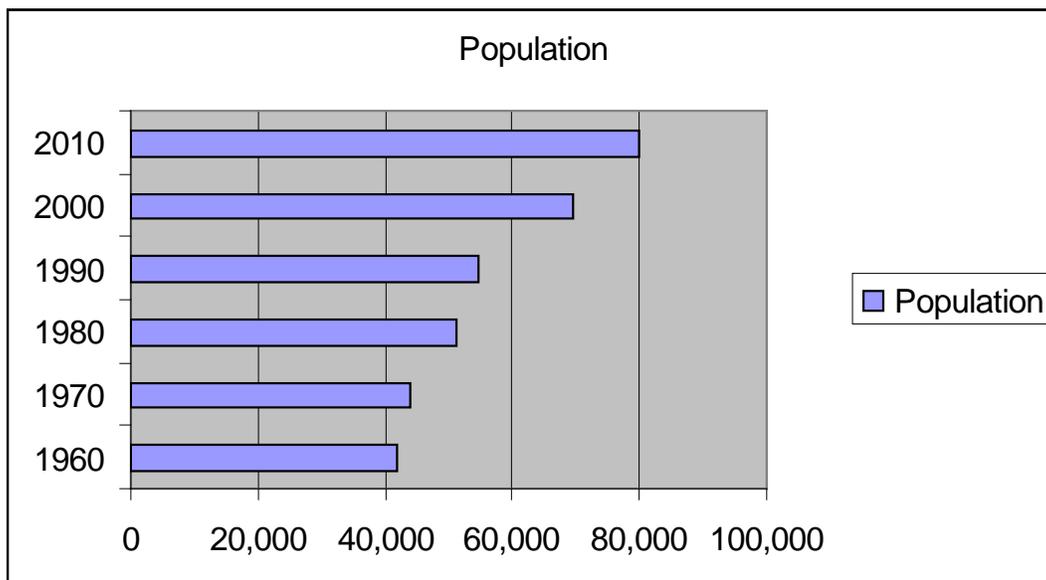
Maury is one of 95 counties in Tennessee. Maury County population growth of 16.5% from 2000 to 2010 ranked it 16th in Tennessee, which grew 16.65 percent ranking it 14th in the nation. Maury County continues to grow attaining a population of 80,956 in 2010, a 16.48% growth ranking it 16th in the state.

The Mt. Pleasant Population in year 2010 was 4,561 and consisted of Males (46.5%) and Females (53.5%). The median age for all citizens is 39.6 and the racial ethnicity is composed of 75.5 % white and black makes up 20.7 %. Hispanic, Native American, Pacific Islander, and Latino make up the other 5% (U.S. Census Bureau, 2010).

The population for the City of Spring Hill in 2010 was 29,036 residents. The City of Spring Hill conducted a Special Population Census in 2014 with a certified population of 32,053 residents. In 2016, the City of Spring Hill performed a second Special Population Census with a certified population of 36,530 residents. The following table illustrates the population growth experienced in Spring Hill from 1940 through the latest population census performed in 2016.

Year	Population	Year	Population
1940	543	2004	13,697
1950	541	2005	17,325
1960	689	2007	23,462
1970	685	2010	29,036
1980	986	2014	32,053
1990	1,464	2016	36,530
2000	7,115		

MAURY COUNTY POPULATION, 1960-2010						
	1960	2000	2004	2008	2009	2010
Total	41,699	69,542	72,885	79,666	80,685	80,956
Change		27,843	3,343	6,781	1,019	271
Change %		66.77%	4.81%	9.30%	1.28%	.33%

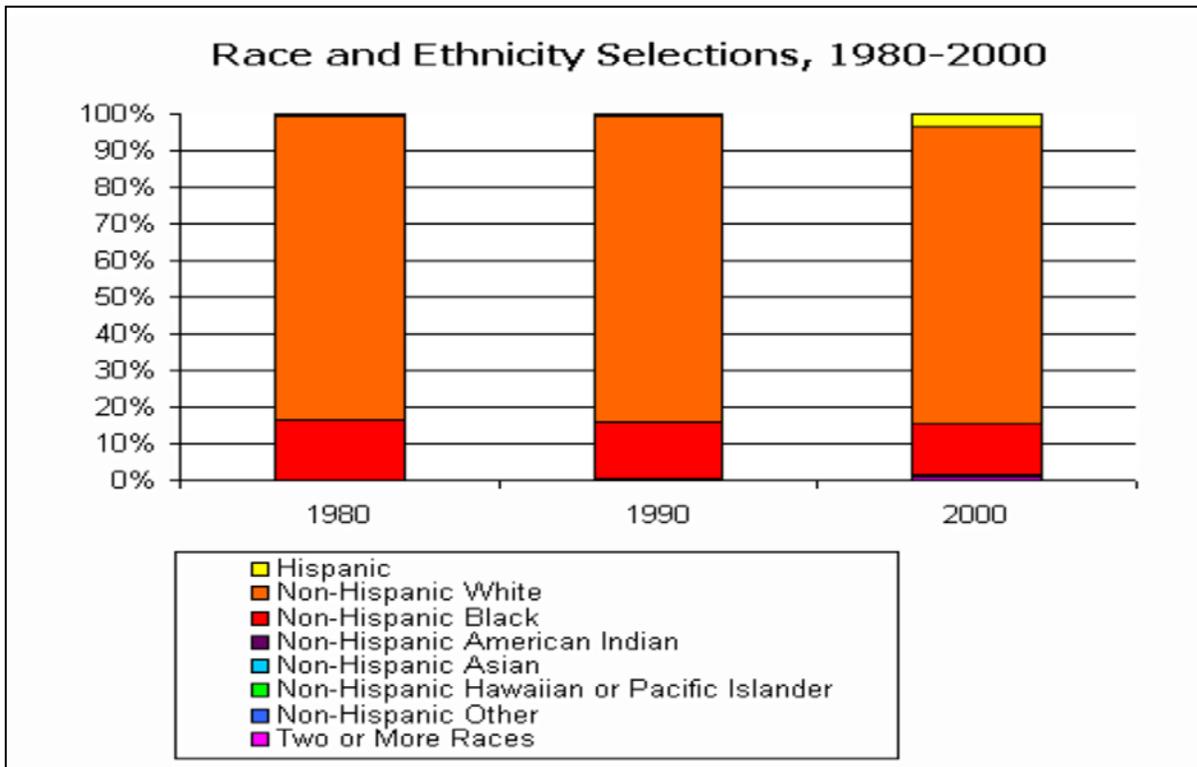


3.2.2 Ethnicity

On the 2010 Census questionnaire, race and Hispanic ethnicity are listed as separate questions. A person of Hispanic ethnicity is anyone who identifies with that social group, and so can be of any race. This can make data on race and ethnicity difficult to interpret. Race data is also difficult to compare from Census to Census because categories have changed over time. For example, the 2000 Census was the first to offer the category "Native Hawaiian or Other Pacific Islander," and those people could have responded in a number of different ways in previous years. The 2000 Census also marked the first time that respondents were allowed to select more than one racial category. On earlier Censuses, multiracial individuals were asked to choose a single racial category, or respond as "Some Other Race".

MAURY COUNTY POPULATION - ETHNIC BREAKOUT						
	1990		2000		2010	
	Number	Percent	Number	Percent	Number	Percent
Total Population	54,812	26.9%	69,542	16.4%	80,956	100%
Total Hispanics	323	0.59%	2,264	3.26%	2,264	4.80%
White*	45,662	83.31%	56,327	81.05%	66,980	82.40%
Black*	8,597	15.68%	9,821	14.13%	10,098	12.50%
American Indian and Eskimo*	70	0.13%	181	0.26%	223	0.30%
Asian*	153	0.28%	230	0.33%	317	0.60%
Hawaiian and Pacific Islander*	-	-	12	0.02%	0	Z
Other*	7	0.01%	74	0.11%	1618	0.11%
Two or More Races*	-	-	589	0.85%	954	2.00%

*Non-Hispanic only; in 1980 and 1990 "Asians" includes Hawaiians and Pacific Islanders



Based upon the 2010 Population Census, the ethnicity population characteristics for Spring Hill are enumerated in the following table.

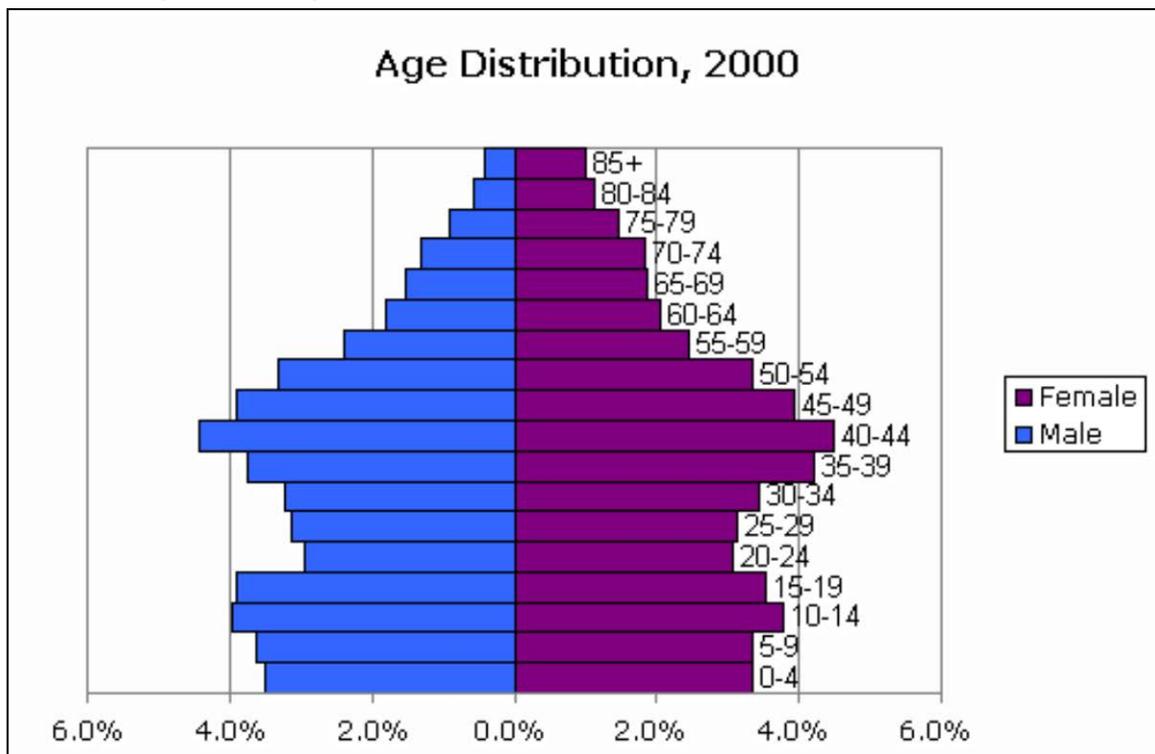
Spring Hill Population - Ethnicity		
	2010	
	Number	Percent (%)
Total Population	29,036	
Hispanic or Latino	1,627	5.6
White	24,727	85.1
Black	1,569	5.4
American Indian and Eskimo	58	0.2
Asian	465	1.6
Native Hawaiian/Pacific Islander	58	0.2
Two or More Races	552	1.9

3.2.3 Age Characteristics

When drawn as a "population pyramid," age distribution can hint at patterns of growth. A top heavy pyramid, for example; suggests negative population growth that might be due to any number of factors, including high death rates, low birth rates, and increased emigration from the area. A bottom heavy pyramid, suggests high birthrates, falling or stable death rates, and the potential for rapid population growth. Most areas fall somewhere between these two extremes and have a population pyramid that resembles a square, indicating slow and sustained growth with the birth rate exceeding the death rate, though not by a great margin. The age distribution of Maury County is depicted below.

The Mt Pleasant Median resident age is 36.8 years and the Spring Hill median age is 30.2 years well below the state average for cities.

The Median Age for Spring Hill is 33.8 years based upon the 2016 Special Population Census



3.3 Jurisdiction Economics – Earnings and Employment

In 2002 Maury County's per capita personal income (PCPI) of \$26,562 ranked it 10th in the state and was 96% of the state average of \$27,611, and 86% of the national average of \$30,906. The 2002 PCPI reflected an increase of 2.7% from 2001. The state change was 2.6% and the national change was 1.2%. In 2009 the PCPI of Maury was \$20,753 and ranked 5th in the state. The 1992-2002 average annual growth rate of PCPI was 2.5%. The average annual growth rate for the state was 4% and for the nation was 4.0%.

In 2002 Maury County's total personal income (TPI) of \$1,899,364 ranked it 16th in the state and was 1.2% of the state total. In 1992 the TPI of Maury was \$1,231,553 and ranked it 16th in the state. The 2002 TPI reflected an increase of 4.5% from 2001. The 2002 state change was 3.4% and the national change was 2.3%. The 1992-2002 average annual growth rate of TPI was 4.4%. The average growth rate for the state was 5.5% and for the nation was 5.2%.

The Median Household Income for Spring Hill (based on 2010 Population Census in 2015 dollars) is \$78,588.

In 2015, Spring Hill industries providing employment include: Manufacturing (14%); Professional, scientific and technical services (12%); Construction (11%); Retail Trade (10%); Wholesale Trade (8%); Arts, entertainment, and recreation (7%); and Healthcare (5%).

MAURY COUNTY PERSONAL INCOME			
Description	2000	2001	2009
Personal income	\$1,846,706	\$1,817,315	\$1,927,665
Per capita personal income	\$26,486	\$25,875	\$27,809
Average earnings per job (dollars)	\$40,886	\$40,656	\$43,564
*Source-Bureau of Economic Analysis: Table CA30			

Total personal income includes net earnings by place of residence, dividends, interest and rent; and personal current transfer receipts received. In 2002 net earnings accounted for 70.2% of

TPI vs. 72.7% in 1992; dividends, interest, and rent were 13% vs. 13.1% in 1992; and personal current transfer receipts were 16.8% vs. 14.1% in 1992. From 2001 to 2002 net earnings increased 4.7%; dividends, interest, and rent decreased 1.1%; and personal current transfer receipts increased 8.3%. From 1992 to 2002 net earnings increased on average 4.1% each year; dividends, interest, and rent increased on average 4.3%; and personal current transfer receipts increased on average 6.3%.

In year 2009, the Mt. Pleasant median household income was \$29,304, Spring Hill median income was \$62,382 and Columbia median household income was \$36,241.

The Median Household Income for Spring Hill (based on 2010 Population Census in 2015 dollars) is \$78,588.

In 2015, Spring Hill industries providing employment include: Manufacturing (14%); Professional, scientific and technical services (12%); Construction (11%); Retail Trade (10%); Wholesale Trade (8%); Arts, entertainment, and recreation (7%); and Healthcare (5%).

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Earnings of persons employed in Maury increased from \$1,751,373 in 2001 to \$1,852,312 in 2002, an increase of 5.8%. The state change was 3.4% and the national change was 1.5%. The average annual growth rate from the 1992 estimate of \$1,346,749 to the 2002 estimate was 3.2%. The average annual growth rate for the state was 5.5% and for the nation was 5.3%.

MAURY COUNTY REVENUES AND JOBS						
*	Personal Revenue			Jobs*		
Description	2000	2001	2009	2000	2001	2009
Farm earnings/jobs	951	106	-3150	2106	2120	2090
Non-farm earnings/jobs**	1826081	1751267	1855462	42580	40958	40982
Construction	78681	76232	66082	2390	2524	2284
Manufacturing	893157	797615	861648	11582	10306	9592
Retail/wholesale trade	132591	157771	164644	1374	1243	1243
Finance, insurance, and real estate	64563	82249	87459	5441	5299	5459
Transportation and warehousing	58636	54264	67727	2449	2665	2869
Services	373349	339295	357250	12656	12411	12987
Government	217842	231321	240243	6300	6274	6329
*2000 data is adjusted between categories for the conversion of SIC codes to NCIC codes.						
**Some earnings and jobs data is not available to be included in individual categories						
*Source-Bureau of Economic Analysis: Table CA05/CA25						

Mt Pleasant Industries providing employment are: Manufacturing with (26.1%), and Educational, Health and Social Services with (25.0%). Spring Hill Industries providing employment are: Manufacturing (21.5%), Educational, Health and Social Services (15.6%), and Retail trade (11.1%).

MAURY COUNTY RETAIL SALES		
	2000	2003
Building Materials	68,914,032	64,405,017
General Merchandise	102,617,628	144,518,061
Food Stores	161,995,961	145,518,061
Autos, Boats, Aircraft	134,900,517	157,685,476
Service Stations	29,406,350	19,866,397
Furniture & Home Décor	16,235,309	15,686,879
Apparel & Accessory	10,703,698	9,630,901
Eating & Drinking	64,557,171	68,016,819
Other Retail	87,855,219	145,012,752
Total	677,185,888	770,706,240

The Local Area Unemployment Statistics (LAUS) program is a Federal-State cooperative effort in which monthly estimates of total employment and unemployment are prepared for approximately 6,800 areas: These estimates are key indicators of local economic conditions. The Bureau of Labor Statistics (BLS) of the U.S. Department of Labor is responsible for the concepts, definitions, technical procedures, validation, and publication of the estimates that State employment security agencies prepare under agreement with BLS. A wide variety of customers use these estimates:

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Federal programs use the data for allocations to States and areas, as well as eligibility determinations for assistance. State and local governments use the estimates for planning and budgetary purposes and to determine the need for local employment and training services. Private industry, researchers, the media, and other individuals use the data to assess localized labor market developments and make comparisons across areas.

MAURY COUNTY UNEMPLOYMENT													
2000	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00	Sep-00	Oct-00	Nov-00	Dec-00	Ann-00
Unemployment	4.5	3.3	2.9	3.1	2.9	3.5	3.9	4.2	3.6	3.4	3.9	3.5	3.6
2010	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Ann-10
Unemployment	9.7								15.1				12.4
2011	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Ann-11
Unemployment	10.2	10.1	9.5	9.6	9.5	10.2	9.6	14.2	14.0				10.76
*Source: Bureau of Labor Statistics													

The Consumer Price Index (CPI) represents all goods and services purchased for consumption by the reference population.

The Bureau of Labor Statistics has classified all expenditure items into more than 200 categories, arranged into eight major groups. Major groups and examples of categories in each are as follows:

- Food and beverages (breakfast cereal, milk, coffee, chicken, wine, service meals and snacks)
- Housing (rent of primary residence, owners' equivalent rent, fuel oil, bedroom furniture)
- Apparel (men's shirts and sweaters, women's dresses, jewelry)
- Transportation (new vehicles, airline fares, gasoline, motor vehicle insurance)
- Medical care (prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, hospital services)
- Recreation (televisions, pets and pet products, sports equipment, admissions)
- Education and communication (college tuition, postage, telephone services, computer software and accessories)
- Other goods and services (tobacco and smoking products, haircuts and other personal services, funeral expenses)

Also included within these major groups are various government-charged user fees, such as water and sewerage charges, auto registration fees, and vehicle tolls. In addition, the CPI includes taxes (such as sales and excise taxes) that are directly associated with the prices of specific goods and services. However, the CPI excludes taxes (such as Income and Social Security taxes) not directly associated with the purchase of consumer goods and services. The CPI does not include investment items, such as stocks, bonds, real estate, and life insurance. (These items relate to savings and not to day-to-day consumption expenses.)

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MAURY COUNTY CONSUMER PRICE INDEX ESTIMATE													
2000	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
U.S. Cities	168.8	169.8	171.2	171.3	171.5	172.4	172.8	172.8	173.7	174	174.1	174	172.2
D-Southern Cities	164.5	165.2	166.9	166.8	167.2	167.1	167.7	167.8	168.2	167.6	167.3	167.1	167
2001	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
U.S. Cities	175.1	175.8	176.2	176.9	177.7	178	177.5	177.5	178.3	177.7	177.4	176.7	177.1
D-Southern Cities	168.2	169.1	169.5	170.6	171	171.4	170.1	170.1	169.7	169.9	168.9	167.6	169.7
2002	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
U.S. Cities	177.1	177.8	178.8	179.8	179.8	179.9	180.1	180.7	181	181.3	181.3	180.9	179.9
D-Southern Cities	168.6	168.6	169.9	170.5	170.6	171.6	172.2	172.7	172.6	172.9	173	172.3	171.3

*Source: Bureau of Labor Statistics

3.4 Climate and Infrastructure

Location				Area	Elevation
				SQ. Miles	Feet
Mid-South Tennessee, 43 miles (68.8 kilometers South of Nashville, Tennessee)				612.9	651
June Average Temperature		January Average Temperature		Average Participation	
High	Low	High	Low	Rain Inches	Snowfall Inches
57	61	46	25	56.1	5
Prevailing Winds				Average annual freeze-free days	
Southwesterly				180 –220	

MAURY COUNTY CHARACTERISTICS							
MAURY COUNTY EDUCATION							
K – 5		K – 12		Middle Schools		High Schools	
Number	Enrollment	Number	Enrollment	Number	Enrollment	Number	Enrollment
3	1923	9	4290	4	2367	6	2780
Private Schools		College/University		Technical Schools		Child Care	
Number	Enrollment	Number	Enrollment	Number	Enrollment	Number	Enrollment
3	1175	1	10,000+	2		83	
MAURY COUNTY HEALTHCARE							
Hospitals		Clinics		Nursing and Assisted Living Facilities		Medical Practitioners	
Number	Beds	Number				Doctors	Dentists
1	275	30		10		254	42

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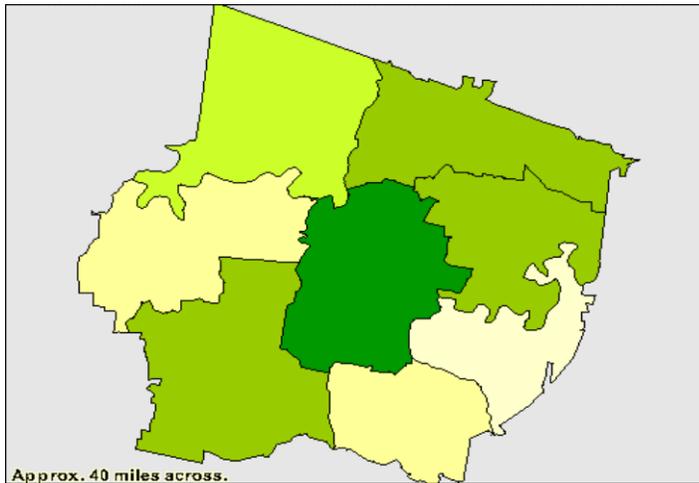
MAURY COUNTY CHARACTERISTICS					
MAURY COUNTY TRANSPORTATION					
General Aviation		Commercial Aviation		Highways	
Location	10 miles	Location	Nashville	Interstate	I-65
Runway Length	6003 ft.	Distance	36 miles	State	31,43,412
Runway surface	Asphalt	Daily flights	424	Local	6,7,50,99
Communications	Unicom	Airlines	12		243,245,246
Lighting	MIRL/PAPI	Repairs	Major		373,396
Fuel	100LL/Jet-A	Railroad		Common Carriers	
Bus Service		CSX & Tennessee Southern		Companies	Terminals
Greyhound: Interstate, None locally		Track Capacity: 236,000 Lbs.		7	7
MAURY COUNTY COMMUNICATIONS AND UTILITIES					
Telephone	Newspaper	Radio/Television		Cable/Satellite	
AT&T Communications	The Daily Herald Columbia	WXRQ, WRMB		Charter Communications	
Verizon	Pillar to Post Mt. Pleasant	WKRM		Columbia Power & Water	
Cingular	The Tennessean	WMCP		Dish Network	
Nextel	The Informer Spring Hill	WKOM		Direct TV	
T-Mobile	The Journal-Spring Hill			Comcast Communication	
Electricity	Gas	Water		Sewage/Landfill	
Columbia Power – TVA	ATMOS Energy	Columbia Water System		Columbia Wastewater Dept.	
Mt. Pleasant Power System –TVA	Mt. Pleasant Gas	Mt. Pleasant Water System		Mt. Pleasant Sewer System	
Duck River Cooperative – TVA	East TN Pipeline	Spring Hill Water System		Spring Hill Sewer System	
Mid-TN Electric	Columbia Gulf	Maury County Water System		Maury County Solid Waste	

3.5 Housing

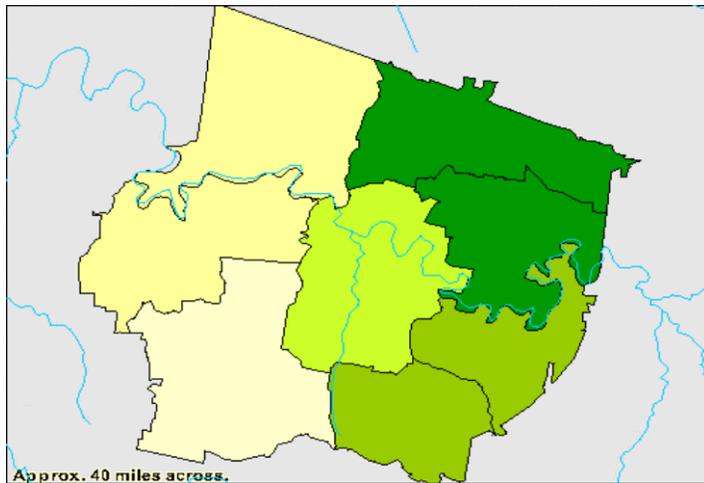
Maury County, as of 2009 has a total of 36,446 residential housing units with a median value of \$134,800. The median house value in Mt Pleasant is \$95,713 and the Spring Hill median house value is \$195,133 (year 2009), Mount Pleasant compared to Tennessee state average:

Median house value is significantly below state average.

SINGLE FAMILY NEW HOUSE BUILDING PERMITS						
		Mt. Pleasant		Spring Hill		
Year		Qty	Avg. Cost	Qty	Avg. Cost	
1999		16	76,800	395	76,000	
2000		19	61,100	368	74,200	
2001		23	75,300	511	72,100	
2002		12	99,000	746	82,500	
2010		3	142,100	878	92,600	



Jurisdiction	Units
Spring Hill	10,569
Mt. Pleasant	2406 –3464
NW County	1232 –1241
W-SW County	707 -1241



Jurisdiction	Median Value
Spring Hill	195,133
SW County	107,600
Mt. Pleasant	95,713
WNW County	82,100

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In 2015, the Median House Value in Spring Hill was \$213,300 based upon data provided by the U.S. Census Bureau.

SINGLE FAMILY NEW HOUSE BUILDING PERMITS						
Year			Mt. Pleasant		Spring Hill	
	Qty.	Avg. Cost	Qty.	Avg. Cost	Qty.	Avg. Cost
2012					394	\$72,000
2013					507	\$77,500
2014					587	\$82,500
2015					576	\$84,500
2016					699	\$92,600

Jurisdiction	Units
Spring Hill	
Mt. Pleasant	
NW County	
W-SW County	
Total	13,637

Jurisdiction	Median Value
Spring Hill	
SW County	
Mt. Pleasant	
WNW County	
Total	\$213,300

SECTION 4: RISK ASSESSMENT

4.1 Overview

Maury County and its communities are vulnerable to a wide array of natural and manmade hazards that threaten life and property. The Hazard Identification section provides background information for many of these hazards from a broad perspective, as identified and defined by TEMA. It is important that all of these hazards be initially considered for relevance in advancing through the hazard mitigation planning process. Subsequent sections of the Plan—the Hazard Analysis and the Vulnerability Assessment—address the specific hazards that pose a threat to Maury County in greater detail from a localized perspective.

44 CFR Requirement

44 CFR Part 201.6(c) (2) (I): The risk assessment shall include a description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

4.2 Hazard Identification

A comprehensive, alphabetical listing of specific hazard types that have been identified by the State of Tennessee Hazard Mitigation Plan and the Tennessee Emergency Management Agency that may potentially threaten Tennessee communities is depicted in the table below. It is followed by brief definitions or descriptions for each hazard. See Appendix E – Hazard Extent (pg.239)

Summary of Natural and Manmade Hazard Threats to Tennessee Communities

Natural Hazards	Manmade Hazards
Earthquake	Attack - Conventional/Nuclear
Flooding/Flash Flooding	Civil Disturbances
Landslides/Mudslides	Dam Failure
Land Subsidence	Hazardous Material Incidents/CBRNE
Sinkholes	Fixed Facilities
Caves	Transportation
Mines	Hostage Situation
Heat and Drought	Methamphetamine Laboratory
Thunderstorm/Hail/High Winds	Power/Utility Failure
Tornadoes	Pandemic/Vectors
Tropical Storms/Hurricane	Terrorism/CBRNE
Winter Storms	Transportation Accident
Wildfires	Urban Fire

4.2.1: Natural Hazards

4.2.1.1: Earthquake

An earthquake is a naturally induced shaking of the ground, caused by the fracture and sliding of rock within the Earth's crust. Earthquake magnitude is determined by the dimensions of the rupturing fracture (fault) and the amount of displacement that takes place. The larger the fault surface and displacement, the greater the energy is. This energy produces shaking and a variety of seismic waves that radiate throughout the Earth.

Most property damage and earthquake-related deaths are caused by the failure and collapse of structures due to ground shaking. The level of damage depends upon the amplitude and duration of the shaking, which are directly related to the earthquake size, distance from the fault, site and regional geology. Other damaging earthquake effects include landslides, the down-slope movement of soil and rock in mountain regions and along hillsides, and liquefaction. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of persons, and disrupt the social and economic functioning of the affected area.



4.2.1.2: Flooding/Flash Flooding

Flooding is an overflowing of water onto normally dry land and is one of the most significant and costly of natural disasters. Flooding tends to occur during anomalous years of prolonged, regional rainfall (typical of an El Nino year), and is typified by increased humidity and high summer temperatures. Flash flooding is caused by too much rain falling in a short time and is a critical natural hazard, often a result of thunderstorms or the remnants of a tropical storm. Several factors contribute to flash flooding: rainfall intensity and duration, topography, soil conditions, and ground cover. Most flash flooding is caused by slow-moving thunderstorms, thunderstorms repeatedly moving over the same area, or by multiple storm cells colliding. Flash flooding can occur within a few minutes of excessive rainfall or from a quick release from a dam or levee failure. Thunderstorms produce flash flooding, often far from the actual storm and water may rise at night when natural warnings may not be noticed.



4.2.1.3: Landslides/Mudslides

Landslides (rockslides, mudslides, etc.) are among the most common natural hazards. Unlike most natural hazards, however, most damage is not caused by extreme events, but by uncounted (and often unreported) minor events.

Slumps usually damage utilities within or below the slide mass, but seldom cause a threat to life. Flows, in addition to the above hazards can flow around well-built structures, preserving them but causing damage from water and mud.

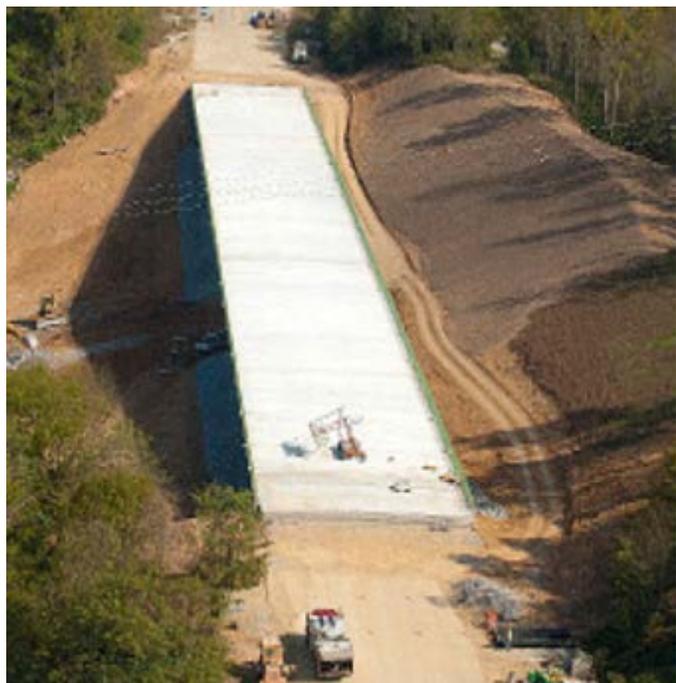
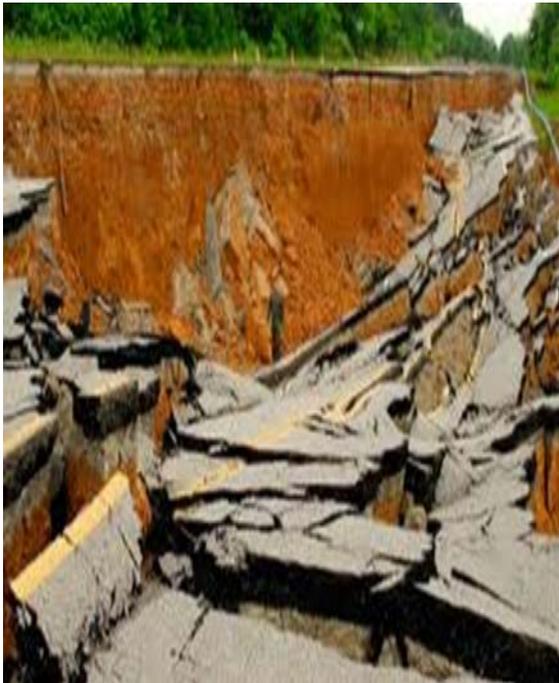


Translational slides can be the most catastrophic of all. In addition to presenting a local hazard to structures and utilities, they can cause damage and death both far from and only slightly below the source.

The hazards associated with landslides are as diverse as the types of failure. Falls may damage roads or buildings at the base of a steep slope, injure climbers, or remain on a road as a hazard to transportation. In addition to the direct hazards of a landslide moving out from under or onto structures or utilities, there is a major indirect hazard. Large slides generally do not stop moving until they reach the bottom of a valley where they block streams, usually resulting in flooding and damage to the system ecology (e.g. sediment).

The Effects of Before and After a Catastrophic Landslide

Below left is the end result of the May 2010 Flood and to the right is the finished bridge over New Hwy. 7 in Santa Fe, TN. These are the results of proper hazard mitigation practices.



4.2.1.4: Land Subsidence

Subsidence is the formation of depressions, cracks, and sinkholes in the earth's surface, which normally occurs over many days to a few years.

Karst topography develops when beds of relatively soft limestone and dolomite are present. The dilute organic acids invariably present in water that percolates downward dissolve these formations. In such places, rock is honeycombed with cracks, fissures and potentially sizable cavern systems, which can collapse.



In some areas natural drainage occurs primarily below ground rather than surface streams. These underground passages are commonly connected to the surface by funnel-shaped depressions called sinkholes. The formation of these sinkholes often leads to ground subsidence or collapse. This results from the settlement or collapse of overlying materials into solution openings beneath the surface, such as caves or enlarged joints. Sinkhole development is usually a slow process, however, may fail suddenly, without warning. Abandoned mines, mine shafts, and tunnels sometimes give way. Incidence of subsidence is always a danger to property, dams, factories, and utility lines, but when they occur quickly they can also threaten lives.

4.2.1.5: Heat and Drought

Extreme heat is defined as temperatures that hover ten degrees or more above the average high temperature for the region and last for several weeks. Health risks from extreme heat include heat cramps, heat fainting, heat exhaustion and heat stroke. According to the National Weather Service, heat is the leading weather-related killer in the United States and has killed more people than lightning, tornadoes, floods, and hurricanes combined in the last 10 years.

Drought occurs when water supplies cannot meet established demands. Severe drought conditions endanger livestock and crops, significantly reduce surface and ground water supplies, increase the potential risk for wildfires and cause significant economic loss. Drought may not be constant or predictable and does not begin or end on any schedule, but typically long-term droughts last for periods of two to ten years. Droughts may be classified as one of following four types:

Meteorological drought is defined by the level of “dryness” when compared to an average, or normal, amount of precipitation over a given period of time.

Agricultural drought relates characteristics of drought to specific agricultural-related impacts. Emphasis is placed on factors such as soil water deficits, water needs based on differing stages of crop development, and water reservoir levels.

Hydrological drought is directly related to the effect of precipitation shortfalls on surface and groundwater



supplies. Changes in land use can alter the hydrologic characteristics of a basin. Socio-economic drought is the result of water shortages that limit the ability to supply water-dependent products in the marketplace.

4.2.1.6: Thunderstorms

Thunderstorms are formed from a combination of moisture, rapidly raising warm air, and a force capable of lifting air such as a warm and cold front, a sea breeze or a mountain. Thunderstorms may occur singly, in clusters, or in lines. Some of the most severe weather occurs when a single thunderstorm affects one location for an extended time.



Straight-line winds can exceed 100 miles per hour and are responsible for most thunderstorm damage. One type of straight-line wind, the downburst, can cause damage equivalent to a tornado. Thunderstorms are associated with tornadoes and heavy rains that lead to floods.

All thunderstorms contain lightning, which is an electrical discharge that results from the buildup of positive and negative charges. When the buildup becomes strong enough, lightning appears as a "bolt." This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning reaches a temperature approaching 50,000 degrees in a split second. In the United States, 75 to 100 citizens are killed each year by lightning. Lightning's electrical charge and intense heat electrocutes on contact, splits trees and ignites fires.

Hail is produced by many strong thunderstorms and is products of the updrafts and downdrafts that develop inside the clouds of a thunderstorm, where super cooled water droplets exist. The transformation of droplets to ice requires a temperature below 32 degrees, and a catalyst in the form of tiny particles of solid matter, or freezing nuclei. Continued deposits of super cooled water on nuclei cause the ice crystals to grow into hailstones. Hail can be smaller than a pea or as large as softballs and can be very destructive to property, crops, livestock, and people.

4.2.1.7: Tornadoes

Tornados are violent windstorms characterized by a twisting, funnel-shaped cloud. A tornado is spawned by a thunderstorm or hurricane and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. A funnel does not need to reach to the ground for a tornado to be present. A debris cloud beneath a thunderstorm is all that is needed to confirm the presence of a tornado. The damage from a tornado is a result of the high wind velocity and wind-blown debris. Tornados can occur at any time of the year; however, the season is generally March through August. Over 80% of all tornadoes strike between noon and midnight.



The most violent tornadoes are capable of tremendous destruction with wind speeds of 250 mph or more. Damage paths can be in excess of 1 mile wide and 50 miles long. Even

with advances in meteorology, adequate warning time for tornadoes is short or sometimes not possible.

The intensity, path length, and width of tornadoes are rated according to a scale developed by T. Theodore Fujita and Allen D. Pearson. The Fujita-Pearson Tornado Scale is presented below. Tornadoes classified as F0-F1 are considered weak; those classified as F2-F3 are considered strong, while those classified as F4-F5 are considered violent.

Fujita Scale/Enhanced Fujita Scale for Tornadoes				
F-Scale	Fastest Quarter Mile Wind Speed	Typical Impacts	Enhanced Scale: 3 Sec Wind Gust Speed	Enhanced F-Scale
F0	40-72 mph	Some damage to chimney; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.	65-85 mph	EF0
F1	73-112 mph	Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.	86-110 mph	EF1
F2	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.	111-135 mph	EF2
F3	158-206 mph	Roof and some walls torn off well constructed houses; trains overturned; most trees in forest uprooted.	136-165 mph	EF3
F4	207-260 mph	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.	166-200 mph	EF4
F5	261-318 mph	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel reinforced concrete structures badly damaged.	Over 200 mph	EF5

4.2.1.8: Winter Storms

Winter storms produce an array of hazardous weather conditions including heavy snow, blizzards, freezing rain, ice pellets, and extreme cold. The extreme cold associated with winter storms is a deceptive killer as it indirectly causes injury and death resulting from exhaustion and overexertion, asphyxiation, hypothermia, and frostbite from wind chill.



Extreme ice and snow events are the most potentially disruptive to society, for they can bring down power lines, trees, and lead to roof collapses. All forms of severe winter weather can make travel treacherous. Severe winter storms are extra-tropical cyclones (storms that form outside of the warm tropics) fueled by strong temperature gradients and an active upper-level jet stream.

4.2.1.9: Wildfires

Wildfires are uncontrolled burning of grasslands, brush, or woodlands. Wild land fires are wildfires in an area where development is essentially nonexistent, except for roads, railroads, power lines and similar facilities. According to FEMA, people start over four out of five forest fires. Negligent human behavior such as smoking in forested areas or not extinguishing campfires is



the cause of many fires. The other primary cause of forest fires is lightning.

There are three different classes of wild land fires. A surface fire is the most common type and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire is usually started by lightning and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wild land fires are usually signaled by dense smoke that fills the area for miles around.

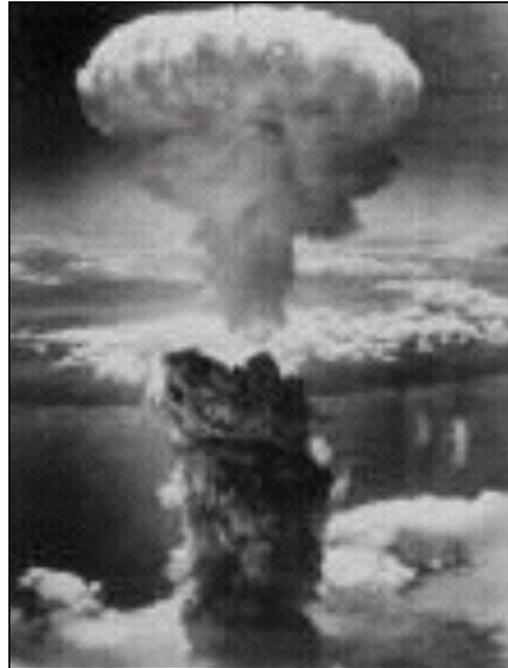
The potential for wildfire depends upon surface fuel characteristics, recent climate conditions, current meteorological conditions, and fire behavior. Hot, dry summers and dry vegetation increase susceptibility to fire in the fall, a particularly dangerous time of year for wildfire.

Urban wild land interface fires are wildfires in a geographical area where structures and other human development meet or intermingle with wild land or vegetative fuels.

4.2.2: Manmade Hazards

4.2.2.1: Attack

A hostile attack is the most threatening man-caused hazard. An "enemy attack" is considered an attack of one sovereign government against another as a declared or undeclared act of war. Although the chances of a strike on the U.S. have greatly diminished, several countries throughout the world have developed nuclear capability. In addition, the possibility exists that a terrorist organization might acquire nuclear weapons. There are four primary potential effects experienced as the result of a nuclear bomb.



Overpressure: When a nuclear weapon explodes in the atmosphere, a blast or shock wave is created that initially moves at speeds higher than the speed of sound. This is overpressure.

INR and EMP: Initial nuclear radiation (INR) and the electromagnetic pulse (EMP). INR is nuclear radiation in the first minute after detonation. This radiation is hazardous to unprotected people within about 1.5 miles. EMP is electromagnetic radiation. EMP is a conversion of nuclear energy into electromagnetic frequency, which occurs when a nuclear weapon is detonated outside of earth's atmosphere. EMP can affect electrical and electronic equipment across entire continents. Operation of the equipment is disrupted until it can be repaired or replaced.

Fire Risk: The combined effects of blast overpressure damage and the thermal pulse or fireball can ignite combustible materials, causing sustained fires. Primary fires are those ignited directly by the thermal pulse. Secondary fires are generated by damage and destruction from blast overpressures and result from the disruption of building furnaces, gas lines, and electric lines.

Fallout risk: When a nuclear weapon explodes near the ground it makes a big crater. Earth from the crater is instantly changed from solids into hot gas and fine dust by the tremendous heat. This hot gas and dust, together with vaporized materials form a giant fireball that rises rapidly in the air and becomes the top part of the nuclear mushroom cloud. The dust and earth in the stem and in the mushroom cloud become radioactive.

The top of the mushroom forms a cloud of fine particles. The heavier, larger particles settle close to the point of explosion, the small particles float several hundred miles in the wind. The first 24 hours is the most dangerous period as the initial fallout is highly radioactive. The lighter, delayed fallout particles lose much of their radioactivity and reaches the earth in rain or snow over periods ranging from days to years.

There are three kinds of dangerous radiation in fallout: Alpha, Beta and Gamma. Gamma radiation is capable of penetrating the entire body and causing damage to organs, blood and bones. Large doses of gamma radiation can cause sickness or death. Small doses incurred over a long period of time may have no immediate effect, but could cause various forms of illness later in life. Genetic damage in subsequent generations may also result. Alpha radiation

is stopped by the outer skin layers and does not usually present an external hazard. However, if contaminated air, food, or water enters the body in sufficient quantity, considerable internal damage can occur. Beta radiation is more penetrating and may cause burns where fallout particles have deposited on the skin.

The effects of a nuclear attack have varying effects on populations. Those people located near the explosion would be killed or seriously injured by the blast, heat, or initial nuclear radiation. People a few miles away would be subject to blast, heat, and fires. A high percentage of the population residing in the lighter damaged areas would probably survive, but might subsequently be endangered by radioactive fallout.

4.2.2.2: Civil Disturbance

A civil disorder is defined as any incident intended to disrupt community affairs and threaten the public safety. Civil disorders include: riots, mob violence, and any demonstration resulting in police intervention and arrests.

4.2.2.3: Dam/Levee Failure

A dam/levee is a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Dams are typically constructed of earth, rock, concrete, or mine tailings, and generally fall into the following categories

Earth Dams make up the vast majority of dams and are safe if they are properly constructed and maintained.

Concrete Gravity Dams are designed to resist sliding and shaped to resist overturning.

Arch Concrete Dams are used to narrow sites and have strong abutments.

Gravity Arch Concrete Dams are a conservative design of the Arch.

Buttress Concrete Dams have a strong foundation and are resistant to sliding, overturning and overflowing.

Stone Masonry Dams are constructed of stone or block with masonry joints.



Dam break floods are usually associated with intense rainfall or flood conditions. The greatest threat to people and property is in the areas immediately below the dam since flood discharges decrease as the flood wave moves downstream. Dam failure may be caused by faulty design, construction and operational inadequacies, or a flood event larger than the dam design.

The degree and extent of damage depend on the size of the dam. A small dam break in a stock pond may result in little damage. However, a small dam break could result in the loss of irrigation water for a season, causing extreme financial hardship to farmers. An even larger dam failure might bring about considerable loss of property, destruction of cropland, roads, and utilities, and even loss of life. More far-reaching consequences can include loss of income, disruption of services, and environmental devastation.

4.2.2.4: Hazardous Material Incident

Hazardous materials are chemical substances, which, if released or misused, pose a threat to the environment or health. These chemicals are used in industry, agriculture, medicine, research, and consumer goods. Hazardous materials come in the form of explosives, flammable

and combustible substances, poisons, and radioactive materials. These substances are most often released as a result of transportation or industrial accidents.

HazMat incidents typically take three forms, transportation incidents, fixed-facility incidents and pipeline incidents. The major difference between the three is that it is reasonably possible to identify and prepare for a fixed site incident, because laws require those facilities to notify state and local authorities about what is being used or produced there. Transportation and pipeline incidents are substantially harder to prepare for, however, as the materials involved is not known until the accident actually happens.



Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Many products containing hazardous chemicals are used and stored in homes. Varying quantities of hazardous materials are manufactured, used, or stored at an estimated 4.5 million facilities in the United States--from major industrial plants to local dry cleaning establishments or gardening supply stores. Hazardous materials are transported on highways, railways, waterways, and pipelines daily, so any area is considered vulnerable to an accident.

4.2.2.5: Hostage Situation

A hostage situation is one in which people are held against their will and negotiations take place for their release. The situation may range from a simple domestic or isolated criminal act to an attempt to impose will on a national or international scale to intimidate or coerce a government to further a political, social or religious objective.

4.2.2.6: Pandemics/Vectors

Scientists expect that an Avian H5 Flu virus, which has swept through chickens and other poultry, will change genetically into a flu that can be transmitted to humans. It has emerged as a highly pathogenic strain of influenza virus that is now affecting the entire western component of Asia. Dr. Gerberding said the CDC is preparing for a possible pandemic next year. A special flu team formed last year monitors the spread of avian flu and analyzes the strains as they appear. This new avian flu strain is unknown in the human population, thus humans have no immunity. The mortality rate has been about 72% in identified patients.



One of the "new" or "emerging" series of threats to communities is vector-based threats, such as bacteria, insects, and animals that pose a direct or indirect hazard to humans, their food supply, or the economy. Although many people don't consider Foot and Mouth Disease to be a "threat," an outbreak of the disease in Europe caused widespread concern over the safety of the meat supply, as well as the possibility of resulting infection of humans. Federal, state and local

officials, including the emergency services community have plans and procedures for handling incidents involving these threats.

4.2.2.7: Power/Utility Failure

A major electrical power failure is defined as a failure of the electrical distribution system that will exceed twenty-four hours in duration and affect greater than 33% of the geographical area of the county. Electrical distribution systems can be interrupted for a number of reasons, but those that have historically been the main cause are high winds, severe thunderstorms and winter storms. A prolonged major electrical distribution system failure during the middle of winter, accompanied by very cold temperatures, can have dramatic effects on a population.

4.2.2.8: Terrorism

The Federal Bureau of Investigation (FBI) defines terrorism as “the unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives.” Events typically would be expected in urban areas near public gatherings, government facilities, or highly visible areas, but no one area is less likely to be a target than any other.



Terrorists often use threats to create fear among the public, to try to convince citizens that their government is powerless to prevent terrorism, and to get publicity for their causes. Most terrorist incidents have involved small extremist groups who use terrorism to achieve a designated objective. Local, state and federal law enforcement officials monitor suspected terrorist groups and try to prevent or protect against a potential attack. Additionally, the U. S. Government works with other countries to limit support for terrorism.

The FBI categorizes terrorism in the United States primarily as one of two types - domestic terrorism or international terrorism.

Domestic terrorism involves groups or individuals whose terrorist activities are directed at elements of our government or population without foreign direction

International terrorism involves groups or individuals whose terrorist activities are foreign-based and/or directed by countries or groups outside the U. S. or whose activities transcend national boundaries

Terrorist events in this country have included the 1993 bombing of the World Trade Center in New York, the U. S Capitol, Mobil Oil's corporate headquarters in New York City, and the bombing of the Alfred P. Murrah federal building in Oklahoma City. More recently, the World Trade Center Buildings and the Pentagon were the targets of a well-planned terrorist attack involving the use of commercial aircraft as flying bombs.

A terrorist attack can take several forms, depending on the technical means available to the terrorist, the nature of the political issue motivating the attack, and the points of weakness of the terrorist's target. Bombings are the most frequently used method in the U. S. Other possibilities

include an attack at transportation facilities, utility systems or other public services, or an incident involving chemical or biological agents.

Chemical & biological weapons: There are four major categories under which the chemical agents may be classified; these include the blister agents, the choking agents, the blood agents, and the nerve agents.

Blister agents are intended to incapacitate, rather than kill. These agents were used extensively during World War I. Their use by a terrorist group largely depends on the group's objectives and moral views. If the intent of an attack is to injure numerous people and overload the areas medical facilities, without causing many deaths, then a blister agent would be the best choice.

Choking agents were the agents most used during WW I. With the advent of nerve agents, they have lost much of their usefulness. These substances are intended to cause death and are convenient and readily available to terrorists.

Blood agents are cyanide-based compounds. Their primary use would be that of targeted individuals, such as assassinations.

Nerve agents are the most recent developed chemical weapons. German scientists developed the original nerve agents during the 1930's as insecticides and then into chemical weapons by the Nazi military. These agents have been stockpiled as the primary chemical weapon. They are hundreds of times more lethal than blister, choking, or blood agents. These chemicals are the most useful to terrorists due to the small quantity needed to inflict a substantial amount of damage. Fortunately, these chemicals are more difficult to obtain.

Several nations have developed biological agents to use in warfare. Such agents are selected or adapted from bacteria, fungi, viruses, or toxins that cause various diseases of human beings, animals, or food crops. Currently, the development of biological agents as weapons has kept pace with our ever-evolving day-to-day technology. Despite the widespread ban, international diplomatic efforts have not been entirely effective in preventing the enhancement and proliferation of offensive biological warfare programs.

Cyber-Terrorism: The U.S. promotes cyber-security well beyond its borders. Critical domestic information infrastructures are directly linked with Canada, Mexico, Europe, Asia, and South America. The nation's economy and security depend on far-flung U.S. corporations, military forces and foreign trading partners that require secure and reliable global information networks to function. The vast majority of cyber-attacks originates or passes through systems abroad, crosses several borders, and requires international cooperation to stop.



In 1998, the United States received a wake-up call to the national security dimensions of the threat. Dubbed "Solar Sunrise," this incident placed U.S. military systems under electronic assault, with computer systems in the United Arab Emirates the apparent source. Unclassified logistics, administrative and accounting systems essential to the management and deployment of military forces were penetrated at a time that military action

was being considered against Iraq. The Timing of the attacks raised U.S. suspicion that this was the first wave of a major cyber-attack by a hostile nation.

It was eventually learned that two California teenagers under the guidance and direction of a sophisticated Israeli hacker had orchestrated the attacks.

Another event illustrated the threat to the global economy. In February 2000, computer servers hosting several of the largest commercial web sites on the Internet were flooded with connection requests. Ultimately, these distributed denial-of-service attacks paralyzed large parts of the Internet. Only through close cooperation between U.S. and Canadian law enforcement investigators was it discovered that a Canadian teenager had been breaking into legions of computers around the world for many months. Retaining control over these compromised servers, he would flood the servers of his next corporate victim. The cost of slowdowns and outages that occurred was an estimated billion dollars in economic losses.

On May 4, 2000, the "I love you" virus began infecting computers around the globe. First detected in Asia this virus quickly swept around the world in a wave of attacks on government and private sector networks. By the time the destructive pace of the virus had been slowed, it had infected nearly 60 million computers and caused billions of dollars in damage. Cooperation among law enforcement authorities around the world led to the identification of the perpetrator, a computer science dropout in the Philippines.

Together, these incidents make clear that U.S. domestic efforts alone cannot deter or prevent attacks. We must work closely with our international partners to put into place those cooperative mechanisms that can help prevent the damage of such attacks.

4.2.2.9: Transportation Accident

A transportation accident is an incident related to a mode of transportation (highway, air, rail, waterway, port, and harbor) where an emergency response is necessary to protect life and property.

These are incidents involving air or rail passenger travel resulting in death or serious injury. Highway incidents are excluded because they are generally handled without emergency management organization involvement.

4.2.2.10: Urban Fire

An urban fire is any instance of uncontrolled burning which results in major structural damage to large residential, commercial, industrial, institutional, or other properties in developed areas. Generally a large structure is defined as any structure exceeding 25,000 square feet. Large structural fires therefore would include fully involved structures of this size or greater. Multiple stories may be involved as well and constitute square footage.



Almost every county has at least one city that has significant development including a downtown City area, industrial park, hospital, government center, churches, manufacturing facilities, warehouses, and multiple-story buildings. Each of these locations is a prime target for urban fire events.

4.3: Hazard Analysis

The Hazard Analysis section focuses on those hazards initially identified in the Hazard Identification section and that are of particular concern and relevance to Maury County. The section provides best available information on specific historical occurrences in Maury County and describes the future potential for a hazard event to occur. This includes an assessment of the location and spatial extent of the event and best available data regarding the impact on the County.

44 CFR Requirement

44 CFR Part 201.6(c) (2) (I): The risk assessment shall include a description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events, and on the probability of future hazard events.

The table below indicates the specific hazard types identified by Maury County for further study and analysis in advancing through the hazard mitigation planning process. It is followed by a brief explanation of why some hazards were excluded from further study, and then more detailed information for those hazards, which have been included in the analysis.

Summary of Natural and Manmade Hazard Threats to Maury County

Natural Hazards	Manmade Hazards
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Earthquake <input checked="" type="checkbox"/> Flooding/Flash Flooding <input checked="" type="checkbox"/> Heat and Drought <input checked="" type="checkbox"/> Thunderstorm/Hail/High Winds <input checked="" type="checkbox"/> Tornadoes <input checked="" type="checkbox"/> Wildfires <input checked="" type="checkbox"/> Winter storms 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Dam Failure <input checked="" type="checkbox"/> Hazardous Material Incidents <ul style="list-style-type: none"> Transportation Incidents Fixed Facility Incidents <input checked="" type="checkbox"/> Pandemic/Vectors <ul style="list-style-type: none"> West Nile Influenza <input checked="" type="checkbox"/> Terrorism <ul style="list-style-type: none"> Chemical Biological Radiological Nuclear Explosive <input checked="" type="checkbox"/> Transportation Incidents <input checked="" type="checkbox"/> Urban Fire

The Maury County Hazard Mitigation Planning Committee considered and evaluated all hazards in terms of their general risk. The decision to focus on the hazards checked in the above table was principally based on past historical hazard data, local knowledge, and the general priorities for implementing mitigation-planning efforts.

Note: See Appendix E – Hazard Extent (page 237-242)

4.3.1: Natural Hazards

The adjacent table is a comprehensive, alphabetical listing of specific Natural hazard types that have been identified by the State of Tennessee Hazard Mitigation Plan to potentially threaten Tennessee communities. The State of Tennessee’s Natural Hazard priorities are based on frequency, magnitude and cost.

A list of manmade hazards has been published on the Tennessee Emergency Management Website. It is important that all of these hazards be initially considered for relevance in advancing through the hazard mitigation planning process. Subsequent sections of the Plan, the Hazard Analysis and the Vulnerability Assessment address the hazards of specific concern to Maury County in greater detail from a localized perspective.

Natural Hazards Identified by the State of Tennessee	State Priority for Maury County	State Priority for Middle TN.
Wild Fire	7	7
Flood	1	2
Wind Storm	5	5
Severe Storm	2	1
Winter Storm	3	4
Tornado	4	3
Hailstorm	6	6
Drought	9	9
Erosion	10	10
Earthquake	11	11
Extreme Heat	8	8
Landslide	12	12
Land Subsidence	13	14
Expansive Soils	14	13

Hazard selection for mitigation planning is primarily based on the historic occurrence of disaster that has occurred in the jurisdiction unless a particular hazard has been eliminated or mitigated. However, as new development occurs and the environment changes new hazards may become evident and must be considered for inclusion in a mitigation plan. Examples include a new industry that introduces a hazardous material, the political climate, such as 9/11, which introduced terrorism and other events such as human, animal and plant diseases and infestations.

The Maury County Hazard Mitigation Planning Committee evaluated and selected all natural hazards identified by the State of Tennessee Hazard Mitigation Plan except for Erosion, landslides, land subsidence and Expansive Soils. There have been no reported incidents of these hazards and the geology of Maury County does not lend itself to their occurrence therefore, these hazards have not been included in this plan.

4.3.1.1: Earthquakes

An earthquake is the sudden motion or trembling in the earth caused by an abrupt release of slowly accumulating strain. This sudden release results in ground shaking, surface faulting, and/or ground failures. Earthquakes occur along faults, which are fractures or fracture zones in the earth across which is relative motion. If the rocks across a fault are forced to slide past one another, they accumulate strain energy for centuries or millennia, and then release it almost instantaneously. The energy released radiates outward from the source as a series of waves - an earthquake. Ground shaking may affect areas many miles from the epicenter (the point on the ground surface above the focus). As the stress builds, an impending earthquake may be signaled phenomena, which occurs in a characteristic way prior to an earthquake.



Although earthquake prediction is difficult, there are warning signs that indicate both the place and the time of an impending event. Earthquakes most commonly occur in the same place as prior earthquakes. Non-scientists often interpret the term “active” as meaning active during historical time (the last 100 years). Active faults are commonly indicated by micro-seismicity (earthquakes so small they can only be detected by instruments) and by the presence of scarps. Scarps are steep, linear slopes, up to 65 feet high, showing offset of ground surface.

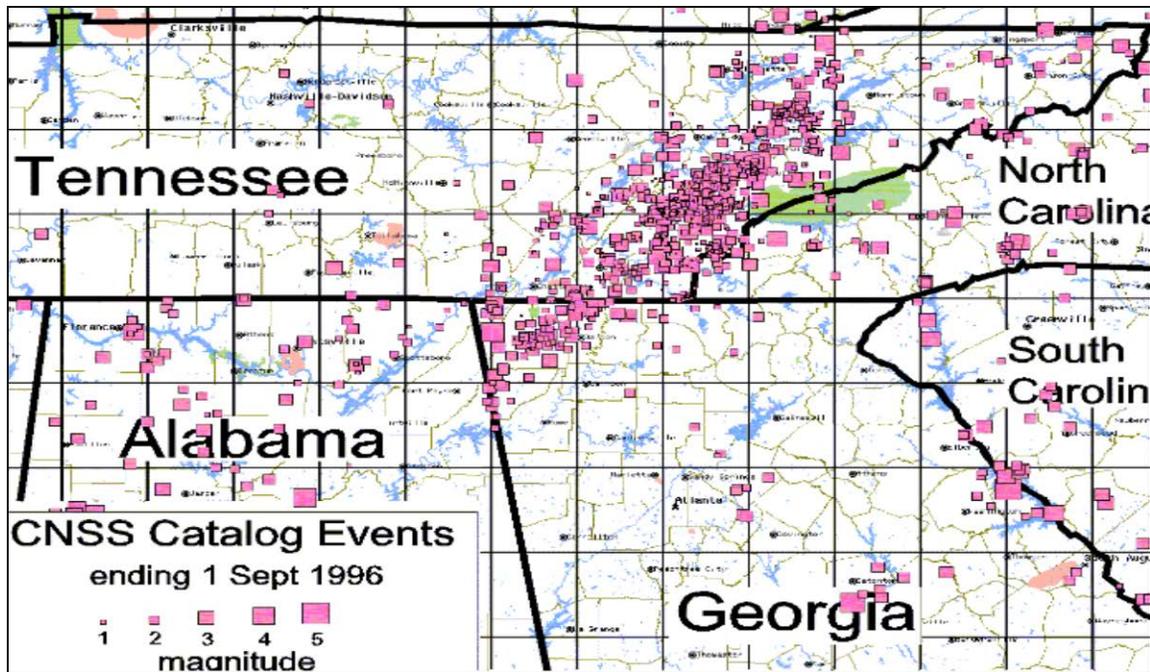
The Mercalli scale is the method most commonly used in the United States for measuring earthquake intensity. This twelve tier scale ranks observed effects from I, felt only under especially favorable circumstances, to XII, total damage. The magnitude of an earthquake is measured through the use of the Richter scale and is demonstrated below. Earthquake magnitudes describe the subject on an absolute scale. An earthquake of magnitude 8, for example, is ten times stronger than a magnitude 7-earthquake, 100 times stronger than a magnitude 6-earthquake, etc. There is no highest or lowest value.

Modified Mercalli Scale of Earthquake Intensity

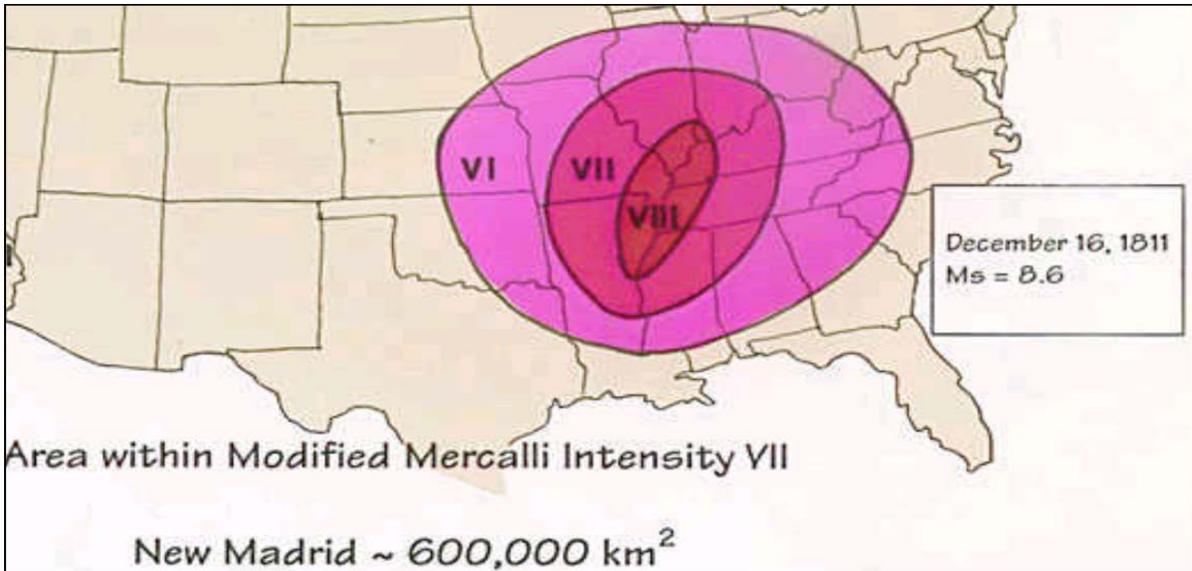
Scale	Intensity	Description of Effects	Maximum Acceleration (mm/sec)	Corresponding Richter Scale
I	Instrumental	Detected only on seismographs	<10	
II	Feeble	Some people feel it	<25	<4.2
III	Slight	Felt by people resting	<50	
IV	Moderate	Felt by people walking	<100	
V	Slightly Strong	Sleepers awake; church bells ring	<250	<4.8
VI	Strong	Trees sway; suspended objects swing, objects fall off shelves	<500	<5.4
VII	Very Strong	Walls crack; plaster falls	<1000	<6.1
VIII	Destructive	Moving cars uncontrollable; poorly constructed buildings damaged	<2500	
IX	Ruinous	Some houses collapse; ground cracks; pipes break open	<5000	<6.9
X	Disastrous	Ground cracks profusely; many buildings destroyed; liquefaction/landslides widespread	<7500	<7.3
XI	Very Disastrous	Most buildings collapse pipes roads/bridges, railways destroyed triggers other hazards	<9800	<8.1
XII	Catastrophic	Total destruction; trees fall; ground rises and falls in waves	>9800	>8.1

Tennessee is seldom thought of as "earthquake country." However, the National Earthquake Hazard Reduction Program recently categorized portions of Tennessee as "high risk" in recognition of the state's vulnerability to earthquakes that occur both within and outside its borders. Each year more than 400 seismic events occur largely unfelt by the populace. The following map depicts historic earthquake occurrences in Tennessee.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

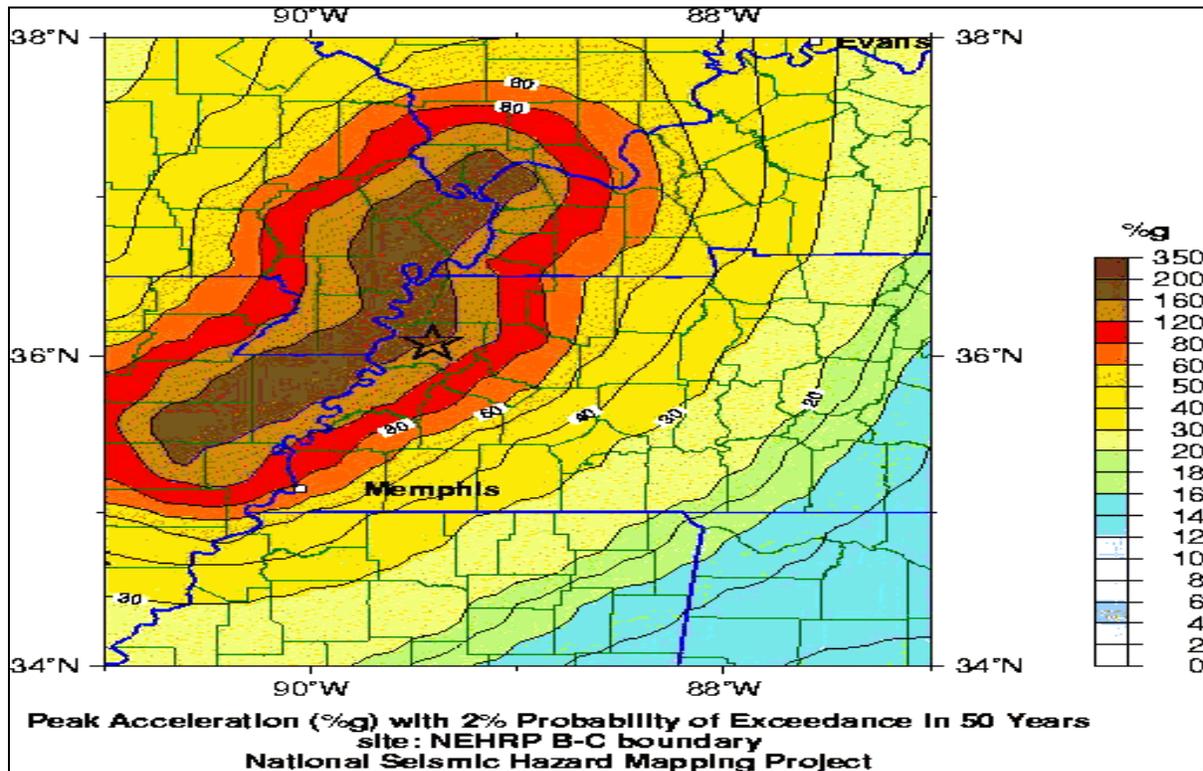


Maury County is within the area of Modified Mercalli Intensity VII of a similar earthquake of 1811 occurring on the New Madrid Fault. This earthquake could measure up to 6.1 on the Richter scale. Damage at this level would result in structure damage such as foundation and wall cracks, possible road and bridge damage and content damage resulting from objects falling.

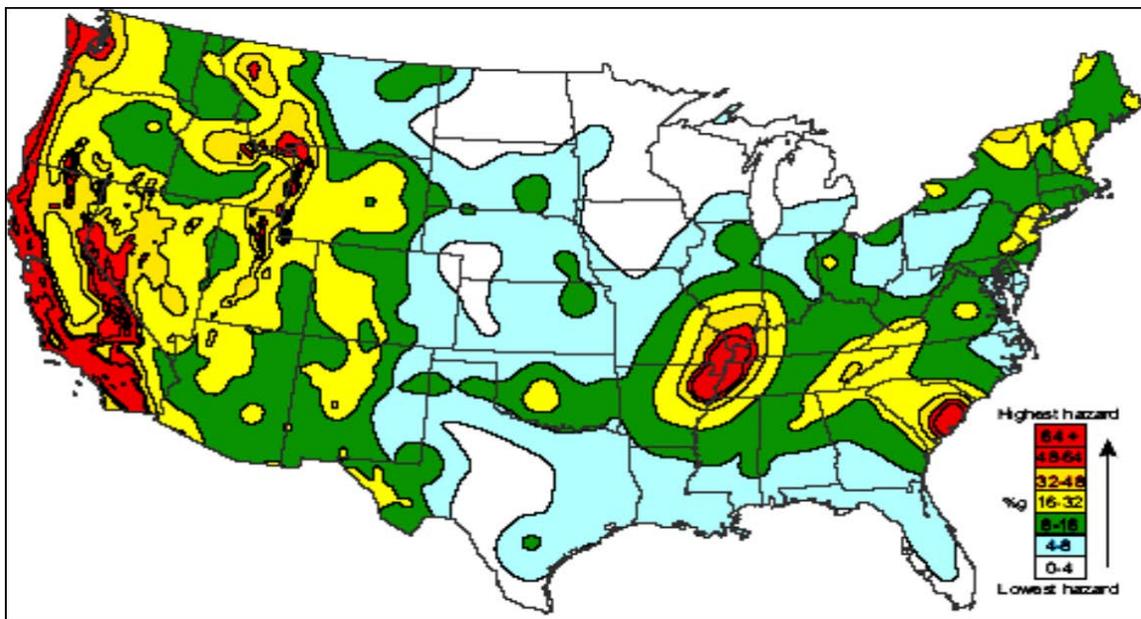


In evaluating the risk of an earthquake effecting Maury County, Peak Ground Acceleration (PGA), which measures the rate in change of motion relative to the established rate of acceleration due to gravity, must be considered. The USGS regional map shows the PGA Values for areas with a 10% chance of being exceeded over 50 years. Maury County is in the 12-16%g range, which is considered to be a medium earthquake hazard risk. This map shows three things about earthquake risk: the geographic area affected (all colored areas on the map), the probability of an earthquake (10% chance in 50 years), and the level of severity.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan



The U.S. Geological Survey shaking-hazard map for the United States is based on information about the rate at which earthquakes occur and on how far strong shaking extends from earthquake sources. Colors on this map show the levels of horizontal shaking that have a 1-in-50 chance of being exceeded in a 50-year period. Shaking is expressed as a percentage of g (g is the acceleration of a falling object due to gravity). The map shows Maury County to be in the 8-16% g range, which is considered to be a medium earthquake hazard.



The major form of damage from most earthquakes is damage to construction. Bridges are particularly vulnerable to collapse, and dam failure may generate major downstream flooding. Buildings vary in susceptibility, dependent upon construction and the types of soils on which they are built. Fires caused by ruptured gas mains may also destroy structures. The damage caused by both ground breaking and ground shaking can lead to the paralysis of the local infrastructure: police, fire, medical and governmental services. As with many catastrophes, the worst hazard to the survivors is their own shock and inability to respond to the necessity for prompt, effective action. Secondary earthquake hazards result from distortion of the surface materials such as water, soil, or structures.

Throughout Maury County, many existing roadways cut through hilly terrain, creating steep banks on one or both sides of the road. Even moderate earthquake vibrations could dislodge sections of these road banks, closing roads, damaging bridges, and affecting structures built above and below the banks, especially when periods of heavy rainfall may set the stage for soil liquefaction to occur. Maury County is classified as Zone 3 for damage in the event of a large quake due to the potential for landslide and liquefaction. The greatest threat of earthquake hazard is failure of Dams.

As stated in the State of Tennessee Hazardous Mitigation Plan, earthquakes are considered the most potentially damaging disaster in Tennessee because of their universal secondary effects. An earthquake event in Maury County could be expected to affect 50% of the population, primarily through disruption of commerce, malfunction of utility services, and building collapse. The table below documents historical earthquake events for Maury County.

MAURY COUNTY HAZARD HISTORY								
Hazard	Earthquakes							
Hazard Date	Location or Map Reference	Event Description Power Outage Trees Down Bridge out Road Closed Evacuation	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset and Content Loss	Source FEMA NOAA USGS Local etc.
12/16/1811	NE Arkansas Maury Co.	8.5 XII Columbia some Damage	10	0	10	5,000	0	1811 USGS
01/23/1812	New Madrid MO.	8.0 XII Columbia some Damage	8	0	8	5,000	0	1812 USGS
02/07/1812	New Madrid MO.	8.5 XII Columbia Some damage	8	0	8	5,000	0	1812 USGS
		TOTAL	0	0	26	15,000	0	

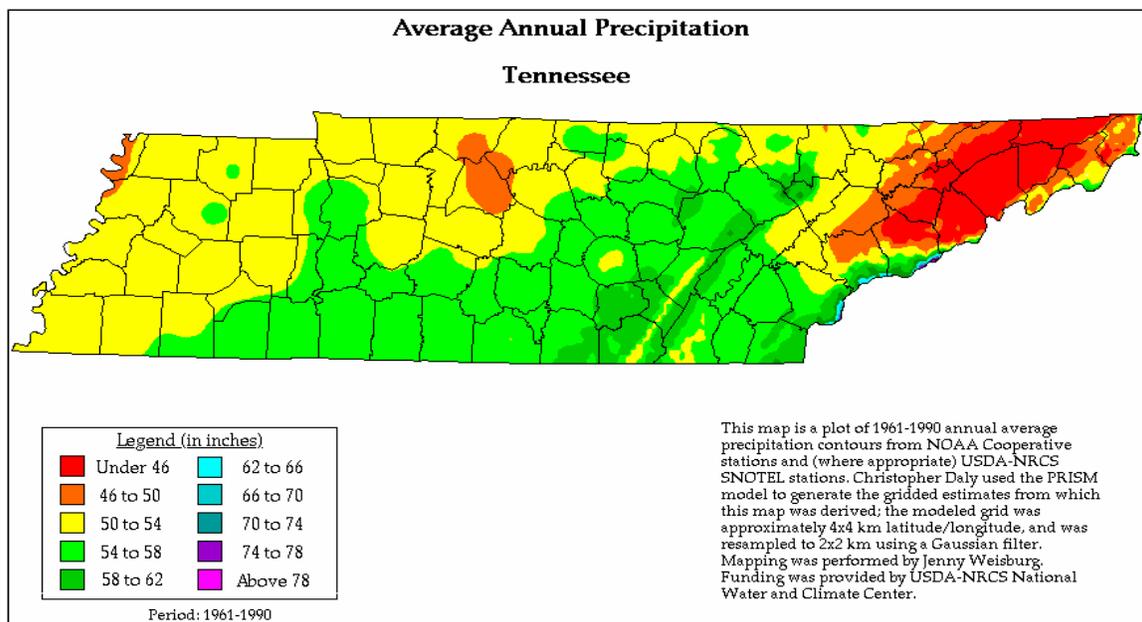
4.3.1.2: Flooding/Flash floods

Flooding occurs when abnormally high stream flow overtops the natural or artificial banks of a watercourse. There are three principle types of floods, which may affect Tennessee: riverine floods, flash floods, and dam break floods. Much of the county's rural areas contain many low-lying areas prone to both riverine and flash flooding. In addition to numerous sites throughout rural areas, municipalities also experience flooding at several points. Much of this rural area is sparsely populated with homes accessible only by unimproved roads. When flooding occurs, evacuation and response efforts are difficult. Slow-rise and flash floods have been the most common recurrent disasters.

The worst slow-rise floods occurred in 1926-27, 1936-37, and 1973. The great Tennessee and Cumberland River floods of 1927 gave way to even greater floods in 1937. A number of flash floods have occurred, the worst on June 13, 1924, when fifteen inches of rain fell in an eight-hour period. This flood produced a ten-foot-high wall of water, which plummeted down a narrow valley in Carter County, killing 11 people.



Moderate to heavy rainfall ice and snow occurred in December 1936 through January 1937. The Mississippi, Cumberland, and Tennessee Rivers and their tributaries overflowed into some of the most industrialized and populated sections of Tennessee. It was a record flood year for these river systems. Socially and economically, this was the worst single disaster in American history to that date, rivaling the combined effects of the floods of 1926-27 and the "Dust Bowl" of 1930-31. The National Weather Service reported that 21.24 inches (156 trillion tons) of rain fell in January alone. January 24, was dubbed "Black Sunday" as rivers overflowed in Tennessee and eleven other states inundating 12,700 square miles and affecting 75,000 homes. Almost 900 people were seriously injured and 250 died of flood-related causes.



On an annual basis, flooding causes the most damage in Tennessee. From 1963 through 1998, flooding resulted in 19 Presidential declared disasters across the state, with expenditures in excess of \$60 million. Flooding presents significant problems for between 20 and 30 percent of the state's population annually.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

The primary source of flooding in Maury County is the Duck River and its tributaries. The Duck River and its tributaries crisscross and potentially affect the entire county. There have been numerous events of localized flooding resulting from storm water runoff impacting both private and public assets. One particular area of concern is the flooding of the only bridge access to a local development. This impacts private and emergency response access into the Stoneybrook Subdivision. A golf course in the same area is frequently flooded.

NOTE: See Appendix C: pages 217-235 for locations of local flooding

Maury County Specific flooding:

MAURY COUNTY HAZARD HISTORY								
Hazard	Flooding [note: countywide – effects experienced throughout entire county; community – effects experienced in a localized area]							
Hazard Date	Location or Map Reference	Event Description Power Outage Trees Down Bridge out Road Closed Evacuation	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset or Content Loss	Source FEMA NOAA USGS Local etc.
08/30/05	Countywide	Flash Flood	0	0		1,000	0	NOAA SHELDUS
01/10/08	Fly	Flash Flood	0	0		1,000	0	NOAA SHELDUS
04/02/09	Westwood	Flash Flood	0	0		5,000	0	NOAA SHELDUS
04/02/09	Westwood	Flash Flood	0	0		10,000	0	NOAA SHELDUS
05/01/09	Monsanto	Flash Flood	0	1		250,000	0	NOAA SHELDUS
05/02/09	Spring Hill	Flash Flood	0	0		50,000	0	NOAA SHELDUS
09/17/09	Hampshire	Flash Flood	0	0		10,000	0	NOAA SHELDUS
09/17/09	Godwin	Flash Flood	0	0		10,000	0	NOAA SHELDUS
09/20/09	Timmons	Flash Flood	0	0		10,000	0	NOAA SHELDUS
05/01/10	Rockdale	Flash Flood	0	0		50,000	0	NOAA SHELDUS
05/02/10	Oakland	Flood	0	0		1,400,000	0	NOAA SHELDUS
		TOTAL	0	1		1,797,000	0	

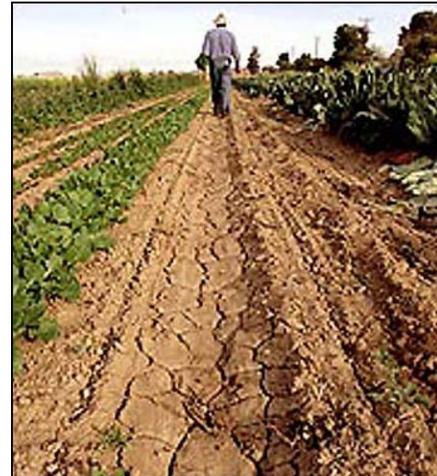
Since the 2012 Hazard Mitigation Plan, Maury County has experienced a few flood events, with none as significant as the May 2010 flooding, which was included in the 2012 Plan Update:

Location	County/ Zone	State	Date	Time	T.Z.	Type	Deaths	Injuries	Property Damage	Crop Damage
ROCKDALE	MAURY CO.	TN	5/1/2010	12:10	CST-6	Flash Flood	0	0	50.00K	1.00K
OAKLAND	MAURY CO.	TN	5/2/2010	12:25	CST-6	Flood	0	0	1.400M	1.00K
HAMPSHIRE	MAURY CO.	TN	4/28/2014	9:00	CST-6	Flash Flood	0	0	10.00K	0.00K
WILLIAMSPORT	MAURY CO.	TN	6/5/2014	5:00	CST-6	Flash Flood	0	0	10.00K	0.00K
CROSS BRIDGES	MAURY CO.	TN	8/30/2014	18:00	CST-6	Flash Flood	0	0	0.00K	0.00K
HAMPSHIRE	MAURY CO.	TN	10/13/2014	20:00	CST-6	Flash Flood	0	0	5.00K	0.00K
KLEBURNE	MAURY CO.	TN	10/1/2015	13:30	CST-6	Flash Flood	0	0	25.00K	0.00K
MT JOY	MAURY CO.	TN	12/23/2015	21:00	CST-6	Flash Flood	3	0	20.00K	0.00K
KETTLE MILLS	MAURY CO.	TN	4/22/2017	15:00	CST-6	Flash Flood	0	0	15.00K	0.00K
WATER VLY	MAURY CO.	TN	8/31/2017	22:00	CST-6	Flash Flood	0	0	0.00K	0.00K
SPRING HILL	MAURY CO.	TN	12/23/2017	4:00	CST-6	Flood	0	0	0.00K	0.00K
SPRING HILL	MAURY CO.	TN	2/10/2018	12:00	CST-6	Flood	0	0	0.00K	0.00K
WATER VLY	MAURY CO.	TN	3/1/2018	6:00	CST-6	Flash Flood	0	1	5.00K	0.00K
ARMOUR VLG	MAURY CO.	TN	6/28/2018	12:00	CST-6	Flood	0	0	0.00K	0.00K

4.3.1.3: Drought and Heat

Extreme heat is defined as temperatures that hover ten degrees or more above the average high temperature for the region and last for several weeks. Health risks from extreme heat include heat cramps, heat fainting, heat exhaustion and heat stroke. According to the National Weather Service, heat is the leading weather-related killer in the United States and has killed more people than lightning, tornadoes, floods and hurricanes combined in the last 10 years. The elderly and the ill are most at-risk.

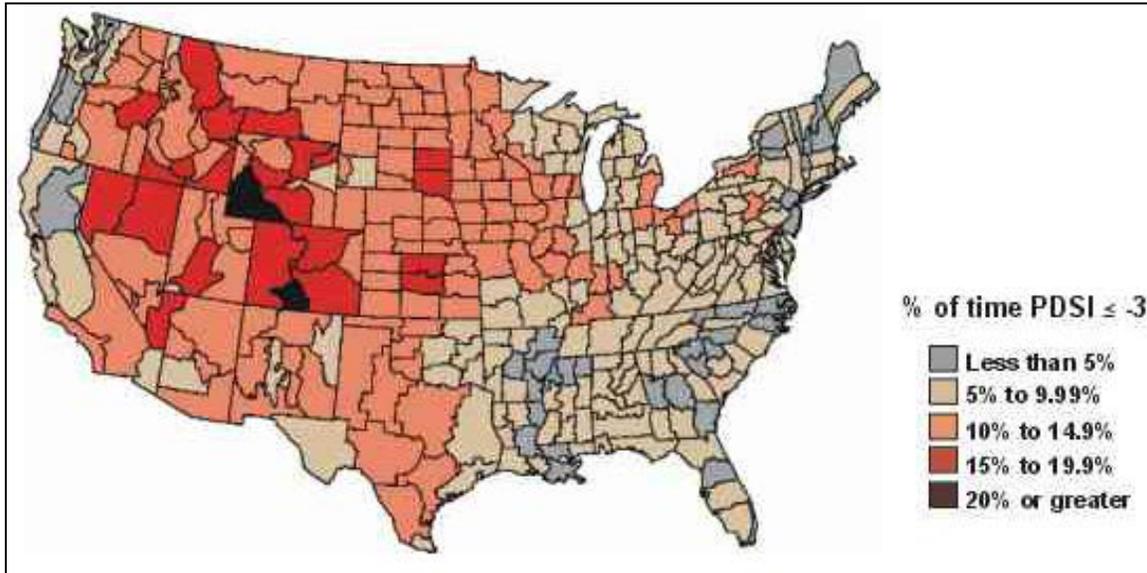
A severe heat wave struck Tennessee in 1980 and resulted in 156 heat-related deaths. Ten were recorded in Nashville, 16 in Chattanooga, 88 in Memphis and 42 elsewhere. During the worst part of the heat wave, Memphis exceeded 100 degrees for 33 days. Thirteen days were consecutive and, on July 13, the temperature reached 108 degrees. Thirty-eight heat-related deaths occurred in 1952.



Droughts generally affect areas dependent on reservoirs for water. Such droughts usually lead to restrictions on water use to what is essential for living. Urban droughts occur less frequently than agricultural droughts, occurring once every 15 years and affecting about 10-15% of the state's population.

The Palmer Drought Severity Index (PDSI), first developed in 1965, is a means of quantifying drought in terms of moisture demands versus moisture supply. Moisture demands include plant requirements and water needed for recharge of soil moisture. An allowance is also included for runoff amounts necessary for recharging ground water and surface water supplies such as rivers, lakes, aquifers and reservoirs. The PDSI balances the moisture demands against the moisture supply available. The PDSI expresses this comparison of moisture demand to moisture supply on a numerical scale that usually ranges from positive six to negative six. Positive values reflect excess moisture supplies while negative values indicate moisture demands in excess of supplies.

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MAURY COUNTY HAZARD HISTORY								
Hazard	Heat and Drought [note: countywide – effects experienced throughout entire county]							
Hazard Date	Location or Map Reference	<u>Event Description</u> Heat/Drought.	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset or Content Loss	<u>Source</u> FEMA NOAA USGS Local etc.
05/01/07	TNZ005>011-022>034-056>066-075-077>080-093	Drought	0	0	0	0	0	NOAA SHELDUS
06/01/07	TNZ005>011-022>034-056>066-075-077>080-093	Drought	0	0	0	0	0	NOAA SHELDUS
07/01/07	TNZ005>011-022>034-056>066-075-077>080-093	Drought	0	0	0	0	0	NOAA SHELDUs
08/01/07	TNZ005>011-022>034-056>066-075-077>080-093	Drought	0	0	0	0	0	NOAA SHELDUS
09/01/07	TNZ005>011-022>034-056>066-075-077>080-093	Drought	0	0	0	0	0	NOAA SHELDUS

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10/01/07	TNZ005>011-022>034-056>066-075-077>080-093	Drought	0	0	0	0	0	NOAA SHELDUS
11/01/07	Tnz008>010-027>034-059>066-075-077>080-095	Drought	0	0	0	0	0	NOAA SHELDUS
02/01/08	TNZ027>034-059>066-075-077>080-095	Drought	0	0	0	0	0	NOAA SHELDUS
03/01/08	TNZ028>034-059>066-075-077>080-094	Drought	0	0	0	0	0	NOAA SHELDUS
08/04/10	TNZ005>008-022>028-056>062-075-093	Excessive Heat	0	0	0	0	0	NOAA SHELDUS
TOTAL			0	0	0	0	0	

Since the 2012 Hazard Mitigation Plan, Maury County has experienced a few excessive heat and drought events:

Location	County/ Zone	State	Date	Time	T.Z.	Type	Deaths	Injuries	Property Damage	Crop Damage
MAURY (ZONE)	MAURY (ZONE)	TN	8/4/2010	12:00	CST-6	Excessive Heat	0	0	0.00K	0.00K
MAURY (ZONE)	MAURY (ZONE)	TN	7/3/2012	0:00	CST-6	Drought	0	0	0.00K	0.00K
MAURY (ZONE)	MAURY (ZONE)	TN	7/1/2016	0:00	CST-6	Drought	0	0	0.00K	5.00K
MAURY (ZONE)	MAURY (ZONE)	TN	8/1/2016	0:00	CST-6	Drought	0	0	0.00K	0.00K
MAURY (ZONE)	MAURY (ZONE)	TN	10/1/2016	0:00	CST-6	Drought	0	0	0.00K	0.00K
MAURY (ZONE)	MAURY (ZONE)	TN	11/1/2016	0:00	CST-6	Drought	0	0	0.00K	0.00K
MAURY (ZONE)	MAURY (ZONE)	TN	12/1/2016	0:00	CST-6	Drought	0	0	0.00K	0.00K

4.3.1.4: Thunderstorms

Thunderstorms are formed from a combination of moisture, rapidly raising warm air and a force capable of lifting air such as a front, a sea breeze or a mountain. Thunderstorms occur singly, in clusters or in lines. Some of the most severe weather occurs when a single thunderstorm affects one location for an extended period of time.

Straight-line winds, in extreme cases have the potential to exceed 100 miles per hour, and are responsible for most thunderstorm wind damage. One type of straight-line wind, the downburst, can cause damage equivalent to a strong tornado. Thunderstorms and tornadoes may be associated with heavy rains that can lead to flooding.



All thunderstorms contain lightning, which is an electrical discharge that results from the buildup

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of positive and negative charges within a thunderstorm. When the buildup becomes strong enough, lightning appears as a "bolt." This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning reaches a temperature approaching 50,000 degrees Fahrenheit in seconds. The rapid heating and cooling of air near the lightning causes thunder. Lightning is a major threat, in the United States, 75 to 100 Americans are hit and killed. The power of lightning's electrical charge and intense heat can electrocute on contact, split trees, ignite fires and cause electrical failures.

Hailstones are products of thunderstorms and are developed by downdrafts and updrafts that develop inside the cumulonimbus clouds of a thunderstorm, where super cooled water droplets exist. The transformation of droplets to ice requires a temperature below 32 degrees and a catalyst in the form of tiny particles of solid matter, or freezing nuclei. Continued deposits of super cooled water cause the ice crystals to grow into hailstones, hail can be smaller than a pea or larger than softballs and can be very destructive to property, crops, livestock, and people.

Below is a table, depicting thunderstorms and thunderstorm related events that resulted in fatalities, and injuries or loss of property in Maury County.

MAURY COUNTY HAZARD HISTORY								
Hazard	Thunderstorms[note: countywide – effects experienced throughout entire county; community – effects experienced in a localized area]							
Hazard Date	Location or Map Reference	<u>Event Description</u> Power Outage Trees Down Bridge out Road Closed Evacuation	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset or Content Loss	<u>Source</u> FEMA NOAA USGS Local etc.
06/08/05	Columbia	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
06/27/05	Columbia	Tstm Wind 50 kts.	0	0	0	20,000	0	NOAA SHELDUS
07/30/05	Columbia	Lightning	0	0	0	21,000	0	NOAA SHELDUS
08/05/05	Mt. Pleasant	Hail 1.5 in.	0	0	0	0	0	NOAA SHELDUS
08/06/05	Columbia	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
08/15/05	Columbia	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
08/29/05	TNZ056>058 -060>061- 075-077- 079-093>095	Strg Wind 33kts.	0	0	0	11,000	0	NOAA SHELDUS
09/25/05	Columbia	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
11/28/05	Countywide	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
03/09/06	Columbia	Tstm Wind 55 kts.	0	0	0	5,000	0	NOAA SHELDUS

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03/09/06	Mt. Pleasant	Lightning	0	0	0	50,000	0	NOAA SHELDUS
03/09/06	Mt. Pleasant	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
03/31/06	Spring Hill	Hail 1.00 in.	0	0	0	0	0	NOAA SHELDUS
03/31/06	Spring Hill	Tstm Wind 61 kts.	0	0	0	0	0	NOAA SHELDUS
04/02/06	Columbia	Tstm Wind 50 kts.	0	0	0	4,000	0	NOAA SHELDUS
04/02/06	Spring Hill	Hail 2.00 in.	0	0	0	100,000	0	NOAA SHELDUS
04/03/06	Hampshire	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
04/07/06	Spring Hill	Hail 1.75 in.	0	0	0	0	0	NOAA SHELDUS
04/07/06	Spring Hill	Tstm Wind 55 kts.	0	0	0	5,000	0	NOAA SHELDUS
04/21/06	Spring Hill	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
05/03/06	Mt. Pleasant	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
05/26/06	Columbia	Hail 0.75 in.	0	0	0	0	0	NOAA SHELDUS
06/23/06	Columbia	Tstm Wind 52 kts.	0	0	0	0	0	NOAA SHELDUS
06/23/06	Columbia	Lightning	0	1	0	0	0	NOAA SHELDUS
06/23/06	Columbia	Tstm Wind 52 kts.	0	0	0	0	0	NOAA SHELDUS
07/19/06	Columbia	Tstm Wind 50 kts.	0	0	0	5,000	0	NOAA SHELDUS
04/03/07	Columbia	Tstm Wind 55 kts.	0	0	0	1,000	0	NOAA SHELDUS
04/03/07	Columbia	Hail 0.75 in.	0	0	0	0	0	NOAA SHELDUS
04/11/07	Mt. Pleasant	Tstm Wind 50 kts.	0	0	0	22,000	0	NOAA SHELDUS
04/11/07	Columbia	Hail 1.00 in.	0	0	0	0	0	NOAA SHELDUS
04/11/07	Columbia	Tstm 50kts.	0	0	0	0	0	NOAA SHELDUS
06/08/07	Columbia	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
07/20/07	Columbia	Lightning	0	0	0	150,000	0	NOAA SHELDUS
07/25/07	Mt. Pleasant	Lightning	0	0	0	100,000	0	NOAA SHELDUS

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08/01/07	Mt. Pleasant	Tstm Wind 50 kts.	0	0	0	3,000	0	NOAA SHELDUS
08/01/07	Santa Fe	Tstm Wind 50 kts.	0	0	0	3,000	0	NOAA SHELDUS
10/18/07	Mt. Pleasant	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
01/29/08	TNZ008-060	High Wind 56 kts.	0	0	0	60,000	0	NOAA SHELDUS
03/03/08	TNZ060	Strong Wind 39 kts.	1	0	0	0	0	NOAA SHELDUS
05/08/08	Neapolis	Tstm Wind 70 kts.	0	0	0	20,000	0	NOAA SHELDUS
02/11/09	Spring Hill	Tstm Wind 55 kts.	0	0	0	6,000	0	NOAA SHELDUS
02/11/09	Spring Hill	Tstm Wind 55 kts.	0	0	0	12,000	0	NOAA SHELDUS
03/27/09	Columbia	Hail 1.75 in.	0	0	0	0	0	NOAA SHELDUS
03/27/09	Cross Bridges	Hail 1.75 in.	0	0	0	0	0	NOAA SHELDUS
03/28/09	Columbia	Funnel Cloud	0	0	0	0	0	NOAA SHELDUS
03/28/09	Spring Hill	Funnel Cloud	0	0	0	0	0	NOAA SHELDUS
04/10/09	Glendale	Tstm Wind 60 kts.	0	0	0	100,000	0	NOAA SHELDUS
04/10/09	Columbia	Hail 0.75 in.	0	0	0	0	0	NOAA SHELDUS
04/10/09	Frierson Town	Hail 0.75 in.	0	0	0	0	0	NOAA SHELDUS
04/10/09	Columbia	Hail 0.88 in.	0	0	0	0	0	NOAA SHELDUS
04/10/09	Columbia	Hail 0.88 in.	0	0	0	0	0	NOAA SHELDUS
06/01/09	Columbia	Hail 0.88 in.	0	0	0	0	0	NOAA SHELDUS
06/01/09	Columbia	Hail 0.75 in.	0	0	0	0	0	NOAA SHELDUS
06/01/09	Godwin	Tstm Wind 55 kts.	0	0	0	10,000	0	NOAA SHELDUS
06/01/09	Godwin	Hail 0.88 in.	0	0	0	0	0	NOAA SHELDUS
06/01/09	Columbia	Hail 1.00 in.	0	0	0	0	0	NOAA SHELDUS
06/02/09	Theta	Hail 0.75 in.	0	0	0	0	0	NOAA SHELDUS
06/17/09	Godwin	Hail 1.00 in.	0	0	0	0	0	NOAA SHELDUS

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07/12/09	Darks Mill	Tstm Wind 55 kts.	0	0	0	50,000	0	NOAA SHELDUS
04/27/10	Canaan	Tstm Wind 48 kts.	0	0	0	2,000	0	NOAA SHELDUS
05/15/10	Darks Mill	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
05/28/10	Columbia	Tstm Wind 52 kts.	0	0	0	0	0	NOAA SHELDUS
06/09/10	Spring Hill	Tstm Wind 56 kts.	0	0	0	0	0	NOAA SHELDUS
06/09/10	Spring Hill	Hail 0.75 in.	0	0	0	0	0	NOAA SHELDUS
06/17/10	Columbia	Tstm Wind 52 kts.	0	0	0	0	0	NOAA SHELDUS
06/17/10	Williamsport	Lightning	0	1	0	0	0	NOAA SHELDUS
07/12/10	Union Grove	Tstm Wind 55 kts.	0	0	0	1,000	0	NOAA SHELDUS
07/12/10	Canaan	Tstm Wind 53 kts.	0	0	0	0	0	NOAA SHELDUS
08/05/10	Columbia	Lightning	0	0	0	5,000	0	NOAA SHELDUS
08/14/10	Columbia	Tstm Wind 55 kts.	0	0	0	10,000	0	NOAA SHELDUS
08/21/10	Columbia	Tstm Wind 55 kts.	0	0	0	30,000	0	NOAA SHELDUS
10/12/10	Columbia	Hail 1.00 in.	0	0	0	0	0	NOAA SHELDUS
10/24/10	Mt. Pleasant Maury Airpt.	Funnel Cloud	0	0	0	0	0	NOAA SHELDUS
10/24/10	Mt. Pleasant Maury Airpt.	Tstm Wind 55 kts.	0	0	0	10,000	0	NOAA SHELDUS
10/24/10	Ashwood	Tstm Wind 55 kts.	0	0	0	10,000	0	NOAA SHELDUS
04/04/11	Spring Hill	Tstm Wind 60 kts.	0	0	0	15,000	0	NOAA SHELDUS
04/04/11	Westwood	Tstm Wind 69 kts.	0	0	0	10,000	0	NOAA SHELDUS
04/04/11	Spring Hill	Tstm Wind 60 kts.	0	0	0	25,000	0	NOAA SHELDUS
04/20/11	Columbia	Tstm Wind 51 kts.	0	0	0	12,000	0	NOAA SHELDUS
04/20/11	Mt. Pleasant	Tstm Wind 50 kts.	0	0	0	0	0	NOAA SHELDUS
04/26/11	Armour Village	Tstm Wind 55 kts.	0	0	0	10,000	0	NOAA SHELDUS
04/27/11	Mt. Pleasant	Tstm Wind 54 kts.	0	0	0	0	0	NOAA SHELDUS

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04/27/11	Sandy Hook	Tstm Wind 55 kts.	0	0	0	25,000	0	NOAA SHELDUS
05/02/11	Mt. Pleasant	Funnel Cloud	0	0	0	0	0	NOAA SHELDUS
05/02/11	Needmore	Funnel Cloud	0	0	0	0	0	NOAA SHELDUS
05/25/11	Westwood	Tstm Wind 55 kts.	0	0	0	25,000	0	NOAA SHELDUS
05/25/11	Ridley	Tstm Wind 55 kts.	0	0	0	15,000	0	NOAA SHELDUS
05/25/11	Columbia	Tstm Wind 55 kts.	0	0	0	10,000	0	NOAA SHELDUS
06/15/11	Columbia	Hail 1.00 in.	0	0	0	0	0	NOAA SHELDUS
06/15/11	Spring Hill	Hail 1.25 in.	0	0	0	0	0	NOAA SHELDUS
06/18/11	Columbia	Tstm Wind 52 kts.	0	0	0	5,000	0	NOAA SHELDUS
06/28/11	Columbia	Tstm Wind 52 kts.	0	0	0	3,000	0	NOAA SHELDUS
07/21/11	Leftwich	Tstm Wind 55 kts.	0	0	0	5,000	0	NOAA SHELDUS
07/21/11	Union Grove	Tstm Wind 55 kts.	0	0	0	2,000	0	NOAA SHELDUS
08/18/11	Mt. Pleasant	Hail 1.00 in.	0	0	0	0	0	NOAA SHELDUS
08/18/11	Mt. Pleasant	Tstm Wind 52 kts.	0	0	0	0	0	NOAA SHELDUS
08/18/11	Mt. Pleasant	Tstm Wind 52 kts.	0	0	0	2,000	0	NOAA SHELDUS
TOTAL			1	2	0	990,000	0	

4.3.1.5: Tornadoes

Tornadoes are violent windstorms characterized by a twisting, funnel-shaped cloud. It is spawned by a thunderstorm (or sometimes as a result of a hurricane) and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. A funnel does not need to reach to the ground for a tornado to be present. A debris cloud beneath a thunderstorm is all that is needed to confirm the presence of a tornado, even without a condensation funnel.



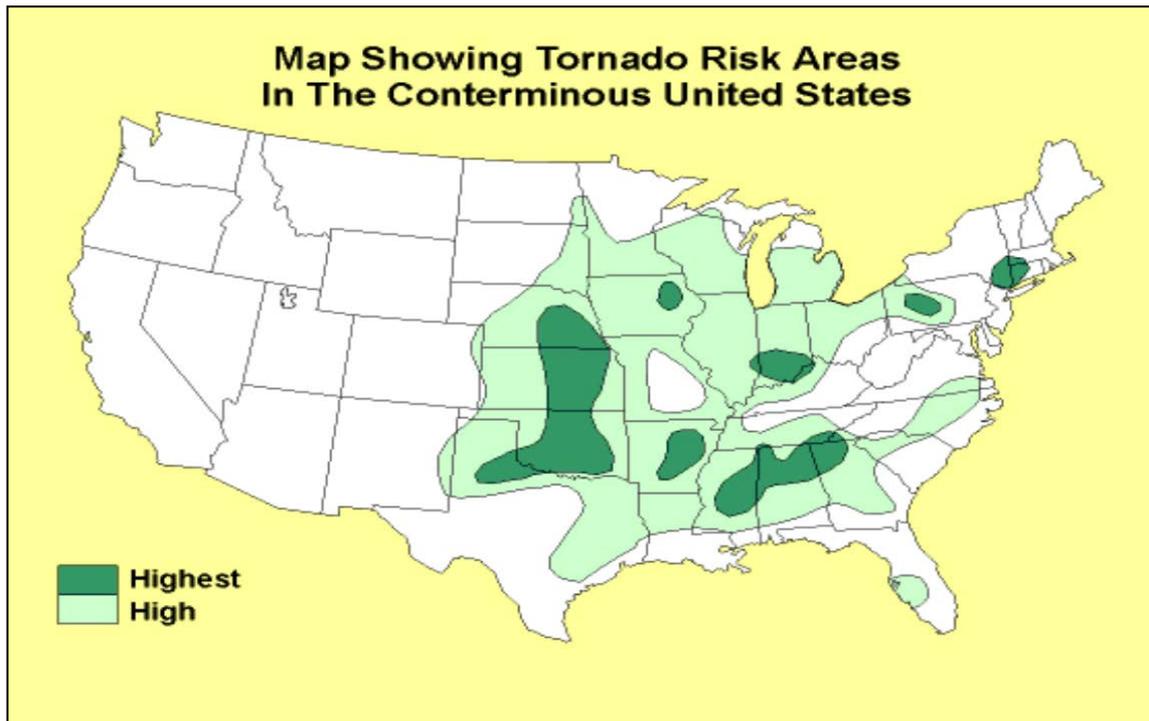
The damage from a tornado is a result of the high wind velocity and wind-blown debris. Tornado season is generally March through August, although tornadoes can occur at any time of year. They tend to occur in the afternoons and evenings. Over 80% of all tornadoes strike between noon and midnight. The most violent tornadoes are capable of tremendous destruction with wind speeds of 250 mph or more.

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Damage paths can be in excess of 1 mile wide and 50 miles long. Even with advances in meteorology, warning times for tornadoes is short or impossible

The intensity, path length and width of tornadoes are rated according to a scale developed by T. Theodore Fujita and Allen D. Pearson. The Fujita-Pearson Tornado Scale is presented below. Tornadoes classified as F0-F1 are considered weak; those classified as F2-F3 are considered strong, while those classified as F4-F5 are violent.

Fujita Scale/Enhanced Fujita Scale for Tornadoes				
F-Scale	Fastest Quarter Mile Wind Speed	Typical Impacts	Enhanced Scale: 3 Sec Wind Gust Speed	Enhanced F-Scale
F0	40-72 mph	Some damage to chimney; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.	65-85 mph	EF0
F1	73-112 mph	Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.	86-110 mph	EF1
F2	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.	111-135 mph	EF2
F3	158-206 mph	Roof and some walls torn off well constructed houses; trains overturned; most trees in forest uprooted.	136-165 mph	EF3
F4	207-260 mph	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.	166-200 mph	EF4
F5	261-318 mph	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel reinforced concrete structures badly damaged.	Over 200 mph	EF5



Between January 1, 1995, and December 31, 1999, the State of Tennessee experienced in excess of 150 tornadoes.

- Six twisters killed 52 and injured 552 in six counties in March 1933. Called the East Nashville Tornado, this storm damaged or demolished sixteen hundred structures.

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- In March 1952, 67 people died, 282 were injured and damages exceeded \$5.5 million.
- In April of 1974, 45 people were killed and 600 injured in a series of thirteen tornadoes.
- The Nashville tornado of April 1998 left extensive property damage in downtown Nashville and in several East Nashville neighborhoods.
- A tornado in early 1999 destroyed large portions of downtown Clarksville, demolishing historic churches, commercial buildings, and homes.

A series of 22 tornadoes transited Tennessee, Alabama, Arkansas, Georgia, South Carolina and Mississippi from April 2-6, 1936. Four hundred and twenty-one fatalities and \$ 22 million in damages became the storms' legacy. In Tennessee; Lincoln, Maury, and Hardin counties: 10 fatalities, 51 injuries in 2 separate incidents.

In Maury County, significant tornadoes present a low to moderate threat, occurring once every two to three years and affecting up to 5% of the county's population. Though tornadoes have affected Maury County infrequently in the past (see the table below), the threat remains. Due to a large number of mobile homes throughout the county, the potential for property damage and loss of life during a tornado is high.

MAURY COUNTY HAZARD HISTORY								
Hazard	Tornados [note: Maury County – effects experienced specific location area in county; community – effects experienced in a localized area]							
Hazard Date	Location or Map Reference	<u>Event Description</u> Power Outage Trees Down Bridge out Road Closed Evacuation	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset or Content Value	<u>Source</u> FEMA NOAA USGS Local etc.
04/16/98	7 mi. SW of Culleoka	Tornado F3 17mi X 800yds. Trailers/Homes	0	8	24	4,000,000	40,000	NOAA SHELDUS
05/25/00	2 mi. WNW of Williamsport	Tornado F1-1mi X 220yds Trees	0	0		1000	0	NOAA SHELDUS
05/25/00	7 mi W of Columbia	Tornado F1-1mi X 100yds	0	0		0	0	NOAA SHELDUS
05/25/00	3 mi ESE of Fountain Hgts	Tornado F2-3mi X 220yds.	0	0	1	15000	0	NOAA SHELDUS
02/25/01	Mt. Pleasant	Tornado F0-0mi X 10yds Trees	0	0		1500	0	NOAA SHELDUS
04/28/02	Mt. Pleasant 3532N8712W	Tornado F0 0mi X 10yds	0	0		2,500,000	25,000	NOAA SHELDUS
11/15/05	Spring Hill	Tornado F0	0	0	0	0	0	NOAA SHELDUS
		TOTAL	0	8	25	6,517,500	65,000	

4.3.1.6: Winter Storms

Winter storms include ice storms, blizzards and extreme cold. The most arduous blizzard seasons of the twentieth century were those of 1945, 1951, and 1993. The landmark winters of the nineteenth century were in 1835 and 1898. Winter storms in Tennessee often include extreme cold and ice. These storms are especially hazardous in terms of closing emergency routes, creating power and utility system failures, and immobilizing economic activity.



In March of 1993 the "Storm of the Century" struck the eastern half of Tennessee killing 18 people and causing \$18 million in damage. In 1994, a major ice storm created massive utility outages and road damage over two-thirds of the state. The net result was over \$100 million in damages as was the largest disaster in the state's history. Additionally, major snowstorms effected citizens of Tennessee in 1996 and 1998, requiring both State and Federal Government response. The total combined cost of these winter storms was in the \$25 million range.

Maury County receives an average of five inches of snowfall each year. A few inches of snow can make travel impossible given the hilly and rural terrain throughout much of the county. Ice storms bring the entire affected area to a standstill. Ice accumulation causes trees and power lines to fall, interrupting telephone service and creating significant power outages. Particularly in low-income residences with sub-standard insulation, water lines freeze and break during periods of extreme cold, leaving residents without water and creating a burden on the public and private infrastructure. Closure of Interstate 65 and other major transportation routes necessitates emergency sheltering for stranded motorists. Jurisdictions are economically impacted by costs for materials and labor to clear streets and roadways. Residents are often stranded, and commerce and industry are affected by restricted travel of employees, delivery services, and customers.

Winter storms present a moderate to high threat to Maury County. On average, winter storms occur every three years, affecting the entire county.

MAURY COUNTY HAZARD HISTORY								
Hazard	Winter Storms[note: countywide – effects experienced throughout entire county]							
Hazard Date	Location or Map Reference	Event Description Power Outage Trees Down Bridge out Road Closed Evacuation	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset or Content Loss	Source FEMA NOAA USGS Local etc.
03/07/08	TNZ006-024>026-057>058-060	Winter Storm	0	0	0	0	0	NOAA SHELDUS
02/28/09	TNZ060	Winter Weather	0	0	0	0	0	NOAA SHELDUS

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03/01/09	TNZ032-056>058-060>063-066-075-077>078-093	Heavy Snow	0	0	0	0	0	NOAA SHELDUS
03/01/09	TNZ032-056>058-060>063-066-075-077>078-093	Sleet	0	0	0	0	0	NOAA SHELDUS
03/01/09	TNZ032-056>058-060>063-066-075-077>078-093	Winter Storm	0	0	0	0	0	NOAA SHELDUS
01/29/10	TNZ058-060-075-077>078-080	Ice Storm	0	0	0	100,000	0	NOAA SHELDUS
02/08/10	TNZ060	Winter Weather	0	0	0	0	0	NOAA SHELDUS
12/12/10	TNZ007-027-059>061-095	Heavy Snow	0	0	0	0	0	NOAA SHELDUS
12/12/10	TNZ007-027-059>061-095	Winter Weather	0	0	0	0	0	NOAA SHELDUS
12/13/10	TNZ060	Extreme Cold/ Wind Chill	1	0	0	0	0	NOAA SHELDUS
12/15/10	TNZ060	Winter Weather	0	0	0	0	0	NOAA SHELDUS
12/25/10	TNZ032-058-060>064-066-079-093	Heavy Snow	0	0	0	0	0	NOAA SHELDUS
12/25/10	TNZ032-058-060>064-066-079-093	Winter Weather	0	0	0	0	0	NOAA SHELDUS
01/09/11	TNZ056-058-060-061	Heavy Snow	0	0	0	0	0	NOAA SHELDUS
01/20/11	TNZ007-026-059>061-095	Heavy Snow	0	0	0	0	0	NOAA SHELDUS
01/20/11	TNZ007-026-059>061-095	Winter Weather	0	0	0	0	0	NOAA SHELDUS
01/26/11	TNZ026-059-060	Heavy Snow	0	0	0	0	0	NOAA SHELDUS
01/26/11	TNZ026-059-060	Winter Weather	0	0	0	0	0	NOAA SHELDUS
02/09/11	TNZ026-060-095	Winter Weather	0	0	0	0	0	NOAA SHELDUS
		TOTAL	1	0	0	100,000	0	

4.3.1.7: Wild fires

Wild fires are incidents of uncontrolled burning in grasslands, brush, or woodlands. Significant wild land fires occur about once every two years. However, several hundred lesser events occur annually across the entire state. The eastern and middle portions of the state are most affected, and a single event usually impacts less than 5% of any one county's population.



Seasonal wild fires have been destructive, especially during periods of drought. Some of the worst were recorded in 1925, 1935, and the 1980s. These fires, usually caused by lightning strikes, have destroyed incalculable acres of cropland as well as wildlife, domestic livestock,

Due to the abundance of vegetation throughout the county, wildfires are a moderate threat in all annually, usually as a result of escaped controlled burning or arson. The county's volunteer fire departments respond to an average of 30 wild land fires each year. Many of these fires occur in mixed interface areas and may pose a threat to occupied structures throughout the moderately populated areas. Two municipalities, Mt. Pleasant and Spring Hill have extensive areas of greenbelt, and brush fires in these cities create a significant urban interface danger. No new major wildfire events have occurred in Maury County since the 2012 Plan. The Table below from the 2012 Plan identifies the occurrence and extent of major wildfires in Maury County:

MAURY COUNTY HAZARD HISTORY								
Hazard	Wildfires[note: countywide – effects experienced throughout entire county; community – effects experienced in a localized area]							
Hazard Date	Location or Map Reference	Event Description Wildfires of 10 acres or more	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset or Content Loss	Source FEMA NOAA USGS State Local
03/19/95	Sowell Mill Pk.	Wildfire (120 acres)	0	0	0	12,000	60,000	Rural F.D.
04/11/95	Sowell Mill Pk.	Wildfire (18 acres)	0	0	0	1800	9,000	Rural F.D.
09/16/99	Craig Bridge Rd	10 acre wildfire	0	0	0	1000	5,000	Rural F.D.
		TOTAL	0	0	0	14,800	74,000	

4.3.2: Manmade Hazards

In considering manmade hazards, Maury County decided to concentrate its analysis and future mitigation efforts on those more likely to occur such as hazardous materials incidents or those that that would result in major emergencies or disasters such as hazardous materials spill or release.

Hazards that would result in smaller, isolated events (such as arson or civil unrest) or those that would be difficult to mitigate (such as hostage situation or enemy attack) were not considered

for further study under this Plan. Additionally, those hazards that are being addressed through concurrent planning efforts and those that are the direct result of other hazards already being addressed were not considered priorities for further study under this Plan. It is recommended that these manmade hazards become more fully incorporated into this Plan during future plan updates and enhancements.

4.3.2.1: Dam/levee Failure

Dam break floods are usually associated with intense rainfall or flood conditions. The greatest threat to people and property is areas immediately below the dam. Dam failure may be caused by faulty design, construction, operational inadequacies, or flooding larger than the dam design.



The degree and extent of damage depend on the size of the dam. A small dam retaining water in a stock pond may break resulting in little damage. However, a small dam break could result in the loss of irrigation water for a season causing financial hardship to farmers. An even larger dam failure might bring about considerable loss of property, destruction of cropland, roads, utilities and even loss of life. More far-reaching consequences can include loss of income, disruption of services and environmental devastation.

In Tennessee, there are more than 1,200 dams, most of them small agricultural dams. There are some large dams within the state including those operated by the Tennessee Valley Authority and the U. S. Army Corps of Engineers. These dams serve to produce electrical power for the state, control flooding, and to provide recreational opportunities.

Earthquakes present a significant threat to dams; even a moderate quake could result in dam failure. Several dam or reservoir failures have occurred. The worst incident was in Claiborne County, south of New Tazewell, on August 3, 1916. A milldam failed on Big Barren Creek, sending a giant wall of water downstream and breaching several other smaller dams in the process. Twenty-four people died amidst the immense property damage caused by the roaring water.

Several dams and impoundments associated with phosphorus mining operations exist in the Maury County watershed. The Mine Safety and Health Administration, TDEC, and/or the Office of Surface Mining regulate those structures. Sixteen dams in Maury County have been designated as posing a significant or high risk to communities downstream of the impoundment. The dams of concern are identified below.

MAURY COUNTY DAMS								
Note: L = low; S = Significant; H =High								
Dam Name	River	City	NID Height	NID Storage	Year Built	Drainage Area	Hazard Rating	Owner Name
Campbell Lake	Trib-Patterson Branch	Canaan	21.4	220	1966	0.89	L	Maury County
Miller Lake	Trib-Little Bigby Creek	Southport	22.4	98	1949	0.49	H	Collier Miller
U.T. Station	Trip-Rutherford Creek	Darks Mill	14	66	1950	0.32	L	University of Tennessee

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Hunter Lake	Trib-Rutherford Creek	Greens Mill community	19	124	1963	0.87	S	Willis Hunter Jr.
Bob s #2	Trib-Scotts Creek	Porters Chapel	34.1	242	1958	0.29	H	Robert Bain
Bob s #1	Trib-Scotts Creek	Porters Chapel	40.6	434	1961	0.48	H	Robert Bain
Big Oak	Trib-Double Branch Creek		24.2	304		1.75	H	General Management
Golden Eye Lake	Trib-Duck River	Williamsport	100	1200		0.19	S	TWRA
Shell Cracker	Trib-Duck River	Williamsport	110	2508		0.54	S	TWRA
Lost Acres	Snow Creek	Santa Fe	25.9	300	1960	0.74	H	Joe Willoughby
Arrow Lake	Sugar Creek Trib-Big Bigby	Mt. Pleasant	26.9	1135	1921	6.6	H	Aventis Crop science
Bluecat Lake	Trib-Leipers Fork	Williamsport	120	5760	1979	0.62	H	TWRA
Solutia #11	Trib-Duck River	Williamsport	80	2012	1962	0.36	L	Solutia inc.
Solutia #2	Helms Branch	Williamsport	56.9	262.9	1962	1.58	L	Solutia inc.
Solutia #8	Helms Branch	Williamsport	25	518	1961	0.28	S	Solutia inc.
Occidental Chem. #10	Rutherford Creek	Godwin	63.9	1838	1965	0.43	S	Occidental
Solutia #15	Cold Branch	Williamsport	227	32945	1977	1.7	L	Solutia inc.
Rhone Poulenc #21	Trib-Sugar Creek	Ridley	55.6	4600	1980	0.04	S	Rattle/Snap Hunting Club
Ingram	Carters Creek		14.5	35	1960	0.19	S	Ingram, Charlie
Old Columbia			27.2	700	1920	1208	S	City of Columbia
Whippoorwill Lake			39.8	800	1983	1.15	H	TWRA
Old Columbia	Duck	Columbia	65	1000	1925	0	L	Ms. Debra Whitehead

4.3.2.2: Hazardous Materials Incident

Within Maury County every city has multiple facilities that produces, stores, or uses some form of hazardous material. Every water treatment plant has chlorine on-site to rid the water of bacterial contaminants. Almost every community has a farmer's Co-Op, which stores significant quantities of pesticides, fertilizers, etc. Hazardous materials are transported down many roads every day. Propane trucks serve the rural populations while natural gas is used by many urban citizens and must be treated as a dangerous hazard when a leak occurs. In addition, every home has some hazardous materials present - cleaners, batteries, bleach, paint, gasoline, etc.

Hazardous Materials Transportation Incident is any occurrence of a hazardous material release during transport, that pose a risk to health, safety, and property as defined by Department of Transportation Materials Transport regulations. Hazardous materials transportation incidents

can occur at any place, although the vast majority occurs on interstate highways, major federal or state highways or on the major rail lines.

Nine local highways, three state highways and a portion of Interstate 65 serve Maury County. CSX and Tennessee Southern railroads bisect the central portion of the county. These highway and rail routes serve as transportation corridors for hazardous materials. While there have been no major incidents of hazardous materials release in train incidents in Maury County, the potential exists.



Although hazardous materials transportation events affect less than 5% of the general population, incidents can affect several thousand people. The events may pose significant risk to emergency responders who lack adequate training and equipment. Every year about 250,000 shipments of hazardous materials crisscross the state of Tennessee. Many incidents occur in sparsely populated areas and affect very few people. There are occasions where materials are involved in accidents in areas with much higher population densities such as the propane tanker explosion in Memphis in 1989 that killed eight people. Significant events occur about 50 times per year in Tennessee.

Interstate Pipeline Hazardous Materials Incident is an incident of an uncontrolled release of hazardous materials from pipelines. There are a significant number of high-pressure interstate natural gas and petroleum pipelines running through Maury County. The pipelines are used to provide natural gas to the utilities in Tennessee and transport materials to Northeastern United States from production areas along the Gulf Coast. Major releases from these facilities occur, on average, twice a year, affecting up to several dozen people at a time.



Fixed Facility Hazardous Materials Incident is any occurrence of uncontrolled release of materials, from a fixed site, that poses a risk to health, safety, and property as determined in the EPA's Resource Conservation and Recovery Act. These materials are classed identically to those specified in the section on transportation accidents. Hazardous materials events of this type occur several times a month in many of the counties in Tennessee. Major events occur approximately six times per year across the state.

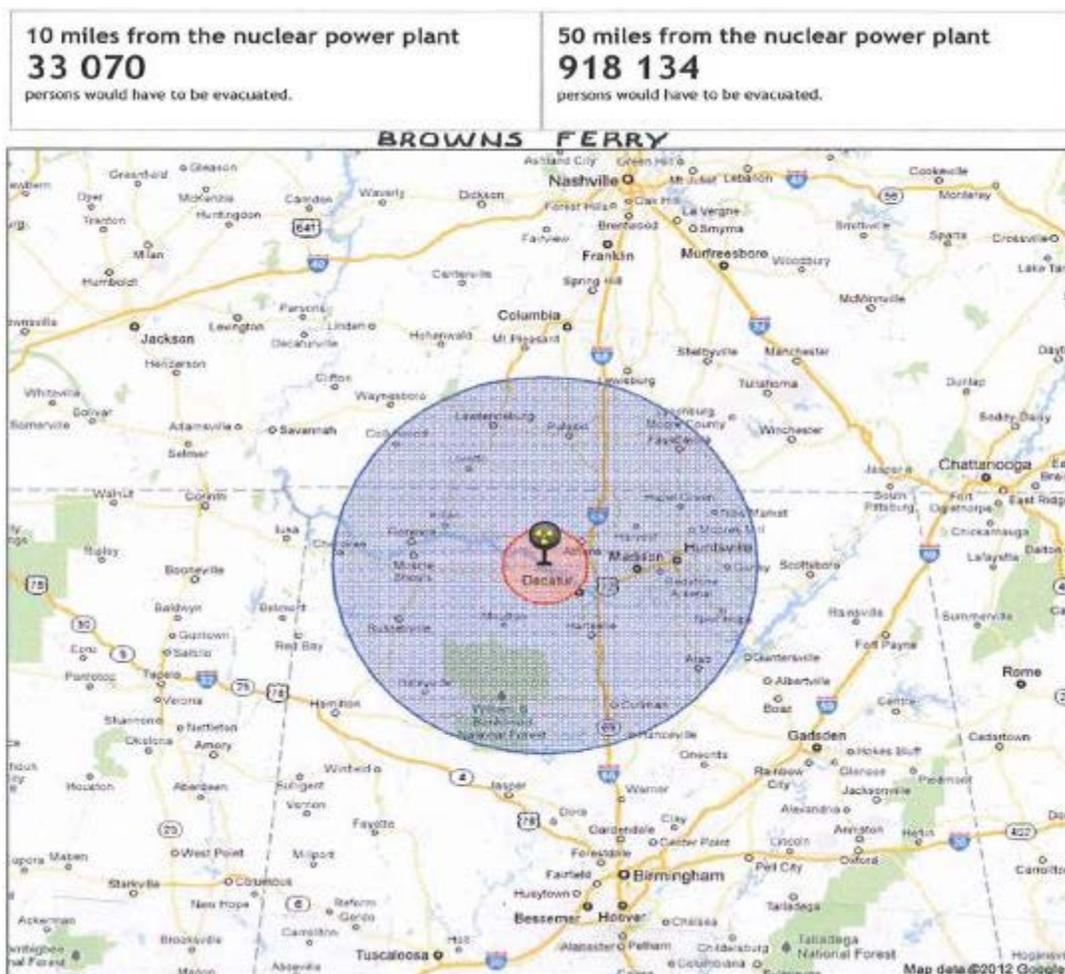
Fixed Nuclear Release is any occurrence at a fixed nuclear power plant or other facility, with an inventory of radioactive material that results in a release of radioactive material in sufficient quantity to constitute a threat to the health and safety of the community.

The incident at Three-Mile Island (Pennsylvania) in 1979 led to the creation of standards and protocols for the handling of emergencies at nuclear power plants. Since that time, there has not been a major emergency at any of the nation's nuclear facilities. Both TVA and the state keep emergency response plans up-to-date, and hold at least one full-scale exercise every year. An incident at a fixed nuclear facility in Tennessee could affect about 20% of the population.

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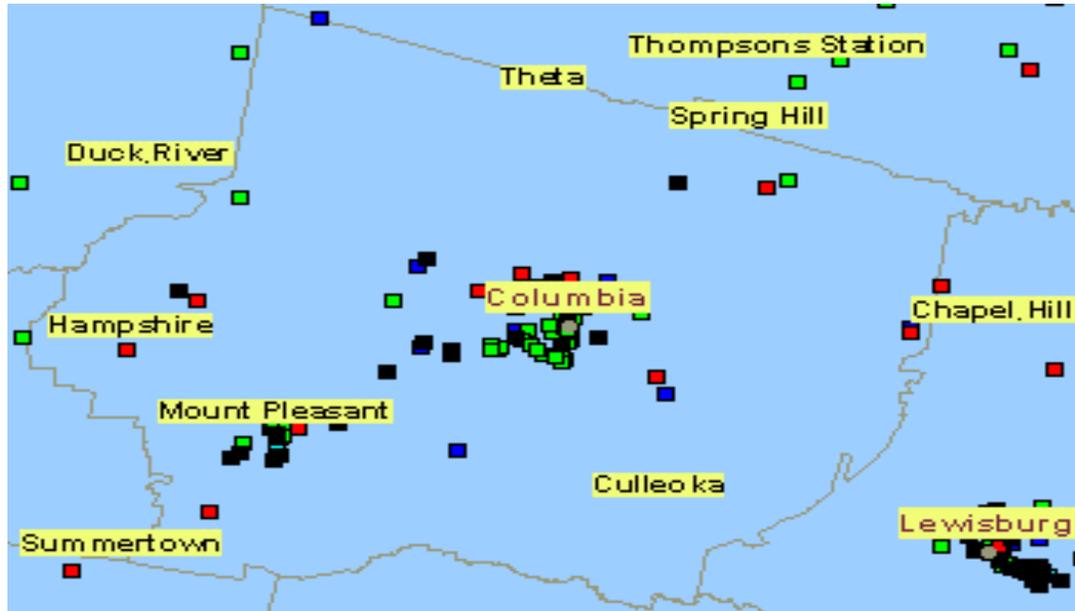
The State of Tennessee is home to the Oak Ridge Reservation where the U. S. Department of Energy operates two nuclear power plants; Sequoyah and Watts Bar. These are operated by the Tennessee Valley Authority (TVA), and provide as much as 20% of their electrical capacity. TVA also operates a nuclear plant in Brown's Ferry, Alabama, an accident at this facility, could theoretically affect residents of Maury County. As of March 2012, they are in the process of replacing all 100 emergency sirens with units equipped with battery backups in a 10-mile radius. The total cost of this project is about \$7 million. The new sirens run on conventional electrical service, but feature a battery backup designed to keep them operating for up to seven days if power is interrupted, as it was after last April's tornadoes.

At Browns Ferry, contractor crews will replace sirens at the rate of four to six a day and be working six days a week in Lauderdale, Limestone, Lawrence and Morgan counties of North Alabama.



Fixed Facilities

There are approximately 30 major facilities within Maury County that manufacture, store, or utilize legal quantities of hazardous materials in some capacity. An incident at one of these facilities could be expected to affect as much as 10% of the county's population. Those facilities are depicted in the map below:



Some of the most notable disasters in Tennessee's history have been the result of hazardous materials accidents:

- The Rockwood bromine spill in 1977.
- In 1906 a railroad car of dynamite exploded in a rail yard at Jellico in Campbell County, killing 9 people, injuring 200, and leaving 500 homeless.
- In 1978, the City of Waverly was the site of a devastating liquid propane gas explosion that killed 16 people and injured 97.
- In 1983 an explosion at an illegal fireworks factory, near Benton in Polk County, killed 11 workers, injured one, and demolished several buildings.
- In December 1988, a liquid propane gas truck overturned and exploded in a gigantic fireball on I-240 in Memphis. Nine people were killed on the highway, and additional lives were lost when the flaming ten-thousand-gallon liquid propane tank became airborne and crashed into a nearby duplex, setting several buildings on fire.

A significant release incident occurs on state and federal highways in Maury County approximately three times each year. A technological event or accidental release has the potential of extending contamination over much of the county. The table below depicts the reported incidents in Maury County.

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MAURY COUNTY HAZARD HISTORY								
Hazard	Accidental CBRNE/Hazardous Materials Spills/Releases [community – effects experienced in a localized area]							
Hazard Date	Location or Map Reference	Event Description Material Type Extent Area Evacuation Etc.	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset or Content Loss	Source FEMA NOAA USGS State Local
Jun-96	School Bus	Chemical Release	0	3	1	1,000	1,500	Daily Herald
Nov-96	Zeneca Mt. Pleasant	Methyl Alcohol	0	0	1	0	5,000	USCG
Nov-97	I-65	Diesel in drain 150gal.	0	0	1	0	3,000	USCG
Jun-98	Union Carbide Columbia	Anthracene Spill	0	0	1	0	1,500	USCG
Oct-98	Storke Town	Gas Release	0	36	1	0	108,000	Daily Herald
Oct-98	Tradewinds Dr. Columbia	Diesel Leak	0	0	1	0	1,500	USCG
Nov-98	Saturn Mfg.	Purge Solvent	0	0	1	0	22,500	USCG
Jan-99	Saturn Mfg.	Gasoline in creek	0	0	1	7,500	14,500	USCG
Apr-99	Spring Hill H. S.	Chemical Spill	0	0	1	0	1,000	Daily Herald
Sep-01	Spring Hill Lock Ave.	Body shop waste spill	0	0	11	2,500	4,250	USCG
Oct-01	Mt. Pleasant	Zeneca Bromine 9000#	0	0	1	18,750	24,000	USCG
Jun-02	Saturn Mfg. Locomotive	Diesel spill 2000 gal	0	0	1	70,000	34,500	USCG
Nov-03	Riverside Dr. Columbia	Contaminant in Water Intake	0	1	1	100,000	210,000	USCG
Feb-04	Sawdust, Hwy 50	Propane truck	0	2	1	25,000	10,000	Daily Herald
		TOTAL	0	42	24	224,750	441,250	

4.3.2.3: Pandemic/Vectors

Pandemics (World Wide epidemics) have occurred three times in the world's human population.

The 1918-1919 Spanish Flu caused the highest number of deaths. India had 16 million deaths. The U.S. had 675,000 deaths. In England 230,000 died. In Germany 225,000 and in France 166,000 perished. Worldwide, the estimated fatalities were 20 million to 50 million. During the Spanish Flu pandemic, Spain closed its government. New York City closed its port and trains did not run. The British Navy did not sail for three weeks.

The 1957-58 Asian flu was identified in February 1957 in China. By June, it had crossed the Pacific and entered the U.S. Globally, it caused a million deaths. In the U.S., 70,000 persons died. It was a Type A virus.

The 1968-69 Hong Kong Flu caused four million deaths worldwide and 34,000 deaths in the U.S. It was a Type A virus.

Scientists expect that an Avian H5 Flu virus, which has swept through chickens and other poultry, will change genetically into a flu that can be transmitted to humans. It has emerged as a highly pathogenic strain of influenza virus that is across the entire western component of Asia. Dr. Gerberding said the CDC is preparing for a possible pandemic next year. A special flu team formed last year monitors the spread of avian flu and analysis the strains as they appear. This new avian flu strain is unknown in the human population, thus humans have no immunity. The mortality rate has been up to 72%.

Influenza occurs every year and nations attempt to prepare for the “flu season” which brings one to two weeks of symptoms, even pneumonia and death. The cost in the U.S. is \$71 to \$167 billion annually. Fatalities in the U.S. are about 36,000 and worldwide 250,000 to 500,000.

Three types of influenza viruses exist: A, B, and C. Type A viruses are of most concern for humans, pigs, marine mammals and birds. Type B virus has been identified in the seal population and is fatal. Influenza C virus is associated with ticks.

Influenza viruses are constantly evolving. The viruses undergo minor and major modifications through antigenic drift and antigenic shift. Antigenic drift is the mechanism responsible for creating small changes in the genetic composition of the virus. Antigenic drift occurs in Type A and B influenza.

Antigenic shift describes significant changes in the genetic structure of the virus. It occurs only in type “A” when two different virus strains are present in a host or after transmission of viruses from different hosts. The two viruses swap genetic material creating a “new” virus never before seen.

Avian flu was first discovered in Canada. It is estimated that 50% of wild ducks in Canada carry various forms of the flu. Highly infectious forms are the destructive to domestic poultry causing a rise in food costs. This has a powerful ripple effect of raising costs to processors, grocers and restaurants. Three strains of avian influenza viruses are known to jump the species barrier from birds to non-human animals to humans: A (H9n2), A (H7N7) and A (H5N1). A (H5N1) is the most lethal causing death in 68 % of humans infected with it. Mild variants of avian flu are most feared by public health officials. Coughing or sneezing, they spew infectious droplets at a rate of 150 feet per second. Shaking hands or contaminated public washrooms and doorknobs can spread the disease very quickly.

Small Pox – Variola major was last seen in the USA was in 1949. The last naturally occurring case was in Somalia in 1977. Vaccination for smallpox in the USA ended in 1972 except for the military personnel. When smallpox was considered eradicated worldwide, only two laboratories were designated to keep the virus. One lab was our CDC in Atlanta, Georgia and the other lab was in Russia. When the break-up of the USSR occurred, the location of Russia’s smallpox virus became unknown. It was widely thought that at least four other countries received part of the virus. Variola is classified, as a biological weapon, on the “A” list by the CDC. The virus can

be transmitted from person to person, may result in high mortality rate (30%), cause panic and social disruption, have a moderate to high potential for large-scale dissemination, and require special action for public health preparedness and response.

Hepatitis A virus results from eating food or drinking water contaminated with human excrement. Outbreaks are associated with consumption of produce. Hepatitis A virus attacks the liver, is highly infectious and can lead to varying degrees of illness, hospitalization or even death.

Emerging Pathogens - Severe Acute Respiratory Syndrome. SARS started in China in late 2002. The World Health Organization reported 29 countries were affected by the end of July 2003. There were 8500 cumulative cases and 774 deaths. Health care workers accounted for 1707 cases. In the United States 29 cases were confirmed. SARS is closely associated with influenza and is of major concern to all public health officials.

Emerging Pathogens - Monkey pox Virus is an orthopox virus, which also includes cowpox and smallpox. It is a viral disease occurring in the rain forest of central and West Africa. Monkey pox is milder than smallpox. It was seen in the USA June 14, 2003. It was introduced to this country by prairie dogs infected by Gambian rats imported by a distributor of exotic pets. By June 18, 2003, 87 persons in six states were confirmed with the virus.

Epidemics in Tennessee were major killers in the 1700s and 1800s. The worst culprits were smallpox, polio, influenza, measles, cholera, and yellow fever. There have been seven great epidemics of cholera and eight of yellow fever in Tennessee history.

- In 1918 the Spanish flu pandemic struck Tennessee, killing over 7,700 people. Small cities were infected as severely as larger cities; the Du-Pont company City of Old Hickory, near Nashville, was hardest hit. This plant was particularly vulnerable due to its large labor force (over 7,500 people) and their close proximity during working hours. More than 1,300 Nashville citizens died.
- An 1873 epidemic claimed 2,000 in Memphis, a number which, constituted at the time the most yellow fever victims in an inland city
- In 1878 Yellow fever raged in Memphis until mid-October, infecting over 17,000 and killing 5,150.
- In 1939, there was a typhus fever outbreak in Nashville.

Maury County has a history of disease outbreak. The table below depicts the Pandemic (disease epidemic) incidents in Maury County.

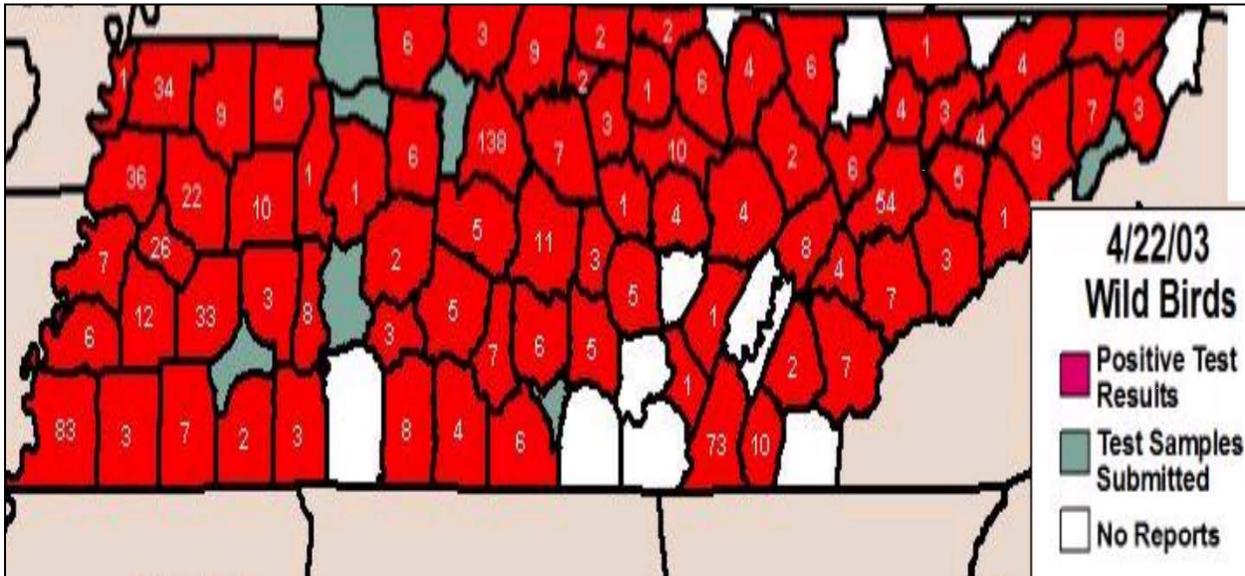
MAURY COUNTY HAZARD HISTORY	
Hazard	Pandemics/Epidemics[note: countywide – effects experienced throughout entire county; community – effects experienced in a localized area]

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Hazard Date	Location or Map Reference	Event Description Medical Type Extent Etc.	Fatalities	Injuries	Assets Damaged	Medical Cost	Lost Wages Cost	Source
								FEMA
04/20/98	Brookhaven	Rabies	0	1	0	0	0	Daily Herald
09/20/98	Rally Hill	Rabies	0	3	0	0	0	Daily Herald
01/09/03	Columbia	Bird dropping- Woodard school	0	5	0	0	15,000	Daily Herald
		TOTAL	0	9	0	0	15,000	

Animal & vector-based hazards is one of the "emerging" threats to Tennessee and its citizens are vector-based threats - bacteria, insects and other animals that pose a direct or indirect hazard to humans, their food supply, or the state's economy. Vector-borne diseases which have been diagnosed in Tennessee include: Western equine encephalitis, St. Louis encephalitis, Colorado tick fever, Rocky Mountain spotted fever, tularemia, rabies, plague, and Hanta-Virus.

West Nile Virus is one of several mosquito-borne viruses in the United States. The virus exists in nature primarily through a transmission cycle involving mosquitoes and birds. Mosquitoes become infected with West Nile Virus (WNV) when they feed on infected birds. Less than one percent of those infected may develop meningitis or encephalitis, the most severe forms of the disease, which occurs primarily in persons over 50 years of age. Symptoms of encephalitis or meningitis may include severe headache, high fever, neck stiffness, stupor, disorientation, tremors, convulsions, paralysis, coma and sometimes, death.



Foot and Mouth Disease is a highly infectious and difficult to control disease of cloven-hoofed mammals including cattle, swine, wild sheep, goats, deer and pigs. Should an outbreak occur anywhere in the United States, routine livestock movements could rapidly spread the disease making early detection, combined with immediate eradication of affected animals, crucial for controlling the disease? Left unchecked, the economic impact of FMD could reach billions of dollars in the first year. Deer and other wildlife would likely become infected and be a source for re-infection of livestock.

Fire ant colonies can quickly become a human health hazard. Fire ants inject a dose of venom that causes a burning sensation. These stings can cause blisters and infections, and can even cause anaphylactic shock or death in the most sensitive victims. It is also not uncommon for colonies of fire ants to attack and sometimes kill domestic animals, pets and wildlife. Fire ant mounds can grow up to 2 feet high above ground and colonies can destroy entire fields of corn and soybeans. These insects are capable of causing major damage, both in terms of human and animal harm and in crop damage. Fire ants have invaded many of the southern Tennessee counties and continue a slow spread northward.

4.3.2.4: Terrorism

The Federal Bureau of Investigation (FBI) defines terrorism as “the unlawful use of force against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives.” Events could typically be expected in urban areas near public gatherings, government facilities or highly visible areas.

Terrorists often use threats to create fear among the public, to try to convince citizens that their government is powerless to prevent terrorism, and to get publicity for their causes.



The 1966 Defense Against Weapons of Mass Destruction Act, defines weapons of mass destruction as “any weapon or device that is intended, or has the capability, to cause death or serious bodily injury to a significant number of people through the dissemination, release or impact of toxic or poisonous chemicals or their precursors, a disease organism, or radiation or radioactivity.” President Clinton’s 1994 Executive Order 12938 entitled “Proliferation of Weapons of Mass Destruction” also defines weapons of mass destruction to be “nuclear, biological, or chemical weapons.”

The Domestic Preparedness Program is a partnership of federal, state, and local agencies with the goal of ensuring that, as a nation, we are prepared to respond to a terrorist attack involving nuclear, biological, or chemical weapons - weapons of mass destruction (WMD). Today, the term "Homeland Security" is used to denote the concept of preparing for these kinds of events.

The FBI categorizes terrorism in the United States primarily as one of two types - domestic terrorism or international terrorism. Domestic terrorism involves groups or individuals whose terrorist activities are directed at elements of our government or population without foreign direction. International terrorism involves groups or individuals whose terrorist activities are foreign-based and/or directed by countries or groups outside the U. S., or whose activities transcend national boundaries.

Direct attacks such, as the Oklahoma City bombing of the Murrah building was an act of domestic terrorism. The attacks on the World Trade Center in 2001 were acts of international terrorism. Attacks can take many forms. They are all designed to terrorize citizens.

Bioterrorism: In the wake of the September 11, 2001 terrorist attacks, concerns about bio-terrorist attack involving smallpox prompted Tennessee health officials to develop a mass vaccination plan. Maury County Health Department's plan was tested during an August 2004 Strategic National Stockpile drill.

Bomb Threats: Though none have been found credible, bomb threats are becoming an increasing problem for schools and government in Maury County. Government buildings, area high schools, middle and elementary schools have all been targets of bomb threats.

Cyber-Terrorism: Several facilities in Maury County have been affected by computer viruses and attempted system entry by "hackers."

Maury County contains potential target sites for terrorist attack. The table below lists the terrorist type incidents experienced in Maury County

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MAURY COUNTY HAZARD HISTORY								
Hazard	Terrorist/CBRNE[note: countywide – effects experienced throughout entire county; community – effects experienced in a localized area]							
Hazard Date	Location or Map Reference	Event Description Building/Asset Damage.	Fatalities	Injuries	Assets Damaged	Estimated Costs	Asset or Content Loss	Source FEMA NOAA USGS State Local
1995	Highland	Weapon	0	0	0	1500	0	School System
1995	Spring Hill H.S.	Weapon	0	0	0	1500	0	School System
1996	Whitthorne	Bomb Threat	0	0	0	2500	0	School System
1997	Spring Hill Elementary	Bomb Threat	0	0	0	2500	0	School System
1997	Spring Hill Elementary	Bomb Threat	0	0	0	2500	0	School System
1998	Hampshire	Weapon	0	0	0	1500	0	School System
1998	Woodard	Bomb Threat	0	0	0	2500	0	School System
2000	Baker School	Weapon	0	0	0	1500	0	School System
2000	Spring Hill H.S.	Bomb Threat	0	0	0	2500	0	School System
2000	Spring Hill H.S.	Bomb Threat	0	0	0	2500	0	School System
2000	Mt. Joy Rd.	Recover Explosives	0	0	0	5000	0	Bomb Squad
2000	Halifax Dr.	Blasting Caps	0	0	0	5000	0	Bomb Squad
2000	Lewis County	Explosives and Blasting Caps	0	0	0	5000	0	Bomb Squad
2000	Baker School	Recover Inert Military Ordnance	0	0	0	5000	0	Bomb Squad
2000	Mt. Pleasant Pike	Recover Explosives & IED	0	0	0	5000	5,000	Bomb Squad
2001	Central H.S.	Bomb Threat	0	0	0	2500	2,500	School System
2001	Porter Hills Subdivision	Recover blasting caps	0	0	0	5000	3,500	Bomb Squad
2001	Mt. Joy Rd.	Recover Explosives	0	0	0	5000	5,000	Bomb Squad
2001	Spring Hill	Suspicious Package	0	0	0	5000	3,500	Bomb Squad
2001	Columbia	Blasting Caps	0	0	0	5000	3,500	Bomb Squad

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2001	Stoneybrook Subdivision	Recover military ordnance	0	0	0	5000	5,000	Bomb Squad
2001	Duck River	Blasting Caps	0	0	0	5000	3,500	Bomb Squad
2001	Sowell Mill Pk.	Recover explosives	0	0	0	5000	5,000	Bomb Squad
2002	Porter Hills Subdivision	IED/Chemical reaction device	0	0	0	5000	2,500	Bomb Squad
2002	Columbia	Incendiary devices	0	0	0	5000	2,500	Bomb Squad
2002	Maury County Jail	Pipe Bomb	0	0	0	5000	5,000	Bomb Squad
2002	E 8th Street	Blasting caps & incendiary device	0	0	0	5000	0	Bomb Squad
2003	Central H.S.	Weapon	0	0	0	1500	0	School System
2003	Highland	Weapon	0	0	0	1500	0	School System
2003	Spring Hill H.S.	Bomb Threat	0	0	0	2500	0	School System
2003	James Campbell Blvd.	Suspicious package attached to vehicle	0	0	0	5000	0	Bomb Squad
2003	Shadybrook Mall	Recover military ordnance	0	0	0	5000	0	Bomb Squad
2003	Nashville Hwy.	Suspicious Package	0	0	0	5000	0	Bomb Squad
2003	Hwy. 412 East	Recover explosive	0	0	0	5000	0	Bomb Squad
2003	Mt. Pleasant	IED/Chemical reaction device	0	0	0	5000	0	Bomb Squad
2003	Spring Hill	Suspicious item	0	0	0	5000	0	Bomb Squad
2004	Highland	Weapon	0	0	0	1500	0	School System
2004	Spring Hill H.S.	Bomb Threat	0	0	0	2500	0	School System
2004	Whitthorne	Bomb Threat	0	0	0	2500	0	School System
2004	Riverside Elementary	Attempted Robbery	0	0	0	1500	0	School System
2004	Shadybrook Mall	Suspicious device in mail truck	0	0	0	5000	0	Bomb Squad
2004	Polk St.	Suspicious package	0	0	0	5000	0	Bomb Squad
2005	Culleoka	Recover explosives	0	0	0	5000	0	Bomb Squad
2005	Nashville Hwy.	Recover explosives	0	0	0	5000	0	Bomb Squad
		TOTAL	0	0	0	325,5000	0	

4.3.2.5: Transportation

A transportation incident is an incident related to a mode of transportation (highway, air, rail, waterway, port, and harbor) where an emergency response is necessary to protect life and property.

These are primarily incidents involving air or rail passenger travel resulting in death or serious injury.

Highway incidents except for those that have a resulting Hazardous Materials spill or release or significant fatalities are excluded because they are generally handled without emergency management organization involvement.

MAURY COUNTY HAZARD HISTORY								
Hazard	Transportation [community – effects experienced in a localized area]							
Hazard Date	Location or Map Reference	Event Description Major transportation accidents/events	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset or Content Loss	Source FEMA NOAA USGS State Local
Sep-97	Hwy 412 @ Pottsville.	2 dump trucks & school bus wreck	0	7		7,000	3,500	Daily Herald
Dec-99	I65 @ 36mm	Tractor-trailer vs. car. Explodes	5	2		7,000	3,500	Daily Herald
May-04	Scribner Mill, Culleoka Hwy	Car vs. school bus	0	4		4,000	2,000	Daily Herald
Jun-04	Hunter Field	Plane crash 1 passenger	0	1		100,000	2500	Daily Herald
TOTAL			5	14		118,000	11,500	

4.3.2.6: Urban Fire

An urban fire is any instance of uncontrolled burning which results in major structural damage to large residential, commercial, industrial, institutional, or other properties in developed areas.

Generally a large structure is defined as any structure exceeding 25,000 square feet. Large structural fires therefore would include fully involved structures of this size or greater. Hospitals, government centers, manufacturing facilities, warehouses, barns, etc. are examples of multiple stories which may be involved and constitute square footage.

Tennessee’s worst urban fire disaster was the great Nashville Fire of 1916. It destroyed seven hundred homes and businesses. A "million dollar" fire occurred in Knoxville in 1897, it destroyed several warehouses and large retail stores along a section of lower Gay Street.



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In 1978, during a firefighters' strike, 255 fires broke out almost simultaneously around Memphis. According to officials, this was either a rash of arson fires or a most extraordinary case of coincidence. Most incidents occurred in abandoned or condemned buildings. On Christmas Eve in 1989, 16 people died, 50 were injured, and 145 were left homeless by a fire at the high-rise retirement home in Johnson City.

The table below identifies some of the major fires that have impacted Maury County. Included in this table are multi-structure fires, major commercial fires, multi-family housing, nursing home, and etcetera. The worst of which was the 1977 Columbia (Maury County) jail fire trapped and killed 42 inmates and visitors.

MAURY COUNTY HAZARD HISTORY								
Hazard	Urban Fires [community – effects experienced in a localized area]							
Hazard Date	Location or Map Reference	Event Description Fire Type Fire Cause	Fatalities	Injuries	Assets Damaged	Structure Loss	Asset or Content Loss	Source FEMA NOAA USGS State Local
02-06-95	Duplex Rd, Spring Hill	8 unit apartment complex	0	0	1	320,000	170,000	Daily Herald
08-31-95	Demastus Lane	Manufacturing plant (boats)	0	0	1	250,000	500,000	Daily Herald
09-12-95	300 S. James Campbell	Small shopping center	0	0	1	500,000	510,000	Daily Herald
07-28-97	Mt. Pleasant	Hidden Acres Manor	0	2	2	145,000	14,500	Daily Herald
07-28-97	Hampshire Pike	Forest Acres/Apartment	0	0	1	25,000	2,500	Daily Herald
03-03-98	119 Nashville Hwy.	Grocery store fire	0	0	2	500,000	15,000	Daily Herald
03-30-98	1208 Nashville Hwy.	Hotel fire	0	0	1	55,000	12,500	Daily Herald
07-17-03	Hatcher Lane	Apartment Complex	0	0	2	85,000	14,500	Daily Herald
		TOTAL	0	2	11	1,880,000	1,239,000	

From 2012 - 2017 there has been an average of one fire death per year within Maury County, from data provided by the Tennessee State Fire Marshal's Office. One fire death occurred on each of the following dates: July 4, 2012, November 15, 2012, July 9, 2013, December 18, 2013, and February 15, 2014.

<http://sfmo.maps.arcgis.com/apps/webappviewer/index.html?id=2fedd26c300241329b0717557bad841a>

4.4 Hazard Vulnerability

4.4.1 Community Hazard Vulnerability Assessment

The Vulnerability Assessment section builds upon the information provided in the Hazard Analysis by identifying community assets and development trends in Maury County, then assessing the potential impact and amount of damage that could be caused by each hazard event. The primary objective of the assessment is to prioritize the hazards of concern to Maury County and to identify hazard mitigation strategies that will reduce or eliminate their effects.

44 CFR Requirement

44 CFR Part 201.6(c)(2)(ii): The risk assessment shall include a description of The jurisdiction's vulnerability to the hazards described in paragraph (c) (2) (I) of this section. The description shall include an overall summary of each hazard and its impact on the community.

To complete the assessment, best available data was collected from a variety of sources, including local, state and federal agencies. Multiple analyses were performed qualitatively and quantitatively. Additional, work will be done on an ongoing basis to enhance, expand and further improve the accuracy of the baseline established here, and it is expected that this vulnerability assessment will continue to be refined through future plan updates.

The findings presented in this section with regard to vulnerability were developed using best available data, and the methodologies applied resulted in an approximation of risk. These estimates should be used to understand relative risk from hazards and the potential losses that may be incurred; however, uncertainties are inherent in any loss estimation methodology, arising in part from incomplete scientific knowledge concerning specific hazards and their effects on the built environment, as well as incomplete data sets and from approximations and simplifications that are necessary in order to provide a meaningful analysis. Further, most data sets used in this assessment contain relatively short periods of records which increases the uncertainty of any statistically-based analysis.

HAZARD RATING	
No Fatalities/Injuries	0
Less than 3 injuries	1
Less than 3 fatalities/5 injuries	2
Less than 10 fatalities/50 injuries	3
Less than 25 fatalities/100 injuries	4
More than 25 fatalities/injuries	5
No Economic Damage or Cost	0
Less than 500,000 damage cost	1

Two distinct methodologies were applied. The first includes a qualitative analysis (The qualitative assessment completed for Maury County uses a scoring system based on the adjacent table) that relies more on local knowledge and rational decision-making. Upon completion, the methodologies are combined to create a “hybrid” approach for assessing hazard vulnerability for Maury County that allows for some degree of quality control and assurance. The second methodology is a quantitative analysis that relies upon best available data and technology. The methodologies are briefly introduced here and are described in more detail throughout this section.

Qualitative Methodology relies less on technology, but more on historical and anecdotal data, community input and professional judgment regarding expected hazard impacts. The qualitative assessment relies more on local knowledge and is built around varying degrees and weights of risk values as assigned by the consensus of Maury County’s Mitigation Steering Committee.

Less than 1,000,000 damage cost	2
Less than 3,000,000 damage cost	3
Less than 5,000,000 damage cost	4
More than 5,000,000 damage cost	5
Extent area minimal/no evacuation	0
Extent area local/minimal evacuation	1
Extent area local/some evacuation	2
Extent area 1 mi./some evacuation	3
Extent area 3 mi./major evacuation	4
Extent area >3 mile/evacuation	5
Probability once in 100 years	0
Probability once in 50 years	1
Probability once in 10 years	2
Probability once in every 5 years	3
Probability once in every 1 year	4
Probability more than once in 1 year	5
No repetitive loss	0
One repetitive loss	1
Three repetitive losses	2
Five repetitive losses	3
Ten repetitive losses	4
More than ten repetitive losses	5

Quantitative Methodology consists of utilizing Hazards U.S. Multi-Hazard (HAZUSMH); a geographic information system (GIS) based loss estimation software available from FEMA. For some hazards, the quantitative assessment also incorporates a detailed GIS-based approach using best available local data from Maury County. When combined, the results of these vulnerability studies are used to form an assessment of potential hazard losses (in dollars) along with the identification of specific community assets that are deemed potentially at-risk. As the HAZUSMH software was only acquired by Maury County during this planning cycle its use was limited. Future updates to the plan will fully utilize HAZUSMH

4.4.1.1 Jurisdiction Hazard Vulnerability

The summary of all selected hazards is depicted below. In Maury County large urban fires have been most costly at over 15 million dollars or \$139,090 + per occurrence. If you include residential fires the total is estimated to exceed \$50 million dollars. Thunderstorms and Tornados are tied at second at about 9 million dollars. Hazardous Materials and Flooding are third and forth with losses in excess of 3.5 million. Pandemics are the most costly in lives and injuries with Urban Fires and Transportation at second.

HAZARD VULNERABILITY SUMMARY							
Hazard	Incidents	Years	Avg./yr	Fatalities	Injuries	Assets	Cost
Earthquake	3	196	.01	0	0	26	15,000
Flooding	39	50	1	8	1	0	3,590,675
Heat and Drought	8	100	.1	2	0	0	1,052,632
Thunderstorm	136	48	3	5	27	0	9,112,716

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Tornadoes	12	41	.35	0	13	0	9,145,000
Winter storms	16	44	.33	1	11	0	2,270,926
Wildfires	7	32	.29	0	0	0	2,280,800
Dam Failure	0	0	0	0	0	0	0
Hazardous Material spills	69	51	1.2	9	163	196	3,747,725
Pandemic/Vectors	19	96	.2	3940	9661	0	15,000
Terrorism	194	32	6	0	0	0	312,500
Transportation Incidents	52	52	1	24	169	0	2,851,000
Urban Fire	112	52	1.1	46	38	112	15,578,100
TOTAL	667			4035	10,083	334	49,972,074

When all selected hazards historical information is evaluated and scored, the number one hazard that has impacted Maury County was Urban Fires. It was also recognized that the availability and quantity of data varied significantly between hazards and impacted evaluations. The committee believed that had economic data been accurately recorded flooding and severe weather dollars could easily have been up to 10 times greater.

For reasonableness testing, the historic data was compared to the results of the Hazard Analysis and vulnerability compiled by the State of Tennessee and published in the State of Tennessee Hazard Mitigation Plan. The Historic data compiled by the Maury County Mitigation Committee generally matches the states assessment. The largest variant was wildfires rated number one by the state.

Natural Hazards Identified by the State of Tennessee	State Priority for Maury County	State Priority for Middle TN.	Maury County Historic Priority
Wild Fire	7	6	9
Flood	1	2	2
Wind storm	5	4	5
Severe Storm	2	1	5
Winter Storm	3	4	6
Tornado	4	3	7
Hailstorm	6	5	5
Drought	9	8	11
Erosion	10	9	N/A
Earthquake	11	10	12
Extreme Heat	8	7	6
Landslide	12	11	N/A
Land Subsidence	13	13	N/A
Expansive soils	14	12	N/A

Maury County has been the subject of several disaster declarations and subsequent disaster funding. The table below identifies those declarations and the economic relief provided

DISASTER DECLARATION ECONOMIC RELIEF				
Date	Declaration Number	Hazard Incident	Economic Relief	Source
Jan 1999	FEMA-DR-1262-TN	Severe storms/winds/tornadoes	115,488	FEMA and State

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Feb 1994	FEMA-DR-1010-TN	Winter Ice Storm/Flash Flooding	776,252	FEMA and State
Jan/Mar 02	FEMA-DR-1408-TN	Flooding/severe storms	299,376	FEMA and State
May 2003	FEMA-DR-1464-TN	Flooding/severe storm/tornado	382,732	FEMA and State
Apr-1998	FEMA-DR-1215-TN	Storms/tornadoes/flooding	64,707	FEMA and State
TOTAL			1,538,555	

After analyzing and evaluating all available data the Hazard Mitigation Committee developed the vulnerability assessment using the risk table developed previously. Below are tables that summarize the hazards that the Maury County Mitigation Planning Committee identified as the historic hazards that have impacted Maury County and its communities and the potential hazards that could impact the county and communities in the future.

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MAURY HAZARD HISTORIC VULNERABILITY ASSESSMENT											
Vulnerability is rated from 1 to 5 Hazard Event	Fatality/Injury	Economic Loss	Extent/Impact	Probability	Repetitive Loss	Disaster Declared	Vulnerability Score	Priority	Total Hazard Dollar Loss	Economic Relief Dollars	Relief Source FEMA State Local etc.
	Urban Fire	5	5	1	5	5	N	21	1	16,090,600	0
Flooding	3	4	2	5	5	Y	19	2	3,590,675	1,000,000	FEMA
Hazardous Material Incidents	4	4	1	4	5	N	18	3	3,747,725	0	
Transportation Incidents	4	3	0	5	5	N	17	4	2,851,000	0	
Thunderstorm	3	3	0	5	5	N	16	5	9,112,716	500,000	FEMA
Winter Storms	3	3	1	3	4	N	14	6	2,280,800	500,000	FEMA
Tornadoes	3	3	1	3	4	Y	14	7	9,145,000	500,000	FEMA
Terrorism	0	1	2	5	5	N	13	8	312,500	0	
Wildfires	0	3	1	3	4	N	11	9	2,270,926	0	
Pandemic/Vectors	5	1	1	0	2	N	10	10	15,000	0	
Heat and Drought	2	3	0	1	2	N	8	11	1,052,632	0	
Earthquake	0	1	0	0	2	N	3	12	15,000	0	
Dam Failure	0	0	0	0	0	N	0	13	0	0	
TOTALS									50,484,574		

MAURY PROJECTED VULNERABILITY ASSESSMENT											
Vulnerability is rated from 1 to 5 Hazard Event	Fatality/Injury	Economic Loss	Extent/Impact	Probability 1-5	Repetitive Loss	Disaster Declared	Vulnerability Score	Priority	Estimated Total Hazard Dollar Loss	Estimated Economic Relief Dollars	Relief Source FEMA State Local etc.
	Flooding	4	5	2	5	5	Y	21		155,153,738	TBD
Urban Fire	3	5	1	4	5	N	18		9,323,518	TBD	TBD
Thunderstorm	3	3	1	5	5	N	17		2,000,000	TBD	TBD
Hazardous Material Incident	3	3	3	2	5	N	16		99,154,385	TBD	TBD
Tornadoes	3	5	1	3	3	Y	15		2,693,136	TBD	TBD
Transportation Incidents	2	2	0	5	5	N	14		500,000	TBD	TBD
Terrorism	2	3	2	3	3	N	13		77,406,627	TBD	TBD
Winter Storms	3	3	1	3	2	N	12		1,500,000	TBD	TBD
Dam Failure	4	5	0	1	1	N	11		584,374	TBD	TBD
Wildfires	2	3	1	2	2	N	10		1,500,000	TBD	TBD
Pandemic/Vectors	5	2	1	0	1	N	9		2,000,000	TBD	TBD
Heat and Drought	2	3	0	1	2	N	8		500,000	TBD	TBD
Earthquake	2	3	1	0	1	N	7		2,000,000	TBD	TBD
TOTAL									354,315,778		

4.4.1.2 Municipality Hazard Vulnerability

In some instances individual participating municipalities may have specific vulnerabilities to identified hazards that differ from the countywide vulnerabilities. This differentiation can exist for many reasons, such as geographic location, geology differences, proximity to manmade hazards, etc. Within the hazard analysis section there is narrative identifying where hazards have impacted specific municipalities or areas of the county. The table below depicts each municipality's specific vulnerability to each identified hazard

JURISDICTIONS VULNERABILITY TO HAZARDS				
Hazard event	County	Mt. Pleasant	Spring Hill	
Earthquake	Unlikely	Unlikely	Unlikely	
Flooding	Highly Likely	Highly Likely	Likely	
Heat and Drought	Possible	Possible	Possible	
Thunderstorm	Highly Likely	Highly Likely	Highly Likely	
Tornadoes	Likely	Likely	Likely	
Wildfires	Likely	Likely	Possible	
Winter Storms	Likely	Likely	Likely	
Dam Failure	Possible	Possible	Unlikely	
HAZMAT Incidents	Likely	Possible	Likely	
Pandemic/Vectors	Possible	Possible	Possible	
Terrorism	Likely	Likely	Likely	
Transportation Incidents	Highly Likely	Highly Likely	Highly Likely	
Urban Fire	Likely	Likely	Likely	

Individual municipalities can also suffer significant differences in losses from the impact and extent of a disaster initiated by either a natural or manmade hazard. Generally these losses are a direct result of population density, commercial development, housing density and housing value. The table below depicts the differing aspects of losses by jurisdiction.

MUNICIPALITY HAZARD VULNERABILITY LOSS ASSESSMENT				
Low – minimal impact or minimal likelihood of occurrence				
Medium – moderate impact or likelihood of occurrence				
High – Major impact or likely to occur				
Hazard	County	Mt. Pleasant	Spring Hill	
Earthquake	Low	Low	Low	
Flooding	High	High	High	
Heat and Drought	Medium	Low	Low	
Thunderstorm	Medium	High	High	
Tornadoes	High	High	High	
Wildfires	Low	Low	Low	
Winter Storms	Medium	Medium	Medium	
Dam Failure	Medium	Medium	Low	
HAZMAT Incidents	Medium	Low	High	
Pandemic/Vectors	Medium	Low	Medium	
Terrorism	High	Low	High	
Transportation Incidents	Medium	Low	Medium	
Urban Fire	Medium	Low	Medium	

The differing municipality vulnerability to hazards and the impact and extent of losses are reflected in specific mitigation goals and action items for individual municipalities in the mitigation section.

4.4.2 Tier II Hazardous Materials Vulnerability Assessment

On October 17, 1986, in response to a growing concern for safety around chemical facilities, Congress enacted the (EPCRA), also known as Title III of the Superfund Amendments and Reauthorization Act (SARA). The Act has had a far-reaching influence on issues relating to hazardous materials. EPCRA contains five sections, which cover issues associated with the manufacture, use, exposure, transportation, and public education of hazardous materials. It is the mission of the Local Emergency Planning Committees (LEPCs) and State Emergency Response Commission (SERC) to implement EPCRA in the State of Tennessee and mitigate the effects of a release or spill of hazardous materials.

The Tennessee Emergency Management Agency is the lead agency responsible for implementing EPCRA and provides administrative functions and support to the SERC. The Commission conducts quarterly public meetings in varying locations throughout the state. Currently, SERC membership is comprised of Governor-appointed individuals who represent the interests of state and local government, emergency services, industry and the environment.

The assessment below identifies the Tier II reporting companies in Maury County. Transmission pipelines are located primarily in rural and sparsely populated areas. Therefore, populations have not been calculated for this plan. Railroads are not required to complete and submit TIER II forms. They have been included in this section because they pose a very significant risk to local populations.

MAURY HAZARDOUS MATERIAL ASSESSMENT						
Criteria	0	1	2	3	4	5
Material Visibility	X	Existence not well known	X	Existence known locally	X	Existence widely known
Material Volatility	None	Very Low	Low	Medium	High	Very High
Material Access	Secure Perimeter Armed Guards Controlled 24/7 Access	Fenced, guarded, controlled access	Controlled access protected entry	Controlled access entry not protected	Open access restricted parking	Open Access Parking not restricted
Material Mobility	X	Is moved frequently	X	Moved some	X	Fixed in place
Material Amount	No materials	Limited quintiles in secure locations	Moderate quantities under strict control	Large quantities under some control	Large quantities minimally controlled	Large quantities easily accessed
SARA Reporting	Not Reporting	Occasional Reporting	Usually Reported	Usually Timely Reported	Always Reported	Always Timely Reported
Site Population	0	1-250	251-500	501-1000	1001-5000	>5000

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MAURY COUNTY HAZARDOUS MATERIALS VULNERABILITY ASSESSMENT												
Facility/Asset Name or Description and Address	Material Type	Capacity; employees and visitors	Population (1mi)	Population (3mi)	Material Visibility	Material Volatility	Material Access	Material Mobility	Material Amount	SARA reporting	Site Population	Total Score
Allworth of TN. Inc. 101 S. Park Dr. Mt. Pleasant	Chemicals	50	500	1000	3	4	5	3	3	3	1	22
American Bank Note 711 Armstrong Ln. Columbia	Solvents, inks, dyes,	200	750	1250	3	4	0	5	2	3	1	18
Amerigas, 409 Cemetery Ave., Columbia	Compressed gas	20	750	2000	3	5	3	5	4	3	1	24
Armor Environmental Services Inc. 6976 Industrial Rd. Mt. Pleasant	Petroleum products, chemicals	25	500	1000	3	5	3	5	4	3	1	22
Blue Springs Rock 1071 Blue Springs Road Columbia	Explosives	50	500	1500	3	5	5	5	3	3	1	25
BP Pipelines Lines & equipment throughout county	Compressed flammable liquids & gas	24	*	*	3	5	5	5	5	3	1	27
Columbia Oil Co. 1100 W. 7th St. Columbia	Petroleum products	12	500	1500	3	4	5	5	5	3	1	26
Columbia Rock Products, Rock Products Rd. Columbia	Explosives	75	1000	3000	3	5	5	5	3	3	1	25
Columbia Power & Water Water Plant 806 Nashville Hwy. Columbia	Compressed gas, chemicals	10	1000	3000	3	5	3	5	3	3	1	23
CSX Railroad Tracks throughout jurisdiction	Hazardous products	18	>5000	<15000	3	5	5	1	5	N/A	1	20
Cytec Industries 910 Mt. Joy Rd. Mt. Pleasant	Chemicals	140	500	1500	3	5	2	5	3	3	1	22
East Tennessee Natural Gas Lines and equipment throughout county	Compressed flammable liquids/gases	24	*	*	3	5	5	5	5	3	1	27
Gibson Oil Co. 102 Wayne Street, Columbia	Petroleum products	12	500	1500	3	4	5	5	5	3	1	26
Maury County Airport 1200 N. Main St. Mt. Pleasant	Aviation fuels and lubricants	15	500	1500	3	5	4	5	5	3	1	26
Maury Farmers Co-Op 423 Westover Drive, Columbia	Fertilizers, pesticides, herbicides,	15	4000	6500	3	5	5	3	4	2	1	23
Maury Regional Med. Center 1224 Trotwood Ave, Columbia	Compressed gas, bio-hazardous waste, nuclear materials	3000	4000	6500	4	5	3	5	3	4	4	28

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Mt. Pleasant Water Dept. 8398 Old Hwy. 43 Mt. Pleasant	Compressed gas, chemicals	2	300	750	3	5	3	5	3	3	1	23
Occidental Chemical, 970 Santa Fe Pike, Columbia	Phosphorous and chemical	40	500	2000	3	5	1	5	3	3	1	21
South Central Bell 904 S. High Street Columbia	Wet acid batteries	25	500	2500	3	3	3	5	3	3	1	21
Spring Hill Manufacturing 100 Saturn Parkway Spring Hill	Compressed gas, chemicals, paints petroleum, etc.	8000	8000	15000	5	5	1	5	3	3	5	27
Spring Hill Water Treatment Plant 4151 Kedron Rd. Spring Hill	Compressed gas, chemical	7	500	1500	3	5	3	5	3	3	1	23
Patriot Rail Tracks across the county	Any/all products shipped by rail	15	>5000	<15000	3	5	5	1	5	N/ A	1	20
Texas Eastern Gas Trans. Co. Lines and equipment throughout Maury county	Compressed flammable gasses and liquids	24	*	*	3	5	5	5	5	3	1	27
Graf-Tec/(UCAR) Santa Fe Pike Columbia	Chemical	150	1000	3000	3	5	1	5	3	3	1	21

4.4.3 Terrorism Vulnerability Assessment

With the mobility of the peoples of the world and the possibility of a terrorist attack, it is possible to have a major biological or nerve gas release anywhere in the USA, including Maury County. It is important that all agencies work together to maximize the resources and to think outside of the traditional disease and natural disaster incidents.

The probability is low, that the most dangerous variants of terrorism, nuclear, biological, or chemical attack, would affect Maury County. At present, the most likely form of nuclear, biological or chemical terrorism may be a threat or hoax involving a nuclear device or sabotage.

It is impossible to assess Maury County's vulnerability to international terrorism. Although extremist groups exist within the county, it is unlikely that any terrorist act perpetrated by these groups would be disastrous countywide. Authorities on terrorism generally agree that terrorism cannot be entirely eliminated. For the present, it is a problem to be managed, not solved. Efforts to manage potential terrorism should include:

- Gathering intelligence on terrorist operations, members and their ideology.
- Pooling intelligence and information with knowledgeable sources.
- Physically protecting suspected targets.
- Promoting public awareness.
- Controlling arms and explosives.
- Careful applicant screening for jobs that require the use of arms and explosives.
- Preparing contingency plans for different kinds of terrorist acts.

The assessment below builds on the Office of Domestic Preparedness Terrorist Vulnerability survey of 2002.

MAURY COUNTY TERRORISM ASSESSMENT						
Criteria	0	1	2	3	4	5
Asset Visibility	X	Existence not well known	X	Existence known locally	X	Existence widely known
Target Utility	None	Very Low	Low	Medium	High	Very High
Asset Access	Secure Perimeter Armed Guards Controlled 24/7 Access	Fenced, guarded, controlled access	Controlled access protected entry	Controlled access entry not protected	Open access restricted parking	Open Access Parking not restricted
Asset Mobility	X	Is moved frequently	X	Moved some	X	Fixed in place
Hazard Materials present	No materials	Limited quantiles in secure locations	Moderate quantities under strict control	Large quantities under some control	Large quantities minimally controlled	Large quantities easily accessed
Potential Collateral Damage	No Risk	Low risk; immediate area only	Moderate risk; immediate area only	Moderate risk within 1mi. radius	High risk within 1 mi. radius	High risk beyond 1mi. Radius
Site Population	0	1-250	251-500	501-1000	1001-5000	>5000

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MAURY COUNTY TERRORISM VULNERABILITY													
Facility/Asset Name or Description and Address	Agriculture Commercial Government Education Industrial Non-Profit Recreation Residential Religious Utilities	Capacity; employees and visitors	Population (1mi)	Population (3mi)	Asset Visibility 1=L,5=H	Target Utility	Asset Access	Asset Mobility	Hazardous materials	Collateral Damage	Site Population	Total Score	
Maury County													
Maury Regional Hospital 1224 Trotwood Ave Columbia	Health Care	2500	3500	6500	5	5	5	5	2	2	4	28	
Maury Co. Regional Airport 1200 N. Main St. Mt. Pleasant	Transportation	15	500	1500	5	5	4	5	4	4	1	28	
Gibson Oil Company 102 Wayne St. Columbia	Commercial	12	500	1500	4	3	5	5	5	4	1	27	
Columbia Oil Co. 1100 W. 7th St. Columbia	Commercial	12	500	1500	4	3	5	5	5	4	1	27	
Patriot Rail Tracks throughout county	Transportation	18	>5000	<15000	4	3	5	1	5	5	1	24	
CSX Railroad Tracks throughout county	Transportation	24	>5000	<15000	5	3	5	1	5	5	1	25	
Mule Day Event Columbia	Annual Event		35,000	100,000	4	2	5	5	0	0	5	21	
Amerigas409 Cemetery Ave. Columbia	Commercial	20	750	2000	3	5	4	5	5	5	1	28	
Columbia Gulf Transmission Lines/equipment	Fuel pipeline	24	*	*	3	5	5	5	5	5	1	29	
Texas Eastern Gas Transmission Lines/equipment	Fuel pipeline	36	*	*	3	5	5	5	5	5	1	29	
BP Pipeline Lines and equipment throughout county	Fuel pipeline	24	*	*	3	5	5	5	5	5	1	29	
Cytec Industries 7910 Mt. Joy Rd. Mt. Pleasant	Chemical Plant	75	500	1500	3	2	3	5	5	5	1	24	
Maury County Fire 1257 Mapleash Ave. Columbia	Fire rural	30	3500	6500	3	3	3	5	0	0	1	15	
Theta VFD 2110 Gravel Hill Rd Columbia	Fire, rural	15	150	500	3	3	3	5	0	0	1	15	
Santa Fe VFD 2606 Owens Drive Santa Fe	Fire, rural	15	750	1250	3	3	3	5	0	0	1	15	
Williamsport VFD3285 Williamsport Pike Williamsport	Fire, rural	15	150	500	3	3	3	5	0	0	1	15	
Hampshire VFD 4126 Hampshire Pike Hampshire	Fire, rural	15	200	600	3	3	3	5	0	0	1	15	
Mynders VFD 3702 Bigbyville Rd Columbia	Fire, rural	15	150	500	3	3	3	5	0	0	1	15	

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Culleoka VFD 2410 Valley Creek Rd. Culleoka	Fire, rural	15	1500	3000	3	3	3	5	0	0	1	15
East Maury VFD2424 Bear Creek Pike Columbia	Fire, rural	15	100	300	3	3	3	5	0	0	1	15
S. Maury VFD115 Charles Tisher Lane Mt. Pleasant	Fire, rural	15	300	750	3	3	3	5	0	0	1	15
Bethel VFD 6334 Leipers Cr. Rd. Santa Fe	Fire, rural	15	300	500	3	3	3	5	0	0	1	15
Station 10 Lesea Road Columbia, TN	Fire, rural	15	300	399	3	3	3	5	0	0	1	15
Maury County Jail 1300 Lawson White Dr.	Corrections Facility/Jail	250	1000	2000	3	3	1	5	0	0	1	13
Maury County Sheriff's Dept. 1300 Lawson White Dr.	Law Enforcement	50	1000	2000	3	3	1	5	0	0	1	13
Juvenile Detention Center Lawson White Dr. Columbia	Corrections Facility/Jail	75	1000	2000	3	3	1	5	0	0	1	13
TN Hwy Safety Dept 1710 Hampshire Pike Columbia	Hwy Patrol	100	3000	3500	3	2	5	5	0	0	1	16
TN National Guard N. James Campbell Blvd. Columbia	Nat'l Guard	200	1000	2000	3	2	5	5	1	1	1	18
Maury E911 Center 2907 Cayce Lane Columbia	E911	6	750	2500	3	5	3	5	0	0	1	17
Spring Hill Mfg. 100 Saturn Parkway Spring Hill	Industrial	3000	8000	>15000	5	5	1	5	5	4	4	29
Duck River Electric 798 New Lewisburg Hwy. Columbia	Electric Dept.	25	250	500	3	3	5	5	2	1	1	20
U.S. Post Office 417 W. 7th St. Columbia	Federal Building	75	1000	3000	5	4	5	5	0	0	1	20
Maury County Water Dept. 1018 S. Garden St. Columbia	Utility	10	500	1000	3	3	5	5	0	0	1	17
Maury County 1 Public Square	Admin Offices	50	1000	2000	3	5	5	5	0	0	1	19
Maury County 5 Public Square	Computer Offices	25	1000	2000	3	5	5	5	0	0	1	19
Maury County 8 Public Square	Admin Offices	25	1000	2000	3	5	5	5	0	0	1	19
Maury County 6 Public Square	Admin Offices	50	1000	2000	3	5	5	5	0	0	1	19
Maury County 10 Public Square	Admin Offices	25	1000	2000	3	5	5	5	0	0	1	19
Maury County Courthouse 41 Public Square	Courthouse	100	1000	2000	4	5	5	5	0	0	1	20
Maury County Highway Office Bldg. 1210 Industrial Park Rd.	Transportation	10	1000	2000	3	5	5	5	0	0	1	19
Maury County Highway Bldg. 1214 Industrial Park Rd.	Transportation	50	1000	2000	3	5	5	5	3	3	1	25
Maury County 1214 Industrial Park Rd. Central Maintenance	Public Works	20	350	500	3	5	5	5	3	3	1	25

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Schools													
Baker 1301 Hampshire Pk. Columbia	Elementary	311	1000	2000	3	2	5	5	0	0	2	17	
Brown 301 Cord Dr. Columbia	Elementary	443	1200	3600	3	2	5	5	0	0	2	17	
Central H.S.921 Lion Pkwy. Columbia	High	1317	1000	2000	3	2	5	5	0	0	4	19	
College Hill1103 Bridge St. Columbia	Elementary	75	1000	2500	3	2	5	5	0	0	1	16	
E.A. Cox 633 Bear Cr. Pike Columbia	Middle	626	500	1500	3	2	5	5	0	0	3	18	
Culleoka Unit2145 Quality St., Culleoka	Elementary High School	962	500	1500	3	2	5	5	0	0	4	19	
Hampshire Unit4235 Old State Rd. Hampshire	Elementary High School	351	500	1500	3	2	5	5	0	0	2	17	
Highland Park1606 Highland Ave. Columbia	Elementary	308	1000	3000	3	2	5	5	0	0	2	17	
Howell653 Bear Creek Pk. Columbia	Elementary	402	500	1500	3	2	5	5	0	0	3	18	
McDowell 714 W. 7th St. Columbia	Elementary	264	1000	3000	3	2	5	5	0	0	2	17	
Mt Pleasant Elementary 600 N. Locust Mt Pleasant	Elementary	571	1000	3000	3	2	5	5	0	0	3	18	
Mt. Pleasant M.S. 410 Gray Lane Mt. Pleasant	Middle	492	1000	3000	3	2	5	5	0	0	3	18	
Mt. Pleasant H.S.600 Greenwood St. Mt. Pleasant	High	387	1000	3000	3	2	5	5	0	0	2	17	
Riverside 204 Carter St. Columbia	Elementary	506	1000	3000	3	2	5	5	0	0	2	17	
Santa Fe2629 Santa Fe Pike Santa Fe	Elementary High School	662	500	1500	3	2	5	5	0	0	3	18	
Spring Hill Elementary 5359 Main St.Spring Hill	Elementary	538	750	2250	3	2	5	5	0	0	2	17	
Spring Hill M.S. 3501 Cleburne Rd. Columbia	Middle	714											
Spring Hill H.S. One Raider Lane Spring Hill	High School	888	500	1500	3	2	5	5	0	0	3	18	
Whitthorne M. S. 915 Lion Pkwy. Columbia	Junior High	1121	1000	3000	3	2	5	5	0	0	4	19	
Woodard Elementary 207 Rutherford Ln. Columbia	Elementary	472	1000	3000	3	2	5	5	0	0	3	18	
Wright 4714 Derryberry Lane Spring Hill	Elementary	511											
Central Office 501 W. 8th St. Columbia	School Admin.	25	1000	3000	3	2	5	5	0	0	1	16	
Agathos Classical School	K-12	100	250	750	3	2	5	5	0	0	1	16	
Columbia Academy 110 W. 7th St., Columbia	Elementary High School	800	1000	3000	3	2	5	5	0	0	3	18	

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Zion Christian Academy 6901 Old Zion Rd, Columbia	Elementary High School	200	500	1500	3	2	5	5	0	0	1	16
Columbia State College 6007 Hampshire Pk., Columbia	College	1200	500	1500	3	2	5	5	1	1	4	21
Columbia Power and Water 201 Pickens Lane Columbia	Admin Offices Utility Communication	75	1000	3000	3	5	5	5	2	2	1	23
Columbia Power/Water Plant, 806 Nashville Hwy. Columbia	Utility	10	1000	3000	3	5	5	5	5	5	1	29
Mt. Pleasant												
City Hall 100 Public Square	Admin Offices	6	300	750	3	5	5	5	0	0	1	19
Mt. Pleasant Gas System 100 Public Square	Utility	3	300	750	3	5	5	5	0	0	1	19
Mt. Pleasant Power System 100 Public Square	Utility	3	300	750	3	5	5	5	0	0	1	19
South Maury FD 115 Charles Tisher Lane Mt. Pleasant	Fire	4	300	750	3	5	5	5	0	0	1	19
Mt Pleasant Police Dept 100 Public Sq. Mt. Pleasant	Police	12	300	750	3	5	5	5	0	0	1	19
Mt Pleasant Fire Station #2 1158 N. Main St. Mt. Pleasant	Fire	10	300	750	3	5	5	5	0	0	1	19
City Garage 110 E. Cooper St. Mt. Pleasant	Public Works	4	300	750	3	5	5	5	3	3	1	25
Water Dept. 8398 Old Hwy 43 Mt. Pleasant	Utility	2	300	750	3	5	5	5	5	5	1	29
Mt. Pleasant Wastewater Dept. S. Cross Bridges Rd.	Utility	2	300	750	3	5	5	5	0	0	1	19
Spring Hill												
City Hall 199 Town Center Parkway	Admin Offices	15	500	1500	3	5	5	5	0	0	1	19
Water Treatment Plant 4151 Kedron Rd., Spring Hill	Public Works	7	500	1500	3	5	5	5	5	5	1	29
Wastewater Plant/Public Works, 3893 Mahlon Moore Rd., Spring Hill	Public Works	30	500	1500	3	5	5	5	0	0	1	19
Spring Hill Police Dept. 199 Town Center Pkwy.	Law Enforcement	24	500	1500	3	5	5	5	0	0	1	19
Spring Hill E-911 199 Town Center Pkwy.	Emergency Communication	5	500	1500	3	5	5	5	0	0	1	19
Spring Hill Fire Sta. #1 440 Beechcroft Rd.	Fire/Rescue	20	500	1500	3	5	5	5	0	0	1	19
Spring Hill Fire Sta. #2 4237 Port Royal Rd Spring Hill	Fire/Rescue	20	500	1500	3	5	5	5	0	0	1	19
Spring Hill Fire Sta. #3 4000 Campbell Station Pkwy.	Fire/Rescue	20	1000	3000	3	5	5	5	0	0	1	19
U.S Post Office 223 Town Center Pkwy., Spring Hill	Federal Building	50	500	1500	5	4	5	5	0	0	1	20

4.4.4 Critical Facilities and Infrastructure

According to TEMA, critical facilities and infrastructure are those systems “whose incapacity or destruction would have a debilitating impact on the defense or economic security of that community.” These systems include the following eight general categories: telecommunications infrastructure; electrical power systems; gas and oil facilities; banking and finance institutions; transportation networks; water supply systems; government services; and emergency services.

In the preparation of the Mitigation Plan, Maury County has built and plans to maintain an active database for critical facilities and infrastructure with GIS capabilities.

The table below specifically lists the number of potentially at-risk buildings or facilities type, based on the GIS analysis of Maury County’s critical facilities database in combination with the databases of hazardous material facilities and state-owned facilities as provided by ADEM.

There are tables for Maury County and each of the participating municipalities. Each facility is designated as to whether it is in a hazard, is it an economic asset (does it generate revenue), an historic asset and constructions type:

- B = block or brick
- C = concrete
- M = metal
- W = wood

(Only the predominant construction type is recorded)

The following Critical Facilities Lists have been reviewed as part of the 2018 Update Process.

44 CFR Requirement
44 CFR Part 201.6(c)(2)(ii): The risk assessment shall include a description of The jurisdiction's vulnerability to the hazards described in paragraph (c) (2) (I) of this section. The description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of: (A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;

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MAURY COUNTY CRITICAL FACILITY/ASSET INVENTORY										
Facility/Asset Name or Description and Address	Admin Offices Communication Education Type Fire/Rescue Law Enforcement Medical Type Public Works Transportation	Time Open	Employee and visitors capacity	In Hazard	Economic Asset	Historic Asset	Construction: B, C, M, W	Emergency generator	Square Feet	Asset Content and Structure Value
Maury Regional Medical Center 1224 Trotwood Ave Columbia	Hospital	7/24	2500	Y	N	B	Y	133,000	137,500,000	
MRH Ambulatory Care Center 1218 Trotwood Ave Columbia	Ambulatory care	8-4	200	N	N	B	Y	75,000	7,400,000	
MRMC EMS Building 1212 Tradewinds Dr., Columbia	EMS	7/24	25	N	N	M	Y	16,500	1,250,000	
South Central Regional Health 1216 Trotwood Ave Columbia	Public Health	8-4	50	N	N	B		53,000	1,000,000	
Maury County Health Dept. 1909 Hampshire Pike Columbia	Public Health	8-4	25	N	N	W		5,900	550,000	
Columbia Care & Rehab 1410 Trotwood Ave. Columbia	Nursing Home	7/24	200	N	N	B	N	45,000	4,000,000	
Life Care Center 841 W. James Campbell, Columbia	Nursing Home	7/24	290	N	N	B	Y	57,000	5,000,000	
NHC Columbia 101 Walnut Lane Columbia	Nursing Home	7/24	126	N	N	B	N	36,000	3,000,000	
NHC Hillview 2710 Trotwood Ave., Columbia	Nursing Home	7/24	112	N	N	B	N	27,550	2,555,000	
Rosewood Manor 1400 Rosewood Dr., Columbia	Nursing Home	7/24	118	N	N	B	N	29,550	2,555,000	
Poplar Estates Retirement Ctr. 1310 Rosewood Dr. Columbia	Assisted Living	7/24	48	N	N	B	N	25,000	2,300,000	
Alterra Sterling House 5011 Trotwood Ave., Columbia	Assisted Living	7/24	41	N	N	B	N	13,775	1,277,500	
Bridge @ Life Care Center 851 W. James Campbell Columbia	Assisted Living	7/24	50	N	N	B	N	11,775	1,277,500	
Morning Pointe 2050 Union Place, Columbia	Assisted Living	7/24	51	N	N	B	N	14,775	1,277,500	
Hidden Acres Health Care 904 Hidden Acres Dr. Mt. Pleasant	Nursing Home	7/24	109	N	N	B	N	29,550	2,555,000	

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Maury County VFD 1257 Mapleash Ave., Columbia	Fire, rural	Vol	30	N	N	M	Y	15,500	1,250,000
Theta VFD 2110 Gravel Hill Rd., Columbia	Fire, rural	Vol	15	N	N	M	N	4,700	400,000
Santa Fe VFD 2606 Owens Dr., Santa Fe	Fire, rural	Vol	15	N	N	M	N	4,200	400,000
Williamsport VFD 3285 Williamsport Pike Williamsport	Fire, rural	Vol	15	N	N	M	N	4,500	400,000
Hampshire VFD 4126 Hampshire Pike, Hampshire	Fire, rural	Vol	15	N	N	M	N	4,100	400,000
Mynders VFD 3702 Bigbyville Rd., Columbia	Fire, rural	Vol	15	N	N	M	N	4,300	400,000
Culleoka VFD 2410 Valley Creek Rd.,Culleoka	Fire, rural	Vol	15	N	N	M	N	10,900	1,000,000
East Maury VFD 2424 Bear Creek Pike, Columbia	Fire, rural	Vol	15	N	N	M	N	4,200	400,000
South Maury VFD 115 Charles Tisher Lane Mt. Pleasant	Fire, rural	Vol	15	N	N	B	N	5,500	500,000
Bethel VFD 6334 Leipers Cr. Rd. Santa Fe	Fire, rural	Vol	15	N	N	B	N	3,000	200,000
Station 10 Lasea Road	Fire, rural	Vol	15	N	N	M	N	4,200	400,000
Maury County Jail 1300 Lawson White Dr. Columbia	Corrections Facility/Jail	7/24	250	N	N	B	Y	60,775	6,000,000
Maury County Sheriff's Dept. 1300 Lawson White Dr., Columbia	Law Enforcement	7/24	50	N	N	B	Y	22,000	2,000,000
Juvenile Detention Center Lawson White Dr. Columbia	Corrections Facility/Jail	7/24	30	N	N	B	Y	21,000	2,000,000
TN. Highway Dept 1710 Hampshire Pike, Columbia	Hwy. Patrol	8-5	100	N	N	B	Y	57,000	5,000,000
TN National Guard James Campbell Blvd. N. Columbia	National Guard	7-4	200	N	N	B	Y	22,000	2,000,000
Maury County OEM 1451 Tom J Hitch Pkwy	OEM/EOC	7/24	4	N	N	C	Y	5,500	4,000,000
Maury E911 Center 2907 Cayce Lane, Columbia	E911	7/24	6	N	N	M	Y	5,500	500,000
Spring Hill Manufacturing 100 Saturn Pkwy Spring Hill	Manufacturing	7-24	3000	Y	N	B	Y	449,900	440,400,000
Maury County Regional Airport, 1200 N. Main St. Mt. Pleasant	Air Transportation	7-24	15	Y	N	M	N	2,800	250,000
Baker, 1301 Hampshire Pk. Columbia	Elementary School	7-4	311	N	N	B	N	44,000	4,100,000
Brown 301 Cord Dr. Columbia	Elementary School	7-4	443	N	N	B	N	57,000	5,200,000

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Central H.S.921 Lion Pkwy. Columbia	High School	7-4	1317		N	N	B	N	215,000	23,000,000
College Hill 1103 Bridge St. Columbia	Elementary School	7-4	75		N	N	B	N	39,000	4,000,000
E.A. Cox 633 Bear Cr. Pk. Columbia	Middle School	7-4	626		N	N	B	N	155,000	10,500,000
Culleoka Unit 2145 Quality St., Culleoka	Elementary High school	7-4	962		N	N	B	N	165,000	17,000,000
Hampshire Unit 4235 Old State Rd., Hampshire	Elementary High school	7-4	351		N	N	B	N	78,000	7,000,000
Highland Park 1606 Highland Ave. Columbia	Elementary School	7-4	308		N	N	B	N	43,250	4,525,000
Howell 653 Bear Cr. Pk. Columbia	Elementary School	7-4	402		N	N	B	N	82,700	8,070,000
McDowell 714 W. 7th St. Columbia	Elementary School	7-4	264		N	N	B	N	176,000	17,000,000
Mt Pleasant 600 N. Locust Mt Pleasant	Elementary School	7-4	571		N	N	B	N	82,550	8,200,000
Mt. Pleasant 410 Gray Lane Mt. Pleasant	Middle School	7-4	492		N	N	B	N	101,152	11,152,000
Mt. Pleasant H.S. 600 Greenwood St. Mt. Pleasant	High School	7-4	387		N	N	B	N	109,000	11,500,000
Riverside 204 Carter St. Columbia	Elementary School	7-4	506		N	N	B	N	59,750	6,071,000
Santa Fe 2629 Santa Fe Pk. Santa Fe	Elementary/ High School	7-4	662		N	N	B	N	72,500	7,400,000
Spring Hill Elementary 5359 Main St. Spring Hill	Elementary School	7-4	538		N	N	B	N	61,770	6,400,000
Spring Hill M.S. 3501 Cleburne Rd. Columbia	Middle School	7-4	714		N	N	B	N		30,000,000
Spring Hill H.S. One Raider Lane Spring Hill	High School	7-4	888		N	N	B	N	177,000	17,000,000
Whitthorne Middle School Hampshire Pike Columbia	Middle School	7-4	1121		N	N	B	N	164,580	16,758,500
Wright 4714 Derryberry Lane Spring Hill	Elementary School	7-4	511		N	N	B	N		24,000,000
Woodard 207 Rutherford Lane Columbia	Elementary School	7-4	472		N	N	B	N	70,000	7,200,000
Central Office 501 W. 8th St. Columbia	School Administration	7-4	25		N	N	B	N	7,000	765,000
Agathos Classical School 101 Unity Lane Columbia	K-12	7-4	100		N	N	M	N	50,000	3,000,000
Columbia Academy 1101 W. 7th St. Columbia	Elementary/ High School	7-4	800		N	Y	B	N	490,000	40,000,000
Zion Christian Academy 6901 Old Zion Rd Columbia	Elementary/ High School	7-4	200		N	Y	B	N	105,000	10,000,000

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Columbia State Community College 6007 Hampshire Pk. Columbia	College	7-4	2000	N	N	B	N	575,000	55,000,000
Duck River Electric 798 New Lewisburg Hwy. Columbia	Electric Dept.	7-4	25	N	N	B	N	4,900	450,000
U.S. Post Office 417 W. 7th St. Columbia	Federal Building	7-4	75	N	N	B	N	31,500	3,000,000
Maury Co. Water Dept. 1018 S. Garden St. Columbia	Utility	7-4	10	N	N	M	N	1,550	150,000
Maury County 1 Public Sq.	Admin. Offices	7-5	50	Y	Y	B	N	29,000	3,000,000
Maury County 5 Public Sq.	Computer Offices	7-5	25	Y	Y	B	N	21,000	2,000,000
Maury County 8 Public Sq.	Admin. Offices	7-5	25	Y	Y	B	N	18,000	2,000,000
Maury County 6 Public Sq.	Admin. Offices	7-5	50	Y	Y	B	N	11,000	1,000,000
Maury County 10 Public Sq.	Admin. Offices	7-5	25	Y	Y	B	N	11,900	1,000,000
Maury County Courthouse 41 Public Sq.	Courthouse	7-5	100	Y	Y	B	N	44,000	4,000,000
Maury Co. Highway Office Bldg., 1210 Industrial Park Rd., Columbia	Transportation	7-4	10	N	N	M	N	1,300	110,000
Maury Co., 1214 Industrial Park Rd. Highway Bldg.	Transportation	6-4	50	N	N	M	N	1,550	150,000
Maury Co. 1214 Industrial Park Rd. Central Maintenance	Public Works	6-4	20	N	N	M	N	6,700	600,000
Columbia Power & Water 201 Pickens Lane Columbia	Utility Communication	7-4	75	Y	N	B	Y	58,500	6,000,000
James K. Polk Home West 7th Street Columbia	Historic Irreplaceable	8-4	36	N	Y	B	N	7,500	10,000,000
TOTAL									1,026,499,000

Historically-Significant Structures

James K. Polk Home
301-305 West Seventh St.
Columbia, Tennessee 38401
(931) 388-2354

Built in 1816 for James K. Polk's father, Samuel, this Federal-style house is the only surviving home of America's eleventh President. James K. Polk lived here with his parents from 1818 to 1824, when he began his legal and political career. His rise to national prominence included serving as governor of Tennessee from 1839 to 1841, and culminated in 1844, when he was elected as a "dark-horse" Democratic candidate for the Presidency. He died of cholera in Nashville at age 53 on June 15, 1849, three months after stepping down from the White House. During his administration, the United States gained 800,000 square miles of territory by conquest, treaty, and purchase. At Polk's urging, the United States annexed the Republic of Texas. As a result of the Mexican War, which Polk advocated, Mexico ceded land, which now comprises Arizona, Nevada, California, and Utah, as well as parts of New Mexico, Colorado, and Wyoming. Polk departed from his party's campaign slogan of "Fifty-four forty or fight!" and approved a compromise with Great Britain by which the United States obtained the land which is now Idaho, Oregon, and Washington and parts of Montana and Wyoming. With extension of this country's borders from the Atlantic to the Pacific came fulfillment of what some saw as its "manifest destiny," a romantic concept and rallying cry at the time. Today, the James K. Polk ancestral home is a Presidential historic site that displays original Polk belongings, such as furnishings, documents, White House artifacts, and political memorabilia. The site also features the adjacent Sisters' House museum, a reconstructed nineteenth century kitchen building, and formal gardens.



Maury County Tennessee
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MT. PLEASANT CRITICAL FACILITY/ASSET INVENTORY											
Facility/Asset Name or Description and Address	Admin Offices Communication Education Type Fire/Rescue Law Enforcement Medical Type Public Works Transportation	Time Open	Employee and visitors capacity	In Hazard	Economic Asset	Historic Asset	Construction: B,C,M,W	Emergency generator	Square Feet	Asset Content and Structure Value	
City Hall 100 Public Square	Admin. Offices	8-4	6	Y	N	B	N	4,800	500,000		
Mt. Pleasant Gas System 100 Public Square	Utility	8-4	3	Y	N	B	N	1,750	150,000		
Mt. Pleasant Power System 100 Public Square	Utility	8-4	3	Y	N	B	N	1,600	150,000		
South Maury VFD 115 Charles Tisher Lane Mount Pleasant	Fire	7-24	4	Y	N	B	N	3,200	300,000		
Mt Pleasant Police Dept. 100 Public Sq. Mount Pleasant	Police	7-24	12	Y	N	B	N	2,100	150,000		
Mt Pleasant Fire Station # 2 1158 N. Main Street Mt. Pleasant	Fire	7-24	10	N	N	B	Y	3,060	520,000		
City Garage 110 E. Cooper St., Mt. Pleasant	Public Works	8-4	4	N	N	B	Y	2,050	283,600		
Mt. Pleasant Water Dept. 8398 Old Hwy. 43 Mt. Pleasant	Utility	8-4	2	N	N	B	N	20,700	1,800,000		
Mt. Pleasant Wastewater Dept. S. Cross Bridges Rd.	Utility	8-4	2	N	N	B	N	33,500	3,853,600		
TOTAL									7,707,200		

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

SPRING HILL CRITICAL FACILITY/ASSET INVENTORY										
Facility/Asset Name or Description and Address	Admin. Offices Communication Education Type Fire/Rescue Law Enforcement Medical Type Public Works Transportation	Time Open	Employee and visitors capacity	In Hazard	Economic Asset	Historic Asset	Construction: B, C, M, W	Emergency generator	Square Feet	Asset Content and Structure Value
City Hall 199 Town Center Parkway	Admin. Offices	8-4	15		Y	N	B	Y	9,000	1,000,000
Water Treatment Plant 4151 Kedron Rd	Public Works	24	7		Y	N	B	Y	55,500	7,000,000
Wastewater Plant and Public Works 3893 Mahlon Moore Rd	Public Works	8-4	30		N	N	B	Y	44,750	4,614,400
Spring Hill Police Dept. 199 Town Center Pkwy.	Law Enforcement	7-24	24		N	N	B	Y	3,000	350,000
Spring Hill E-911 199 Town Center Pkwy.	Emergency Communication	7-24	5		N	N	B	Y	3,900	450,000
Spring Hill Fire Sta. #1 440 Beechcroft Rd.	Fire/Rescue	7-24			N	N	B	N	4,100	475,000
Spring Hill Fire Sta. # 2 4237 Port Royal Rd	Fire/Rescue	7-24			N	N	B	N	4,100	3,000,000
Spring Hill Fire Sta. #3 4000 Campbell Sta. Pkwy.	Fire/Rescue	7-24	20		N	N	B	Y	6,500	1,200,000
U.S Post Office 223 Town Center Pkwy.	Federal Building	8-4	50						21,000	4,000,000
TOTAL										22,089,400

4.4.5 Asset inventory by Hazard

For this vulnerability assessment, some of the defined hazard areas are not deemed unique enough to make definitive vulnerability assessments for potentially at-risk buildings or facilities that differentiate them from other areas of Maury County (for example, the insignificant spatial differences in peak ground acceleration for the earthquake hazard). However the below assessments are planned to be completed prior to the date of plan updating set by FEMA

The vulnerability of each these facilities was partially assessed using GIS analysis by comparing their physical location with the extent of known hazard areas that can be spatially defined through GIS technology. For Maury County, this includes flooding/flash flooding (100/500-year flood zones)

MAURY HAZARD VULNERABILITY							
Hazard Event	Hazard Description	Est. Fatalities	Est. Injuries	Assets Damaged	Estimated Structure Damage or Asset Cost	Estimated Response, Recovery, and Content Damage Cost	Source FEMA NOAA USGS State Local etc.
Flooding	Countywide 500 year flood	5	20	2061	109,509,558	45,644,180	Local FEMA
Hazardous Material Incident	RR Hazmat incident	20	100	2704	44,489,802	54,664,582	Local FEMA
Urban Fire	Mount Pleasant Urban Fire	2	2	14	6,658,888	2,664,630	Local FEMA
Terrorism	General Motor's Facility	75	200	21	36,042,857	41,363,770	Local FEMA
Tornado	Spring Hill	2	40	25	1,963,571	729,565	Local FEMA
Dam Failure	Spring Hill	2	40	25	1,963,571	729,565	Local FEMA
	TOTAL	106	402	4850	200,628,247	145,796,292	Local FEMA

4.4.5.1 Hazard Population and Structure/Asset Inventory

For each identified hazard that lends itself to predicting a geographic location for a disaster, incident population and structure/asset information is collected usually using a GIS system and information from the county property tax assessor. Current and future population is calculated within a defined hazard area. Current and future structure/asset types and values are also calculated and estimated. The future estimates are usually calculated using a 10-year timeframe.

44 CFR Requirement

44 CFR Part 201.6(c) (2) (ii): The risk assessment shall include a description of the jurisdiction's vulnerability to the hazards described in paragraph (c) (2) (I) of this section. The description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms (c)(2)(ii)(A) an estimate of the potential losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section

ANTICIPATED FUTURE VULNERABILITY BASED ON IDENTIFIED HAZARDS

Each hazard was addressed as it relates to future development since no rationale currently exists to accurately determine the types and numbers of future developments.

Flooding:

Due to current and anticipated future code restrictions, future facilities, infrastructure, and buildings will have a low vulnerability to flooding.

Severe Weather (includes heat and drought, thunderstorms, tornadoes and winter storms)

Due to current and anticipated future code restrictions, future facilities, infrastructure, and buildings will have a low vulnerability to severe weather.

Earthquakes:

Due to current and anticipated future code restrictions, future facilities, infrastructures, and buildings will have a moderate-high vulnerability to earthquakes.

Fires (includes urban and wild fires):

Due to current and future code restrictions and public education, future facilities, infrastructure, and buildings will have a low vulnerability to fires.

Dam Failures:

Due to aging, lack of maintenance, and failing structural integrity, the future facilities, infrastructure, and buildings that could be constructed downstream of current dams will have a moderate-high vulnerability to dam failure.

Haz-mat Incidents:

Future facilities and buildings will have a moderate-high vulnerability to haz-mat incidents.

Terrorism:

Due to increased public education and awareness, future facilities, infrastructure, and buildings will have a low vulnerability to terrorism.

Pandemic/Vectors and Transportation Incidents:

Although future facilities, infrastructure, and buildings are not anticipated to be affected by pandemics/vectors and transportation incidents, the people that use them will be highly vulnerable should an incident of this type occur.

The following asset inventory lists have been reviewed as part of the 2018 Update Process.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY ASSET INVENTORY SUMMARY - BY HAZARD						
Hazard	HAZMAT Railroad Siding-1 mile radius					
	In Hazard Current	In Jurisdiction Current	%	In Hazard (10yr)	In Jurisdiction Projected	% Proj.
Population	3378	71627	4.7	3385	82,371	4.7
Structure Type						
Residential	2020	14,851	13.6	2161	15,891	13.6
Agricultural Land	18	4204	.43	14	3,363	.42
Commercial/Indus	559	2397	23.3	587	2,517	23.3
Government/Util/NP	160	848	18.9	97	880	11.0
TOTAL	2691	22,300	12.1	2859	22,651	12.6
Structure Value						
Residential	79,925,700	1,827,355,900	4.4	87,240,631	1,955,270,813	4.4
Agriculture	2,0612,200	480,013,000	4.3	90,287,600	384,010,400	4.3
Commercial/Indus	46,859,600	433,368,800	10.8	92,191,155	455,037,240	10.8
Government/Util/NP	28,757,708	441,049,832	6.5	106,177,267	462,488,824	23.0
TOTAL	176,155,208	3,181,787,532	5.5	375,896,653	3,256,807,277	5.9

MAURY COUNTY ASSET INVENTORY - BY HAZARD										
Hazard	HAZMAT Railroad Siding-1 mile radius									
Facility/Asset Name or Description and Address	Admin Offices Communication Education Type Fire/Rescue Law Enforcement Medical Type Public Works Transportation	Capacity	Vulnerable Population	Critical Asset	Economic Asset	Historic Asset	Special Considerations	Construction B,C,M,W	Square Feet	Asset Content and Structure Value
2020 Residences	Residences	8080	S	N	N	N	S	A	211,000	99,907,125
18 Farm Structures	Agriculture	50	N	N	N	N	S	A	9,000	2,946,000
559 Businesses	Commercial/Ind.	5590	S	S	Y	N	S	A	545,000	93,719,200
98 Government/NP	Various	1750	S	S	S	N	S	A	390,000	14411540
Maury Co. Courthouse	Courthouse	150	N	Y	Y	Y	N	B	44,000	4,000,000
Maury County IT Dept.	Computer	25	N	Y	Y	Y	S	B	19,000	2,000,000
Maury County Water	Utility	10	N	Y	N	N	S	M	1,550	150,000
School Central Office	Admin Offices	25	N	Y	N	N	N	B	7,000	765,000
Highland Park School	Elementary	450	N	Y	N	N	Y	B	43,250	4,525,000
Columbia City Hall	Admin Officers	50	N	Y	Y	N	Y	B	277,000	2,819,900
Columbia Fire Dept.	Fire Dept	24	N	Y	N	N	Y	B	8,000	936,000
Columbia Power/Water	Utility	75	N	Y	N	N	Y	B	58,500	6,000,000
James K. Polk Home	Historic	36	N	Y	Y	Y	Y	B	7,500	10,000,000
		0							0	0
TOTAL									1,620,800	242,179,765

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY ASSET INVENTORY SUMMARY - BY HAZARD						
Hazard	Mt Pleasant-Urban Fire-1 Block radius					
	In Hazard Current	In Jurisdiction Current	%	In Hazard (10yr)	In Jurisdiction Projected	% Proj.
Population	275	71627	.038	316	82,371	.38
Structure Type						
Residential	1	14,851	.007	1	15,891	.01
Agricultural Land	0	4204	0	0	3,363	
Commercial/Indus	9	2397	.38	10	2,517	.38
Government/Util/NP	4	848	1.24	5	880	1.24
TOTAL	14	22,300	.063	16	22,651	
Structure Value						
Residential	5,243	1,827,355,900	.001	5,243	1,955,270,813	.001
Agriculture	0	480,013,000	0	0	384,010,400	
Commercial/Indus	2,950,000	433,368,800	.219	3,097,500	455,037,240	.68
Government/Util/NP	800,000	441,049,832	.199	840,000	462,488,824	.19
TOTAL	3,755,243	3,181,787,532	.118	3,942,743	3,256,807,277	.12

MAURY COUNTY ASSET INVENTORY – BY HAZARD										
Hazard	Mt Pleasant-Urban Fire-1 Block radius									
Facility/Asset Name or Description and Address	Admin Offices Communication Education Type Fire/Rescue Law Enforcement Medical Type Public Works Transportation	Capacity	Vulnerable Population	Critical Asset	Economic Asset	Historic Asset	Special Considerations	Construction B,C,M,W	Square Feet	Asset Content and Structure Value
0-Agriculture	Agriculture	0	N	N	N	N	N	B	0	0
3 Businesses	Commercial	9	N	N	N	Y	N	W	10,000	300,000
AT&T	Communication	3	N	N	N	Y	S	B	1000	3,875,000
Doll & Toy Museum	Commercial	12	N	N	N	Y	N	B	6000	450,000
The Flower Shop	Commercial	8	N	N	N	Y	N	B	1200	150,000
K's Beauty Shop	Commercial	8	N	N	N	Y	N	B	2000	150,000
The Glass House	Commercial	10	N	N	N	Y	N	B	5000	450,000
Crews Printing	Commercial	10	N	N	N	Y	N	B	6000	450,000
The Pizza Place	Commercial	25	N	N	N	Y	N	B	6000	75,000
Mt. Pleasant Power	Utility	10	N	N	N	Y	N	B	1000	343000
Gen. Sessions Court	Courthouse	50	N	N	N	Y	Y	B	9000	250,000
Probation Services	Police Dept	10	N	N	N	Y	Y	B	1500	149,857
Mt. Pleasant Power	Utility	15	N	N	N	Y	Y	B	3500	400,000
TOTAL									53,200	7,049,412

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY ASSET INVENTORY SUMMARY - BY HAZARD						
Hazard	Tornado-Southern Maury County – actual occurrence					
	In Hazard Current	In Jurisdiction Current	%	In Hazard (10yr)	In Jurisdiction Projected	% Proj.
Population	100	71627	.01	115	82,371	.01
Structure Type						
Residential	22	14,851	.01	24	15,891	.01
Agricultural Land	0	4204	0	0	3,363	0
Commercial/Indus	0	2397	0	0	2,517	0
Government/Util/NP	0	323	0	0	339	0
TOTAL	22	22,300	.01	24	22,651	.11
Structure Value						
Residential	2,314,600	1,827,355,900	.01	2,476,622	1,955,270,813	.13
Agriculture	0	480,013,000	0	0	384,010,400	0
Commercial/Indus	0	433,368,800	0	0	455,037,240	0
Government/Util/NP	0	400,589,830	0	0	420,619,322	0
TOTAL	2,314,600	3,181,787,532	.07	2,476,622	3,256,807,277	.08

MAURY COUNTY ASSET INVENTORY – BY HAZARD										
Hazard	Tornado-Southern Maury County – actual occurrence									
Facility/Asset Name or Description and Address	Admin Offices Communication Education Type Fire/Rescue Law Enforcement Medical Type Public Works Transportation	Capacity	Vulnerable Population	Critical Asset	Economic Asset	Historic Asset	Special Considerations	Construction B,C,M,W	Square Feet	Asset Content and Structure Value
McCall, Henry E.	Residential	6	N	N	N	N	N	B	3,500	300,000
Tike, Thurman & Paul	Residential	6	N	N	N	N	N	B	3,200	255,250
Stonebreaker, Kenneth	Residential	6	N	N	N	N	N	B	2,800	129,375
Perry, J.W.	Residential	6	N	N	N	N	N	W	2,900	149,500
Gibson, Robert A.	Residential	6	N	N	N	N	N	W	2,600	138,250
Harries, Robert Lee Jr.	Residential	6	N	N	N	N	N	B	3,800	331,875
Bolton, Benny _ _	Residential	6	N	N	N	N	N	W	2,700	128,500
McKenzie, R.M.	Residential	6	N	N	N	N	N	B	3,000	185,500
Dickey, Jerry W.	Residential	6	N	N	N	N	N	B	2,900	162,375
Stoner, Ben D.	Residential	6	N	N	N	N	N	B	2,500	161,125
Redding, Gary Michael	Residential	6	N	N	N	N	N	B	3,100	222,250
Rochelle, William	Residential	6	N	N	N	N	N	W	2,400	117,625
									0	0
TOTAL									46,403	2,893,250

4.4.6 Hazard Loss Calculations

Structure/Asset/Contents/Function/Use Value

To complete the loss estimation, the level of damage must be assessed, both as a percentage of the asset structural and content replacement value, and as a function.

To illustrate, a library in a flood hazard could suffer 40% damage. The potential loss is calculated by multiplying the value of the structure, the contents, and the use by 40%.

Determine the replacement value of the structure.

To determine the loss to the structure in a particular hazard event, multiply the structure replacement value by the expected percent damage.

For example, if the library's structure replacement value equals \$100,000 and the expected damage from a 100-year flood is 40 percent of the structure, then the loss to this structure from a flood is \$40,000.

Determine the expected amount of damage to the contents of the structures.

To determine the losses to the contents from a particular hazard event, multiply the replacement value of the contents by the expected percent damage.

For example, if the library's content replacement value equals \$225,000 and the expected damage from a 100-year flood is 10 percent of the contents, then the losses to these contents from a flood are \$22,500.

Determine loss of function cost.

To determine the cost of the loss of function for the period that the business or service was unable to operate due to the hazard event, estimate the losses to structure use and function by determining functional downtime, or the time (in days) that the function would be disrupted from a hazard event. Then estimate the daily cost of the functional downtime.

Divide the average annual budget or sales by 365 to determine the average daily operating budget or sales.

Multiply the average daily operating budget or sales by the functional downtime to determine the cost of the loss of function for the period that the business or service was unable to operate due to the hazard event.

For example, if an ice cream shop had daily sales of \$2,500 during the summertime and was forced to close for two weeks because of damages from a hazard event, the function loss would be \$35,000 (\$2,500 x 14 days).

For a public facility, such as a library with an annual budget of \$600,000 and an average daily budget of \$1,644 ($\$600,000 / 365$), the loss estimate for a seven-day closure would be \$11,508.

44 CFR Requirement

44 CFR Part 201.6(c) (2) (ii): The risk assessment shall include a description of the jurisdiction's vulnerability to the hazards described in paragraph (c) (2) (I) of this section. The description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of:
(B) An estimate of the potential losses to vulnerable structures identified in paragraph (c) (2) (ii) (A) of this section and a description of the methodology used to prepare the estimate.

To determine the cost of the displacement from the regular place of business, determine the time (in days) that a function may need to operate from a temporary location due to a hazard event and multiply by the temporary location cost per day.

For example, if the library was closed for 7 days (loss of function) and then resumed operations from an empty trailer rented for \$10 per day for the next 90 days, the displacement cost would be \$900 (90 days x \$10 per day).

A single line item can be used for loss calculations for residences by identifying the number of residences and using the average cost of housing and an average loss percentage for the residences in the disaster area.

Debris Calculation and Storage Costs

Debris processing after certain disasters (fires, floods, earthquakes, tornados etc.) can be a major expense and as such must be identified in calculating the total cost of a disaster. An estimate of the cubic yards of various materials is necessary in order to determine the amount and type of acreage needed for disposal. Once total cubic yards are calculated the cost of needed landfill acreage can be determined.

The cubic yards of debris calculation was developed using the damage factor then a factor of 25% of the total square feet of a damaged structure.

For example, if a 1,000 square foot building was 20% damaged then the debris calculation would be $1,000 \times .2 = 200$ square feet then the debris factor of 25% would be applied $200 \times .25 = 50$ square feet divided by 9 resulting in 5.56 cubic yards of debris. The resulting cubic yards is multiplied by the local disposal costs, which are \$25.00 per cubic yard in Maury County.

Response/Evacuation/Recovery/Lost Wages

Response, evacuation, recovery, debris disposal and lost wages are ancillary costs of a disaster that must be calculated to determine the total cost/loss of a disaster event.

Response costs are costs associated with emergency response and first responder personnel and equipment costs.

Evacuation costs are costs of evacuation, evacuation shelters, and shelter operations.

Recovery costs are costs associated with damage assessment, cleanup, utility restoration and repopulation costs.

Wages lost are the loss of employment for a period of time. Permanent job loss for a community can also be calculated for a fixed time period, i.e. 5 years.

Response/Evacuation/Recovery/Other costs are calculated based on the total structure damage. The rationale being, that the structural damage is directly related to the intensity and extent of the hazard. The factors used for calculations are:

- .025% of structural loss would equal response costs
- .005% of structural loss would equal evacuation costs
- .10% of structural loss would equal miscellaneous recovery costs

The following lists have been reviewed as part of the 2018 Update Process.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY HAZARD STRUCTURE/CONTENTS/USE/FUNCTION LOSS							
Hazard		Countywide-500 year flood					
Asset/Structure Name/Description	Content Value	% Loss	Content Loss	Structure Value	% Loss	Total Structure Content Loss	
954 Residential	20,383,325	25%	5,095,831	81,533,300	20%	21,402,491	
Agricultural Assets	48,368,357	5%	2,418,418	112,859,500	5%	8,061,393	
182 Commercial/Industrial	87,801,100	25%	21,950,275	87,801,100	25%	43,900,550	
136 Government/Util/NP	39,592,649	25%	9,898,162	92,382,848	25%	32,993,874	
Riverside school	1,744,714	25%	436,179	4,071,000	25%	1,453,929	
East Maury Co. VFD	42,857	25%	10,714	100,000	25%	35,714	
Maury Regional EMS	375,000	25%	93,750	875,000	25%	312,500	
Life Care Center	1,285,714	25%	321,429	3,000,000	25%	1,071,429	
The Bridge at Life Care	333,214	25%	83,304	777,500	25%	277,679	
						0	
						0	
						0	
						0	
						0	
						0	
						0	
Total Structure and Content Loss						109,509,559	
Asset/structure Name/Description	Avg. Daily Budget	Days Down	Lost Function Cost	Displaced Cost/Day	Days Disp	Total Function Use Costs	
954 Residential	0	0	0	200	45	8,586,000	
Agricultural Assets	300	10	2,352,000	500	10	6,272,000	
182 Commercial/Industrial	1310	15	3,576,300	500	15	4,941,300	
136 Government/Util/NP	2550	30	10,404,000	500	30	12,444,000	
Riverside School	200	15	3,000	500	30	18,000	
East Maury Co. VFD	200	15	3,000	500	30	18,000	
Maury Regional EMS	7500	30	225,000	500	30	240,000	
Life Care Center	1370	30	41,100	500	30	56,100	
The Bridge at Life Care	3200	30	96,000	1000	30	126,000	
						0	
						0	
						0	
						0	
						0	
						0	
Total Function and Use Loss						32,701,400	
Burnable Cu. Yards	Soil Cu. Yards	Metals Cu. Yards	Demolition Cu. Yards	Total Cu. Yards	Disposal Cost/Yd	Landfill Acres	Total Debris Cost
5,724	1,908	1,908	9,541	19,081	25	100000	577,025
Response Costs	Evacuation Costs	Recovery Costs	Other Cost	Wage Days Lost	Daily Wage	Total Wages Lost	Total Disaster Related Loss
1,095,096	219,019	328,529	109,510	65250	165	10,766,250	12,518,403
Total Disaster Costs							155,306,387

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MAURY COUNTY HAZARD STRUCTURE/CONTENTS/USE/FUNCTION LOSS							
Hazard		HAZMAT Railroad Siding-1 mile radius					
Asset/Structure Name/Description	Content Value	% Loss	Content Loss	Structure Value	% Loss	Total Structure Content Loss	
2020 Residences	19,981,425	25%	4,995,356	79,925,700	25%	24,976,781	
18 Farm Structures	883,800	0%	0	2,062,200	3%	61,866	
559 Businesses	46,859,600	10%	4,685,960	46,859,600	20%	14,057,880	
98 Government/NP	4,323,462	5%	216,173	10,088,078	20%	2,233,789	
Maury Co. Courthouse	1,200,000	5%	60,000	2,800,000	10%	340,000	
Maury County IT Dept.	600,000	10%	60,000	1,400,000	20%	340,000	
Maury County Water	45,000	5%	2,250	105,000	10%	12,750	
School Central Office	229,500	10%	22,950	535,500	20%	130,050	
Highland Park School	1,357,500	5%	67,875	0	10%	67,875	
Columbia Power/Water	1,800,000	10%	180,000	4,200,000	20%	1,020,000	
James K. Polk Home	3,000,000	5%	150,000	7,000,000	10%	850,000	
						0	
						0	
Total Structure and Content Loss						44,090,991	
Asset/structure Name/Description	Avg. Daily Budget	Days Down	Lost Function Cost	Displaced Cost/Day	Days Disp	Total Function Use Costs	
2020 Residences	0	60	0	200	60	24,240,000	
18 Farm Structures	300	15	81,000	300	15	162,000	
559 Businesses	1310	15	10,984,350	500	15	15,176,850	
98 Government/NP	2550	15	3,748,500	500	15	4,483,500	
Maury Co. Courthouse	6849	15	102,735	500	15	110,235	
Maury County IT Dept.	2740	10	27,400	500	10	32,400	
Maury County Water	1370	5	6,850	500	0	6,850	
School Central Office	1000	10	10,000	500	10	15,000	
Highland Park School	3000	30	90,000	500	30	105,000	
Columbia Power/Water	8219	10	82,190	0	0	82,190	
James K. Polk Home	1370	45	61,650	0	0	61,650	
						0	
						0	
Total Function and Use Loss						44,475,675	
Burnable Cu. Yards	Soil Cu. Yards	Metals Cu. Yards	Demolition Cu. Yards	Total Cu. Yards	Disposal Cost/Yd	Landfill Acres	Total Debris Cost
2,701	900	900	4,502	9,004	25	100000	325,100
Response Costs	Evacuation Costs	Recovery Costs	Other Cost	Wage Days Lost	Daily Wage	Total Wages Lost	Total Disaster Related Loss
444,898	88,980	133,469	44,490	55650	165	9,182,250	9,894,087
Total Disaster Costs							98,785,853

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY HAZARD STRUCTURE/CONTENTS/USE/FUNCTION LOSS							
Hazard							
Mt Pleasant-Urban Fire-1 Block radius							
Asset/Structure Name/Description	Content Value	% Loss	Content Loss	Structure Value	% Loss	Total Structure Content Loss	
1 Residence	1,311	90%	1,180	5,244	90%	6,031	
0-Agriculture	0	90%	0	0	90%	0	
3 Businesses	150,000	90%	135,000	150,000	90%	270,000	
AT&T	1,937,500	90%	1,743,750	1,937,500	90%	3,681,250	
Doll & Toy Museum	225,000	90%	202,500	225,000	90%	427,500	
The Flower Shop	75,000	90%	67,500	75,000	90%	142,500	
K's Beauty Shop	75,000	90%	67,500	75,000	90%	142,500	
The Glass House	225,000	90%	202,500	225,000	90%	427,500	
Crews Printing	225,000	90%	202,500	225,000	90%	427,500	
The Pizza Place	37,500	90%	33,750	37,500	90%	71,250	
Mt. Pleasant Power	102,900	90%	92,610	240,100	90%	318,990	
Gen. Sessions Court	75,000	90%	67,500	175,000	90%	232,500	
Probation Services	44,957	90%	40,461	104,900	90%	139,367	
Mt. Pleasant Power	120,000	90%	108,000	280,000	90%	372,000	
						0	
Total Structure and Content Loss						6,658,888	
Asset/structure Name/Description	Avg. Daily Budget	Days Down	Lost Function Cost	Displaced Cost/Day	Days Disp	Total Function Use Costs	
1 Residence	0	120	0	200	120	24,000	
0-Agriculture	0	10	0	500	10	0	
3 Businesses	700	45	94,500	500	45	162,000	
AT&T	2500	45	112,500	2500	45	225,000	
Doll & Toy Museum	500	45	22,500	500	45	45,000	
The Flower Shop	400	45	18,000	500	45	40,500	
K's Beauty Shop	600	45	27,000	700	45	58,500	
The Glass House	800	45	36,000	1000	45	81,000	
Crews Printing	400	45	18,000	500	45	40,500	
The Pizza Place	500	45	22,500	500	45	45,000	
Mt. Pleasant Power	500	45	22,500	500	45	45,000	
Gen. Sessions Court	500	45	22,500	500	45	45,000	
Probation Services	500	45	22,500	500	45	45,000	
Mt. Pleasant Power	0	120	0	200	120	24,000	
						0	
Total Function and Use Loss						880,500	
Burnable Cu. Yards	Soil Cu. Yards	Metals Cu. Yards	Demolition Cu. Yards	Total Cu. Yards	Disposal Cost/Yd	Landfill Acres Cost	Total Debris Cost
319	106	106	532	1,064	25	50000	76,650
Response Costs	Evacuation Costs	Recovery Costs	Other Cost	Wage Days Lost	Daily Wage	Total Wages Lost	Total Disaster Related Loss
66,589	13,318	19,977	6,659	9900	165	1,633,500	1,740,042
Total Disaster Costs							9,332,024

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY HAZARD STRUCTURE/CONTENTS/USE/FUNCTION LOSS							
Hazard		Tornado-Southern Maury County					
Asset/Structure Name/Description	Content Value	% Loss	Content Loss	Structure Value	% Loss	Total Structure Content Loss	
10 Residences	122,325	75%	91,744	489,300	75%	458,719	
McCall	60,000	90%	54,000	240,000	90%	270,000	
Tike	51,050	90%	45,945	204,200	90%	229,725	
Stonebreaker	25,875	90%	23,288	103,500	90%	116,438	
Perry	29,900	66%	19,734	119,600	66%	98,670	
Gibson	27,650	66%	18,249	110,600	66%	91,245	
Harries	66,375	66%	43,808	265,500	66%	219,038	
Bolton	25,700	66%	16,962	102,800	66%	84,810	
McKenzie	37,100	66%	24,486	148,400	66%	122,430	
Dickey	32,475	66%	21,434	129,900	66%	107,168	
Stoner	32,225	33%	10,634	128,900	33%	53,171	
Redding	44,450	33%	14,669	177,800	33%	73,343	
Rochelle	23,525	33%	7,763	94,100	33%	38,816	
						0	
						0	
Total Structure and Content Loss						1,963,573	
Asset/structure Name/Description	Avg. Daily Budget	Days Down	Lost Function Cost	Displaced Cost/Day	Days Disp	Total Function Use Costs	
10 Residences	0	0	0	200	150	300,000	
McCall	0	0	0	200	150	30,000	
Tike	0	0	0	200	150	30,000	
Stonebreaker	0	0	0	200	150	30,000	
Perry	0	0	0	200	150	30,000	
Gibson	0	0	0	200	150	30,000	
Harries	0	0	0	200	150	30,000	
Bolton	0	0	0	200	150	30,000	
McKenzie	0	0	0	200	150	30,000	
Dickey	0	0	0	200	150	30,000	
Stoner	0	0	0	200	150	30,000	
Redding	0	0	0	200	150	30,000	
Rochelle	0	0	0	200	150	30,000	
						0	
						0	
Total Function and Use Loss						660,000	
Burnable Cu. Yards	Soil Cu. Yards	Metals Cu. Yards	Demolition Cu. Yards	Total Cu. Yards	Disposal Cost/Yd	Landfill Acres Cost	Total Debris Cost
232	77	77	387	773	25	25000	44,325
Response Costs	Evacuation Costs	Recovery Costs	Other Cost	Wage Days Lost	Daily Wage	Total Wages Lost	Total Disaster Related Loss
19,636	3,927	5,891	1,964	0	165	0	31,417
Total Disaster Costs							2,699,313

Multi-Jurisdictional Risk Assessment

Maury County uses a ranking system to determine each jurisdiction's vulnerability and risk to any all-hazard events. This system is based off simple arithmetic which analyzes potential impacts to determine vulnerabilities and then analyzes the probability of these events occurring to calculate a risk ranking for each jurisdiction. Although there have been no significant impact changes since the 2012 Plan, the Hazard Mitigation Committee provides the following 2018 assessments:

Human	
<i>Risk of injuries and deaths from the hazard</i>	
1	Death very unlikely, injuries are unlikely
2	Death unlikely, injuries are minimal
3	Death unlikely, injuries may be substantial
4	Death possible, injuries may be substantial
5	Deaths probable, injuries will likely be substantial
Property	
<i>Amount of residential property damage associated from the hazard</i>	
1	Less than \$500 in damages
2	\$500-\$10,000 in damages
3	\$10,000-\$500,000 in damages
4	\$500,000-\$2,000,000 in damages
5	More than \$2,000,000 in damages
Business	
<i>Amount of business damage associated from the hazard</i>	
1	Less than 3 businesses closed for only a day
2	More than 3 businesses closed for a week
3	More than 3 businesses closed for a few months
4	More than 3 businesses closed indefinitely or relocated
5	A top-10 local employer closed indefinitely
Probability	
<i>Likelihood of the hazard occurring within a given span of years</i>	
1	Less than once every 10 years
2	About once every 5-10 years
3	About once every 2-5 years
4	About once a year
5	More than once a year

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

Earthquake

Event: Earthquake	Human 1-5	Property 1-5	Business 1-5	Sub-Total	Probability 1-5	Risk Score = [(H+P+B)/3] + P
Maury County	2	3	2	2.33	1	1.78
City of Mount Pleasant	3	3	2	2.67	1	1.89
City of Spring Hill	3	3	2	2.67	1	1.89

Flood

Event: Flood	Human 1-5	Property 1-5	Business 1-5	Sub-Total	Probability 1-5	Risk Score = [(H+P+B)/3] + P
Maury County	2	5	3	3.33	1	2.44
City of Mount Pleasant	2	3	2	2.33	1	1.78
City of Spring Hill	2	3	2	2.33	1	1.78

Landslide

Event: Landslide	Human 1-5	Property 1-5	Business 1-5	Sub-Total	Probability 1-5	Risk Score = [(H+P+B)/3] + P
Maury County	1	2	1	1.33	1	1.11
City of Mount Pleasant	1	2	1	1.33	1	1.11
City of Spring Hill	1	2	1	1.33	1	1.11

Land Subsidence

Event: Land Subsidence	Human 1-5	Property 1-5	Business 1-5	Sub-Total	Probability 1-5	Risk Score = [(H+P+B)/3] + P
Maury County	1	3	1	1.67	1	1.22
City of Mount Pleasant	1	3	1	1.67	1	1.22
City of Spring Hill	1	3	1	1.67	1	1.22

Heat/Drought

Event: Heat/Drought	Human 1-5	Property 1-5	Business 1-5	Sub-Total	Probability 1-5	Risk Score = [(H+P+B)/3] + P
Maury County	1	1	1	1	1	1
City of Mount Pleasant	1	1	1	1	1	1
City of Spring Hill	1	1	1	1	1	1

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

Thunderstorms

Event: Thunderstorms	Human 1-5	Property 1-5	Business 1-5	Sub-Total	Probability 1-5	Risk Score = [(H+P+B)/3] + P
Maury County	1	1	1	1	1	1
City of Mount Pleasant	1	1	1	1	1	1
City of Spring Hill	1	1	1	1	1	1

Tornado

Event: Tornado	Human 1-5	Property 1-5	Business 1-5	Sub-Total	Probability 1-5	Risk Score = [(H+P+B)/3] + P
Maury County	4	3	2	3	5	3.33
City of Mount Pleasant	4	3	3	3.33	5	3.78
City of Spring Hill	4	3	3	3.33	5	3.78

Winter Storms

Event: Winter Weather	Human 1-5	Property 1-5	Business 1-5	Sub-Total	Probability 1-5	Risk Score = [(H+P+B)/3] + P
Maury County	1	2	1	1.33	4	2.11
City of Mount Pleasant	2	2	1	1.67	4	2.22
City of Spring Hill	2	2	1	1.67	4	2.22

Wildfire

Event: Wildfire	Human 1-5	Property 1-5	Business 1-5	Sub-Total	Probability 1-5	Risk Score = [(H+P+B)/3] + P
Maury County	2	3	1	2.00	4	2.33
City of Mount Pleasant	1	2	1	1.33	4	2.11
City of Spring Hill	1	2	1	1.33	4	2.11

4.4.7: Analyzing Land Use and Development Trends

4.4.7.1 Maury County

Under PL 1101, the State of Tennessee has mandated that communities plan basic services and future development potential within their respective jurisdictions. There is also a specific requirement for cities to plan for future growth and service extension through the establishment of “urban growth boundaries”. While these “urban growth boundaries” are potentially the same as municipal boundaries in the future, the city actually assumes certain growth controls (such as land use) within that territory upon adoption of the Plan.

The Maury County Strategic Economic Development Plan identifies an important need to create industrial and/or business parks, or at the minimum level of investment in the identification of industrial property.

Maury County Industrial Park - Located on US 43 on the west side of Columbia. This was the County’s first publicly-run and promoted industrial park. A number of industries are located in this Park and there is room for additional employers. There are several other areas and industries that could have been mentioned, but many are isolated land uses and not part of a planned park or full-service industrial setting.

44 CFR Requirement
44 CFR Part 201.6(c)(2)(ii): The risk assessment shall include a description of The jurisdiction's vulnerability to the hazards described in paragraph (c) (2) (I) of this section. The description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of (C) providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

The roadway system in Maury County is in relatively good shape with regards to capacity and the ability to move people and goods around. The only major project anticipated in the near future is the widening of Hwy 412/Bear Creek Pike to at least four lanes from US 31 to I-65.

Maury County will continue the growth curve that it has been on, subject to any significant unknown economic circumstances occurring.

4.4.7.2 City of Mt. Pleasant

Mt. Pleasant North/South Parks – Adjacent property to the Maury County Regional Airport was turned toward industrial uses years ago. There is limited space adjacent to the airport, but additional land is available in the area. In fact, a nice cluster of industries has chosen to locate across the street within a private development. Among new businesses locating there are Sekisui Plastics, I B Tech, Sonoco and Southeast Emulsions asphalt facility of Hamilton, Ohio that is located on a 15.3 acre tract and will employ 8-10 people initially.

Land use growth trend

Rae Products located at 1203 N. Main Street employs twenty (20) employees and manufactures paper tubes and cores.

In 2016, Landmark Ceramics, a porcelain tile manufacturer built a 700,000 square foot facility on a ninety-six (96) acre tract in Mount Pleasant that serves as the North American Headquarters. The facility has made a \$55 million dollar investment in the city. It is estimated that the companies’ \$8.7 million dollar payroll and benefits will employ approximately 300 employees. UST will be a heavy natural gas user and it has estimated a usage of \$1.8 million dollars. The city has its own gas system, however, with this growth being the best seen in

several years, the city does have its problems with infrastructure. A new \$9 million dollar water treatment plant has been constructed and is operational. The bad news is that the waste water treatment plant is outdated and is not able to keep up with current demands. The city is on a moratorium issued by the State of Tennessee, meaning that no new residential construction is to be done until the problem is fixed. In addition, GCP Applied Technologies, located at 301 Magnolia Drive is investing \$29 million dollars in its existing facility. This investment is forecasted to create 29 new jobs.

Cherry Glen Business Park – Located in Mt. Pleasant on US 43, this is a relatively new 547 acre industrial/business park owned by the County. The long-term plan envisions Cherry Glen as a mixed-use development. Among new businesses and facilities located there is the South Maury Volunteer Fire Department and the South Central Development District offices with room to expand and all utilities are in place for future growth and development. A new \$1.3 million dollar speculative facility is located there to entice potential businesses. The 50,000 square foot facility is a joint venture between Maury County, the Mt. Pleasant Power System, the City of Mt. Pleasant and the Tennessee Valley Authority. The building will be constructed using a mix of grant funding and tax-payer dollars with the intention of selling the structures to a manufacturer or large industrial company. In addition, a 76,890 square foot industrial facility located at 103 Sam Watkins Drive which was the former Numatics Corporation is available for occupancy.

Maury County Investments, an organization comprised of local stakeholders, has taken steps forward in the revitalization of the downtown area. Several new business occupancies are open and more are in the planning stage.

A new sewer rehabilitation project is completed after a state grant was awarded for \$500,000 and should be started in late fall 2012.

A Fred's Superstore is being built at 700 N. Main St. and will be utilizing a 17,000 square foot facility when completed and should add to their economy and job growth.

Mt. Pleasant will continue to grow at a slow and steady pace.

4.4.7.3 City of Spring Hill

Spring Hill's residential and commercial growth continues to drive up the city's population numbers and demand for services. Retail and service business have the highest concentration along US31 with secondary nodes on Port Royal Road at Saturn Parkway and along Reserve Boulevard. The largest retail development in Spring Hill is The Crossings located on the north-east quadrant of the Saturn Parkway/US31 interchange.

Saturn Parkway leads directly to the GM Spring Hill Manufacturing Facility and is one of the largest employers in the state. The General Motors Spring Hill Manufacturing Facility is located on the south-west quadrant of that same interchange. GM currently employs approximately 4,000 workers and manufactures two vehicles as well as engines for other vehicles in the GM line.

The 320,000 square foot Northfield facility, formerly the Saturn headquarters, is now the home of the South Central Workforce Alliance. The SCWA provides workforce development training centers on site and leases space to other companies such as IBEX Global and Call 2 Answer. Columbia State Community College, Martin Methodist College, and the Tennessee College of Applied Technology offer classes and degrees in automotive technology, computer numeric

control (CNC) machine tool technology, residential plumbing and wiring, computer operating systems, network technology, electronic technology, industrial maintenance, automotive repair, welding, nursing, EMT, as well as several others at the Northfield facility. The 2016 certified special census shows the population of Spring Hill at 36,530 with 13,025 homes and an average of 2.8 persons per household.

The Saturn Parkway corridor has been designated as an Innovation area to accommodate businesses relative to the fields of medical, technology, and research facilities. King's Creek golf course is located on Kedron Road south of Saturn Parkway. Maury Regional Medical Center, in partnership with Vanderbilt Medical, has built a 3-story building on Port Royal Road at Saturn Parkway to serve the surrounding population that lies north of Maury Regional Medical Center in Columbia and south of Williamson Medical Center in Franklin. In 2013 Centennial opened the Tri-Star Medical Building on Reserve Boulevard which houses a state-of-the-art freestanding emergency room facility with 12 rooms, advanced testing and imagery capability, trauma room, decontamination room, and the largest emergency transport helipad in the state, capable of holding up to 6 aircraft.

The Crossings of Spring Hill consists of 466,860 square feet along US31 on 63 acres. Major stores located there are Super Target, Kohl's, Bed Beth & Beyond, Ross, Electronic Express, PetSmart, Dollar Tree, Kirklands, Books-A-Million, and the AMC Movie Theater with 12 screens. Restaurants located there are O'Charley's, Panda Express, Panera Bread, Logan's Roadhouse, Buffalo Wild Wings, Red Robin, Longhorn Steak House, BoomBozz Gourmet Pizza, Olive Garden, Amigo's, Fulin's, Jonathan's Grille, and Moe's Southwest Grill. The Crossings is also home to the newly-opened 83 room Hampton Inn by Hilton Spring Hill as well as numerous other retail and service stores.

Commercial development has increased in the Port Royal area with several new fast food options and other service-related businesses. City-wide, residential and commercial development has been on a steady increase over the past few years. 2016 saw just under 700 building permits and 2017 is projected to surpass the previous year in residential permits to reinforce the continued growth Spring Hill is experiencing following the recession.



Spring Hill is served by ten outdoor warning emergency sirens. Sirens serving Spring Hill include: Winchester Building, Maury Hill Street; Spring Hill Middle School, Cleburne Road; Golfview Estates Subdivision; Marvin Wright Elementary School, Derryberry Lane; Longview Elementary, Commonwealth Drive; Picketts Ridge Subdivision; Chapman's Retreat Elementary School, Secluded Lane; Heritage School; Summit High School, Buckner Lane; and TriStar Spring Hill ER. It has been agreed upon between the City of Spring Hill and Williamson County that the Williamson County Office of Public Safety will assist the City of Spring Hill with activation of the sirens.

There are 3 fully-staffed and outfitted fire stations with 24-hour ambulance service and over 45 full-time police officers. Spring Hill operates a 911 Dispatch Center within the Emergency Communications Department providing dispatch services for first responders (EMS, Fire and Police) and coordinates mutual aid with both Williamson and Maury Counties.

SECTION 5 CAPABILITIES, MITIGATION AND MAINTENANCE

5.1 Jurisdiction Capabilities

This section of the Plan discusses the capability of Maury County and the participating local jurisdictions to implement hazard mitigation actions. It consists of the following five subsections:

- Capability Assessment Overview
- Conducting Capability Assessments
- Capability Assessment Findings
- Previously Implemented Mitigation Measures
- Linking Capability Assessment and Risk Assessment with the Mitigation Strategy

5.1.1 Capability Assessment Overview

The purpose of conducting a capability assessment is to determine the ability of a local jurisdiction to implement a comprehensive mitigation strategy, and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs, or projects. As in any planning process, it is important to try to establish goals, objectives and actions that are feasible, based on an understanding of the organizational capacity of those agencies or departments tasked with their implementation. A capability assessment helps determine which mitigation actions are practical and likely to be implemented given a local government's regulatory framework, level of administrative and technical support, and fiscal resources.

A capability assessment has two primary components: an inventory of a local jurisdiction's relevant plans, ordinances, or programs already in place, and an analysis of its capacity to carry them out. A capability assessment also highlights the positive mitigation measures already in place or being implemented at the local level, which should continue to be supported and enhanced through future mitigation efforts. The capability assessment completed for Maury County and its jurisdictions serves as a critical planning step and an integral part of the foundation for designing an effective multi-jurisdictional hazard mitigation strategy. Coupled with the Risk Assessment, the Capability Assessment helps identify and target meaningful mitigation actions for incorporation in the Mitigation Strategy section of the Hazard Mitigation Plan. It not only helps establish the goals and objectives for Maury County, but also ensures that those goals and objectives are realistically achievable under given local conditions.

5.1.2 Conducting the Capability Assessment

In order to facilitate the inventory and analysis of local government capabilities throughout Maury County, a Capability Assessment Survey was distributed to Maury County's local jurisdictions. The survey was completed by appropriate local government officials and requested information on a variety of "capability indicators" such as existing local plans, policies, programs, or ordinances that contribute to the community's ability to implement hazard mitigation actions. Other indicators requested included information related to each jurisdiction's fiscal, administrative, and technical capabilities, such as access to local budgetary and personnel resources for mitigation purposes. At a minimum, survey results provide an extensive inventory of existing local plans, ordinances, programs, and resources in place or under development. The survey instrument thereby not only helps accurately assess each jurisdiction's degree of local capability, but also serves as a good source of introspection for those jurisdictions wishing to improve their capability as identified gaps, weaknesses, or conflicts can be viewed as opportunities for specific actions to be proposed as part of the community's mitigation strategy.

The information provided by participating jurisdictions was scored using a simple scoring methodology to rank each jurisdiction's overall capability. A total score and general capability rating of "High," "Medium" or "Low" was then determined for each jurisdiction according to the total number of points. The classifications are designed to provide an assessment of each jurisdiction's local capability. The result of this multi-jurisdictional capability assessment provides critical information for developing an effective and meaningful mitigation strategy.

5.1.3 Capability Assessment Findings

The findings of the capability assessment are summarized in this Plan to provide insight into relevant capacity of Maury County's jurisdictions to implement hazard mitigation activities. All information is based upon the responses provided by local government officials to the Capability Assessment Survey and during meetings throughout the planning process.

5.1.3.1 Planning and Regulatory Capability

Planning and regulatory capability is based on the implementation of existing plans, ordinances, and programs by a local government. These measures can help demonstrate a local jurisdiction's commitment to guiding and managing growth, development, and redevelopment in a responsible manner while maintaining the general welfare of the community. Such measures include emergency response and mitigation planning, comprehensive land use planning, and transportation planning, in addition to the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built. Although some conflicts can arise, these planning initiatives present significant opportunities to integrate hazard mitigation principles and practices into the local decision-making process.

This assessment is designed to provide an overview of the key planning and regulatory tools in place or under development for jurisdictions in Maury County, along with their potential effect on loss reduction. This information will help identify opportunities to address existing gaps, weaknesses, or conflicts with other initiatives, in addition to integrating this Plan with existing planning mechanisms, where appropriate. The table on pages 140 - 142 provides a summary of the relevant local plans, ordinances and programs already in place or under development for Maury County's participating jurisdictions. A more detailed discussion on jurisdiction planning and regulatory capability follows.

Building codes regulate construction standards. In many communities, permits and inspections are required for new construction. Decisions regarding the adoption of building codes (that account for hazard risk), the type of permitting process required both before and after a disaster, and the enforcement of inspections all affect the level of hazard risk faced by a community.

All local jurisdictions in Maury County have adopted and enforce the Southern Building Code (SBCCI). Each of Maury County's jurisdictions has either recently adopted or has begun the process of reviewing the International Building Code (IBC), which was first introduced in 2000 and recently revised in 2003. Adoption of the new code has become a priority for city officials because of the building code effectiveness

A Capital Improvements Plan (CIP) guides the scheduling of spending on public improvements. A CIP can serve as an important mechanism to guide future development away from identified hazard areas. Limiting public spending in hazardous areas is one of the most effective long-term mitigation actions available to local governments.

Continuity of Operations/Continuity of Government Plan provides the county and participating municipalities the guidance on succession of leadership and continuity of government services in the event of a disaster or terrorist incident.

An Economic Development Plan provides for business development of existing business in the county and a strategy to attract new business to locate in the county. A successful Economic Development plan provides long-term, attractive employment opportunity to communities and increases the tax base. Maury County and each of its municipal jurisdictions have Capital Improvement Plans that are developed and adopted on an annual basis, giving local city councils the opportunity to review and determine budgets for a variety of local infrastructure and service programs. Each municipality indicated that their plans can strongly support and will help facilitate hazard mitigation efforts.

A Comprehensive Plan incorporates all aspects of the various tactical plans and programs into a strategic county plan that guides the county and its jurisdictions to successfully improve and enhance the quality of life for all citizens.

Emergency Management Accreditation Program is a program that audits the jurisdictions Emergency Management plans and capabilities to ensure that minimal standards are met to mitigate, respond and recover from a disaster

An Emergency Response Plan is part of an Emergency Operations Plan (EOP) that outlines responsibilities and the means by which resources are deployed following an emergency incident or disaster.

Maury County Emergency Management maintains a countywide EOP. The EOP addresses emergency operations on behalf of all municipalities in Maury County.

The County's EOP has been determined to have a moderate effect on loss reduction, as its emphasis focuses on preparedness and response operations versus hazard mitigation activities. However, the mission, execution, and implementation of the EOP strongly support the goals of this Plan.

A Floodplain Management Plan (or a flood mitigation plan) provides a framework for action regarding the corrective and preventative measures in place to reduce flood-related impacts. Typical flood control activities include: structural flood control works (such as bank stabilization, levees, and drainage channels), acquisition of flood-prone land, flood insurance programs and studies, river and basin management plans, public education programs, and flood warning and emergency preparedness activities. Maury County and its municipalities have pursued a variety of flood mitigation activities that strongly support loss reduction efforts. These activities will be built upon as actions in this Plan are implemented.

An important strategy for all jurisdictions is participation in the National Flood Insurance Program (NFIP). In addition to approaches that cut across hazards, such as education, outreach, and the training of local officials, the NFIP contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. Participation in the NFIP is voluntary for local governments, but the program is promoted by FEMA as a basic first step for implementing and sustaining an effective hazard mitigation program. It is therefore used as a key indicator for measuring local capability as part of this assessment. In order for a county or municipality to join the NFIP, it must adopt a local flood damage prevention ordinance that requires jurisdictions to follow established minimum

building standards in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by the 100-year flood, and that new floodplain development will not aggravate existing flood problems or increase damage to other properties.

Another key service provided by the NFIP is the mapping of identified flood hazard areas. Once prepared the Flood Insurance Rate Maps (FIRM) are used to assess flood hazard risk, regulate construction practices and set flood insurance rates. FIRMs are an important source of information to educate residents, government officials, and the private sector about the likelihood of flooding in their community. Digital Flood Insurance Rate Maps (**DFIRMS**) can be obtained from FEMA by going to the FEMA Map Service Center which allows you to search by your address.

Another voluntary program that provides significant value is the Community Rating System (CRS). CRS is an incentive-based program that encourages counties and municipalities to undertake defined flood mitigation activities that go beyond the minimum requirements of the NFIP, adding extra local measures to provide protection from flooding. All of the 18 creditable CRS mitigation activities are assigned a range of point values. As points are accumulated and reach identified thresholds, communities can apply for an improved CRS class. Class ratings, which run from 10 to 1, are tied to flood insurance premium reductions. As class ratings improve the percent reduction in flood insurance premiums for NFIP policyholder's increases. CRS Premium Discounts, by class as defined by FEMA, are depicted in the adjacent table.

Class	Discount
1	45%
2	40%
3	35%
4	30%
5	25%
6	20%
7	15%
8	10%
9	5%
10	0%

Any community that is in full compliance with the rules and regulations of the NFIP may apply to FEMA for a CRS classification better than class 10. The CRS application process has been greatly simplified over the past several years based on community comments to make the CRS user-friendly. Extensive technical assistance is also available for communities who request it. Maury County and its municipalities are investigating participation in the CRS program.

Growth Control Ordinances are primarily used by local governments to encourage growth in an orderly manner in the areas covered by the ordinance. The purpose of most growth control ordinances is to preserve residential housing values, protect historic areas, and insure that local governments can provide appropriate services to citizens.

Maury County maintains a General Growth Plan. The Plan describes the policies and actions deemed necessary to enhance the existing high quality of life and fully realize the community's vision for the future. Recommendations in the Plan do not specifically address hazards management. The goals and actions identified within this Plan are consistent with and enhance the recommendations made in this hazard mitigation plan. All municipalities adopted the Maury County Urban Growth Plan in March 2001.

Hazard Setback and Hillside Ordinances or Regulations are usually part of a comprehensive land use plan. Typically a comprehensive plan is comprised of demographics, land use, transportation elements and community facilities. Given the nature of the plan and its regulatory standing, the integration of hazard mitigation measures into the comprehensive plan enhances the likelihood of achieving risk reduction goals, objectives, and actions.

Historic Ordinances allow a jurisdiction to preserve historic structures and impose building requirements in historic areas.

A Post Disaster Ordinance provides for the protection of lives and property and enhances the recovery from disasters. The ordinance is used to control price gouging, and allows local governments to facilitate the purchase and deployment of equipment and resources to more quickly recover from disasters.

Real Estate Disclosure is an important issue that facilitates real estate transactions and ensures that both buyers and sellers fully understand any mitigating circumstances associated with properties.

Site Plans/Subdivision Ordinance is intended to regulate the development of residential, commercial, industrial, or other uses, including public infrastructure, as land is subdivided into lots for future development. Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development.

Wildfire Ordinances are a means to control the potential of wildfire occurrence by requiring burn permits and the reduction of fuel for wildfires in both urban interfaces and forests in general.

Zoning Ordinances are the means to control land use by local governments. As part of a community's police power, zoning ordinances are used to protect the public health, safety and welfare of its citizens. Since zoning regulations enable local jurisdictions to limit the type and density of development, it can serve as a powerful tool when applied in identified hazard areas. All incorporated jurisdictions have a zoning ordinance.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY LEGAL AND REGULATORY CAPABILITY							
Regulatory Tools/Plans	Type: Ordinances Codes Plans etc.	Reference number	Date Adopted	Local Authority	State Prohibited	Higher Authority	Electronic copy included
Building Codes	International 2003 Building	01-04-42	2004	Y	N	Y	N
Capital Improvements Plan	Adequate Facilities Privilege Tax	99-031	1/19/99	Y	N	N	N
Comprehensive Plan							
COOP/COG Plan							
Economic Development Plan	Maury Alliance		2003	Y	N	Y	N
EMAP Certified							
Emergency Response Plan	Maury Co. Emer. Ops. Plan Mutual Aid Act of 2004		2004	Y	N	Y	N
Flood Management, Storm water, Pollution Plan			1989	Y	N	Y	N
Growth Control Ordinance	Ordinance		4/26/00	Y	N	N	N
Hazard Setback Regulations							
Hillside Ordinance							
Historic Ordinance							
Post-disaster Ordinance							
Post-disaster Recovery Plan	Maury Co. Emer. Ops. Plan Mutual Aid Act of 2004		2004	Y	N	Y	N
Real Estate Disclosure	TN Real Estate Commission			Y	N	Y	N
Site Plan Requirements	#32, TCA	13-7-101 13-7-401	4/25/86	Y	N	N	N
Subdivision Regulations	TCA	13-3-303 13-3-403	12/19/85	Y	N	N	N
Wildfire Ordinance							
Zoning Ordinances	#32, TCA	13-7-101 13-7-401	12/19/85	Y	N	N	N

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MT. PLEASANT LEGAL AND REGULATORY CAPABILITY							
Regulatory Tools/Plans	Type: Ordinances Codes Plans etc.	Reference number	Date Adopted	Local Authority	State Prohibited	Higher Authority	Electronic copy included
Building Codes	International Building Codes	99-798	7/2016	Y	N	Y	N
Capital Improvements Plan	Annual Budget		Annually	Y	N	N	N
Comprehensive Plan	NO						
COOP/COG Plan	NO						
Economic Development Plan	Annual Budget		Annually	Y	N	N	N
EMAP Certified	NO						
Emergency Response Plan	Maury Co. Emer. Ops. Plan Mutual Aid Act of 2004						
Flood Management, Storm water, Pollution Plan	Ordinance	95-765	4/5/95	Y	N	Y	N
Growth Control Ordinance	Maury County Growth Plan		04/06/00	Y	N	Y	Y
Hazard Setback Regulations	Zoning ordinance	99-798	1997	Y	N	N	N
Hillside Ordinance	NO						
Historic Ordinance	NO						
Post-disaster Ordinance	NO						
Post-disaster Recovery Plan	Maury Co. Emer. Ops. Plan Mutual Aid Act of 2004.		2004	Y	N	Y	Y
Real Estate Disclosure	TN Real Estate Commission			Y	N	Y	N
Site Plan Requirements	Zoning Ordinance 6-23-81		6/3/81	Y	N	N	N
Subdivision Regulations	Resolution		12/04/90	Y	N	N	N
Wildfire Ordinance	No						
Zoning Ordinances	Ordinance	81-641 84-655	6/3/81	Y	N	N	N

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

SPRING HILL LEGAL AND REGULATORY CAPABILITY							
Regulatory Tools/Plans	Type: Ordinances Codes Plans etc.	Reference number	Date Adopted	Local Authority	State Prohibited	Higher Authority	Electronic copy included
Building Codes	Southern Bldg. Code		1986	Y	N	Y	N
Capital Improvements Plan	Resolution		Annually	Y	N	N	N
Comprehensive Plan	Resolution		2015	Y	Y	N	N
COOP/COG Plan	NO						
Economic Development Plan	Resolution		2015	Y	N	N	N
EMAP Certified	NO						
Emergency Response Plan	Maury Co. Emer. Ops. Plan Mutual Aid Act of 2004./Automatic Aid		2015	Y	N	Y	N
Flood Management, Storm water, Pollution Plan	Regulation		2016	Y	N	Y	N
Growth Control Ordinance	Resolution – Comp Plan		2015	Y	N	Y	Y
Hazard Setback Regulations	NONE						
Hillside Ordinance	NONE		2013	Y	N	N	N
Historic Ordinance	NONE		2007	Y	N	N	N
Post-disaster Ordinance	NONE						
Post-disaster Recovery Plan	Maury Co. Emer. Ops. Plan Mutual Aid Act of 2004		2004				
Real Estate Disclosure	TN Real Estate Commission					Y	
Site Plan Requirements	Regulation		2013	Y	N	N	Y
Subdivision Regulations	Regulation		2013/ 2016	Y	N	N	Y
Wildfire Ordinance	NONE						
Zoning Ordinances	Ordinance		2013/ 2016	Y	N	N	Y

5.1.3.2 Administrative and Technical Capability

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its ability to direct staff's time and resources for that purpose. Administrative capability can be evaluated by determining how mitigation-related activities are assigned to local departments and how adequate the personnel resources are for implementing the activities. The degree of intergovernmental coordination among departments will also affect administrative capability for the implementation and success of proposed mitigation activities. Technical capability can generally be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in using GIS to analyze and assess community hazard vulnerability.

The Capability Assessment Survey was used to capture information on administrative and technical capability through the identification of available staff and personnel resources. Additional information on administrative and technical capability can be obtained through Maury County or its local jurisdictions. The table below identifies each jurisdiction's administration and technical capability. The following tables identify the quantity of resources.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY ADMINISTRATIVE AND TECHNICAL CAPABILITIES					
Position	Staff/Personnel Resources	Department/Agency	Number Fully Trained	Number Fully Equipped	Total Personnel
Emergency Management Director	Certified Professional	Emergency Management	1	1	1
Emergency Management Assistant Director	Certified Professional	Emergency Management	1	1	1
Deputy Director	Technicians Administration	Emergency Management	2	2	2
Land Use/Management	Engineer(s)/Planners	State/Local Planning	1	1	1
Construction Practices	Professional	Public Works	1	1	1
Hazards Analysis	Professional(s)	Emergency Management	0	0	0
Floodplain Manager	Engineer(s)	Public Works	0	0	0
Surveyor	Certified Professional	Contracted	1	1	1
Vulnerability Assessor	Professional(s)	Emergency Management	1	1	1
GIS and/or HAZUS	Professional(s)	I.T. Dept.	2	3	3
Grant Writer	Professional(s)	Emergency Management	1	1	1
Fire Personnel	Volunteer(s)	Fire Dept.	60	125	160
Hazmat	Volunteer(s)	Fire/Sheriff Dept	9	9	9
Search and Rescue	Volunteer(s)	Fire Dept.	60	125	160
EMT	Professional(s)	EMS	25	25	25
Paramedic	Professional(s)	EMS	40	40	40
EMS First Responder	Volunteer(s)	Fire/Rescue	50	25	50
Doctor/Nurse/Admin	Professional(s)	Health Department	1500	1500	1500
Government Elected	Elected Officials	Mayor/County Commissioners	23	23	23
Government Administration	Government Employees	Maury County	20	20	20
Agriculture	Agents	Extension Service	1	1	1
Law Enforcement	Sheriff & Deputies	Sheriff's Department	65	65	65
Law Enforcement	Reserve Deputies	Sheriff's Department	30	30	30
Public Works	Directors/Engineers	Public Works	1	1	1
Public Communication	911 Specialists	E-911	9	9	9

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MT. PLEASANT ADMINISTRATIVE AND TECHNICAL CAPABILITIES					
Position	Staff/Personnel Resources	Department/Agency	Number Fully Trained	Number Fully Equipped	Total Personnel
Emergency Management Director	Certified Professional	Emergency Management	C	C	C
Emergency Management Assistant Director	Certified Professional	Emergency Management	C	C	C
Deputy Director	Technicians Administration	Emergency Management	C	C	C
Land Use/Management	Engineer(s)/Planners	State/Local Planning	1	1	1
Construction Practices	Professional	Public Works	1	1	1
Hazards Analysis	Professional(s)	Emergency Management	C	C	C
Floodplain Manager	Engineer(s)	Public Works	1	1	1
Surveyor	Certified Professional	Contracted	1	1	1
Vulnerability Assessor	Professional(s)	Emergency Management	C	C	C
GIS and/or HAZUS	Professional(s)	I.T. Dept.	C	C	C
Grant Writer	Professional(s)	Emergency Management	C	C	C
Fire Personnel	Professional(s)	Fire Dept.	24	24	24
Hazmat	Professional(s)	Haz-Ops Team	1	1	1
Search and Rescue	Professional(s)	Fire Dept.	0	0	0
EMT	Professional(s)	Fire Dept.	8	8	8
Paramedic	Professional(s)	Fire Dept.	2	0	2
EMS First Responder	Professional(s)	Fire Dept.	14	14	14
Doctor/Nurse/Admin	Professional(s)	Health Department	C	C	C
Government/Elected	Elected Officials	Mayor/City Commissioners	6	6	6
Government/Administration	Government Employees	City of Mt. Pleasant	8	8	8
Agriculture	Agents	Extension Service	C	C	C
Law Enforcement	Police	Police Department	14	14	14
Public Works	Directors/Engineers	Public Works	1	1	1
Public Communication	911 Specialists	E-911	4	4	4

Note: (PT) part time; (C) resources provided by Maury County.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

SPRING HILL ADMINISTRATIVE AND TECHNICAL CAPABILITIES					
Position	Staff/Personnel Resources	Department/Agency	Number Fully Trained	Number Fully Equipped	Total Personnel
Emergency Management Director	Certified Professional	Emergency Management	C	C	C
Emergency Management Assistant Director	Certified Professional	Emergency Management	C	C	C
Deputy Director	Technicians Administration	Emergency Management	C	C	C
Land Use/Management	Engineer(s)/Planners	State/Local Planning	4	4	4
Construction Practices	Professional	Public Works	6	6	6
Hazards Analysis	Professional(s)	Emergency Management	C	C	C
Floodplain Manager	Engineer(s)	Building & Codes	1	1	1
Surveyor	Certified Professional	Contracted	1	1	1
Vulnerability Assessor	Professional(s)	Emergency Management	C	C	C
GIS and/or HAZUS	Professional(s)	GIS/IT Department	3	3	3
Grant Writer	Professional(s)	Emergency Management	C	C	C
Fire Personnel	Professional(s)	Fire Dept.	51	51	51
Hazmat	Professional(s)	Fire Dept.	8	8	8
Search and Rescue	Professional(s)	Fire Dept.	51	51	51
EMT	Professional(s)	Fire Dept.	32	32	32
Paramedic	Professional(s)	Fire Dept.	4	4	4
EMS First Responder	Professional(s)	Contractor (Lifeguard)	17	17	17
Doctor/Nurse/Admin	Professional(s)	Health Department	C	C	C
Government/Elected	Elected Officials	Mayor and Board of Aldermen	9	9	9
Government/Administration	Government Employees	City of Spring Hill	2	2	2
Agriculture	Agents	Extension Service	C	C	C
Law Enforcement	Police	Police Department	54	54	54
Public Works	Directors/Engineers	Public Works	10	10	10
Public Communication	911 Specialists	E-911	8	8	8

Note: **(PT)** part time; **(C)** resources provided by Maury County.

5.1.3.3 Fiscal Capability

The ability of a local government to take action is closely associated with the amount of money available to implement policies and projects. This may take the form of outside grants or local-based revenue and financing. The costs associated with mitigation policy and project implementation vary widely. In some cases, policies are tied primarily to staff or administrative costs. In other cases, direct expenses are linked to an actual project such as the acquisition of flood prone homes, which can require a substantial commitment from local, state, and federal funding sources. The Capability Assessment Survey was used to capture information on each jurisdiction’s fiscal capability through the identification of locally available financial resources. The table below depicts the fiscal capability of each jurisdiction.

(Note: TBD = to be determined)

MAURY COUNTY JURISDICTION FISCAL CAPABILITIES					
Financial Resources	Description	Eligible			Used
		Yes	No	TBD	
Community Grants	Community Development Block Grants (CDBG)	Y			Y
	Emergency Management Performance Grants (EMPG)	Y			N
	PDM for disaster resistant universities	Y			N
	PDM Grants for communities	Y		X	
	Department of Health Grants	Y			Y
	Department of Justice Grants	Y			Y
	Department of Agriculture Grants	Y			Y
	Department of Energy Grants		N		
	Department of Education Grants	Y			Y
	Fire Department Grants	Y			Y
	Private Foundation Grants			X	
	Private Business/Industry Grants			X	
Project Funding	Capital Improvement	Y			Y
Special Taxes	Authority to levy taxes for specific purposes	Y			Y
Utility Fees	Fees for water, sewer, gas, or electric service	Y			Y
Impact Fees	Developer fees for new developments	Y			Y
Jurisdiction Bonds	Incur debt through general obligation bonds	Y			Y
Debt Procurement	Incur debt through special tax/revenue bonds	Y			Y
Dept. Procurement	Incur debt through private activity bonds	Y			
Spending Restrictions	Withhold spending in hazard-prone areas	Y		X	

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MT. PLEASANT JURISDICTION FISCAL CAPABILITIES					
Financial Resources	Description	Eligible			Used
		Yes	No	TBD	
Community Grants	Community Development Block Grants (CDBG)	Y			Y
	Emergency Management Performance Grants (EMPG)		N		
	PDM for disaster resistant universities		N		
	PDM Grants for communities	Y			N
	Department of Health Grants		N		
	Department of Justice Grants	Y			Y
	Department of Agriculture Grants		N		
	Department of Energy Grants		N		
	Department of Education Grants		N		
	Fire Department Grants	Y			Y
	Private Foundation Grants	Y		X	
	Private Business/Industry Grants	Y		X	
Project Funding	Capital Improvement	Y			Y
Special Taxes	Authority to levy taxes for specific purposes		N		
Utility Fees	Fees for water, sewer, gas, or electric service	Y			Y
Impact Fees	Developer fees for new developments			X	
Jurisdiction Bonds	Incur debt through general obligation bonds	Y			Y
Debt Procurement	Incur debt through special tax/revenue bonds	Y			Y
Dept. Procurement	Incur debt through private activity bonds		N		
Spending Restrictions	Withhold spending in hazard-prone areas		N		

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

SPRING HILL JURISDICTION FISCAL CAPABILITIES					
Financial Resources	Description	Eligible			Used
		Yes	No	TBD	
Community Grants	Community Development Block Grants (CDBG)	Y			Y
	Emergency Management Performance Grants (EMPG)		N		
	PDM for disaster resistant universities		N		
	PDM Grants for communities	Y		X	
	Department of Health Grants		N		
	Department of Justice Grants	Y			Y
	Department of Agriculture Grants		N		
	Department of Energy Grants	Y	N		Y
	Department of Education Grants		N		
	Fire Department Grants	Y			Y
	Private Foundation Grants	Y		X	
	Private Business/Industry Grants	Y		X	
Project Funding	Capital Improvement	Y			Y
Special Taxes	Authority to levy taxes for specific purposes	Y			Y
Utility Fees	Fees for water, sewer, gas, or electric service	Y			Y
Impact Fees	Developer fees for new developments	Y			Y
Jurisdiction Bonds	Incur debt through general obligation bonds	Y			Y
Debt Procurement	Incur debt through special tax/revenue bonds	Y			Y
Dept. Procurement	Incur debt through private activity bonds			X	
Spending Restrictions	Withhold spending in hazard-prone areas	Y		X	

5.1.4 Existing Mitigation Measures

The success of future mitigation efforts in a community can be gauged to some extent by its ongoing or past efforts. Previously implemented mitigation measures indicate that there is, or has been, a desire to reduce the effects of natural hazards, and the success of these projects can be influential in building local government support for new mitigation efforts. Maury County's previous mitigation efforts and programs include the following

- Emergency medical service is provided throughout the county by Maury Regional EMS.
- Law enforcement is provided by each jurisdiction and by the Maury County Sheriff's Department.
- Each municipality supports a fire department with either all-paid or a combination of paid and volunteer firefighters.
- Eleven all-volunteer fire departments serve Maury County rural areas.
- Maury County and the municipalities within participate in the National Flood Insurance Program (NFIP).
- Tennessee health officials helped to develop a mass vaccination plan. Maury County Health Department's plan was tested during an August 2004 Strategic National Stockpile drill and subsequently revised to address problems found during that exercise.
- A plan to activate the state's stockpile for first responders and hospitals has been developed to ensure delivery of Chempacks to these groups within 12 hours of a release of a nerve gas. Chempack includes three major pharmaceuticals: Atropine, Diazepam and Pralidoxime. Mark I packs are presently carried on all EMS units.
- All facilities involved with hazardous materials provide annual TIER II reports.
- Maury County participates in the Joint Terrorism Task Force.

State Mitigation efforts and programs that are significant to Maury County include the following:

State of Tennessee Petroleum Contingency Plan: The State of Tennessee, through the Energy Division of the Department of Economic and Community Development (ECD), maintains a Petroleum Emergency Plan. State law makes this division responsible for the development and coordination of a state capability to address a petroleum crisis.

The State Emergency Response Commission is responsible for implementing federal EPCRA provisions in Tennessee and serving as a technical advisor and information clearinghouse for state and federal hazardous materials programs. The Tennessee Emergency Management Agency is the lead agency responsible for implementing EPCRA.

Tennessee Emergency Management Plan (TEMP): The Tennessee Emergency Management Plan (TEMP) is the document that provides the foundation for all disaster and emergency response operations conducted within the state of Tennessee. Tennessee state law requires TEMA to develop this plan and update it on a periodic basis. All local emergency management plans are required to emulate the TEMP in terms of structure and purpose.

TEMA Regional Offices: TEMA has three Regional Offices. The regional office serves as the primary day-to-day point of contact with local governments and the citizens of the state. Each office is headed by a Regional Administrator, and has staffs that include an Administrative Officer, Local Planner, and multiple District Coordinators (DC). The District Coordinators and Local Planner travel to local Emergency Management offices to coordinate planning and preparedness activities, ensure that federally assisted counties are complying with grant requirements, and provide training to emergency responders. The DC also serves as the agency's first line of response to major emergencies. A TEMA DC responds to any major emergency, emergencies involving multiple state agencies, hazardous materials, multiple fatalities, and other events upon the request of local officials.

Each county in Tennessee has its own Local Emergency Management Director, who serves at the pleasure of the Chief Executive Officer (County Mayor). The Local Director is the key to Comprehensive Community Emergency Management and Homeland Security, because disasters occur at the local government level. Some local Emergency Management programs receive federal funding assistance through TEMA. Such programs must meet minimum mutually agreed upon criteria. These counties are called State/Local Assistance (SLA) counties. The TEMA Regional Offices are responsible for ensuring SLA counties meet or exceed the minimum SLA criteria.

The Middle Tennessee Region for TEMA consists of the 36 counties. The communities involved range from the smallest unincorporated areas to the largest city in the state, Nashville. Middle Tennessee is also adjacent to one of the largest hazards in the area, Browns Ferry Nuclear Facility in Alabama (TVA).

TEMA, along with other state and local agencies, prepares a two-volume plan that details what steps will be taken by emergency officials during a nuclear event. Citizens living within the 10-Mile Emergency Planning Zone surrounding nuclear plant facilities have access to this plan and should be familiar with appropriate procedures and protocols to be followed in the event of an emergency. Residents beyond that limit may be subject to radiological fallout.

The Domestic Preparedness Program is a partnership of federal, state and local agencies with the goal of insuring that, as a nation, we are prepared to respond to a terrorist attack involving nuclear, biological or chemical weapons - weapons of mass destruction (WMD). Today, the term "Homeland Security" is used to denote the concept of preparing for these kinds of events.

5.1.5 Linking Capability Assessments and Risk Assessment with the Mitigation Strategy

The findings of the Capability Assessment and Risk Assessment serve as the foundation for a meaningful hazard mitigation strategy. During the process of identifying the goals, objectives and mitigation actions, each jurisdiction must consider not only its level of hazard risk but also its existing capability to minimize or eliminate that risk.

In jurisdictions where the overall hazard risk is considered to be HIGH, and local capability is considered LOW, then specific mitigation actions that account for these conditions should be considered. This may include less costly actions such as minor ordinance revisions or public awareness activities. Further, if necessary, specific capabilities may need to be improved in order to better address recurring threats.

Similarly, in cases where the hazard vulnerability is LOW and overall capability is HIGH, more emphasis can be placed on actions that may impact future vulnerability such as guiding development away from known hazard areas.

In jurisdictions where the overall hazard risk is MEDIUM and LOW to MEDIUM capabilities exist then, some specific mitigation actions may need to be considered.

Similarly, where the overall hazard risk is MEDIUM and HIGH capabilities exist then specific mitigation strategies may be prioritized at a lower level.

The tables below provide specific information on the capabilities and vulnerabilities of Maury County and the participating municipalities. These specific tables provide information that will assist local governments in enhancing their mitigation capabilities and mitigating hazards.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY LEGAL AND REGULATORY CAPABILITIES SUMMARY					
	Capabilities 1-8=Low, 9-16=Medium, 17>=High	Maury County	Mt. Pleasant	Spring Hill	
1	Building Codes	Y	Y	Y	
2	Capital Improvements Plan	Y	Y	Y	
3	Community Rating System (flood)				
4	Comprehensive Plan			Y	
5	COOP/COG Plan				
6	Economic Development Plan	Y	C	Y	
7	EMAP Certified				
8	Emergency Response Plan	Y	C	Y	
9	Flood Management Plan		Y	Y	
10	Growth Control Ordinance	Y	C	Y	
11	Hazard Setback Regulations				
12	Hillside Ordinance			Y	
13	Historic Ordinance			Y	
14	National Flood Insurance Program	Y		Y	
15	Post-Disaster Ordinance				
16	Post-Disaster Recovery Plan	Y	C	C	
17	Real Estate Disclosure	S	S	S	
18	Site Plan Requirements	Y	Y	Y	
19	Subdivision Regulations	Y	Y	Y	
20	Wildfire Ordinance				
21	Zoning Ordinances	Y	Y	Y	
	Score Y=1, County/partial=. 5	10.5	8.5	14	

(NOTE: Y = plan in place; P = currently being reviewed; C = provided by Maury County; S = State)

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY ADMINISTRATION AND TECHNICAL CAPABILITIES SUMMARY					
	Capabilities <10=Low, 11-17=Medium 18>=High	Maury County	Mt. Pleasant	Spring Hill	
1	Emergency Management Director	Y	C	C	
2	Emer. Mngmt. Deputy Directors	Y	C	C	
3	Land Use/Management	Y	Y	Y	
4	Construction Practices	Y	Y	Y	
5	Hazards Analysis	Y			
6	Floodplain Manager			Y	
7	Surveyor	PT	PT	PT	
8	Vulnerability Assessor				
9	GIS and/or HAZUS	Y		Y	
10	Grant Writer	Y	C	Y	
11	Fire Personnel	Y	Y	Y	
12	Hazmat	Y	Y	Y	
13	Search and Rescue	Y	Y	Y	
14	EMT	Y	Y	Y	
15	Paramedic	Y		Y	
16	EMS First Responder	Y	Y	Y	
17	Doctor/Nurse/Administration	Y	C	C	
18	Government/ Elected	Y	Y	Y	
19	Government/ Administration	Y	Y	Y	
20	Agriculture	Y	C	C	
21	Law Enforcement	Y	Y	Y	
22	Public Works	Y	Y	Y	
23	Public Communication	Y	C	Y	
	Score 1=Y All others .5	21.5	14.5	18.5	

(NOTE: Y = full time; C = provided by Maury County; PT = part time or contracted)

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

MAURY COUNTY FISCAL CAPABILITIES SUMMARY					
	Capabilities <4=Low, 5-7=Medium, 8-9=High	Maury County	Mt. Pleasant	Spring Hill	
1	Community Grants	Y	Y	Y	
2	Project Funding	Y	Y	Y	
3	Special Taxes	Y		Y	
4	Utility Fees	Y	Y	Y	
5	Impact Fees	Y		Y	
6	Jurisdiction Bonds	Y	Y	Y	
7	Debt Procurement-Tax	Y	Y	Y	
8	Dept Procurement-Private	Y			
9	Hazard Spending Restrictions	Y		Y	
	Score 1=Y	9	5	8	

LOCAL MITIGATION CAPABILITY ASSESSMENT					
Agency/Department Name and Function	Contact Name and email	Contact Telephone	Effect on Loss Reduction		
			Support	Facilitate	
Maury County Office of Emergency Management	Mark Blackwood mblackwood@maurycounty- tn.gov	931-375-6800	X	X	
County Mayor Maury County LEPC	Charles L. Norman. CNorman@maurycounty-tn.gov	931-375-1001	X		
Maury County Tax Assessor	Bobby Daniels b.daniels@maurycounty-tn.gov	931-375-4000	X	X	
Maury County Highway Department	Van Boshers ssmith@maurycounty-tn.gov	931-388-6032	X	X	
Maury Regional EMS	Brain Hupp c-bhupp@mauryregional.com	931-490-4651	X	X	
Maury County Technical Director	Bill Wells bwells@maurycounty-tn.gov	931-375-3101	X	X	
Maury County Board of Education	Chris Marczak	931-388-8403	X	X	
Daily Herald Newspaper	Chris Fletcher cfletcher@c-dh.net	931-388-6464	X	X	
Columbia Power & Water & Cable		931-490-7898	X	X	
Charter Communications (Local cable)	Ron Arnold	931-840-3929	X	X	

5.2 Mitigation Strategy

5.2.1 Overview

The intent of the Mitigation Strategy is to provide Maury County and its municipal jurisdictions with goals that will guide future mitigation policy and project administration, along with a list of proposed actions deemed necessary to meet those goals and reduce the impact of natural and manmade hazards. It is designed to be comprehensive and strategic in nature.

Development of the comprehensive strategy included a thorough review of all natural and selected manmade hazards and identification of policies and projects to reduce the future impacts of hazards and assist the county and municipalities achieve compatible economic, environmental and social goals. The strategy ensures that all policies and projects are linked to established priorities and assigned to specific departments or individuals responsible for their implementation with target completion deadlines. When applicable, funding sources are identified that can be used to assist in project implementation.

The first step in designing the Mitigation Strategy includes the identification of countywide Mitigation Goals. Mitigation Goals represent broad statements that are achieved through the implementation of more specific, action-oriented objectives listed in each jurisdiction's Mitigation Action Plan. These actions include both hazard mitigation policies (such as the regulation of land in known hazard areas through a local ordinance), and hazard mitigation projects that seek to address specifically targeted hazard risks (such as the acquisition and relocation of a repetitive loss structure).

The second step involves the identification and analysis of available mitigation measures to help achieve the identified mitigation goals. This is a long-term, continuous process sustained through the development and maintenance of this Plan. Alternative mitigation measures will continue to be considered as future mitigation opportunities become identified, as data and technology improve, as mitigation funding becomes available, and as this Plan is maintained.

The third and last step in designing the Mitigation Strategy is the creation of the local Mitigation Action Plans (MAPs); The MAPs represent unambiguous plans for action, and are considered to be the most essential outcome of the mitigation planning process. They include a prioritized listing of proposed hazard mitigation actions (policies and projects) for each of Maury County's local jurisdictions along with accompanying information such as those agencies or individuals assigned responsibility for their implementation, potential funding sources and an estimated target date for completion. The MAPs provide those individuals or agencies responsible for implementing mitigation actions with a clear roadmap that also serves as an important tool for monitoring progress over time.

5.2.2 Mitigation Goals

The goals of the Maury County Multi-jurisdictional Hazard Mitigation Plan Update were crafted early in the planning process through a facilitated discussion and brainstorming session with the Mitigation Steering Committee. At each step of the planning process the overarching goals were reviewed and if necessary, modified based on any new information that was gathered and assimilated into the plan. Some additional goals were added based on the analysis of the Capacity Assessments submitted by each jurisdiction and feedback received in the community meetings. There are goals established for each hazard identified by the Hazard Committee as hazards that have a significant potential of impacting assets and population of Maury County and the participating jurisdictions. The following goal statements represent a broad target for Maury County and its jurisdictions to achieve through the implementation of their own specific Mitigation Actions Plans before the next Plan update. Goal achievements are subject to budgetary constraints. The following community goals have been reviewed as part of the 2018 update process. The City of Columbia decided not to participate in the County-wide Mitigation Plan. Therefore, the 2018 updated plan excludes the City of Columbia. Through the planning process additional goals* were identified and added to the plan to address ever-changing hazards.

44 CFR Requirement

44 CFR Part 201.6(c) (3) (I): The mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the important first step. It has been determined by the Maury County Mitigation Steering Committee that the above goal statements are consistent with the State of Tennessee's current mitigation planning goals as identified in the State of Tennessee's Mitigation Plan promulgated by TEMA.

The Hazard Mitigation Steering Committee, after meeting, has determined that no changes were needed as far as on-going or new projects other than the acquisition and occupation of the new Maury County Emergency Operations Center Safe Space (EOCSS). The county and the participating entities are dedicated to the continuation, support, and expansion of emergency services for all of its citizens.

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COMMUNITY GOALS	
Jurisdiction	Goals
Maury County and all participating jurisdictions	<p>Continue to improve jurisdictional capabilities to prepare for, respond to, mitigate, and recover from natural and technological disasters.</p> <p>Minimize the impact of hazardous materials/chemical, biological, radiological, nuclear, or explosive (CBRNE) incidents.</p> <p>Minimize the impact of severe weather on citizens and property.</p> <p>Reduce the impact of local flooding events.</p> <p>Reduce loss of life and property from structure fires and wildfires.</p> <p>Protect life and property from the effects of terrorism.</p> <p>Reduce the impact of methamphetamine labs</p> <p>Minimize potential damage and loss of life from earthquakes</p> <p>Minimize the impact of pandemic disease.</p> <p>Increase the safety of the citizens, visitors and responders.</p> <p>Work with public and private sector partners/agencies for Emergency and Disaster Preparedness and Planning</p>
* Maury County and all participating jurisdictions	<p>Preparedness and planning for intentional violent acts such as: active-shooter incidents, vehicle attacks, crowd bombings, and etc.</p> <p>Preparedness and planning for mass casualty incidents</p> <p>Preparedness and planning for mass fatality incidents</p> <p>Preparedness and planning for civil unrest</p>
Maury County	<p>Support countywide goals for all jurisdictions as established in this Plan.</p> <p>Evaluate methods and funding sources to mitigate hazards.</p> <p>Ensure that mutual aid agreements are in place with public and private entities</p>
Mt. Pleasant	<p>Support countywide goals for all jurisdictions as established in this Plan.</p> <p>Evaluate methods and funding sources to mitigate hazards.</p> <p>Continue participation in the National Flood Insurance Program</p> <p>Investigate participating in the Community Rating Systems to reduce Flood insurance costs for citizens.</p> <p>Coordinate with the State of Tennessee and private dam owners to understand the status of dams and the potential impact to the community</p>
Spring Hill	<p>Support county-wide goals for all jurisdictions as established in this Plan.</p> <p>Evaluate methods and funding sources to mitigate hazards.</p> <p>Continue participation in the National Flood Insurance Program.</p> <p>Investigate participating in the Community Rating Systems to reduce Flood insurance costs for citizens.</p> <p>Coordinate Disaster Planning with Williamson County.</p> <p>Coordinate Disaster Planning with Maury County and General Motors Facility.</p>

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MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 1: Improve all participating jurisdiction's capabilities to prepare for, respond to, mitigate, and recover from natural and/or technological disasters.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
Objective 1.1: Improve the county's ability to evaluate and manage hazards.						
1.1.1	Develop strategies to prevent the loss of public records	All	Maury County Jurisdictional IT Depts.	25,000	100,000	Dept Budgets
1.1.2	Maintain the Hazard Mitigation Committee and conduct annual meetings	All	Emergency Management	10,000	Unknown	Dept Budgets
Objective 1.2: Obtain grant funding.						
1.2.1	Identify grant opportunities for all jurisdictions and disciplines	All	Emergency Management Jurisdictional Grant Writers	100,000	1,000,000	Dept Budgets
1.2.2	Develop funding sources for sustainment and replacement of equipment purchased with grant funding.	All	Emergency Management Jurisdictional Grant Writers	100,000	1,000,000	Dept Budgets
Objective 1.3: Provide hazard awareness, preparedness, and training information to citizens.						
1.3.1	Develop/maintain a web site for citizen information on shelter locations, shelter-in-place citizen training, FEMA courses and links to hazard preparedness websites.	All	Emergency Management Maury County Jurisdictional I.T. Depts.	5,000	100,000	Dept Budget
Objective 1.4 Improve shelter capabilities.						
1.4.1	Assist in finding funding sources to equip shelter facilities.	All	Emergency Management, Volunteer Agencies	5,500	100,000	Agency Budgets
Objective 1.5: Continue to improve Maury County Office of Emergency Management capabilities.						
1.5.1	Review annually and after each disaster to revise the Maury County Emergency Operations Plan.	All	Emergency Management	5,000	100,000	Dept Budget
1.5.2	Develop/maintain/revise annually a countywide NIMS resources inventory.	All	Emergency Management, All Agencies	5,000	2,000,000	Dept Budget
1.5.3	Develop an Emergency Operations Center	All	Emergency Management, Maury E-Com	300,000	2,000,000	Grants, Jurisdiction Budgets

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1.5.4	Provide annual Emergency Operations Center training.	All	Emergency Management	10,000	100,000	TEMA, Grants, Agency Budgets
1.5.5	Purchase/install equipment for sharing of information during EOC activation.	All	Emergency Management, Maury E-Com	25,000	100,000	Grants Agency Budgets
Objective 1.6: Improve multi-jurisdictional, multi-agency response to all emergencies and disasters.						
1.6.1	Ensure adoption of the National Incident Management System by all jurisdictions.	All	All Agencies	10,000	1,000,000	Dept Budget
1.6.2	Schedule/conduct ICS training annually for first responders.	All	All Agencies	10,000	1,000,000	Dept. Budgets
1.6.3	Ensure all personnel are trained in NIMS annually.	All	All Agencies	10,000	1,000,000	Dept. Budgets
1.6.4	Conduct annually disaster exercises involving all response agencies.	All	Emergency Management	25,000	1,000,000	Grants Dept. Budgets
Objective 1.7: Improve the county's warning, evacuation, and information capabilities.						
1.7.1	Install warning capabilities for all hazards.	All	All Jurisdictions	50,000	1,000,000	Grants Jurisdiction Budgets
1.7.2	Continue to activate the EAS as necessary.	Maury County	Emergency Management	0	100,000	N/A
1.7.3	Maintain NAWAS at Maury E-Com & Spring Hill Communications	Maury County & Spring Hill	Emergency Management, TEMA	1000	100,000	TEMA, Jurisdiction Budgets
1.7.4	Purchase and install an automated wide area rapid notification system (D-NAWAS).	Maury County	Emergency Management, Maury E-Com	50,000	1,000,000	Grants Dept. Budget
1.7.5	Develop evacuation routes and procedures.	All	Emergency Management	25,000	100,000	Grants Dept. Budget
1.7.6	Develop redundancy capabilities for 911 services	Maury County & Spring Hill	Emergency Management Maury E-com Spring Hill Comm.	250,000	1,000,000	Grants, Dept. Budgets
1.7.7	Develop redundancy capabilities for radio communications	All	Emergency Management Emergency Agencies	100,000	1,000,000	Grants, Dept. Budgets

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MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 2: Minimize the impact of hazardous materials/CBRNE spills and releases.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
Objective 2.1: Identify and establish requirements for fixed sites with reportable quantities of hazardous materials.						
2.1.1	Enact legislation to require fixed sites to install alert devices and develop warning/evacuation plans.	All	All Jurisdictional Fire Services	50,000	100,000	TIER II Sites Budget
2.1.2	Create a GIS map database of identified sites to display ERG established zones and evacuation perimeters.	All	Maury County IT Dept.	10,000	100,000	Dept Budget
Objective 2.2: Improve safety of emergency responders and countywide response to hazardous materials/CBRNE incidents.						
2.2.1	Provide funds for overtime and backfill to facilitate hazardous materials training for all first responders.	All	All Emergency Agencies	25,000	500,000	Grants Dept Budgets
2.2.2	Provide funds for overtime and backfill to allow for hazardous materials, HMT0, operations level, and CBRNE Training.	All	All Emergency Agencies	200,000	1,000,000	Grants Dept Budgets
2.2.3	Enhance Maury Haz-Ops Team Capabilities for regional response to CBRNE incidents.	All	Emergency Management, All response Agencies	250,000	1,000,000	Grants Dept. Budgets
2.2.4	Plan and conduct annual CBRNE exercises involving all emergency response agencies.	All	Emergency Management All response Agencies	25,000	100,000	Grants Dept Budgets
Objective 2.3 Reduce effects to the environment resulting from transportation hazardous materials/CBRNE spills.						
2.3.1	Enhance Maury Haz-Ops Team Capabilities for regional response to transportation incidents.	All	Emergency Management All response Agencies	100,000	1,000,000	Grants Dept. Budgets
Objective 2.4: Reduce risk of citizen proximity to hazardous materials/CBRNE events.						
2.4.1	Establish codes to prohibit construction of residential or public structures near fixed hazardous materials sites.	All	All Jurisdictional Governments	5,000	100,000	Jurisdiction Budgets
2.4.2	Establish codes to prohibit construction of special needs population facilities near rail lines.	All	All Jurisdictional Governments	5,000	100,000	Jurisdiction Budgets

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MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 3: Minimize the impact of severe weather on citizens and property.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
Objective 3.1: Increase citizen awareness of and preparedness for severe weather events.						
3.1.1	Partner with volunteer agencies to distribute severe weather awareness/preparedness literature at events.	All	Emergency Management	2,500	100,000	Dept Budgets
3.1.2	Partner with NWS and any applicable agencies to publicize citizen weather spotter preparedness training.	All	Emergency Management	500	100,000	Dept Budgets
3.1.3	Publish news articles and distribute literature for public education on safe rooms/shelter-in-place.	All	Emergency Management	500	100,000	Dept Budget
3.1.4	Participate in the Severe Weather Awareness Week campaign.	All	Emergency Management, NWS	2,500	100,000	Dept Budgets
Objective 3.2: Minimize utility loss during severe weather.						
3.2.1	Continue power line right-of-way clearing to reduce downed communication and power lines.	All	Public Utilities	50,000	500,000	Public Utilities
3.2.2	Partner with public utilities to publish news articles and distribute literature to increase public knowledge of downed line prevention and safety.	All	Emergency Management, Public Utilities	3,000	100,000	Dept Budgets
Objective 3.3: Reduce loss of life and property from high winds and tornados.						
3.3.1	Continue to enforce building codes for new buildings and infrastructure and existing buildings and infrastructure undergoing renovations.	All	Jurisdictional Planning & Zoning Departments	25,000	500,000	Dept Budgets
3.3.2	Work with state inspectors to ensure anchor codes are met for mobile homes.	All	Jurisdictional Planning & Zoning Departments	25,000	100,000	Dept Budgets
3.3.3	Provide funding to assist low-income residents to anchor previously- sited mobile homes.	All	Jurisdictional Planning & Zoning Departments	500,000	1,000,000	PDM Grants CDBG Grants

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3.3.4	Enact legislation requiring mobile home parks to install ground anchors at each mobile home space.	All	All Jurisdictional Governments	3,000	1,000,000	Jurisdiction Budgets
3.3.5	Enact legislation requiring new mobile home parks to provide storm shelters to protect all residents.	All	All Jurisdictional Governments	3,000	1,000,000	Jurisdiction Budgets
Objective 3.4: Improve severe weather warning to citizens throughout the county.						
3.4.1	Enact legislation requiring NOAA weather radios in daycare, healthcare and industrial facilities	All	All Jurisdictional Governments	5,000	1,000,000	Jurisdiction Budgets
Objective 3.5: Ensure access of emergency vehicles to victims during severe weather.						
3.5.1	Equip all emergency response vehicles with on-demand tire chains	All	All Jurisdictional Governments	200,000	1,000,000	AFG Grant
3.5.2	Equip all fire department and rescue vehicles with chain saws.	All	All Jurisdictional Governments	40,000	100,000	AFG Grant
Objective 3.6: Ensure provision of critical needs during severe weather.						
3.6.1	Partner with applicable agencies to maintain/update contact lists of suppliers of drugs, food, water, and fuel yearly.	All	Emergency Management	2,500	100,000	Dept Budgets
3.6.2	Install generators in critical facilities and fuel depots.	All	All Jurisdictional Governments	250,000	1,000,000	Grants Jurisdiction Budgets
Objective 3.7: Reduce the impact of severe cold and extreme heat on special needs populations.						
3.7.1	Partner with agencies to identify citizen's subject to suffer during extreme temperatures.	All	Department of Human Services	12,500	100,000	Dept Budget CDBG Grant
3.7.2	Partner with volunteer agencies to protect the homeless, poor, elderly and chronically- ill during extreme temperatures.	All	Department of Human Services, Volunteer Agencies	12,500	100,000	Dept Budget, Agency Budgets
3.7.3	Partner with volunteer agencies/utilities to provide utility bill assistance for citizens.	All	Utility Companies, Volunteer Agencies	12,500	100,000	Agency Budgets, Utility Budgets
Objective 3.8: Reduce the impact of drought on water supplies.						

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3.8.1	Partner with applicable agencies to maintain/update annually contact information for supplies of potable water.	Maury County	Emergency Management	2,500	100,000	Dept Budget
Objective 3.9: Develop short and long term shelter program.						
3.9.1	Pre-identify locations and partners for shelters	Maury County	Emergency Management and Participating Entities	5,000	Invaluable	Entities' Budgets and Grants
3.9.2	Develop supply caches	Maury County	Emergency Management and Participating Entities	100,000	Invaluable	Entities' Budgets and Grants
MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 4: Reduce the impact of local flooding events.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
Objective 4.1: Identify specific flood prone areas.						
4.1.1	Ensure that maps are with current tax rolls to provide detailed flood hazard information.	Maury County	Tax Assessor	15,000	500,000	Jurisdiction Budgets
4.1.2	Use HAZUS-MH to map 50 and 100-year flood plains.	All	County I.T. Director	50,000	100,000	Dept Budget
4.1.3	Identify repetitive loss areas and structures.	All	County I.T. Director	50,000	300,000	Dept Budget
4.1.4	Evaluate the need to relocate/acquire structures in flood hazards.	All	Jurisdictional Planning & Zoning Dept. County I.T.	25,000	250,000	Dept Budgets
4.1.5	Use mapping database to establish zoning restrictions in flood hazard areas.	All	Jurisdictional Planning & Zoning Departments	7,500	300,000	Dept Budgets
Objective 4.2: Reduce flooding along creeks.						
4.2.1	Study methods to slow or detain the amount of water from flood-prone waterways.	All	Jurisdictional Planning & Zoning Departments	12,500	250,000	Jurisdiction Budgets, Dept Budgets
4.2.2	Evaluate the realignment of bridges to remove abutment obstructions from flood-prone waterways	All	Jurisdictional Highway/ Street or Public Works Depts.	12,500	300,000	Jurisdiction Budgets, Dept Budgets, TDOT

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4.2.3	Evaluate methods to reduce flooding to flood-prone roadways	All	Jurisdictional Highway/ Street or Public Works Depts.	12,500	100,000	Jurisdiction Budgets, Dept Budgets, TDOT
4.2.4	Evaluate the feasibility of construction of detention features.	All	County I.T. Director, Public Works	50,000	500,000	Dept Budgets
4.2.5	Evaluate methods to improve storm water systems in flood-prone areas.	All	Jurisdictional Highway/ Street or Public Works	12,500	200,000	Jurisdiction Budgets, Dept Budgets
Objective 4.3: Eliminate repetitive damage from roadway flooding.						
4.3.1	Identify roadways repetitively damaged by flooding.	All	County I.T. Director	12,500	300,000	Dept Budget
4.3.2	Raise grade level of identified roadways.	All	Jurisdictional Highway/ Street or Public Works	2,000,000	5,000,000	Jurisdiction Budgets, Dept Budgets, TDOT
4.3.3	Evaluate the feasibility of expanding ditch depth and width along roadways to mitigate road flooding	All	Jurisdictional Highway/ Street or Public Works	12,500	500,000	Jurisdiction Budgets, Dept Budgets, TDOT
Objective 4.4: Provide motorists warning of roadway flooding.						
4.4.1	Erect signage to indicate water depth at flooding points.	All	Jurisdictional Highway/ Street or Public Works	25,000	100,000	Grants Jurisdiction Budgets, Dept Budgets, TDOT
4.4.2	Install gates to block roadways and bridges during flooding.	All	Jurisdictional Highway/ Street or Public Works Depts.	50,000	100,000	Grants Jurisdiction Budgets, Dept Budgets, TDOT
4.4.3	Develop adequate notification system(s)	All	Emergency Management; Emergency Services	25,000	50,000	Jurisdiction Budgets, Dept. Budgets
Objective 4.5: Increase public awareness of flood hazard and safety.						
4.5.1	Distribute flood awareness and preparedness literature at events	All	Emergency Management	2,500	100,000	Dept Budget
Objective 4.6: Reduce flooding due to debris in streams.						

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4.6.1	Provide regular maintenance to remove debris from flood-prone streams.	All	Jurisdictional Highway/ Street or Public Works	150,000	300,000	Grants Jurisdiction Budgets, Dept Budgets, TDOT
4.6.2	Install larger culverts to permit clear stream flow.	All	All Jurisdictional Highway/ Street or Public Works Depts.	200,000	500,000	Grants Jurisdiction Budgets, Dept Budgets, TDOT
Objective 4.7: Continue strict enforcement of building codes.						
4.7.1	Restrict construction and/or placement of mobile homes within the flood plain.	All	Jurisdictional Planning & Zoning Departments	7,500	100,000	Dept Budgets
Objective 4.8: Improve emergency responder safety at flooding/swift water incidents.						
4.8.1	Enhance Swift Water Rescue, Dive Recovery and Boat Teams	All	Emergency Management Emergency Agencies	100,000	1,000,000	Grants, Dept. Budgets
4.8.2	Fund training, overtime, and backfill costs for teams.	All	All Jurisdictional Governments	50,000	1,000,000	Grants, Dept. Budgets
4.8.3	Provide equipment to allow responders to safely conduct operations.	All	All Jurisdictional Governments	100,000	1,000,000	Grants, Dept. Budgets
4.8.4	Develop FOGs for all emergency responders.	All	Emergency Management	5,000	100,000	Dept. Budget
MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 5: Reduce loss of life and property from structure fires and wildfires.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
Objective 5.1: Increase citizen awareness of fire hazards, prevention, and safety.						
5.1.1	Continue aggressive fire prevention programs in all schools.	All	All Fire Departments	50,000	100,000	Fire Dept Budgets
5.1.2	Partner with agencies to present fire prevention programs to service clubs, senior citizens, and special-needs populations.	All	All Fire Departments	10,000	100,000	Fire Dept Budgets
5.1.3	Partner with agencies to present proper fire extinguisher use.	All	All Fire Departments	10,000	100,000	Fire Dept Budgets

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5.1.4	Partner with agencies to distribute fire prevention literature at community events.	All	All Fire Departments	5,000	100,000	Fire Dept Budgets
5.1.5	Partner with the media to promote a “change your clock, change your smoke detector battery” twice yearly.	All	All Fire Departments	500	100,000	Fire Dept Budgets
5.1.6	Obtain grants to provide free smoke detectors to residents in need.	All	All Fire Departments	5,000	100,000	Dept Budget
Objective 5.2: Reduce the incidence and severity of structure fires.						
5.2.1	Continue rigid enforcement of existing fire and electrical codes.	All	Jurisdictional Planning & Zoning Departments	25,000	100,000	Dept Budgets
5.2.2	Develop emergency pre-plans for public buildings, schools, businesses, and churches.	All	All Fire Departments	20,000	2,000,000	Dept Budgets
Objective 5.3: Improve firefighter safety and response capabilities.						
5.3.1	Develop long-range plans for Rapid Intervention Team (RIT) training.	All	All Fire Departments	50,000	1,000,000	Dept Budgets
5.3.2	Provide jurisdictional matching funds for awarded AFGs.	All	All Jurisdictional Governments	75,000	2,000,000	Jurisdiction Budgets
Objective 5.4: Improve water supply in rural areas.						
5.4.1	Create a GIS mapping database to identify water line size and hydrant locations in rural areas.	Maury County	County IT Director, Water Utilities	7,500	100,000	Dept Budget
5.4.2	Assist in obtaining grant funds to replace smaller diameter lines with adequate sized mains.	All	South Central Tennessee Development District, Water Utilities	5,000	300,000	CDBG, Water Utilities
5.4.3	Assist in obtaining grant funds to construct pumping stations to provide adequate pressure in elevated areas.	All	South Central Tennessee Development District, Water Utilities	5,000	400,000	CDBG, Water Utilities
5.4.4	Assist in obtaining grant funds to install hydrants at one-half mile intervals in unincorporated areas.	Maury County	South Central Tennessee Development District, Water Utilities	5,000	200,000	CDBG, Water Utilities

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Objective 5.5 Increase citizen awareness of and preparedness for wildfire events.						
5.5.1	Expand fire prevention efforts to include programs on wildfire and arson.	All	All Fire Departments	5,000	100,000	Fire Dept Budgets
5.5.2	Publish news articles to promote wildfire awareness.	All	Division of Forestry	500	100,000	Dept Budgets
5.5.3	Publish outdoor burn permit requirements in area newspapers each week, September through May.	All	Division of Forestry	500	100,000	Dept Budgets
5.5.4	Publish outdoor burn ban information in area newspapers daily.	All	Division of Forestry	500	100,000	Dept Budgets
5.5.5	Partner with the Division of Forestry to distribute wildfire fuels reduction, awareness, and prevention literature at community events.	All	Division of Forestry, Emergency Management	2,500	100,000	Dept Budgets
Objective 5.6: Enforce outdoor burn ban and permit requirements.						
5.6.1	Enact legislation to make mandatory fines for non-permitted outdoor burning.	All	All Jurisdictional Governments	3,000	100,000	Jurisdiction Budgets
5.6.2	Require prosecution and restitution for arson.	All	Division of Forestry, All Jurisdictional Governments	3,000	100,000	Dept Budgets
Objective 5.7: Improve firefighter safety and effectiveness of operations during wild land firefighting operations.						
5.7.1	Provide annual wild land fire training for municipal and rural fire departments	All	Division of Forestry	25,000	100,000	Dept Budgets
5.7.2	Provide wild land firefighting equipment to all rural fire departments in the county.	All	All Jurisdictional Governments	100,000	100,000	Jurisdiction Budgets
MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 6: Protect life and property from domestic and international terrorism.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
Objective 6.1: Encourage public vigilance and reporting of suspicious activities.						
6.1.1	Publish news articles on the importance of public vigilance in the fight against terrorism.	All	Emergency Management	1,000	100,000	Dept Budget
Objective 6.2: Decrease the possibility of and loss of life from attacks on public facilities.						

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6.2.1	Evaluate the need to restrict parking of vehicles in close proximity to critical facilities.	All	Jurisdictional Highway/ Street or Public Works Depts.	25,000	2,000,000	Jurisdiction Budgets
6.2.2	Evaluate all critical facilities for safety and recommend improvements.	All	All Jurisdictional Governments	100,000	5,000,000	County Budget
6.2.3	Develop and practice, at least annually, evacuation plans for all critical facilities.	All	All Jurisdictional Governments	12,500	100,000	County Budget
6.2.4	Partner with schools to improve security and lock down procedures.	All	Emergency Management, Board of Education	12,500	100,000	Dept Budgets
6.2.5	Partner with all critical infrastructures to improve security and lock down procedures	All	Emergency Management and All Jurisdictional Governments	250,000	1,000,000	Dept Budgets
Objective 6.3: Improve terrorism response capabilities and safety of emergency responders.						
6.3.1	Continue to participate in the Joint Terrorism Task Force.	All	Jurisdictional Law Enforcement	2,500	100,000	Dept Budgets
6.3.2	Fund overtime and backfill to provide first response to terrorism training for all first response agencies.	All	All Jurisdictional Governments	50,000	100,000	Grants, Dept. Budgets
6.3.3	Budgets to provide adequate first response personnel for every shift.	All	All Jurisdictional Governments	200,000	200,000	Jurisdiction Budgets
6.3.4	Enhance Haz-Ops Team Capabilities for regional response to CBRNE incidents.	All	Emergency Management, All response Agencies	500,000	2,000,000	Grants Jurisdiction Budgets
6.3.5	Enhance Haz-Devices Unit Capabilities for regional response to CBRNE incidents.	All	Law Enforcement Emergency Management	100,000	1,000,000	Grants Jurisdiction Budgets
6.3.6	Support Tennessee Homeland Security strategies to counter terrorism	All	Emergency Management Law Enforcement	10,000	1,000,000	Grants Dept. Budgets

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MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 7: Reduce the impact of methamphetamine labs.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
Objective 7.1: Improve meth lab recognition and reporting.						
7.1.1	Partner with schools to promote recognition and reporting of meth labs.	All	Jurisdictional Law Enforcement, Boards of Education	12,500	100,000	Dept Budgets
7.1.2	Maintain and publicize a countywide hotline to report suspected meth labs.	All	Maury County Sheriff's Department	2,500	100,000	Dept Budget
Objective 7.2: Reduce availability of precursor materials.						
7.2.1	Enact legislation to require quantity limitations and registration for all ephedrine and pseudoephedrine product sales.	All	Jurisdictional Governments	3,000	100,000	Jurisdiction Budgets
Objective 7.3: Improve emergency responder safety at clandestine labs.						
7.3.1	Develop Meth Task Force to include Law Enforcement and the Haz-Ops Team and other needed members or personnel	All	Law Enforcement, Emergency Management, Haz-Ops Team Others	100,000	1,000,000	Grants, Dept. Budgets
7.3.2	Fund training, overtime, and backfill cost for Meth Task Force personnel training.	All	Maury County	50,000	1,000,000	Grants, Dept. Budgets
7.3.3	Provide equipment to allow responders safe entry at clandestine labs.	All	All Jurisdictional Governments	100,000	1,000,000	DOJ, DEA, Dept. Budgets
7.3.4	Develop meth lab FOGs for all emergency responders.	All	Emergency Management,	5,000	100,000	Dept. Budgets

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MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 8: Minimize potential damage and loss of life from earthquakes.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
Objective 8.1: Evaluate the potential for a damaging earthquake in Maury County.						
8.1.1	Partner with the state Division of Geology to quantify the potential for an earthquake greater than 6.0 in Maury County.	All	Maury County I.T. Director	12,500	100,000	Dept Budget
8.1.2	Partner with UT geology department to identify areas of greatest hazard.	All	Maury County I.T. Director	12,500	100,000	Dept Budget
8.1.3	Create a GIS database to determine critical facilities and other structures that may be affected.	All	Maury County I.T. Director	12,500	100,000	Dept Budget
Objective 8.2: Increase citizen awareness of earthquake hazards and mitigation strategies.						
8.2.1	Distribute earthquake awareness and preparedness literature at community events.	All	Emergency Management	2,500	100,000	Dept Budget
8.2.2	Provide critical facilities managers FEMA's guidebook, "Reducing the Risks of Nonstructural Earthquake Damage".	All	Emergency Management	2,500	500,000	Dept Budget
MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 9: Minimize the impact of pandemic disease.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
Objective 9.1: Prepare for Bioterrorism and other widespread public health emergencies.						
9.1.1	Continue to develop and recruit volunteers to staff mass clinic. Plan to include response to all widespread disease.	All	State Dept. of Health, Maury County Health Department	20,000	100,000	State Health Dept
9.1.2	Exercise the mass clinic plan and revise as necessary.	All	State Dept. of Health, Maury County Health Department,	12,000	100,000	State Health Dept
9.1.3	Continue to participate in Strategic National Stockpile drills and exercises.	All	State Dept. of Health, Maury County Health Department	2,000	100,000	State Health Dept

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9.1.4	Maintain an inventory of Mark 1 packs to respond to chemical agent dispersal events	All	State Dept. of Health, Maury regional Hospital, EMS	25,000	1,000,000	State Health Dept
MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 10: Enhance the Safety of Citizens, Visitors, and Responders						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
10.1.1	Ensure that Mass Gatherings/Special Events are conducted as safely as practical	All	Emergency Management, All Agencies	25,000	1,000,000	Dept. Budgets
10.1.2	Enhance all hazardous operations teams	All	Emergency Management, All Agencies	25,000	100,000	Grants Dept. Budgets
10.1.3	Develop additional hazardous operations teams as needed	All	Emergency Management, All Agencies	100,000	1,000,000	Grants Dept. Budgets
MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 11: Work with public and private sectors partners/agencies for emergency and disaster preparedness and planning.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
11.1.1	Continue to provide public education and information regarding disaster preparedness	All	Emergency Management, All Agencies	10,000	1,000,000	Dept. Budgets
11.1.2	Provide templates and guidance for emergency planning	All	Emergency Management, All Agencies	10,000	100,000	Grants Dept. Budgets
11.1.3	Assist with exercises and drills for partners and agencies	All	Emergency Management, All Agencies	10,000	1,000,000	Grants Dept. Budgets
MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 12*: Preparedness and planning for intentional violent acts such as: active-shooter incidents, vehicle attacks, crowd bombings, and etc.						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
12.1.1	Utilize training, drills and exercises to prepare and plan for intentional violent acts.	All	Emergency Management, All Agencies	100,000	1,000,000	Grants, Dept. Budgets
12.1.2	Promote situational awareness with public and private sector	All	Emergency Management, All Agencies, Community	10,000	1,000,000	Grants, Dept. Budgets

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MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 13*: Preparedness and planning for mass casualty incidents						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
13.1.1	Utilize training, drills and exercises to prepare and plan for mass casualty incidents	All	EMS, Health, All Agencies	25,000	1,000,000	Grants, Dept. Budgets
13.1.2	Obtain and maintain a cache of appropriate and necessary equipment	All	EMS, Health, All Agencies	100,000	1,000,000	Grants, Dept. Budgets
MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 14*: Preparedness and planning for mass fatality incidents						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
14.1.1	Utilize training, drills and exercises to prepare and plan for mass fatality incidents	All	EMS, Health, All Agencies	25,000	1,000,000	Grants, Dept. Budgets
14.1.2	Obtain and maintain a cache of appropriate and necessary equipment	All	EMS, Health, All Agencies	100,000	1,000,000	Grants, Dept. Budgets
MAURY COUNTY MITIGATION GOALS/OBJECTIVES/ACTIONS/STRATEGY						
Goal 15*: Preparedness and planning for civil unrest						
Action	Action/Project Description	Jurisdiction	Responsibility	Estimated Cost	Estimated Benefit	Funding Sources
15.1.1	Utilize training, drills and exercises to prepare and plan for civil unrest acts.	All	Law Enforcement, All Agencies	25,000	1,000,000	Grants, Dept. Budgets
15.1.2	Promote situational awareness with public and private sector	All	Law Enforcement, All Agencies, Community	10,000	1,000,000	Grants, Dept. Budgets
15.1.3	Obtain and maintain a cache of appropriate and necessary equipment	All	Law Enforcement, All Agencies	100,000	1,000,000	Grants, Dept. Budgets

5.2.3 Mitigation Strategy

5.2.3.1 Identification and Analysis of Mitigation Techniques

In formulating Maury County's Mitigation Strategy, wide range objectivities were considered in order to help achieve the general countywide goals in addition to the specific hazard concerns of each participating jurisdiction. Multiple objectives have been established for each mitigation goal. All activities considered by the Mitigation Steering Committee can be classified under one of the following six broad categories of mitigation techniques:

Prevention activities are intended to keep hazard problems from getting worse, and are typically administered through those government programs or regulatory actions that influence the way land is developed and buildings are constructed. They are particularly effective in reducing a community's vulnerability, especially in areas where development has not occurred or capital improvements have not been substantial.

Property Protection measures involve the modification of existing buildings and structures to help them better withstand the forces of a hazard, or removal of the structures from hazardous locations.

Natural Resource Protection reduces the impact of natural hazards by preserving or restoring natural areas and their protective functions. Such areas include floodplains, wetlands, steep slopes and sand dunes. Parks, recreation or conservation organizations often implement these protective measures.

Structural Mitigation Projects are intended to lessen the impact of a hazard by modifying the environmental natural progression of the hazard event through construction. They are usually designed by engineers and managed or maintained by public works staff.

Emergency Services Although not typically considered a "mitigation" technique, emergency service measures do minimize the impact of a hazard event on people and property. These commonly are actions taken immediately prior to, during, or in response to a hazard event.

Public Education and Awareness are used to alert residents, elected officials, business owners, property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property.

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

5.2.3.2 Selection of Mitigation Techniques for Maury County

In order to determine the most appropriate mitigation techniques for Maury County and its municipal jurisdictions, local government officials reviewed and considered the findings of the Capability Assessment and Risk Assessment. Other considerations included each mitigation action's effect on overall risk to life and property, its ease of implementation, its degree of political and community support, its general cost-effectiveness, and funding availability (if necessary). The following table of alternative mitigation actions was the basis of developing the mitigation techniques.

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ALTERNATIVE MITIGATION ACTIONS																						
HAZARDS>	Transportation	Chemical Facility	Bridge Failure	Dam Failure	Disease Animal	Disease Human	Drought/Blight	Earthquake	Flooding	Hazard spills	Hurricane	Terror-Chemical	Terror-Biological	Terror-Radiological	Terror-Nuclear	Terror-Explosive	Thunderstorm	Tornado/Wind	Urban Fire	Wildfire	Winter Storm	
Alternative Mitigation Actions that can affect the above hazards																						
Building codes			X					X			X					X	X	X	X	X	X	X
Density regulations					X	X		X	X	X			X		X				X	X		
Easements	X	X	X	X						X		X		X		X	X	X	X	X	X	X
Development regulations	X	X		X				X	X	X	X						X	X	X	X	X	X
Wildfire fuel reduction							X														X	
Hillside regulations								X														
Open space regulations	X	X			X	X	X	X											X	X		
Setback regulations	X	X							X	X	X										X	
Special use permits	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X			X	X		
Storm water controls			X	X					X		X						X					
Rights transfer controls	X	X		X	X		X	X	X	X	X				X				X	X		
Zoning	X	X		X	X		X	X	X	X	X				X				X	X		
Acquire in-hazard assets		X		X				X	X		X								X	X		
Facility hazard barriers	X	X								X		X	X	X		X						
Structure elevation									X		X											
Relocation of structures	X							X	X		X											
Structure retrofits								X	X		X	X					X	X	X	X	X	X
Dams monitoring			X	X				X	X								X	X				
Levee/seawall mgt			X	X			X	X	X								X	X				
Real estate disclosure	X	X						X	X		X											
Management practices	X	X	X	X		X	X	X	X	X	X	X	X			X	X	X		X	X	
Forest management							X													X		
Erosion controls			X	X			X	X	X													
Waterway management			X	X			X		X		X						X					
Water dumping controls			X	X		X	X		X	X												
Landscape management	X	X			X		X				X						X	X		X	X	
Wetlands regulations				X		X	X		X		X						X					
Vital facilities protection	X	X		X				X	X		X	X	X	X	X	X	X	X		X	X	
COOP/COG Plan				X		X		X	X		X	X	X	X	X	X		X	X			X
EMAP Accreditation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Emergency Ops. Plan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hazard/threat recognition	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hazard warning systems		X		X					X	X	X	X	X	X	X		X	X	X	X	X	X
Health/safety information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pre-disaster mitigation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Post disaster mitigation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Safe rooms and shelters		X		X				X	X	X	X	X	X	X	X		X	X	X			X
Public education	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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FEMA guidance for meeting the planning requirements of the DMAK2 also specifies that local governments should prioritize their mitigation actions based on the level of risk a hazard poses to the lives and property of a given jurisdiction. In response to this requirement, the Maury County Mitigation Steering Committee completed a Mitigation Technique Matrix to make certain they addressed, at a minimum, those hazards posing the greatest threat. The matrix provides the committee with the opportunity to cross-reference each of the priority hazards with the aforementioned available mitigation techniques, including prevention, property protection, natural resource protection, structural projects, emergency services, and public education and awareness. It is important to note that Maury County's individual Mitigation Action Plans include an array of actions targeting multiple hazards, not just those classified as high risk.

MAURY COUNTY MITIGATION MATRIX																
Priority for Mitigation Actions		L = Low, M = Medium, H = High														
Jurisdiction	Mitigation Measure	Dam Failure	Earthquake	Flooding	Hazmat	Heat/Drought	Hurricane	Land Subsidence	Pandemic	Terrorism	Thunderstorm	Tornado	Transportation	Wildfire	Winter Storm	Urban Fire
Maury County	Prevention	M	L	H	M	L			L	M	H	H	M	L	L	H
	Property Protection	M	L	H	H	L			L	L	M	M	L	L	L	H
	Natural Resource Protection	M	L	H	H	L			L	L	L	L	L	M	M	L
	Structural Mitigation Projects	M	M	H	H	L			L	L	H	H	L	M	M	H
	Emergency Services	M	L	H	H	L			M	M	H	H	M	L	L	H
	Public Education/Awareness	M	L	H	H	L			L	M	H	H	M	L	L	H
City of Mt. Pleasant	Prevention	H	L	H	M	L			M	M	H	H	L	M	L	H
	Property Protection	H	L	H	M	L			M	M	H	H	L	M	L	H
	Natural Resource Protection	M	L	M	M	L			L	L	L	L	L	H	L	L
	Structural Mitigation Projects	M	L	H	M	L			L	M	H	H	L	M	L	H
	Emergency Services	M	L	H	M	L			L	M	M	H	H	L	L	H
	Public Education/Awareness	H	L	H	M	L			M	M	H	H	L	M	L	H
City of Spring Hill	Prevention	L	L	M	H	L			M	M	H	H	M	M	L	L
	Property Protection	L	L	M	M	L			L	M	H	H	M	M	L	H
	Natural Resource Protection	L	L	M	M	L			L	L	L	L	M	M	L	L
	Structural Mitigation Projects	L	L	H	M	L			L	M	H	H	L	M	L	H
	Emergency Services	L	L	H	M	L			M	M	H	H	M	M	L	M
	Public Education/Awareness	L	L	M	M	L			M	M	H	H	M	L	L	L

5.2.3.3 Mitigation Action Plans

The mitigation actions proposed by each of Maury County's local governing bodies participating under this Plan are listed in The MAPs on the pages that follow. Each MAP has been designed to address the multi-jurisdictional goals of this Hazard Mitigation Plan, in addition to the particular goals and objectives of each individual jurisdiction. They will be maintained on a regular basis according to the plan maintenance procedures established for the Maury County Multi-jurisdictional Hazard Mitigation Plan.

44 CFR Requirement

201.6(c) (3) (iii): The mitigation strategy shall include an action plan describing how the actions identified in paragraph (c) (2) (ii) of this section will be prioritized, implemented, and administered by the local jurisdiction.

It was the intent of the committee to establish realistic, attainable actions that can be accomplished within the present fiscal capabilities of the participating jurisdictions and accepted by the citizens of the county. All members of the Planning Committee agreed that starting with small steps, accomplishing the stated goals, and publicizing the success of the county's mitigation efforts will open the community to acceptance of larger, perhaps more costly, projects in the future.

Many of the goals are interrelated (e.g. providing various categories of preparedness and awareness information to citizens at community events); these will be accomplished under a single, ongoing project. Many of the goals can be accomplished within existing department budgets, costing only the time of employees already on staff. While "time is money" and hours have been estimated in dollars for each action item, there will be no requirement for additional funds to be budgeted to accomplish many of the action items.

44 CFR Requirement	
201.6(c) (3) (iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit for the plan.	
Jurisdiction	Number of Mitigation actions
Maury County	127
City of Mt. Pleasant	119
City of Spring Hill	121

The hazard mitigation planning process has brought together a group of dedicated representatives from the three jurisdictions comprising Maury County. An early suggestion from several members of the planning committee that the group continue to meet on a regular schedule after Plan Update approval speaks for the cooperation and sense of community each jurisdiction brings to the planning effort and instills confidence that the jurisdictions will unite in mitigation and other efforts to meet the following goals.

It is the vision of Maury County and its municipalities to promote citizen and governmental responsibility for hazard awareness and preparedness, and to foster cooperative planning among the jurisdictions to reduce the impact of natural and man-made hazards on public and private assets, and on the safety and welfare of all citizens.

The cohesive collection of actions listed in each jurisdiction's MAP also can serve as an easily understood menu of mitigation policies and projects for local decision-makers who want to quickly review their jurisdiction's respective element of the countywide Plan. In preparing the individual Mitigation Actions Plans, each jurisdiction considered their overall hazard risk and capability to mitigate identified hazards as recorded through the risk and capability assessment process, in addition to meeting the adopted countywide mitigation goals and the unique needs of their community. Prioritizing mitigation actions for each jurisdiction was based on the "STAPLEE" process. "STAPLEE" uses multiple factors under the categories of Social,

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Technical, Administration, Political, Legal, Economic and Environment. The Table below represents a composite of all jurisdiction rankings.

EVALUATION OF ALTERNATIVE MITIGATION ACTIONS																								
STAPLEE Criteria	S Social		T Technical			A Administer			P Political			L Legal			E Economic			E Environment						
Evaluation Criteria>	Community Acceptance L=1	Effect on Population L=3	Technical Feasibility L=1	Long-Term Solution L=1	Secondary Impacts L=3	Staffing L=3	Funding Potential L=1	Maintenance/Operations L=3	Political Support L=1	Local Champion L=1	Public Support L=1	State Authority L=1	Local Authority Exists L=1	Potential Legal Challenge L=3	Action Benefit L=1	Action Cost L=3	Economic Goal Contribution L=1	Outside Funding Required L=3	Land/Water Effect L=3	Endangered Species Effect L=3	HAZMAT Waste Site Effect L=3	Environmental Effect L=3	Federal law Compliant L=3	Total Priority Score
1.1.1	3	3	3	3	3	3	1	2	3	3	2	3	3	3	3	3	3	2	3	3	3	3	3	64
1.1.2	3	3	3	3	3	3	2	3	3	3	2	3	3	3	2	3	3	2	3	3	3	3	3	65
1.2.1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
1.2.2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
1.3.1	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	66
1.4.1	3	3	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	65
1.5.1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
1.5.2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
1.5.3	3	3	3	3	3	3	1	3	3	3	3	3	3	3	3	2	3	1	3	3	3	3	3	64
1.5.4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
1.5.5	3	3	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	64
1.6.1	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	68
1.6.2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	68
1.6.3	3	3	3	3	3	3	2	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	67
1.6.4	3	3	3	3	3	3	2	3	2	3	3	3	3	3	3	3	3	2	3	3	3	3	3	66
1.7.1	3	3	3	3	3	3	1	3	2	3	3	3	3	3	3	1	3	1	3	3	3	3	3	62
1.7.2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
1.7.3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	68
1.7.4	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	67
1.7.5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	67
1.7.6	3	3	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	65
1.7.7	3	3	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	65
2.1.1	3	3	3	3	3	3	1	3	3	2	3	3	3	2	3	1	3	1	3	3	3	3	3	61
2.1.2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
2.2.1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
2.2.2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	68
2.2.3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
2.2.4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
2.3.1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	1	3	3	3	3	3	66

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2.4.1	2	3	3	3	3	3	2	3	1	2	2	3	3	1	3	3	3	3	3	3	3	3	61
2.4.2	2	3	3	3	3	3	2	3	1	2	2	3	3	1	3	3	3	3	3	3	3	3	61
3.1.1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
3.1.2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
3.1.3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
3.1.4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
3.2.1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	68
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3.3.1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	68
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3.3.3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	3	3	3	3	3	3	64
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3.3.5	3	3	3	3	3	3	3	3	2	3	2	3	3	1	3	3	3	3	3	3	3	3	66
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3.5.2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	67
3.6.1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
3.6.2	3	3	3	3	3	3	1	3	3	3	3	3	3	3	2	1	3	3	3	3	3	3	64
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5.1.3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
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9.1.4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69
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10.1.3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	69

MITIGATION ACTION PRIORITY AND IMPLEMENTATION																							
Goal Action	Priority	Action Project																			Planned Implementation Date	Comment	
1.2.1	69	Identify grant opportunities for all jurisdictions and disciplines.																			On-going	Grant opportunities are continually researched and identified.	
1.5.1	69	Review annually and after each disaster to revise the County Basic Emergency Operations Plan.																			Annually and after disasters.		
1.5.2	69	Develop/maintain/revise annually a countywide NIMS-typed resources inventory.																			Annually		
1.5.4	69	Provide annual Emergency Operations Center training.																			Annually		
1.7.2	69	Continue to activate the EAS as necessary.																			As Required		
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		
2.2.4	69	Plan and conduct annual CBRNE exercises involving all emergency response agencies.																			Annually		
3.1.1	69	Partner with volunteer agencies to distribute severe weather awareness/preparedness literature at events.																			On-going		
3.1.2	69	Partner with NWS to publicize citizen weather spotter preparedness training.																			On-going		
3.1.3	69	Publish news articles and distribute literature for public education on safe rooms/shelter-in-place.																			Annually		
3.1.4	69	Participate in the Severe Weather Awareness Week campaign.																			Annually		
3.2.2	69	Partner with public utilities to publish news articles/distribute literature to increase public knowledge of downed line safety.																			On-going		
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		

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3.6.1	69	Recommend that Health Agencies maintain/update contact information for suppliers of drugs, food, water, and fuel annually.	On-going	
3.7.1	69	Partner with agencies to identify citizens' subject to suffer during extreme temperatures.	On-going	
3.7.2	69	Partner with volunteer agencies to protect the homeless, poor, elderly and chronically-ill during extreme temperatures.	On-going	
3.7.3	69	Partner with volunteer agencies/utilities to provide utility bill assistance for citizens.	On-going	
3.8.1	69	Recommend that Health Agencies maintain/update annually contact information for supplies of potable water.	On-going	
4.1.1	69	Ensure that maps are updated/aligned with tax roles for detailed flood hazard information.	On-going	Properties have been identified
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	
5.1.2	69	Partner with agencies to present fire prevention programs to service clubs, senior citizens, and special-needs populations.	On-going	
5.1.3	69	Partner with agencies to present the proper use of fire extinguishers.	On-going	
5.1.4	69	Partner with agencies to distribute fire prevention literature at community events.	On-going	
5.1.5	69	Partner with the media to promote a "change your clock, change your smoke detector battery" twice yearly.	On-going	
5.1.6	69	Obtain grants to provide free smoke detectors to residents in need.	On-going	
5.2.1	69	Continue rigid enforcement of existing fire and electrical codes.	On-going	

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5.2.2	69	Develop emergency pre-plans for all public buildings, schools, businesses, and churches.	On-going	
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	
5.4.3	69	Assist in obtaining grant funds to construct pumping stations to provide adequate pressure in elevated areas.	On-going	
5.4.4	69	Assist in obtaining grant funds to install hydrants at ½ mile intervals in unincorporated areas.	On-going	
5.5.1	69	Expand fire prevention efforts to include programs on wildfire and arson.	On-going	
5.5.2	69	Publish news articles to promote wildfire awareness.	On-going	
5.5.3	69	Publish outdoor burn permit requirements in area newspapers each week, September through May.	On-going	
5.5.4	69	Publish outdoor burn ban information in area newspapers.	On-going as required	
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
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	
6.2.3	69	Develop and practice, at least annually, evacuation plans for all critical facilities.	On-going	
6.2.4	69	Partner with schools to improve security and lockdown procedures.	On-going	
6.3.1	69	Continue to participate in the Joint Terrorism Task Force.	On-going	
6.3.6	69	Support Tennessee Homeland Security strategies to counterterrorism.	On-going	
7.1.3	69	Maintain and publicize a hotline to report suspected meth labs.	On-going	TN has accomplished this.
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
7.3.4	69	Develop meth lab FOGs for all emergency responders.	Accomplished	
8.1.1	69	Partner with the state Division of Geology to quantify the potential for an earthquake greater than 6.0 in Maury County.	On-going	

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8.1.2	69	Partner with UT geology department to identify areas of greatest hazard.	On-going	
8.1.3	69	Create a GIS database to determine critical facilities and other structures that may be affected by a disaster.	On-going	
8.2.1	69	Distribute earthquake awareness and preparedness literature at community events.	On-going	
8.2.2	69	Provide critical facilities managers with FEMA's guidebook, "Reducing the Risks of Nonstructural Earthquake Damage".	On-going	
9.1.1	69	Continue to develop and recruit volunteers to staff mass clinic plan to include response to all widespread disease.	On-going	
9.1.2	69	Exercise the mass clinic plan and revise as necessary.	On-going	
9.1.3	69	Continue to participate in Strategic National Stockpile drills and exercises.	On-going	
9.1.4	69	Maintain an inventory of Mark I packs to respond to chemical agent dispersal events.	On-going	
10.1.1	69	Ensure that Mass Gatherings/Special Events are conducted as safely as practical.	On-going	
10.1.2	69	Enhance all Hazardous Operations Teams	Annually	
10.1.3	69	Develop additional Hazardous Operations Teams as needed	On-going	
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	
1.6.2	68	Schedule/conduct ICS training annually for first responders.	On-going	
1.7.3	68	Maintain NAWAS at Maury E-Com & Spring Hill Communications.	Accomplished	
2.2.2	68	Provide funds for overtime and backfill to allow for hazardous materials, HMTO, operations-level, and CBRNE Training.	On-going	
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.
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	
1.6.3	67	Ensure all personnel are trained in NIMS annually.	On-going	

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1.7.4	67	Purchase and install an automated wide-area rapid notification system (D NAWAS).	Jan. 2015	Complete
1.7.5	67	Develop evacuation routes and procedures.	On-going	
3.5.2	67	Equip all fire department and rescue vehicles with chain saws.	On-going	Many apparatus now 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
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	
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.
1.6.4	66	Conduct annually large-scale disaster exercises involving all response agencies.	On-going	
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	
3.3.5	66	Enact legislation requiring new mobile home parks to provide storm shelters to protect all residents.	July 2023	
4.2.4	66	Evaluate the feasibility of construction of detention features.	On-going	
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	
1.1.2	65	Maintain hazard mitigation committee and conduct meetings to review plan as needed.	On-going	
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
1.7.7	65	Develop redundancy capabilities for radio communications.	On-going	Some redundancy developed

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3.5.1	65	Equip all emergency response vehicles with on-demand tire chains.	On-going	New apparatus being bought with chains
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	
6.3.5	65	Enhance Haz-Device Unit Capabilities for regional response to CBRNE incidents.	On-going	
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	
4.8.3	64	Provide Equipment for Safe Water Rescue Ops.	On-going	
1.1.1	64	Develop strategies to prevent the loss of public records.	July 2023	
1.5.3	64	Develop an Emergency Operations Center.	Dec 2014	Completed
1.5.4		Enhance Emergency Operations Center	On-going	
1.5.5	64	Purchase/install office computers and display equipment for the sharing of information during EOC activation.	Dec 2014	
3.3.3	64	Provide funding to assist low-income residents to anchor previously-sited mobile homes.	July 2023	
3.6.2	64	Install generators in critical facilities and fuel depots.	On-going	Some generators obtained
4.6.1	64	Provide regular maintenance to remove debris from flood-prone streams.	On-going	
4.6.2	64	Install larger culverts to permit clear stream flow.	July 2023	
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
6.2.2	64	Evaluate all critical facilities for safety and recommend improvements.	On-going	
6.3.4	64	Enhance Haz-Ops Team Capabilities for regional response to CBRNE incidents.	On-going	
7.3.1	64	Develop Meth Task Force to include Law Enforcement and the Haz-Ops Team and other needed members or personnel.	On-going	
7.3.2	64	Fund training, overtime, and backfill cost for Meth Task Force personnel training.	July 2023	
7.3.3	64	Provide equipment to allow responders safe entry at clandestine labs.	On-going	

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

6.2.1	63	Evaluate the need to restrict parking of vehicles in close proximity to critical facilities.	On-going	
1.7.1	62	Install warning capabilities for all hazards.	July 2023	
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	
4.3.2	57	Raise grade level of identified roadways.	On-going	

5.3: Mitigation Implementation and Plan Maintenance

This section discusses how the Mitigation Strategy will be implemented by Maury County's participating jurisdictions and how the overall Hazard Mitigation Plan will be evaluated and enhanced over time. This section also discusses how the public will continue to be involved in the hazard mitigation planning process. It consists of the following three subsections:

- Implementation
- Monitoring, Evaluation and Enhancement
- Continued Public Involvement

44 CFR Requirement

44 CFR Part 201.6(c) (4) (I): The plan shall include a plan maintenance process that includes a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

5.3.1 Implementation

Each jurisdiction participating in this Plan Update is responsible for implementing specific mitigation actions as prescribed in their locally adopted Mitigation Actions. In each Mitigation Action Plan, every proposed action is assigned to a specific local department or agency in order to assign responsibility and accountability and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their unique mitigation strategy as needed without altering the broader focus of the countywide Plan. The separate adoption of locally specific actions also ensures that each jurisdiction is not held responsible for monitoring and implementing the actions of other jurisdictions involved in the planning process.

In addition to the assignment of a local lead department or agency, an implementation time period or a specific implementation date has been assigned in order to assess whether actions are being implemented in a timely fashion. Maury County and its participating jurisdictions will seek outside funding sources to implement mitigation projects in both the pre-disaster and post-disaster environments. When applicable, potential funding sources have been identified for proposed actions listed in the Mitigation Action Plans.

5.3.2 Incorporate Mitigation into Planning Mechanisms

It will be the responsibility of each participating jurisdiction to determine additional implementation procedures. This includes integrating the requirements of the Maury County Multi-Jurisdictional, Multi-Hazard Mitigation Plan Update into other local planning documents, processes, or mechanisms such as comprehensive plans, strategic plans, and capital improvement plans, Continuity of Operations Plans, etc. when appropriate.

44 CFR Requirement

44 CFR Part 201.6(c)(4)(ii): The plan maintenance process shall include a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

The members of the Mitigation Steering Committee will remain charged with ensuring that the goals and strategies of new and updated local planning documents for their jurisdictions or agencies are consistent with the goals and actions of the Hazard Mitigation Plan, and will not contribute to increased hazard vulnerability in Maury County.

Opportunities to integrate the requirements of this Plan Update into other local planning mechanisms shall continue to be identified through future meetings of the Mitigation Steering Committee and through the five-year review process described herein. Although it is recognized that there are many possible benefits to integrating components of this Plan Update into other

local planning mechanisms, the development and maintenance of this stand-alone Hazard Mitigation Plan Update is deemed by the Maury County Mitigation Steering Committee to be the most effective and appropriate method to implement local hazard mitigation actions at this time. As such, the primary means for integrating mitigation strategies into other local planning mechanisms will be through the revision, update and implementation of each jurisdiction's individual Mitigation Action Plan that require specific planning and administrative tasks (e.g. plan amendments, ordinance revisions, capital improvement projects, etc.).

During the planning process for new and updated local planning documents, such as a comprehensive plan, capital improvements plan, or emergency management plan, Maury County will provide a copy of the hazard mitigation plan update to the appropriate parties. Maury County will continue to recommend that all goals and strategies of new and updated local planning documents are consistent with the hazard mitigation plan update and will not contribute to increased hazards in the affected jurisdiction(s). Using similar methods as described, portions of the Maury County Mitigation Plan have been incorporated into the county's Basic Emergency Operations Plan as part of the update process.

5.3.3 Monitoring, Evaluation and Enhancement

Periodic revisions and updates of the Hazard Mitigation Plan are required to ensure that the goals of the Plan are kept current, taking into account potential changes in hazard vulnerability and mitigation priorities. In addition, revisions may be necessary to ensure that the Plan is in full compliance with applicable federal and state regulations. Periodic evaluation of the Plan will also ensure that specific mitigation actions are being reviewed and carried out according to each jurisdiction's individual Mitigation Action Plan. The Maury County Mitigation Steering Committee will continue to meet biannually and following any disaster events warranting a reexamination of the mitigation actions being implemented or proposed by the participating jurisdictions. This will ensure that the Plan is continuously updated to reflect changing conditions and needs within Maury County. If determined appropriate, or as requested, an annual report on the Plan will be developed and presented to local governing bodies of participating jurisdictions in order to report progress on the actions identified in the Plan and to provide information on the latest legislative requirements and/or changes to those requirements.

Following FEMA approval of the Plan Update, the Maury County Hazard Mitigation Committee will meet bi-annually to assess project progress and results.

5.3.3.1 Five (5) Year Plan Review;

The Plan will be reviewed by the Mitigation Steering Committee every five years to determine whether there have been any significant changes in Maury County that may, in turn, necessitate changes in the types of mitigation actions proposed. New development in identified hazard areas, an increased exposure to hazards, the increase or decrease in capability to address hazards, and changes to federal or state legislation are examples of factors that may affect the necessary content of the Plan. The plan review provides community officials with an opportunity to evaluate those actions that have been successful and to explore the possibility of documenting potential losses avoided due to the implementation of specific mitigation measures. The plan review also provides the opportunity to address mitigation actions that may not have been successfully implemented as assigned. The Maury County Emergency Management Agency will be responsible for reconvening the Mitigation Steering Committee and conducting the five-year review.

During the five-year plan review process, the following questions will be considered as criteria for assessing the effectiveness and appropriateness of the Plan:

- Do the goals address current and expected conditions?
- Has the nature or magnitude of risks changed?
- Are the current resources appropriate for implementing the Plan?
- Are there implementation problems, such as technical, political, legal or coordination issues with other agencies?
- Have the outcomes occurred as expected?
- Did the jurisdictions, agencies and other partners participate in the plan implementation process as proposed?

Following the five-year review, any necessary revisions will be implemented according to the reporting procedures and plan amendment process outlined herein. Upon completion of the review and update/amendment process, the Maury County Hazard Mitigation Plan Update will be submitted to the State Hazard Mitigation Officer for final review and approval in coordination with FEMA.

5.3.3.2 Disaster Declaration

Following a disaster declaration, the Mitigation Steering Committee will reconvene and the Plan will be revised as necessary to reflect lessons learned, or to address specific circumstances arising from the event. It will be the responsibility of the Maury County Office of Emergency Management to reconvene the Mitigation Steering Committee and ensure the appropriate stakeholders are invited to participate in the plan revision and update process following declared disaster events.

5.3.3.3 Reporting Procedures

The results of the five-year review will be summarized by the Mitigation Steering Committee in a report that will include an evaluation of the effectiveness of the Plan and any required or recommended changes or amendments. The report will also include an evaluation of implementation progress for each of the proposed mitigation actions, identifying reasons for delays or obstacles to their completion, along with recommended strategies to overcome them. Any necessary revisions to the countywide Plan elements must follow the plan amendment process outlined herein. For changes and updates to the individual Mitigation Action Plans, appropriate local designees will assign responsibility for the completion of the task.

5.3.3.4 Plan Amendment Process

Maury County and its participating municipalities will forward information on any proposed change(s) to all interested parties including, but not limited to, all affected county and municipal departments, residents and businesses. When a proposed amendment may directly affect particular private individuals or properties, Maury County will follow existing local, state or federal notification requirements, which may include published public notices as well as direct mailings. Information on any proposed Plan amendments will also be forwarded to TEMA. This information will be disseminated in order to seek input on the proposed amendment(s) for not less than a 45-day review and comment period. At the end of the 45-day review and comment period, the proposed amendment(s) and all comments will be forwarded to the Mitigation Steering Committee for final consideration. The committee will review the proposed amendment along with the comments received from other parties, and if acceptable, the committee will submit a recommendation for the approval and adoption of changes to the Plan to each appropriate governing body within 60 days. In determining whether to recommend approval or denial of a Plan amendment request, the following factors will be considered by the Mitigation Steering Committee:

- There are errors, inaccuracies or omissions made in the identification of issues or needs in the Plan;
- New issues or needs have been identified which are not adequately addressed in the Plan;
- There has been a change in information, data, or assumptions from those on which the Plan is based;
- There has been a change in local capabilities to implement proposed hazard mitigation activities.

Upon receiving the recommendation from the Mitigation Steering Committee and prior to adoption of the Plan Update, each local governing body will hold a public hearing. The governing body will review the recommendation from the Mitigation Steering Committee (including the factors listed above) and any oral or written comments received at the public hearing. Following that review, the governing body will take one of the following actions:

- Adopt the proposed amendments as presented;
- Adopt the proposed amendments with modifications;
- Refer the amendments request back to the Mitigation Steering Committee for further revision; or
- Defer the amendment request back to the Mitigation Steering Committee for further consideration and/or additional hearings.

5.3.4 Continued Public Involvement

Public participation is an integral component of the mitigation planning process and will continue to be essential as this Plan Update evolves over time. As described above, significant changes or amendments to the Plan require a public hearing prior to any adoption procedures.

Other efforts to involve the public in the maintenance, evaluation and revision process will be made as necessary. These efforts may include:

- Advertising meetings of the Mitigation Steering Committee in the local newspaper, public bulletin boards and/or City and County office buildings;
- Designating willing and voluntary citizens and private sector representatives as official members of the Mitigation Steering Committee;
- Utilizing local media to update the public of any maintenance and/or periodic review activities taking place;
- Utilizing City and County Web sites to advertise any maintenance and/or periodic review activities taking place.

44 CFR Requirement
44 CFR Part 201.6(c) (4) (iii): The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process.

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APPENDIX A

This section of the plan includes Plan Certification and copies of local resolutions passed by each of Maury County's local jurisdictions.

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

A1 Certification

The document certifying the contents of the plan follows.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

Resolutions/Approvals/Minutes of Public Meetings.

Maury County

Maury County
Hazard Mitigation Certifications

I, Mark Blackwood, Emergency Management Chief for the County of Maury, State of Tennessee, and do hereby certify that public involvement and input regarding the Hazard Mitigation Plan was carried out in accordance with the plan and in accordance with local policy and ordinance.

I further certify that public notification and public input was sought by placing notice to the public _____ from _____ until _____. I further certify that a plan briefing of board, commission, and council members was published and the public invited, per the "Open Meetings" laws of Tennessee. I further certify that agendas of regular meetings of Board, Councils, and Commissions in Maury County and the respective municipalities were published prior to consideration for approval of the Hazard Mitigation Task Force for Maury County and that such citizens had ample opportunity for input in plan development. I further certify that copies of Board, Commission, and/or Council meeting minutes, kept in accordance with Tennessee law, regarding approval of the Hazard Mitigation Plan, are on file and available for members of the public, state and federal agencies. Inspection may be made upon reasonable request to the respective jurisdictional authority.

This certification is in accordance with provisions of the Disaster Mitigation Act 2000 (44 CFR 201.6 and NCGS 62A.)

This, the _____ day of _____, 20_____.

Tennessee,
Maury County

I, _____, a Notary Public for said County and State, do hereby certify that _____ personally appeared before me this day and acknowledged the due the foregoing instrument.

Witness my hand and seal this the _____ day of _____, 20_____.

_____, **Notary Public**. My Commission expires: _____.

A2 Adoption

Approved copies of Individual participating jurisdictions formal adoption documents follow.

The Hazard Mitigation Plan Final Draft 2018 was posted on both the OEM website (www.maurycountyoem.com) and the Maury County website (www.maurycounty-tn.gov) for a period of 6 weeks for public viewing and comment prior to the adoption process within each entity.

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Page left intentionally blank for 2018 Mt. Pleasant Resolution Adoption purposes

Page left intentionally blank for 2018 Spring Hill Resolution Adoption purposes

Appendix B

B1 Committee Meetings

Date	Meeting Type Public/Committee	Number of Attendees	Comments
7-27-17	Kickoff Meeting	11	Address questions and determine Lead Person from each entity for plan update.
11-13-17	Request for Extension		Request from Mark Blackwood Maury County OEM
11-13-17	Request for Extension		Sent to TEMA/ Doug Worden
11-14-17	Plan update/progress/ timeline meeting	14	Discussed status of timeline, compilation of date, and plan approval process
12-13-17	Public Survey tally		50+ surveys filled out & turned in regarding cares/concerns of hazards in their areas
12-15-17	Draft Review by Planning Committee	8	
12-20-17	Draft Review available for Public Input/Comment		
12-15-17	Elected /Appointed Officials draft review	8	
	Public Meeting to review draft plan		
	Full Committee		Review of draft plan for comment and further input.
	Adoption of Plan		Adoption of plan by the City of Mount Pleasant
	Adoption of Plan		Adoption of plan by the City of Spring Hill
	Adoption of Plan		Adoption of plan by Maury County

MAURY COUNTY MITIGATION PLAN UPDATE PROJECT PLAN				
Mitigation Plan Planning				
Task	Acton/Description	Responsible	Deliverable	Target Date
1	Conducted Kickoff meeting with all jurisdictions	Emergency Management	Designate Lead Personnel from each jurisdiction	July 2017
2	Form a steering committee of key decision makers from all jurisdictions	Emergency Management	Key Decision Maker Roster	July 2017
3	Review current mitigation plan requirements, format and develop key data collection processes	Emergency Management and Planning Ops Chief	Appropriate strategy and process for data collection and plan completion	July 2017

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan

4	Form a planning committee	Emergency Management and Planning Ops Chief	Designate Lead Personnel from each jurisdiction	July 2017
5	Gather Data	Lead Personnel & Planning Ops Chief	Review plan and provide necessary changes to current plan	November 2017
6	Mid-plan status update meeting	Mitigation Committee	Provide status update	November 2017
7	Distribute public survey forms	Mitigation Committee	Survey Forms	November 2017
8	Analysis of public survey forms	Mitigation Committee	Results of Public Survey Forms	December 2017
9	Development of updated mitigation plan and submission to the Mitigation Committee	Mitigation Committee	Mitigation Plan Draft	January 2018
10	Submit a draft copy of Mitigation Plan to TEMA for review	Planning Ops Chief	Mitigation Plan Draft	February 2018
11	Submit draft copy to FEMA for review/approval	TEMA	Mitigation Plan Draft	March 2018
12	Review FEMA recommendations to the plan and edit, as appropriate.	Lead Personnel, Planning Ops Chief & TEMA	Mitigation Plan Draft	July 2018
13	Discuss draft Hazard Mitigation plan with new County Mayor and other appropriate staff	Lead Personnel & Planning Ops Chief	Mitigation Plan Draft	October 2018
14	Edit plan to incorporate FEMA recommendations	Lead Personnel, Planning Ops Chief & TEMA	Mitigation Plan Draft	December 2018
15	Resubmit plan to FEMA for approval	Lead Personnel, Planning Ops Chief & TEMA	Mitigation Plan Draft	January 2019
16	Adoption of plan by local entities	Mitigation Committee	Final Mitigation Plan	April 2019

B2 Meeting Minutes

Hazard Mitigation Kick-Off Meeting – July 27, 2017

PRESENT: Mark Blackwood, Emergency Management; Duane Winningham, Emergency Management; Victor Lay, City of Spring Hill; Chuck Downham, City of Spring Hill; Thad Jablonski, City of Columbia; Ty Cobb, City of Columbia; Chris Cummins, City of Columbia; Charles Norman, County Mayor; Kate Collier, City of Mt. Pleasant, Phillip Grooms, City of Mt. Pleasant; Michael Hay, City of Mt. Pleasant

The Hazard Mitigation Planning Committee met at the Maury County OEM Bldg. to establish Primary and Secondary Contacts/Point Persons from each respective entity to work with the Planning Ops Chief to formulate the plan.

Mark Blackwood opened the meeting and, following introductions, proceeded to explain why we were here. He stated the need for a committee to be established in order to update the Maury County Hazard Mitigation Plan in order to put us in line for getting federal grant money and, in the event of a disaster, to be able to recoup some of the monies spent to help get back to normalcy. The results of not having an approved mitigation plan in place was discussed as well as its importance to the citizens of Maury County and the surrounding entities.

Duane Winningham gave out agendas for the meeting. Topics discussed were the current status of the old plan, current status of the new/updated plan and what was needed now to help complete the update. The NIMS (National Incident Management System) requirements were discussed and what was needed to continue to be compliant. Damage Assessments were discussed and several forms were passed out relating to what information was needed from each entity.

A Timeline/Milestones sheet was passed out to help each entity in identifying where we are and where we need to be in order to have an updated plan on file.

November 14, 2017 was set as the next meeting date for the Steering Committee.

Minutes for the November 14, 2017 City Managers/County Mayor Meeting

The following personnel were in attendance:

Maury County Mayor Norman	SHPD Asst. Chief Jason Fogle
Spring Hill Administrator Victor Lay	CFD Asst. Chief Chris Cummins
Mount Pleasant City Manager Kate Collier	CFD Captain Jeremy Finley
Spring Hill Asst. City Admin. Chuck Downham	CFD Firefighter (<u>did not sign in</u>)
MPPD Chief Michael Hay	OEM Chief Mark Blackwood
MPPD Chief Phillip Grooms	OEM Planning Chief Duane Winningham
SHFD Chief Terry Hood	OEM Asst. Director Pat Woodmansee

1. Discussion of current status of Multi-Jurisdictional All-Hazards Mitigation Plan.
 - A brief review of the purpose and importance of a mitigation plan was provided
 - A timeline of the plan was provided, as follows:
 - July 27, 2017 was the Kickoff meeting. During that meeting it was established that all entities would be participating in this project.
 - During the Kickoff meeting, each entities Lead Person that would be responsible for gathering data from their respective entity and forwarding to Emergency Management's Planning Chief was identified.
 - The data gathering phase from our local entities was begun and has been completed. Thanks was given to the 2 city entities that have participated and provided data. Mitigation actions and priorities were discussed and updated.
 - The data gathering phase from entities is now being compiled.
 - Data gathering phase from additional stakeholders has begun with surveys (handout). Please make these available to the public and encourage them to fill them out and submit them. The deadline for submission of these forms is Dec. 7, 2017. It was discussed that they would be available at:
 - ◆ Spring Hill – City Hall and website
 - ◆ Mount Pleasant – City Hall and website
 - ◆ Columbia – possibly City Hall and website
 - ◆ Maury County – County Mayor's office and Emergency Management website
 - Finish compiling data. Projected mid-December through early January.
 - Submit a Draft Copy of Updated Mitigation Plan to each entities Lead Person

- and City manager/County Mayor for review.
- Allow 2 weeks for each entity to review.
- Submit to TEMA for review. Projected mid-January.
- TEMA will submit to FEMA for conditional review. Projected late January.
- FEMA review process is projected to take 45+ days.
- Adopt locally.
- Our current plan's deadline is December 3, 2017. We have applied for an extension with TEMA/FEMA to allow us time to complete this project.

2. Discussion of Mitigation Plan approval process:

- If one entity is listed in the plan and decides not to approve the plan, we will be forced to go back and delete them from the plan and resubmit for FEMA's conditional approval. This would cause significant delays in our process. Concern was expressed regarding this situation and possible negative results for the other entities of Maury County. CFD Asst. Chief Cummins assured the group that he would carry the information back to Columbia and try to determine if they were going to participate in the process or not. It was discussed that if no response from Columbia was received by the time we are ready to submit a draft copy of the plan to each entities Lead Person and City Manager/County Mayor (projected early January) that we would be forced to remove Columbia. This action would be required to ensure that the plan is not delayed. Discussion ensued regarding Columbia's non-submission/participation in the planning process. The City of Columbia chose to not participate in this plan (see letter dated November 27, 2017, below).
- It was recommended that each entity brief elected officials on the plan well before FEMA approves it so we can expedite our local approval. The plan will not be fully approved by FEMA until all entities contained in the plan adopt.
- It was determined who from each entity will handle carrying the plan through the adoption process:
 - Spring Hill – City Administrator
 - Mount Pleasant – City Manager
 - Maury County – County Mayor and Emergency Management
- The offer to assist the cities by being present to answer questions, etc. during the adoption process was made. Mount Pleasant and Spring Hill stated they would like for Emergency Management to attend work/study sessions when this is slated for adoption.

Maury County Tennessee
Multi-jurisdictional Hazard Mitigation Plan



Fire Department



931-560-1700
tcobb@columbiatn.com

November 27, 2017

Mark Blackwood-Director
Maury County Office of Emergency Management
1451 Tom Hitch Parkway
Columbia, TN 38401

Mark,

This letter is official notification of the following decisions regarding emergency management. The City of Columbia has formed a new Columbia Emergency Management Division within the Columbia Fire Department. The Columbia Fire Department notified TEMA in writing June of 2017 regarding the creation of this new division within the fire department. Director Patrick C. Sheehan acknowledged this notification and sent the district coordinator to meet with us in reference to the establishment of this new division.

Columbia Fire's Emergency Management Division will be working diligently with TEMA to develop plans and other requirements in order to be in compliance with Tennessee Code Annotated (TCA) 58-2-110 (1) (B). This will include making sure the director of this division will meet the requirements of TCA 58-2-133. A training program and progress tier has been established to also aid in this transition and development of the new division.

The Columbia Emergency Management Division is developing a new written Hazard Mitigation Plan. It addresses the risks and vulnerabilities unique to the City of Columbia. The Columbia Emergency Management Division is working with TEMA to assemble the necessary information in order to put together a comprehensive, long-term mitigation plan in place.

Concerning the hazard mitigation questions raised at the November 14, 2017 meeting, please be advised to the following:

- First, it is suggested the county move forward with updating the Maury County Hazard Mitigation plan.
- Secondly, the City of Columbia will be working with TEMA to develop a hazard mitigation plan for the City of Columbia and will coordinate with Maury County over the next 12-24 months."

This should speed along your process of updating the Hazard Mitigation Plan for the jurisdictions involved.

Respectfully,

Tyler "Ty" Cobb
Fire Chief



Honor

Duty

Trust

Integrity

**PUBLISH TWO TIMES:
SUNDAY, DECEMBER 24 & 31, 2017**

TO: Daily Herald

PUBLIC NOTICE

Maury County, the City of Mt. Pleasant, and the City of Spring Hill will have for review and to solicit public comments until January 8, 2018, the Multi-Jurisdictional All-Hazards Mitigation Plan for Maury County, Tennessee. A copy of the Plan will be available on the Maury County website and during normal business hours at the following locations:

Maury County – County Mayor’s Office
Mt. Pleasant – City Hall
Spring Hill – City Hall

The Plan creates a framework for risk-based decision-making to reduce damages to lives, property and the economy from future disaster. This is required to develop and regularly update the Plan as a condition for receiving certain types of non-emergency disaster assistance from the Federal Emergency Management Agency (FEMA).

The following is a copy of memo sent to the local newspaper informing the public of a “Community Input” online survey regarding the Hazard Mitigation Plan Update.

For more information about Spring Hill's Hazard Mitigation Team and Plan, call Chuck Downham at (931) 486-2252, extension 257.

Find the complete survey online at www.advertisernews.biz

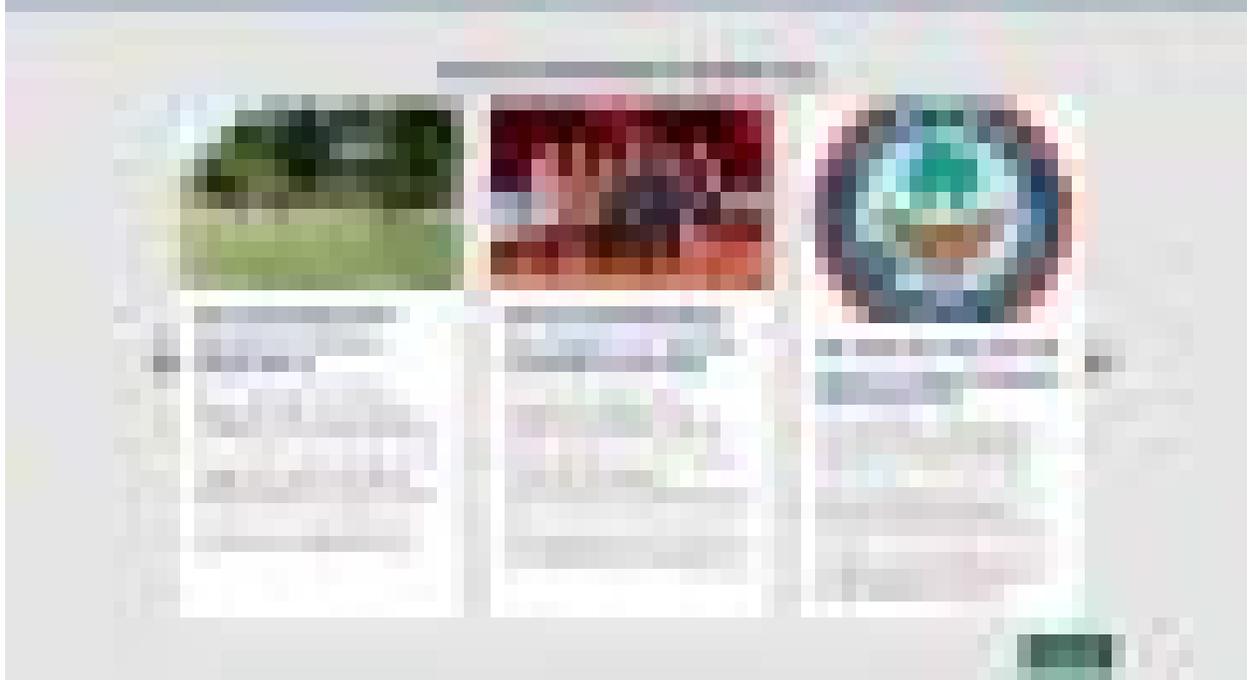


We need your help; take the Maury Co. Hazard Mitigation Planning Survey

All Maury County residents of Spring Hill are encouraged to contribute to this important planning survey as part of the process of drafting a Maury County Hazard Mitigation Plan Update that addresses all types of catastrophic emergencies and/or disasters.

[Read on...](#)

[View All](#)



MEMORANDUM

SUBJECT: Multi-jurisdictional Hazard Mitigation Plan Update 2018

PUBLIC NOTICE

Notice is hereby given to all residents of Maury County, Tennessee and all parties of interest that information is being requested to assist, via a Mitigation Planning Survey with the 2018 Hazard Mitigation Plan Update. These surveys are available during normal business hours at the following locations:

Maury County- County Mayor's Office
Mt. Pleasant- City Hall
Spring Hill- City Hall

These surveys will also be available on- line at www.maurycounty-tn.gov Click on the Emergency Management link and then go to the Survey Icon.

B3 Scanned Documents

Columbia Daily Herald, Sunday November 26, 2017

PUBLIC NOTICE

Notice is hereby given to all residents of Maury County, Tennessee and all parties of interest that information is being requested to assist, via a Mitigation Planning Survey with the 2018 Hazard Mitigation Plan Update. These surveys are available during normal business hours at the following locations:

Maury County- County Mayor's Office
Mt. Pleasant- City Hall
Spring Hill- City Hall

These surveys will also be available on-line at www.maurycounty-tn.gov Click on the Emergency Management link and then go to the Survey Icon.

Nov 26, Dec 3 2TC

Columbia Daily Herald, Sunday December 3, 2017

PUBLIC NOTICE

Notice is hereby given to all residents of Maury County, Tennessee and all parties of interest that information is being requested to assist, via a Mitigation Planning Survey with the 2018 Hazard Mitigation Plan Update. These surveys are available during normal business hours at the following locations:

Maury County- County Mayor's Office
Mt. Pleasant- City Hall
Spring Hill- City Hall

These surveys will also be available on- line at www.maurycounty-tn.gov Click on the Emergency Management link and then go to the Survey Icon.

Nov 26, Dec 3 2TC

Columbia Daily Herald, Sunday, December 24, 2017

PUBLIC NOTICE

Maury County, the City of Mt. Pleasant, and the City of Spring Hill will have for review and to solicit public comments until January 8, 2018, the Multi-Jurisdictional All-Hazards Mitigation Plan for Maury County, Tennessee. A copy of the Plan will be available on the Maury County website and during normal business hours at the following locations:

Maury County - County Mayor's Office
Mt. Pleasant - City Hall
Spring Hill - City Hall

The Plan creates a framework for risk-based decision-making to reduce damages to lives, property and the economy from future disaster. This is required to develop and regularly update the Plan as a condition for receiving certain types of non-emergency disaster assistance from the Federal Emergency Management Agency (FEMA).

Dec 24, Dec 31 2TC

Columbia Daily Herald, Sunday, December 31, 2017

PUBLIC NOTICE

Maury County, the City of Mt. Pleasant, and the City of Spring Hill will have for review and to solicit public comments until January 8, 2018, the Multi-Jurisdictional All-Hazards Mitigation Plan for Maury County, Tennessee. A copy of the Plan will be available on the Maury County website and during normal business hours at the following locations:

Maury County - County Mayor's Office
Mt. Pleasant - City Hall
Spring Hill - City Hall

The Plan creates a framework for risk-based decision-making to reduce damages to lives, property and the economy from future disaster. This is required to develop and regularly update the Plan as a condition for receiving certain types of non-emergency disaster assistance from the Federal Emergency Management Agency (FEMA).

Dec 24, Dec 31 2TC

B4 Public Survey

Copies of completed Public Surveys are on file and available for public review. The following is the survey form that was posted on each participating entities website for electronic completion and submission. Paper copies were also made available for pick-up so as to solicit public input.

MAURY COUNTY MITIGATION PLANNING SURVEY

1. What community do you live in? _____
2. Have you ever experienced or been impacted by a disaster?
 - Yes (please explain): _____
 - No
3. How concerned are you about the possibility of our community being impacted by a disaster?
 - Extremely concerned
 - Somewhat concerned
 - Not concerned
4. Please check the top three hazards you think is the *highest threat* to your neighborhood:
 - Dam Failure
 - Drought
 - Earthquake
 - Erosion
 - Extreme Heat
 - Flood
 - Hail
 - Hazardous Materials
 - Hurricane
 - Land Slides or sinkholes
 - Landslide
 - Lightning
 - Major Urban Fire
 - Pipeline Failure
 - Severe Winter Storm
 - Terrorism
 - Tornado / Thunder Storm
 - Wild/Forest Fire
 - Other (please explain): _____
5. Is there another hazard not listed in this survey that you think is a wide-scale threat to your neighborhood?
 - Yes (please explain): _____
 - No
6. Is your home located in a floodplain?
 - Yes
 - No
 - I don't know
7. Do you have flood insurance?
 - Yes
 - No

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- I don't know
 - a. If "No", why not?
 - Not located in floodplain
 - Too expensive
 - Not necessary because it never floods
 - Not necessary because I'm elevated or otherwise protected
 - Never really considered it
 - Other (please explain): _____

8. Have you taken any actions to make your home or neighborhood more resistant to hazards?

- Yes
- No

a. If "Yes", please explain:

9. Are you interested in making your home or neighborhood more resistant to hazards?

- Yes
- No

10. What is the most effective way for you to receive information about how to make your home and neighborhood more resistant to hazards?

- Newspaper
- Television
- Radio
- Internet
- Mail
- Public workshops/meetings
- Other (please explain): _____

11. In your opinion, what are some steps your local government could take to reduce or eliminate the risk of future hazard damages in your neighborhood?

12. Are there any other issues regarding the reduction of risk and loss associated with hazards or disasters in the community that you think are important?

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13. A number of community-wide activities can reduce our risk from hazards. In general, these activities fall into one of the following six broad categories. Please tell us how important you think each one is for your community to consider pursuing.

Category	Very Important	Somewhat Important	Not Important
<u>1. Prevention</u> Administrative or regulatory actions that influence the way land is developed and buildings are built. Examples include planning and zoning, building codes, open space preservation, and floodplain regulations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>2. Property Protection</u> Actions that involve the modification of existing buildings to protect them from a hazard or removal from the hazard area. Examples include acquisition, relocation, elevation, structural retrofits, and storm shutters.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>3. Natural Resource Protection</u> Actions that, in addition to minimizing hazard losses also preserve or restore the functions of natural systems. Examples include: floodplain protection, habitat preservation, slope stabilization, riparian buffers, and forest management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>4. Structural Projects</u> Actions intended to lessen the impact of a hazard by modifying the natural progression of the hazard. Examples include dams, levees, seawalls, detention/retention basins, channel modification, retaining walls and storm sewers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>5. Emergency Services</u> Actions that protect people and property during and immediately after a hazard event. Examples include warning systems, evacuation planning, emergency response training, and protection of critical emergency facilities or systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>6. Public Education and Awareness</u> Actions to inform citizens about hazards and the techniques they can use to protect themselves and their property. Examples include outreach projects, school education programs, library materials and demonstration events.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THANK YOU FOR PARTICIPATING – PLEASE FILL OUT AND RETURN BY DEC. 7, 2017

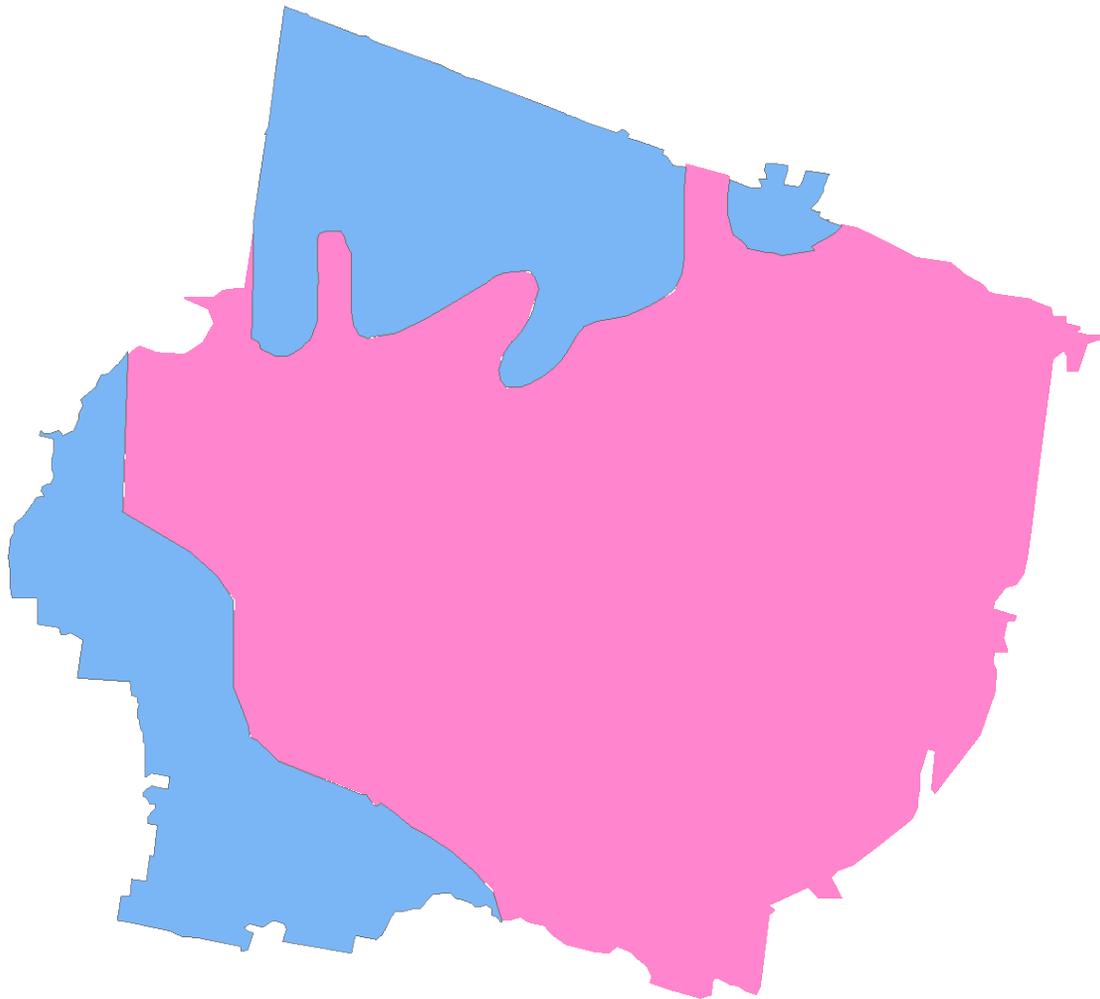
Please help us by completing this survey and returning it to:
Duane Winningham
Maury County Office of Emergency Management
dwinningham@maurycounty-tn.gov

Appendix C MAPS

This Section Contains Plan GIS Maps

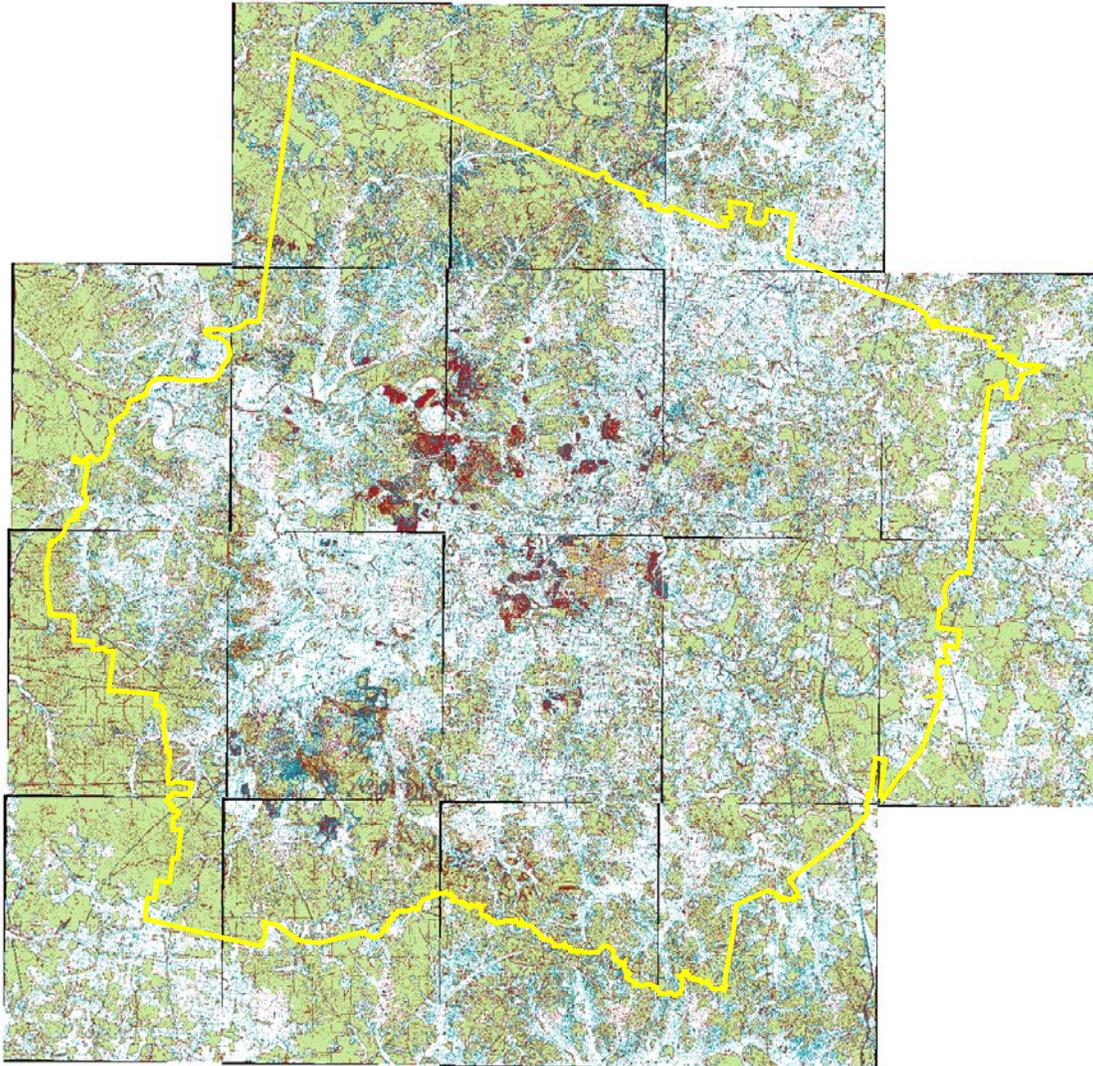
Complete	County Geographic Maps	Page #
Y	County Geology Map	216
Y	County Topographical Map	217
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Y	County Transportation Map	220
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Y	County Housing Cost Map	230
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Y	Tornado – Southern Maury County with Facilities Actually Impacted	232

Maury County, Tennessee Geologic Map

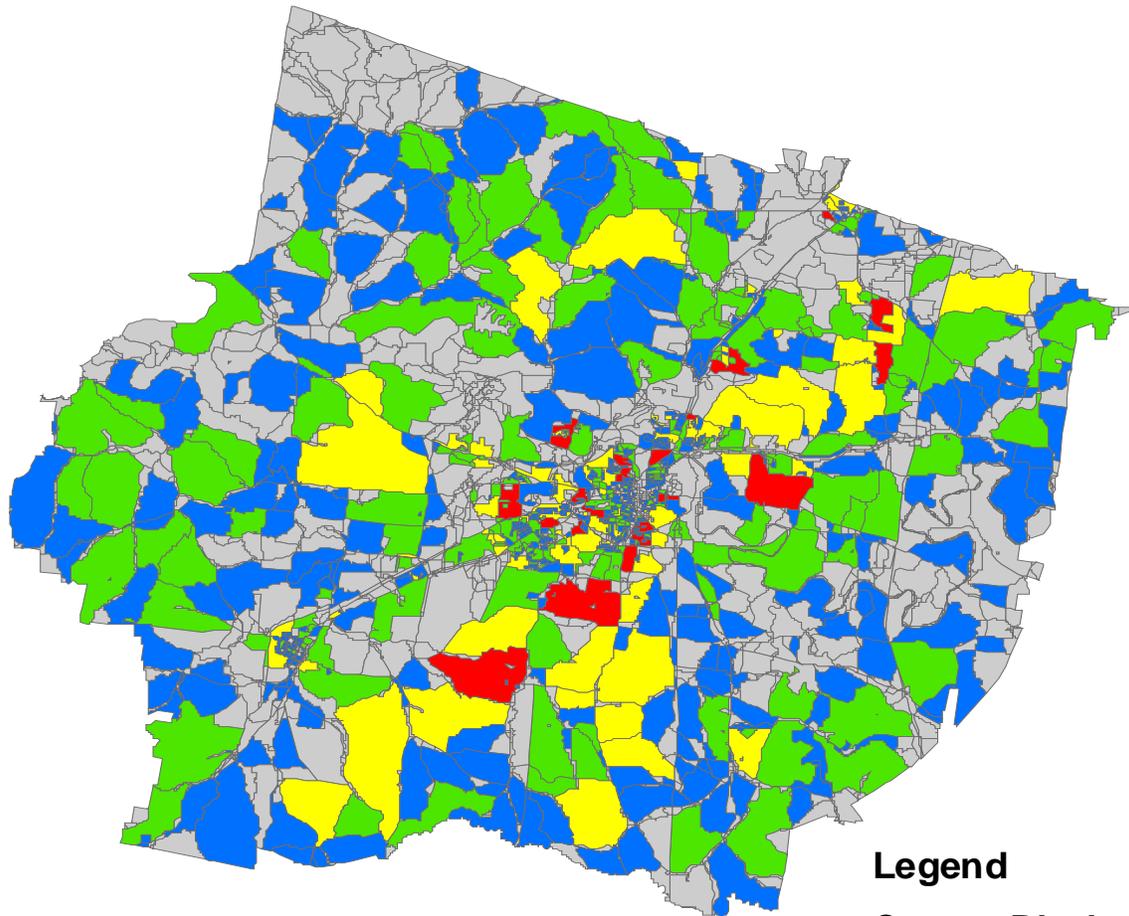


- ORDOVICIAN** Limestone, shale, dolomite, siltstone, sandstone, and claystone
- MISSISSIPPIAN** Limestone, chert, shale, siltstone, sandstone, and dolomite

Maury County, Tennessee Topographic Map



Maury County, Tennessee Population Density Map



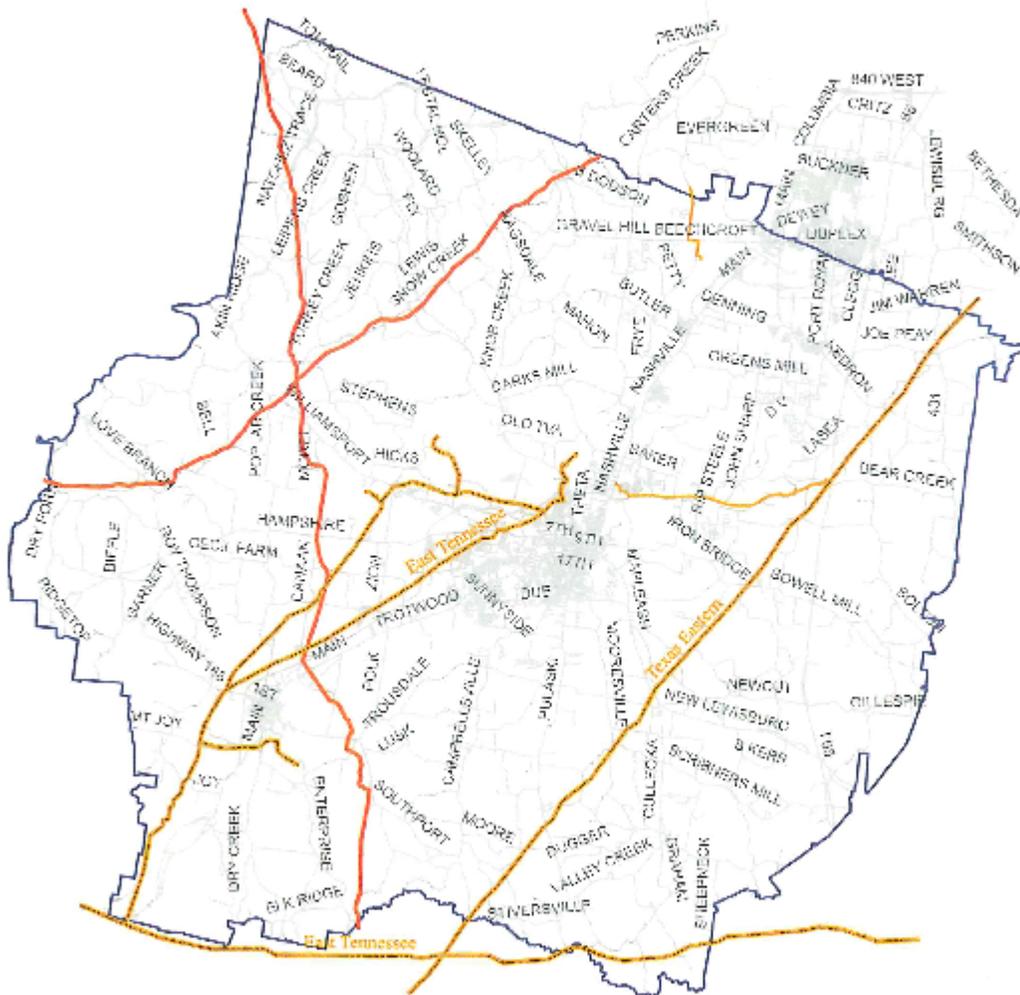
Legend

Census Blocks

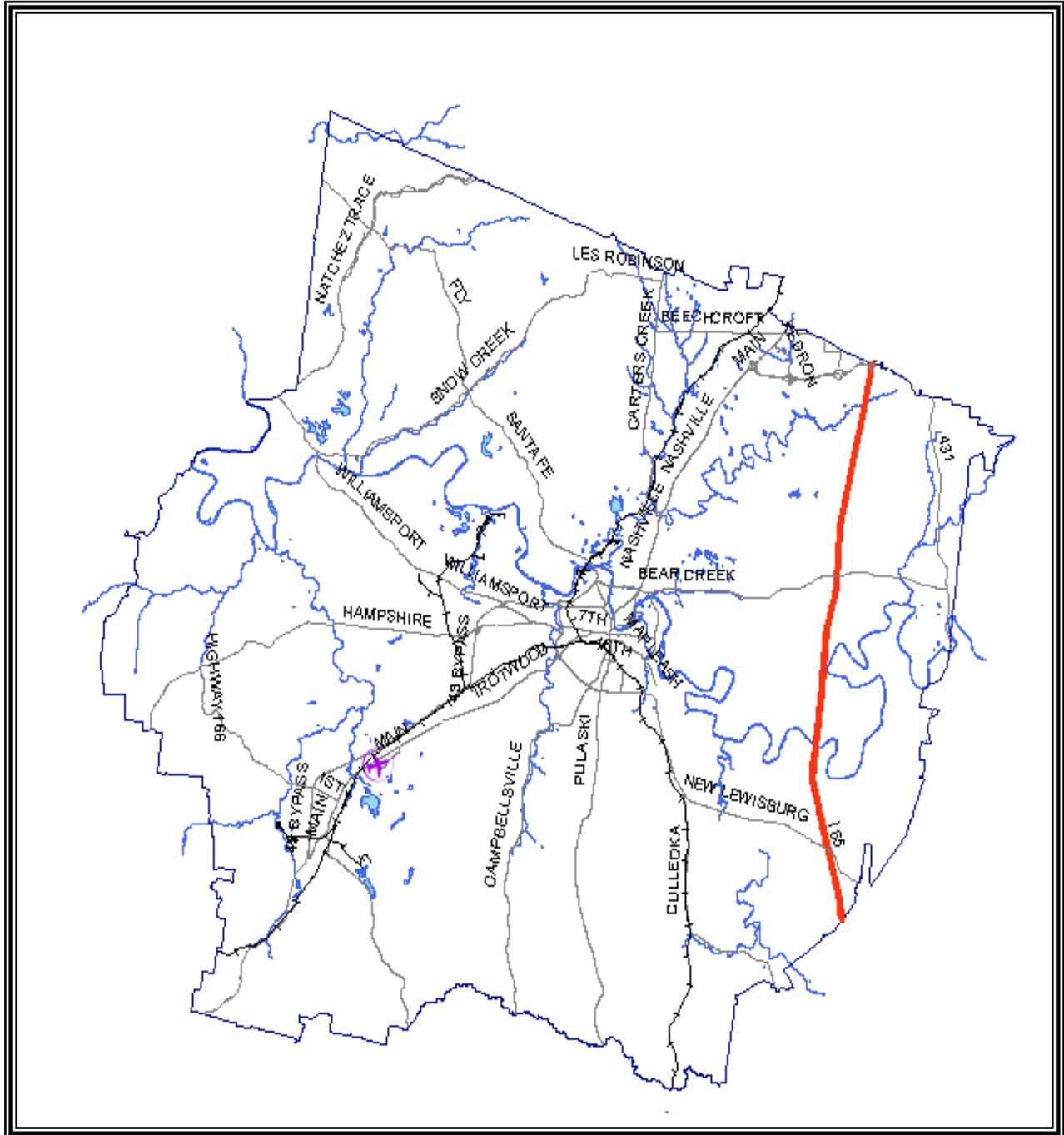
TOTALPOP

0 - 19
20 - 59
60 - 128
129 - 269
270 - 728

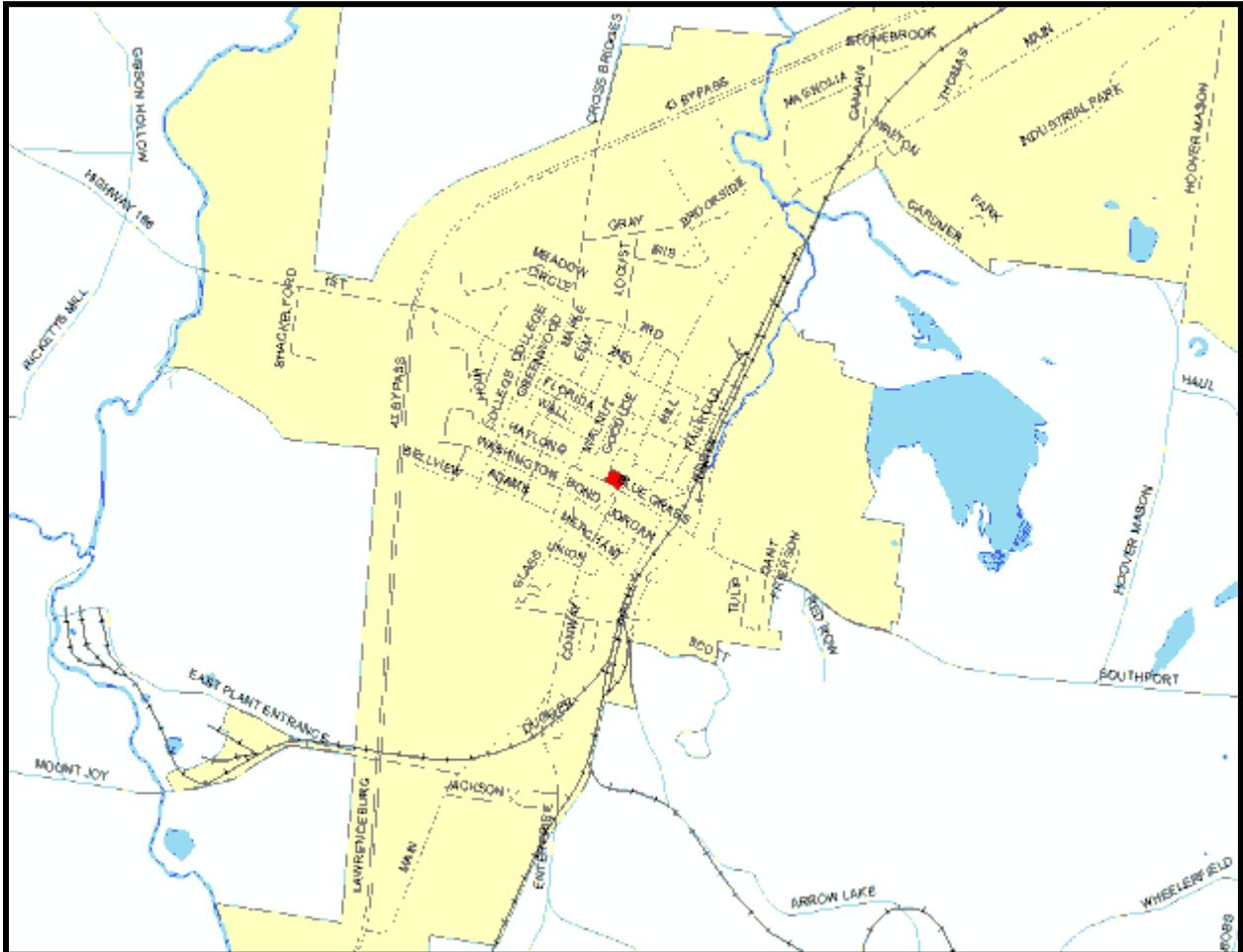
Major Gaslines in Maury County



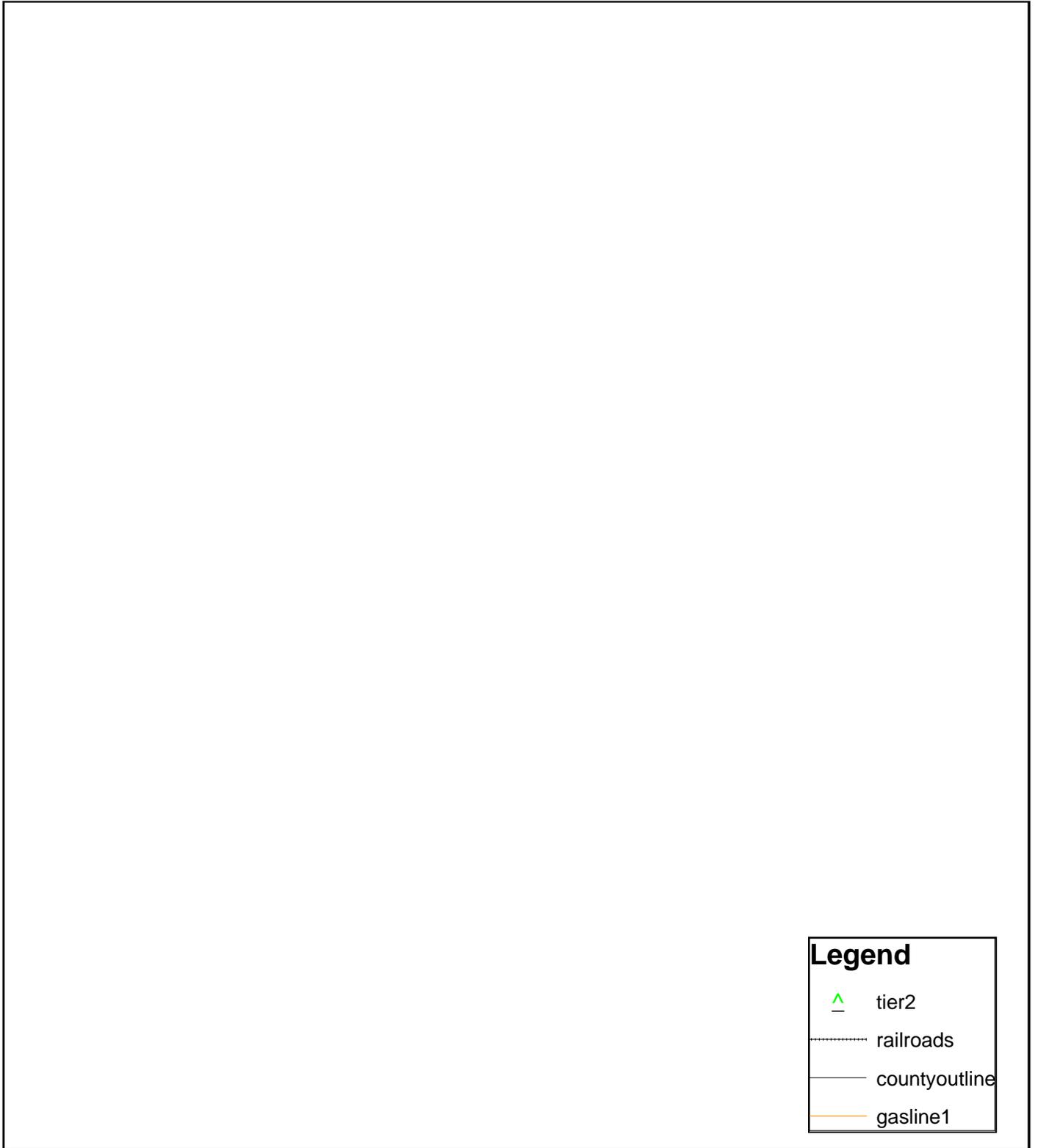
Maury County, Tennessee Transportation Map



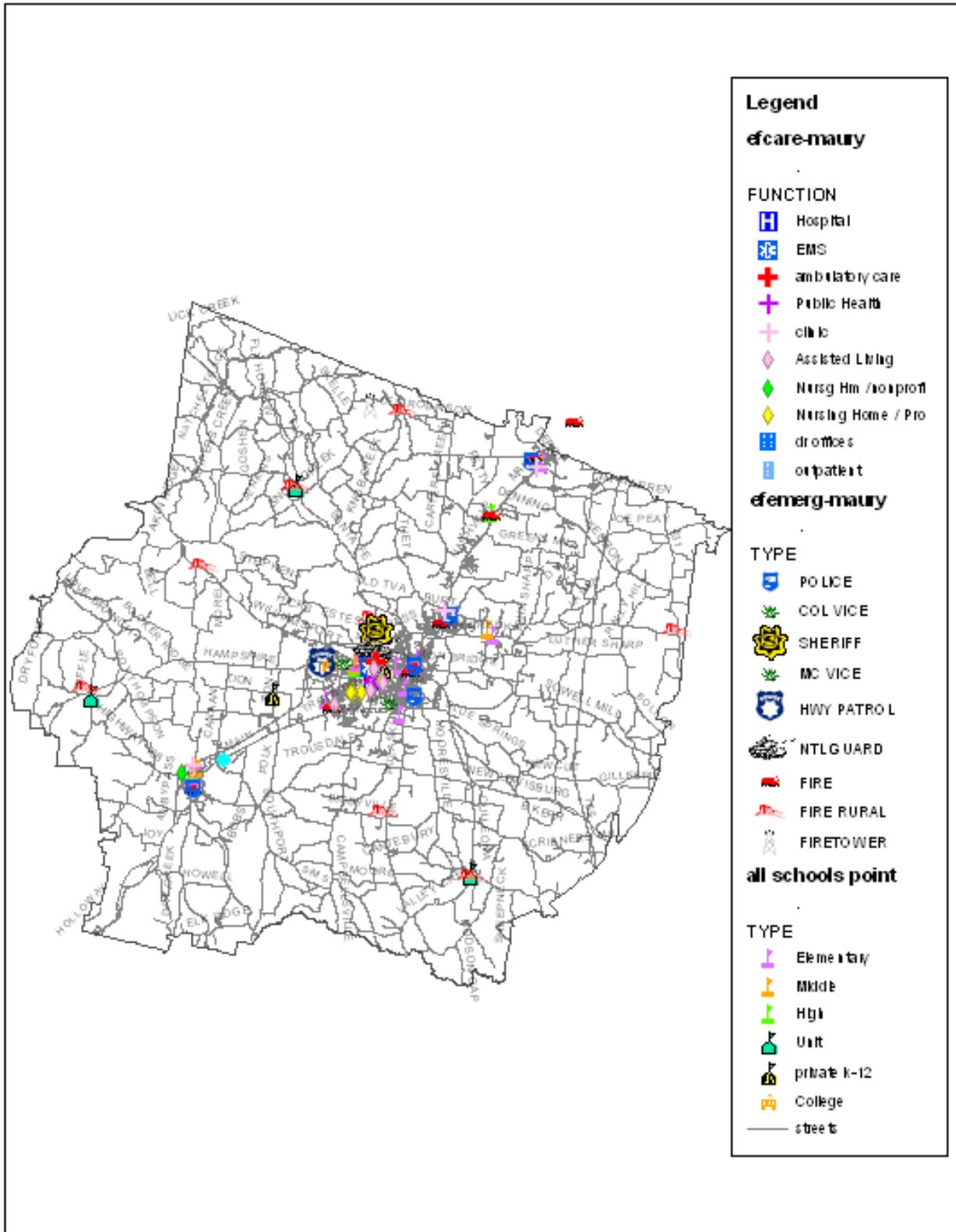
Mt. Pleasant-Urban Fire-1 Block Radius



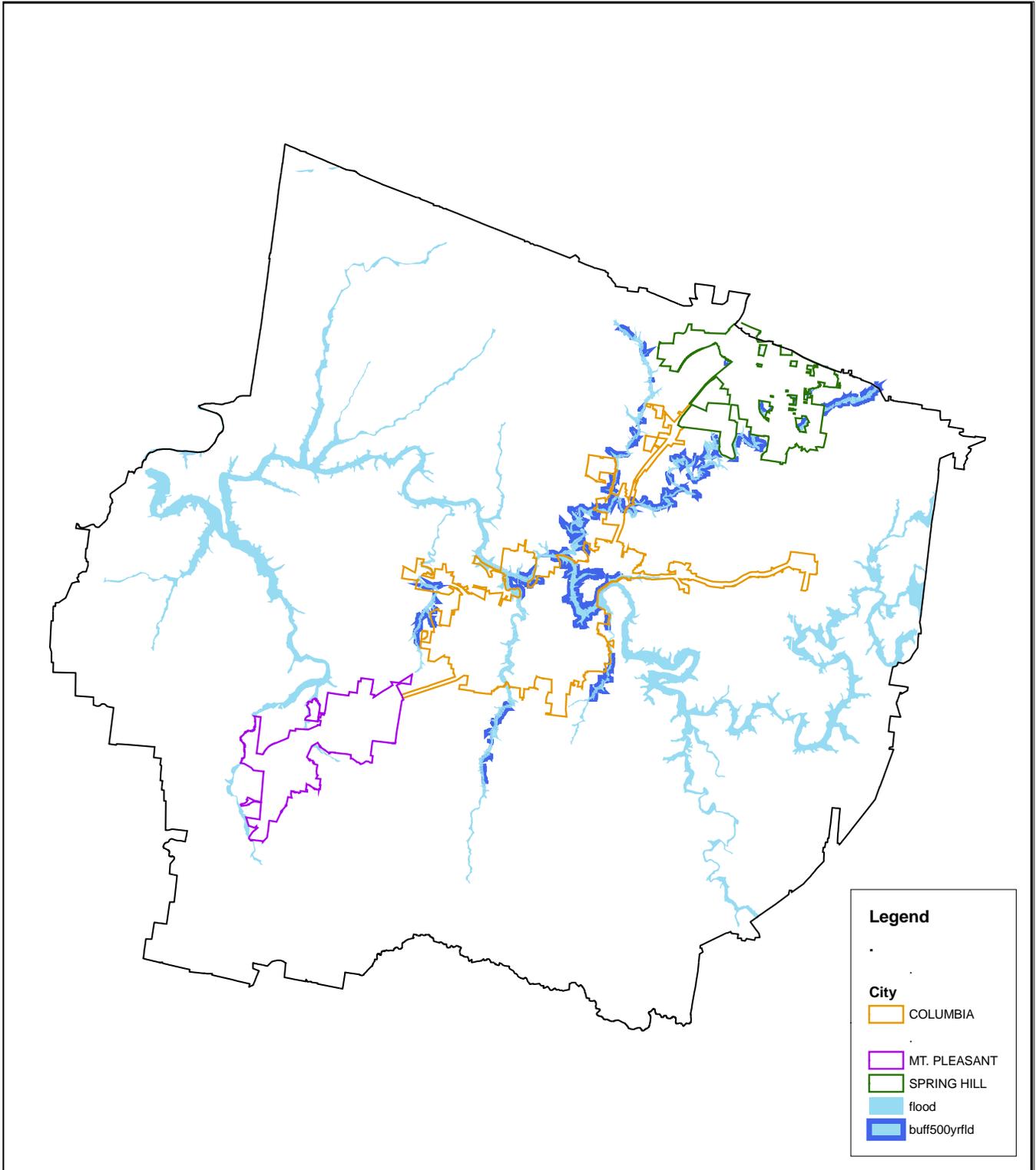
Tier II Hazard Locations



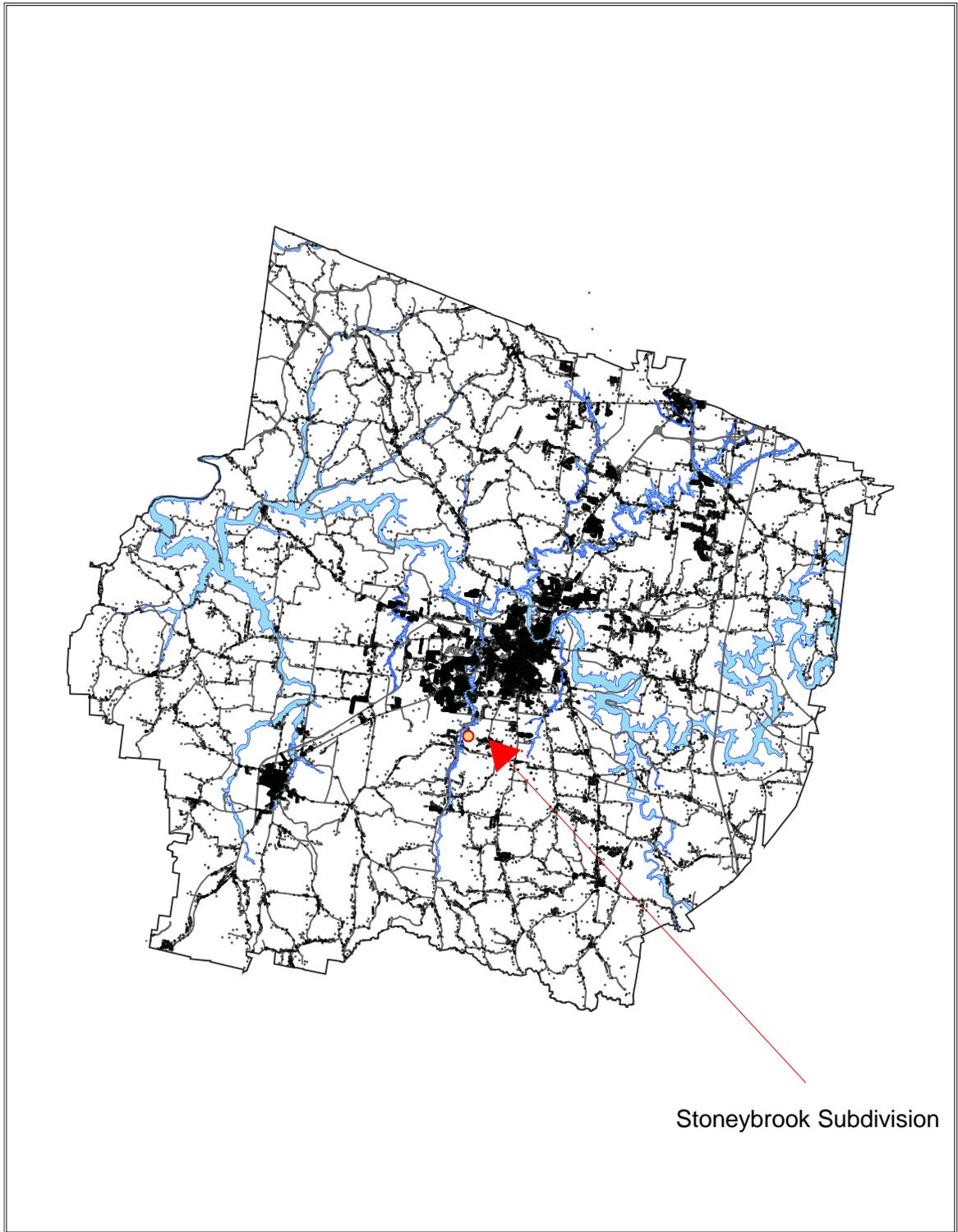
Critical Facilities and Infrastructure



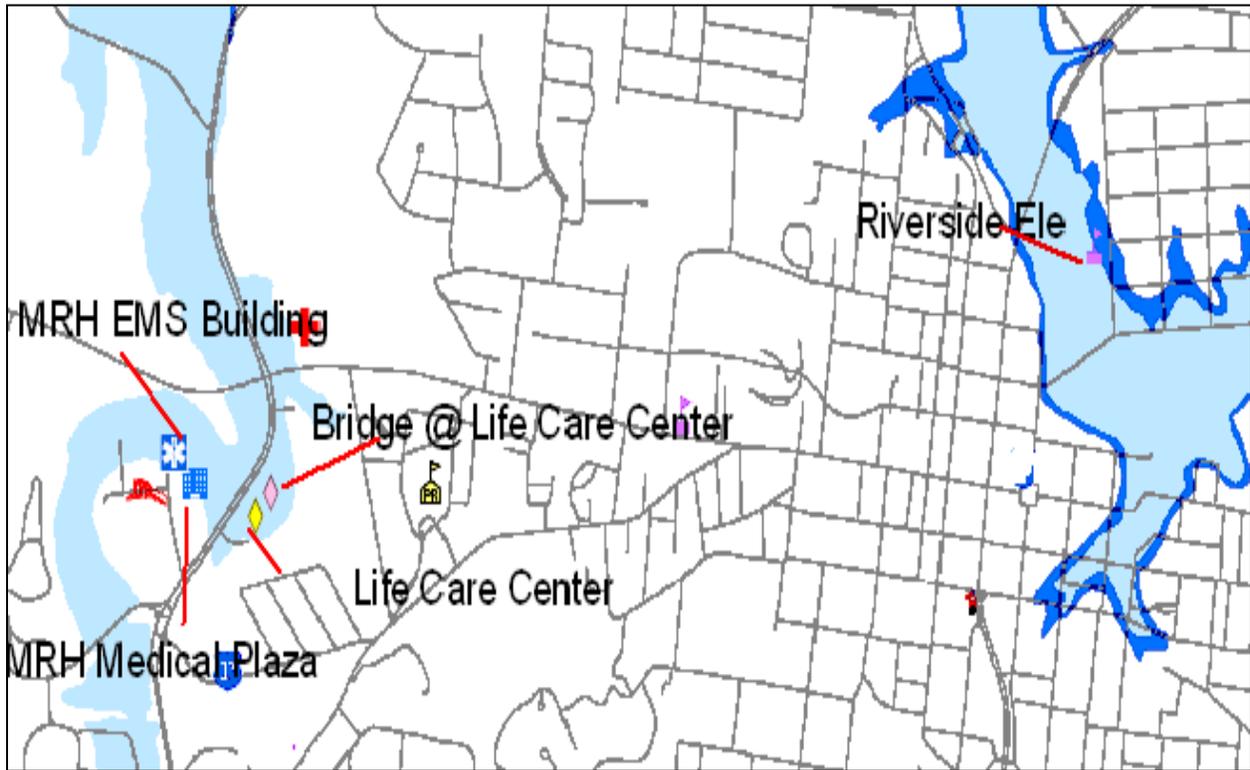
100/500 Year Floodplain Map



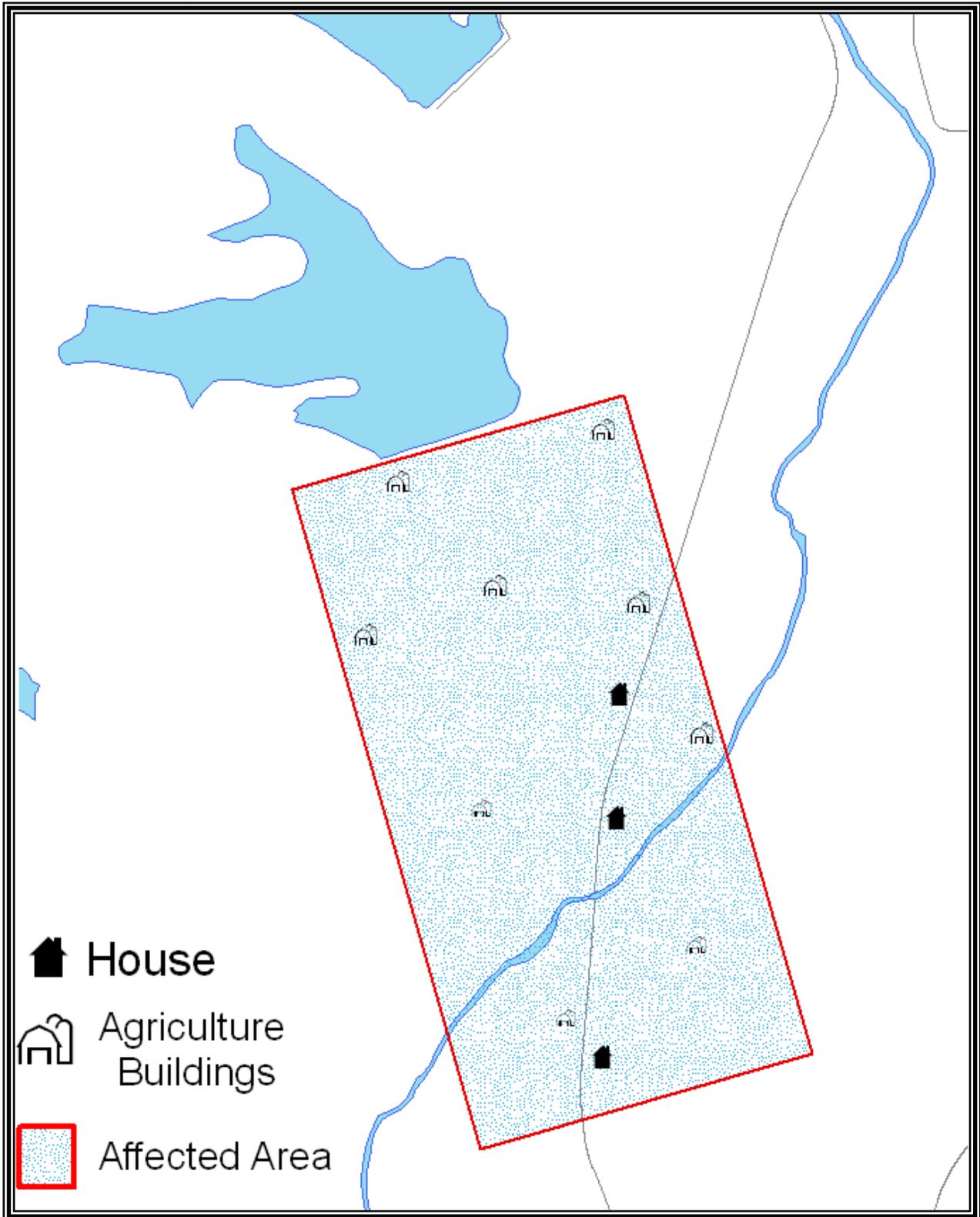
100/500 Floodplain Map with Facilities



100/500 Floodplain Map with Critical Facilities



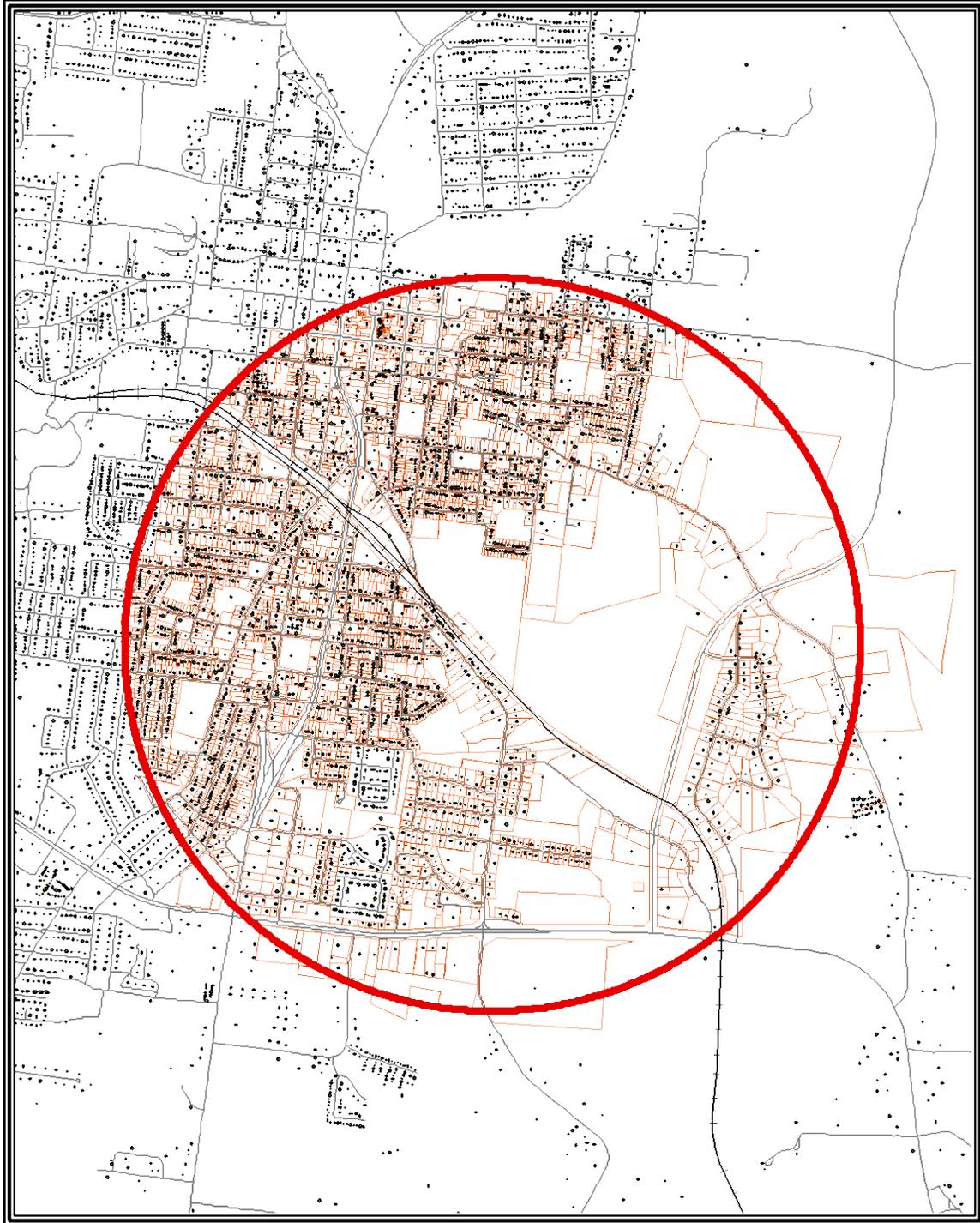
Community Dam Failure Hazard Area and Facilities within Hazard Area



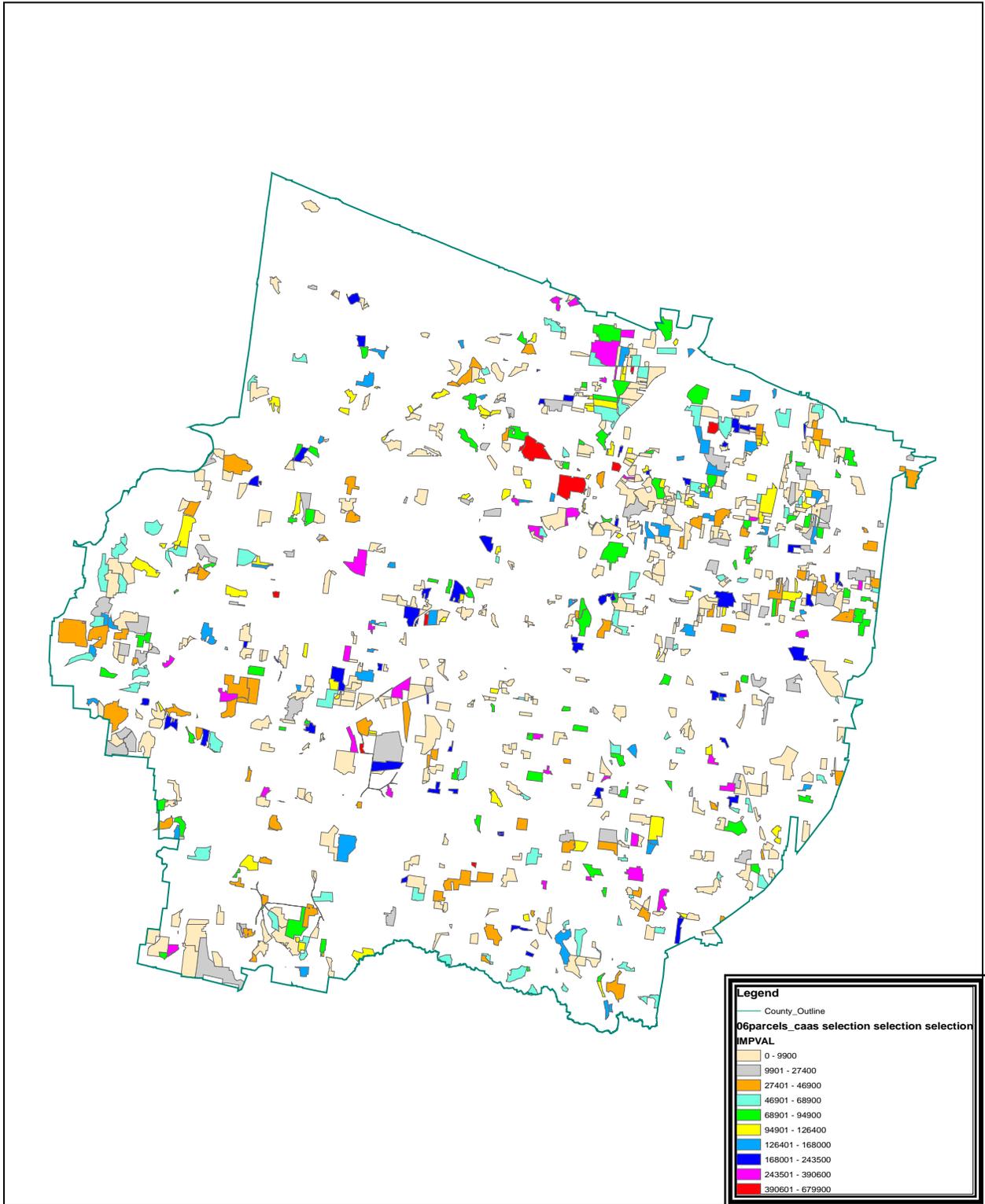
Largest Tier II Facility Map with Hazard Area and Facilities in Hazard



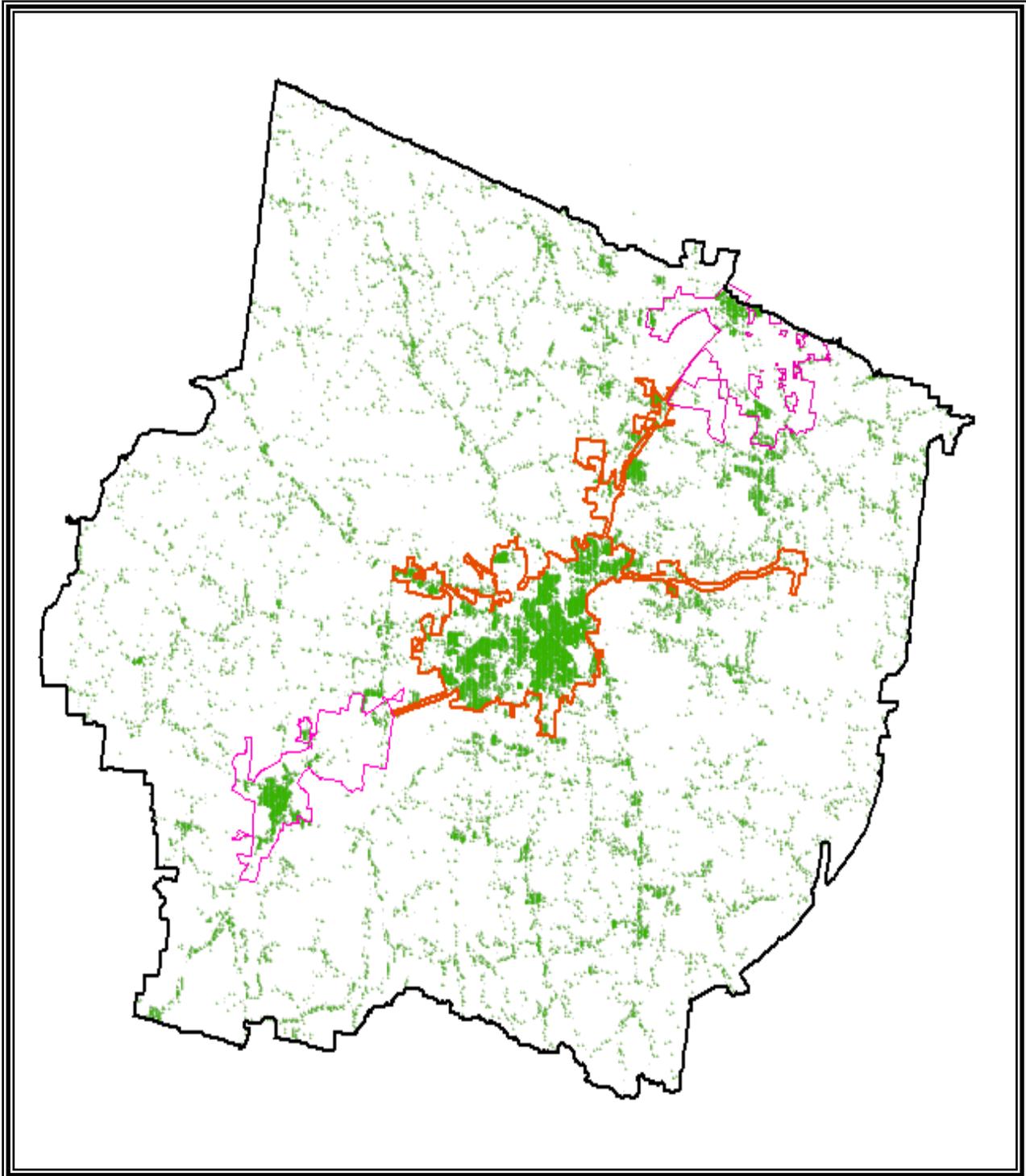
Critical Railroad Siding Location area with Facilities within Hazard



County Housing Cost Map



County Housing Density Map



APPENDIX D

D1 KEY FEDERAL HAZARD MITIGATION FUNDING PROGRAMS

This section of the Plan includes a listing of some of the key, well-established federal hazard mitigation funding programs available to implement future mitigation projects. Additional sources of mitigation funding are routinely made available through a variety state and federal agencies, though the program names, funding amounts and eligibility criteria will vary over time.

Key Federal Hazard Mitigation Funding Programs			
Grant Name	Agency	Purpose	Contact
Pre-Disaster Mitigation Program (PDM)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To provide funding for States and communities for cost-effective hazard mitigation activities, which complements comprehensive hazard mitigation, program and reduce injuries, loss of life, and damage and destruction of property.	FEMA 500 C Street, S.W. Washington, DC 20472 Phone: (202) 646-4621
Emergency Management Performance Grants (EMPG)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To encourage the development of comprehensive emergency management at the State and local level and to improve emergency management planning, preparedness, mitigation, response, and recovery capabilities.	FEMA 500 C Street, S.W. Washington, DC 20472 Phone: (202) 646-4621
Hazard Mitigation Grant Program (HMGP)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To prevent future losses of lives and property due to disasters; to implement State or local hazard mitigation plans; to enable mitigation measures to be implemented during immediate recovery from a disaster; and to provide funding for previously identified mitigation measures to benefit the disaster area.	FEMA 500 C Street, S.W. Washington, DC 20472 Phone: (202) 646-4621
Flood Mitigation Assistance Program (FMA)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To help States and communities plan and carry out activities designed to reduce the risk of flood damage to structures insurable under the NFIP.	FEMA 500 C Street, S.W. Washington, DC 20472 Phone: (202) 646-4621
Community Development Grant Program (CDBG)	U.S. Department of Housing and Urban Development	To develop viable urban communities by providing decent housing and a suitable living environment. Principally for low to moderate-income individuals.	HUD 451 7th Street, S.W. Washington, DC 20410 Phone: (202) 708-3587

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Public Assistance Program (PA)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To provide supplemental assistance to States, local governments, and certain private nonprofit organizations to alleviate suffering and hardship resulting from major disasters or emergencies declared by the President. Under Section 406, Public Assistance funds may be used to mitigate the impact of future disasters.	FEMA 500 C Street, S.W. Washington, DC 20472 Phone: (202) 646-4621
Flood Control Works / Emergency Rehabilitation	U.S. Department of Defense, Army Corps of Engineers	To assist in the repair and restoration of public works damaged by flood, extraordinary wind, wave, or water action.	USACE 20 Massachusetts Avenue, N.W. Washington, DC 20314 Phone: (202) 761-0001
Emergency Watershed Protection	U.S. Department of Agriculture, Natural Resource Conservation Svc	To provide emergency technical and financial assistance to install or repair structures to reduce runoff and prevent soil erosion to safeguard life and property.	NRCS PO Box 2890 Washington, DC 20013 Phone: (202) 720-3527
Watershed Protection and Flood Prevention	U.S. Department of Agriculture, Natural Resource Conservation Svc	To provide technical and financial assistance in planning and executing works of improvement to protect, develop, and use land and water resources in small watersheds.	NRCS PO Box 2890 Washington, DC 20013 Phone: (202) 720-3527
Land and Water Conservation Fund Grants	U.S. Department of the Interior, National Park Service	To acquire and develop outdoor recreation areas and facilities for the general public, to meet current and future needs.	NPS PO Box 37127 Washington, DC 20013 Phone: (202) 565-1200
Disaster Mitigation and Technical Assistance Grants	U.S. Department of Commerce, Economic Development Administration	To help States and localities to develop and/or implement a variety of disaster mitigation strategies.	EDA Herbert C. Hoover Bldg. Washington DC, 20230 Phone: (800) 345-1222
Pre-Disaster Mitigation Loan Program	U.S. Small Business Administration	To make low-interest; fixed-rate loans to eligible small businesses for the purpose of implementing mitigation measures to protect business property from damage that may be caused by future disasters.	SBA 1110 Vermont Avenue, N.W., 9 th Floor Washington, DC 20005 Phone: (202) 606-4000
Watershed Surveys and Planning	U.S. Department of Agriculture, Natural Resource Conservation Svc	To provide planning assistance to Federal, State, and local agencies for the development of coordinated water and related land resources programs in watersheds and river basins.	NRCS PO Box 2890 Washington, DC 20013 Phone: (202) 720-3527
National Earthquake Hazards Reduction Program (NEHRP)	U.S. Department of Homeland Security, Federal Emergency Management Agency	To mitigate earthquake losses that can occur in many parts of the nation providing earth science data and assessments essential for warning of imminent damaging earthquakes, land-use planning, engineering design, and emergency preparedness decisions.	FEMA 500 C Street, S.W. Washington, DC 20472 Phone: (202) 646-4621

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Assistance to Firefighters Grant	U.S. Department of Homeland Security, Federal Emergency Management Agency	Competitively awarded project grants to provide direct assistance, on a competitive basis, to fire departments for the purpose of protecting the health and safety of the public and Fire fighting personnel against fire and fire-related hazards.	FEMA 500 C Street, S.W. Washington, DC 20472 Phone: (202) 646-4621
Fire Management Assistance Grants	U.S. Department of Homeland Security, Federal Emergency Management Agency	To provide project grants and the provision of specialized services for the mitigation, management, and control of fires that threatens such destruction as would constitute a major disaster.	FEMA 500 C Street, S.W. Washington, DC 20472 Phone: (202) 646-4621
Emergency Stream bank and Shoreline Protection	U.S. Department of Defense, Army Corps of Engineers	To prevent erosion damages to public facilities by the emergency construction or repair of stream bank and shoreline protection works.	USACE 20 Massachusetts Avenue, N.W. Washington, DC 20314 Phone: (202) 761-0001
Small Flood Control Projects	U.S. Department of Defense, Army Corps of Engineers	To reduce flood damages through small flood control projects not specifically authorized by Congress.	USACE 20 Massachusetts Avenue, N.W. Washington, DC 20314 Phone: (202) 761-0001
Clean Water Act Section 319 Grants	U.S. Environmental Protection Agency	To implement non-point source programs, including support for non-structural watershed resource restoration activities.	EPA 1200 Pennsylvania Ave. N.W. Washington, DC 20460 Phone: (202) 272-0167

Appendix E- Hazard Extent

Flooding-The severity of flooding that may occur in Maury County is measured by inches of rainfall and by feet of flooding. Based on previous occurrences, it is possible for the extent of a flooding event to exceed 10 inches of rainfall and cause over 2 feet of localized flooding in the span of two days in Maury County.

Severe Storm/Windstorm- The severity of severe storm wind can be based on the designated wind zones for the United States. Maury County resides in Wind Zone III (200 mph wind), but closely borders Wind Zone IV (250 mph wind). In a worst case scenario it is possible for “tornado” wind speeds to reach 200+, but it is more likely for severe wind speeds to be 50+ mph in Maury County. The Beaufort Wind Force (used primarily for sailing), shows possible damages for 50+ mph winds (see following chart).

Beaufort Wind Force Scale		
Force	Wind Speed (mph)	Conditions of Land
0	<1mph	Smoke rises vertically.
1	1-4mph	Smoke drifts and leaves rustle.
2	5-7mph	Wind felt on face.
3	8-11mph	Flags extended, leaves move.
4	12-18mph	Dust and small branches move.
5	19-24mph	Small trees begin to sway.
6	25-31mph	Large branches move, wires whistle, umbrellas are difficult to control.
7	32-38mph	Whole trees in motion, inconvenience in walking.
8	39-46mph	Difficult to walk against wind. Twigs and small branches blown off trees.
9	47-54mph	Minor structural damage may occur (shingles blown off roofs).
10	55-63mph	Trees uprooted, structural damage likely.
11	64-73mph	Widespread damage to structures.
12	>74mph	Severe structural damage to buildings, wide spread devastation.

Source: University of North Carolina at Chapel Hill

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Hailstorm- The severity of hail is measured by the diameter of the hail itself, commonly using the TORRO Hail Index (see following chart). Based on previous occurrences, it is possible for the extent of hail to exceed 1.75 inches (H5) in Maury County.

TORRO Hail Index			
Scale	Max Diameter	Comparisons	Typical Impacts
H0	5-9mm	Pea	No damage.
H1	10-15mm	Mothball	Slight general damage to plants, crops.
H2	16-20mm	Marble	Significant damage to fruit, crops, vegetation.
H3	21-30mm	Walnut	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored.
H4	31-40mm	Pigeon's Egg	Widespread glass damage, vehicle bodywork damage.
H5	41-50mm	Golf Ball	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries.
H6	51-60mm	Hen's Egg	Bodywork of grounded aircraft dented, brick walls pitted.
H7	61-75mm	Tennis Ball	Severe roof damage, risk of serious injuries.
H8	76-90mm	Soft Ball	Severe damage to aircraft bodywork.
H9	91-100mm	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open.

Source: The Tornado & Storm Research Organization

Drought- The severity of a drought is commonly measured using the Palmer Drought Severity Index (see following chart). Based on previous occurrences, it is possible for the extent of drought to exceed -2.0 (moderate drought) in Maury County.

Palmer Drought Severity Index	
Rating	Classification
4.0 or higher	extremely wet
3.0 to 3.99	very wet
2.0 to 2.99	moderately wet
1.0 to 1.99	slightly wet
0.5 to 0.99	incipient wet spell
0.49 to -0.49	near normal
-0.5 to -0.99	incipient dry spell
-1.0 to -1.99	mild drought
-2.0 to -2.99	moderate drought
-3.0 to -3.99	severe drought
-4.0 or lower	extreme drought

Source: <http://drought.unl.edu>

Earthquake- The severity of an earthquake is commonly measured using the Richter and Modified Mercalli Intensity Scale (see charts below). In a worst case scenario it is possible for Maury County to experience a level 3 or higher earthquake on the Richter Scale and a III or greater ranking on the Modified Mercalli Intensity Scale.

Richter Scale for Earthquakes		
Magnitudes	Description	Typical Impacts
Less than 2.0	Micro	Not felt.
2.0-2.9	Slight	Generally not felt, but recorded.
2.0-3.9	Minor	Often felt, but rarely causes damage.
4.0-4.9	Light	Noticeable shaking of indoor items, rattling noises. Significant damage unlikely.
5.0-5.9	Moderate	Can cause major damage to poorly constructed buildings over small regions. At most slight damage to well-designed buildings.
6.0-6.9	Strong	Can be destructive in areas up to about 100 miles across in populated areas.
7.0-7.9	Major	Can cause serious damage over larger areas.
8.0-8.9	Great	Can cause serious damage in areas several hundred miles across.
9.0-9.9	Epic	Devastating in areas several thousand miles across.

Modified Mercalli Intensity Scale for Earthquakes	
Ranking	Typical Impacts
I.	Not felt except by a very few under especially favorable conditions.
II.	Felt only by a few persons at rest, especially on upper floors of buildings.
III.	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV.	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V.	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI.	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII.	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII.	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX.	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X.	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI.	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII.	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Source: USGS

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Extreme Heat-The severity of extreme heat is commonly measured in Degrees Fahrenheit. Based on previous occurrences, it is possible for the extent of extreme heat to exceed 100 Degrees Fahrenheit in Maury County (occurred in August of 2007). Humidity in the air can also make someone feel that it is hotter and the actual air temperature is. To account for humidity Maury County uses the Heat Index (see following chart).

		Heat Index												
		Relative Humidity %												
		40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
Air Temperature ° F	110°	136												
	108°	130	137											
	106°	124	130	137										
	104°	119	124	131	137									
	102°	114	119	124	130	137								
	100°	109	114	118	124	129	136							
	98°	105	109	113	117	123	128	134						
	96°	101	104	108	112	116	121	126	132					
	94°	97	100	102	106	110	114	119	124	129	136			
	92°	94	96	99	101	105	108	112	116	121	126	131		
	90°	91	93	95	97	100	103	106	109	113	117	122	127	132
	88°	88	89	91	93	95	98	100	103	106	110	113	117	121
	86°	85	87	88	89	91	93	95	97	100	102	105	108	112
84°	83	84	85	86	88	89	90	92	94	96	98	100	103	
82°	81	82	83	84	84	85	86	88	89	90	91	93	95	
80°	80	80	81	81	82	82	83	84	84	85	86	86	87	

Caution	Extreme Caution	Extreme	Extreme Danger
Fatigue Possible	Sun Stroke, Muscle Cramps, and/or Heat Exhaustion Possible	Sun Stroke, Muscle Cramps, and/or Heat Exhaustion Likely	Heat Stroke or Sun Stroke Highly Likely

Source: NOAA National Weather Service

Landslide-The severity of a landslide can be measured by the travel distance of “earth” being displaced. It is possible for Maury County to exceed over 50 feet of displaced top soil during a landslide.

Land Subsidence- The severity of land subsidence (sinkholes) can be measured by the length/width and depth of the sinkhole in feet. Based on historical records, it is possible for a sinkhole to be over 15 feet in length/width and over 8 feet deep in Maury County.

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Tornado- The severity of tornadoes that may occur in Maury County is measured using the Enhanced Fujita Scale for tornadoes (see chart below). Even though historical accounts don't record any severe tornadoes passing through Maury County, in a worst case scenario it is possible for the extent of a tornado to exceed an EF3 ranking in the county.

Fujita Scale/Enhanced Fujita Scale for Tornadoes				
F-Scale	Fastest Quarter Mile Wind Speed	Typical Impacts	Enhanced Scale: 3 Sec Wind Gust Speed	Enhanced F-Scale
F0	40-72 mph	Some damage to chimney; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.	65-85 mph	EF0
F1	73-112 mph	Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.	86-110 mph	EF1
F2	113-157 mph	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.	111-135 mph	EF2
F3	158-206 mph	Roof and some walls torn off well constructed houses; trains overturned; most trees in forest uprooted.	136-165 mph	EF3
F4	207-260 mph	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.	166-200 mph	EF4
F5	261-318 mph	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel reinforced concrete structures badly damaged.	Over 200 mph	EF5

Source: NOAA National Weather Service; The Tornado Project

Severe Winter Storm- The severity of winter storms is commonly measured by inches of snowfall. Based on previous occurrences, it is possible for snowfall to accumulate over 6 inches in Maury County.

Wildland Fire- The severity of wildland fires can be measured by the potential of burnable acres. In a worst case scenario it is possible for multiple acres to burn in a large wildland fire in Maury County.

Appendix F

National Flood Insurance Program Compliance

The National Flood Insurance Program (NFIP) is a pre-disaster flood hazard mitigation and insurance protection program which has reduced the increasing cost of disasters. The intent of the program is to: require new and substantially improved structures be designed and constructed to minimize or eliminate future flood damage; provide floodplain residents and business owners with financial insurance assistance in the form of insurance after floods; and it transfers most of the cost of private property flood losses from the taxpayers to floodplain property owners through flood insurance premiums. Participation in the NFIP is based on an agreement between communities and FEMA.

Currently Maury County, the Cities of Colombia, Mount Pleasant and Spring Hill are NFIP participants. Below is an overview of NFIP policy and loss data for Maury County.

Policies In-force: 325
Insurance In-force whole \$: 73,798,700
Written Premium In-force: \$ 223,749

Total Losses: 168
Closed Losses: 144
Open Losses: 0
CWOP Losses: 24
Total Payments: \$ 2,409,660.89

According to the National Flood Insurance Program, repetitive flood loss is defined as 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. Within the NFIP, repetitive flood loss properties are usually considered the most vital structures to mitigate. The chart below provides a summary of repetitive losses for Maury County.

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Maury County Repetitive Loss Properties						
Jurisdiction	Structure Type	Flood Zone	Number of Losses	Total Building Payment	Total Contents Payment	Total Paid
City of Columbia	OTHR-NONRES	AE	16	\$ 115,416.50	\$ 119,807.50	\$ 235,224.00
City of Columbia	SINGLE FMLY	AE	3	\$ 67,662.83	\$ 10,422.23	\$ 78,085.06
City of Columbia	SINGLE FMLY	A17	2	\$ 32,432.35	\$ -	\$ 32,432.35
City of Columbia	SINGLE FMLY	C	2	\$ 6,267.93	\$ -	\$ 6,267.93
City of Columbia	SINGLE FMLY	A17	3	\$ 48,893.79	\$ 4,263.88	\$ 53,157.67
City of Columbia	SINGLE FMLY	A17	7	\$ 102,641.76	\$ 26,500.05	\$ 129,141.81
City of Columbia	OTHR-NONRES	B	2	\$ 3,019.64	\$ -	\$ 3,019.64
City of Columbia	OTHR-NONRES	AE	2	\$ 35,491.40	\$ 7,097.91	\$ 42,589.31
City of Columbia	OTHR-NONRES	A	2	\$ 24,964.86	\$ -	\$ 24,964.86
City of Columbia	SINGLE FMLY	A17	2	\$ 33,196.74	\$ -	\$ 33,196.74
City of Columbia	SINGLE FMLY	A17	4	\$ 99,843.24	\$ -	\$ 99,843.24
City of Columbia	OTHR-NONRES	A17	3	\$ 115,774.20	\$ -	\$ 115,774.20
City of Columbia	OTHR-NONRES	A17	3	\$ 23,005.31	\$ 5,600.00	\$ 28,605.31
City of Columbia	SINGLE FMLY	A17	3	\$ 26,379.53	\$ 3,225.00	\$ 29,604.53
City of Columbia	OTHR-NONRES	AE	3	\$ 31,380.08	\$ -	\$ 31,380.08
Town of Mt Pleasant	SINGLE FMLY	X	2	\$ 43,816.10	\$ 7,965.46	\$ 51,781.56
Town of Mt Pleasant	SINGLE FMLY	X	2	\$ 64,870.67	\$ 3,009.50	\$ 67,880.17
City of Columbia	SINGLE FMLY	A	2	\$ 14,753.07	\$ -	\$ 14,753.07
City of Columbia	SINGLE FMLY	A	3	\$ 99,291.10	\$ -	\$ 99,291.10
Culleoka, Unincorporated	SINGLE FMLY	X	2	\$ 20,892.78	\$ 6,406.54	\$ 27,299.32
City of Spring Hill	SINGLE FMLY	X	2	\$ 16,027.81	\$ -	\$ 16,027.81

To continue compliance with the NFIP, the jurisdictions have identified, analyzed, and prioritized three mitigation strategies to stay active with the program.

1. Continue to evaluate improved standards that are proven to reduce flood damage.
2. Maintaining supplies of FEMA/NFIP materials to help homeowners evaluate measures to reduce damage.
3. Maintaining a map of areas that flood frequently and prioritizing those areas for inspection immediately following heavy rains or flooding event.