

**LAWRENCE COUNTY**  
**MISSOURI**  
**2017 Multi-Jurisdictional**  
**Natural Hazard Mitigation Plan**

*Approved December 11, 2017*



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**FEMA**

December 11, 2017

Mr. Ernie Rhodes, Director  
State Emergency Management Agency  
P. O. Box 116  
Jefferson City, Missouri 65102

**Subject: Review of the Lawrence County, Missouri Hazard Mitigation Plan**

Dear Mr. Rhodes:

The purpose of this letter is to provide the status of the above referenced Local Hazard Mitigation Plan, pursuant to the requirements of 44 CFR Part 201 - Mitigation Planning and the Local Multi-Hazard Mitigation Planning Guidance. The Local Hazard Mitigation Plan Review Tool documents the Region's review and compliance with all required elements of 44 CFR Part 201.6, as well as identifies the jurisdictions participating in the planning process. FEMA's approval will be for a period of five years effective starting with the approval date indicated below.

Prior to the expiration of the plan the community will be required to review and revise their plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval in order to continue to be eligible for mitigation project grant funding.

| Plan Name       | Date Submitted    | Date Approved     | Date of Plan Adoption | Date of Plan Expiration | Review Status |
|-----------------|-------------------|-------------------|-----------------------|-------------------------|---------------|
| Lawrence County | November 20, 2017 | December 11, 2017 | August 8, 2017        | December 11, 2022       | Approved      |

If you have any questions or concerns, please contact Joe Chandler, Planning Team Lead, at (816) 283-7071.

Sincerely,

Michael Scott  
Mitigation Division Director

# CONTRIBUTORS

## Lawrence County Hazard Mitigation Planning Committee

### Jurisdictional Representatives

| Name                    | Title                          | Department             | Jurisdiction/Agency/Organization    |
|-------------------------|--------------------------------|------------------------|-------------------------------------|
| Karen Brown             | Emergency Manager              | Emergency Management   | Lawrence County/ City of Monett     |
| Bonnie Witt-Schulte     | 911 + EMA Director             | Emergency Management   | Lawrence County                     |
| Janella Spencer         | RN Administrator               | Health Department      | Lawrence County                     |
| Brad Delay              | Sheriff                        | Sheriff's Office       | Lawrence County                     |
| David Botts             | Commissioner                   | County Commission      | Lawrence County                     |
| Tim Selvey              | Commissioner                   | County Commission      | Lawrence County                     |
| Tana Bradshaw           | Administrator                  | Health Department      | Lawrence County                     |
| Sam Goodman             | Commissioner                   | County Commission      | Lawrence County                     |
| Steve Woods             | Superintendent                 | Public Works           | City of Aurora                      |
| Mike Randall            | City Manager                   | Administration         | City of Aurora                      |
| Richard Witthuhn        | Chief of Police                | Police Department      | City of Aurora                      |
| Trent White             | Building Inspector             | Building Department    | City of Aurora                      |
| Curt Mooneyham          | Fire Captain                   | Fire Department        | City of Aurora                      |
| Robert Ward             | Fire Chief                     | Fire Department        | City of Aurora                      |
| Deborah Schoen          | City Clerk                     | Administration         | Village of Freistatt                |
| Stacie Young            | Director                       | Emergency Management   | City of Marionville                 |
| Debbie Bateman          | City Clerk                     | Administration         | City of Marionville                 |
| Donna Beck              | City Clerk                     | Administration         | City of Miller                      |
| Lori Peck               | Police Officer                 | Police Department      | City of Miller                      |
| James Smith             | Fire Chief                     | Fire Department        | City of Miller                      |
| Max Springer            | City Administrator             | Administration         | City of Mount Vernon                |
| David Hubert            | Chief of Police                | Police Department      | City of Mount Vernon                |
| Bruce Conway            | Building Officer/Zoning Admin. | Building/Zoning        | City of Mount Vernon                |
| Julie Johnson           | City Clerk                     | Administration         | City of Pierce City                 |
| Tim Jones               | Chief of Police                | Police Department      | City of Verona                      |
| Dede Hutson             | Aldermen                       | Board of Aldermen      | City of Verona                      |
| Linda Gates             | Aldermen                       | Board of Aldermen      | City of Verona                      |
| Mike Gates              | Verona Citizen                 | Verona Citizen         | City of Verona                      |
| Greg Hopkins            | Principal                      | Elementary Schools     | Marionville R-IX School District    |
| Larry Brown             | Superintendent                 | Administration         | Marionville R-IX School District    |
| Dustin Storm            | Superintendent                 | Administration         | Miller R-II School District         |
| Michael Calhoun         | Superintendent                 | Administration         | Monett R-I School District          |
| Scott Cook              | Superintendent                 | Administration         | Mt. Vernon R-V School District      |
| Russ Moreland           | Superintendent                 | Administration         | Pierce City R-VI School District    |
| Terry Winton            | Principal / Safety Director    | Verona High School     | Verona R-VII School District        |
| Cindy Rinker            | Mt. Vernon Branch Supervisor   | Mt. Vernon Branch      | Barry-Lawrence Regional Library     |
| Gary Adams              | Road Supervisor                | Administration         | Miller Benefit Special Rd. District |
| Tammy Adams             | Natural Disaster Secretary     | Administration         | Miller Benefit Special Rd. District |
| David Faucett           | Forman                         | Maintenance            | Green Benefit Special Rd. District  |
| Darrell Vandergrift Jr. | Commissioner                   | Administration         | Green Benefit Special Rd. District  |
| Justin Holder           | Commissioner                   | Administration         | Green Benefit Special Rd. District  |
| Billie Siuils           | Commissioner                   | Administration         | Buck Prairie Special Rd. District   |
| Thom Watson             | Commissioner                   | Administration         | Buck Prairie Special Rd. District   |
| Robert Schnake          | Road Supervisor                | Administration         | Mt. Vernon Special Rd. District     |
| Wayne Echols            | Commissioner                   | Administration         | Verona Benefit Special Rd District  |
| <b>Stakeholders</b>     |                                |                        |                                     |
| Shannon Scott           | Family Resource Specialist     | Lawrence County Office | OACAC                               |
| Eldon Cole              | Manager, Lawrence County       | Missouri Extension     | University of Missouri Extension    |
| Greg Hickman            | Newton County EM               | Emergency Management   | Newton County                       |

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## EXECUTIVE SUMMARY

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The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. Lawrence County and participating jurisdictions and school/special districts developed this multi-jurisdictional local hazard mitigation plan update to reduce future losses from hazard events to the County and its communities and school/special districts. The plan is an update of a plan that was approved on March 27<sup>th</sup>, 2013. The plan and the update were prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 to result in eligibility for the Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance Grant Programs.

The Lawrence County Multi-Hazard Mitigation Plan is a multi-jurisdictional plan that covers the following 18 jurisdictions that participated in the planning process:

- Lawrence County
- City of Aurora
- City of Marionville
- City of Miller
- City of Monett
- City of Mt. Vernon
- City of Pierce City
- City of Verona
- Village of Freistatt
- Marionville R-IX Schools
- Miller R-II Schools
- Monett R-I Schools
- Mt. Vernon R-V Schools
- Pierce City R-VI Schools
- Verona R-VII Schools
- Miller Benefit Special Road District
- Green Benefit Special Road District
- Barry-Lawrence Regional Library

Local jurisdictions that were invited but did not participate in the Plan include:

- Village of Halltown
- Village of Hoberg
- City of Stotts City
- Aurora R-VIII Schools
- Buck Prairie Special Road District
- Mt. Vernon Benefit Special Road District
- Verona Benefit Special Road District

When the future five-year update is developed for this plan, all jurisdictions will again be invited to participate.

Lawrence County and the entities listed above developed a Multi-Jurisdictional Hazard Mitigation Plan that was approved by FEMA on March 27<sup>th</sup>, 2013 (hereafter referred to as the *2013 Hazard Mitigation Plan*). This current planning effort serves to update that previously approved plan.

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

Based upon the risk assessment, the MPC updated goals for reducing risk from hazards. The goals are listed below:

1. Protect lives and property from the effects of natural hazards.
2. Ensure the continued operation of government and emergency services.
3. Ensure the functional operation of critical infrastructures serving the public and the local economy.

To advance the identified goals, the MPC developed recommended mitigation actions, which are detailed in Chapter 4 of this plan. The MPC developed an implementation plan for each action, which identifies priority level, background information, ideas for implementation, responsible agency, timeline, cost estimate, potential funding sources, and more.

## PREREQUISITES

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

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

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

- Lawrence County
- City of Aurora
- City of Marionville
- City of Miller
- City of Monett
- City of Mt. Vernon
- City of Pierce City
- City of Verona
- Village of Freistatt
- Marionville R-IX Schools
- Miller R-II Schools
- Monett R-I Schools
- Mt. Vernon R-V Schools
- Pierce City R-VI Schools
- Verona R-VII Schools
- Miller Benefit Special Road District
- Green Benefit Special Road District
- Barry-Lawrence Regional Library

(Local Governing Body/School District), Missouri

RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF (Local Governing Body/School District), MISSOURI ADOPTING THE LAWRENCE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN**

**WHEREAS** the (Local Governing Body/School District) recognizes the threat that natural hazards pose to people and property within Lawrence County; and

**WHEREAS** (Local Governing Body/School District) has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Lawrence County Multi-Jurisdictional Hazard Mitigation Plan, hereafter referred to as the *Plan*, in accordance with the Disaster Mitigation Act of 2000; and

**WHEREAS** the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Lawrence County from the impacts of future hazards and disasters; and

**WHEREAS**, the Missouri State Emergency Management Agency and the Federal Emergency Management Agency Region VII officials will review the “Lawrence County Multi-Jurisdictional Local Hazard Mitigation Plan,” and approve it as to form and content; and

**WHEREAS** adoption by the Lawrence County Commission demonstrates commitment to hazard mitigation and achieving the goals outlined in the *Plan*;

**NOW THEREFORE, BE IT RESOLVED** that the (Local Governing Body/School District), has adopted the Lawrence County Multi-Jurisdictional Hazard Mitigation Plan as an official plan.

ADOPTED by a vote of \_\_\_ in favor and \_\_\_ against, and \_\_\_ abstaining, this \_\_\_ day of \_\_\_\_\_.

By (Sig): \_\_\_\_\_  
Print name: \_\_\_\_\_

ATTEST:  
By (Sig.): \_\_\_\_\_  
Print name: \_\_\_\_\_

APPROVED AS TO FORM:  
By (Sig.): \_\_\_\_\_  
Print name: \_\_\_\_\_

# 1 INTRODUCTION AND PLANNING PROCESS

|       |   |     |
|-------|---|-----|
| 1     | INTRODUCTION AND PLANNING PROCESS ..... | 1.1 |
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## 1.1 PURPOSE

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Hazard Mitigation is the process of preparing for and taking action in order to reduce the long-term risk of natural disasters to financial and human consequences. Mitigation actions may be implemented prior to, during, or after a hazard event. However, it has been demonstrated that hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan that is developed before a disaster occurs (<http://www.fema.gov/what-mitigation>).

By participating in the planning process and meeting the necessary requirements to do so, communities, school districts, and other special districts become eligible to apply for mitigation grant funding. FEMA has implemented the various hazard mitigation provisions through the Code of Federal Regulations (CFR) at 44 CFR Part 201. The CFR provisions set forth the mitigation plan requirements for local and tribal governments as a condition of receiving FEMA hazard mitigation assistance. Local governments, schools, or other publicly funded districts that do not participate or adopt a hazard mitigation plan will not be eligible to apply for grants as stated under 44 CFR §201.6. Section 322 of the Robert T. Stafford Relief and Emergency Assistance Act (P.L. 93-288), as amended by the Disaster Mitigation Act of 2000 (DMA) (P.L. 106-390), provides for States, Tribes and local governments to undertake a risk-based approach to reducing risks to natural hazards through mitigation planning.

## 1.2 BACKGROUND AND SCOPE

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As required by 44 CFR §201.6(d)(3), a local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts and changes in priorities, and resubmit for approval every five (5) years in order to continue to be eligible for mitigation project grant funding. The 2017 Lawrence County Multi-Jurisdictional Natural Hazard Mitigation Plan, from here on referred to as the Plan, is a revision of the previous five-year update adopted on March 3, 2013, which was the first five year update of the original plan completed in 2005.

The Plan reflects significant changes in priorities and development since 2013, and the continued commitment of local governments to mitigate the impact of natural hazards in Lawrence County. Local jurisdictions that participated in the 2013 Plan and are continuing participation in the 2017 include:

- 
- Lawrence County
  - City of Aurora
  - City of Marionville
  - City of Miller
  - City of Mt. Vernon
  - City of Pierce City
  - City of Verona
  - Village of Freistatt
  - Marionville R-IX Schools
  - Miller R-II Schools
  - Monett R-I Schools
  - Mt. Vernon R-V Schools
  - Pierce City R-VI Schools
  - Verona R-VII Schools
  - Miller Benefit Special Road District

Local jurisdictions that did not participate in the 2013 Plan, but did participate in the 2017 update process are:

- City of Monett
- Green Benefit Special Road District
- Barry-Lawrence Regional Library

The City of Monett and Monett R-I schools also participated in the 2016 Barry County Hazard Mitigation Plan update.

Local jurisdictions that were invited, but did not participate in the Plan include:

- Village of Halltown
- Village of Hoberg
- City of Stotts City
- Aurora R-VIII Schools
- Buck Prairie Special Road District
- Mt. Vernon Benefit Special Road District
- Verona Benefit Special Road District

The local mitigation plan is the representation of the jurisdictions' commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Information in the Plan will be used to help guide and coordinate mitigation activities and decisions for local land use policy in the future.

## **1.3 PLAN ORGANIZATION**

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The Plan is organized into five chapters. The 2013 Plan included a chapter dedicated to local jurisdiction capabilities. This information has been incorporated into the Planning Area Profile and Capabilities Chapter. The format of the Plan was changed to conform to the local hazard

mitigation plan outline template released by the Missouri State Emergency Management Agency (SEMA) in September, 2016. The Plan chapters include:

- Chapter 1: Introduction and Planning Process
- Chapter 2: Planning Area Profile and Capabilities
- Chapter 3: Risk Assessment
- Chapter 4: Mitigation Strategy
- Chapter 5: Plan Implementation and Maintenance
- Appendices

**Table 1.1** summarizes the changes made in The Plan by chapter.

**Table 1.1. Changes Made in Plan Update**

| Plan Chapter           | Summary of Changes Made   |
|------------------------|---|
| Introduction           | <ul style="list-style-type: none"> <li>• General Format Changes</li> <li>• Added table identifying jurisdictional representatives that participated in the plan update.</li> <li>• Added step by step process on how the plan was updated</li> </ul>  |
| Profile & Capabilities | <ul style="list-style-type: none"> <li>• Added Geological and Karst features map</li> <li>• Critical features moved to Ch. 3</li> <li>• Added table showing Unemployment, Poverty, Education, and Language percentages</li> <li>• Historic Sites and Endangered Species list moved to Ch. 3.</li> <li>• Added table showing FEMA HMA grants approved and still pending in the county.</li> <li>• Expanded jurisdictional Profiles and Mitigation Capabilities section.</li> </ul>   |
| Risk Assessment        | <ul style="list-style-type: none"> <li>• General format updates</li> <li>• Expanded introduction section</li> <li>• Added Assets at Risk of Exposure to current population and structures</li> <li>• Added Critical Facilities Inventory of all included jurisdictions</li> <li>• Added Inventory of parks, historical sites, and endangered species.</li> <li>• Added table for Agricultural-related jobs and information and Major employers</li> <li>• Added Land Use Development section for development since previous plan and future land use expected.</li> <li>• Expanded Community Profiles for each jurisdiction.</li> </ul> |
| Mitigation Strategy    | <ul style="list-style-type: none"> <li>• Updated mitigation actions development process</li> <li>• Included actions eliminated and reason for removal</li> <li>• Updated progress made towards mitigation goals from earlier plan</li> <li>• Updated review method using STAPLEE scores</li> <li>• Discussed funding sources, lead agencies and status of continuing, revised and new actions</li> </ul>  |
| Plan Maintenance       | <ul style="list-style-type: none"> <li>• Updated the LEPC responsibilities for plan monitoring, evaluation, and implementation.</li> </ul>  |

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## 1.4 PLANNING PROCESS

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

The Southwest Missouri Council of Governments (SMCOG) was contracted to facilitate the plan development process. SMCOG staff met with the Lawrence County EMD during an initial scoping meeting to develop contact information for area stakeholders and local jurisdiction representatives in order to establish the Mitigation Planning Committee (MPC). Meeting locations and schedules were discussed, as well as determining the most effective way in informing and including the public. The planning process included the kick-off meeting and four subsequent MPC meetings. SMCOG staff were also responsible for producing the draft and final plan update in a FEMA-approvable document, and coordinating with the SEMA and FEMA plan reviews.

Specific information about agenda items for the MPC meetings are presented in Section 1.4.2. The MPC meetings on April 19, 2017, May 31, 2017, June 21, 2017, August 2, 2017, and October 4, 2017 were sent via press release to the Monett Times, Lawrence County Record, and Aurora Advertiser, the newspapers of widest distribution in the County. Meeting dates and items to be discussed for all meetings, including the kick-off meeting on April 19<sup>th</sup>, 2017, were posted on the SMCOG website in advance. Drafts of the Plan were also posted on the website for public comment during the drafting of the Plan and prior to the Plan being submitted for approval. Appendix B provides documentation of the planning process including solicitations for public involvement and meeting notices.

The preliminary draft of the plan was posted on the SMCOG website for public review and comment on July 10, 2017. A public notice was published in the Lawrence County Record and Aurora Advertiser seeking public input on the draft plan. An updated draft of the Plan was posted on the SMCOG website on August 15, 2017. A final draft of the plan was posted on the SMCOG website on November 13, 2017, prior to submitting to SEMA for approval. Input from city and county officials was solicited through distribution of drafts of plan elements for discussion and review at scheduled meetings and other communications with individual community representatives and elected officials.

Neighboring jurisdictions were notified via email and letters, a notification was sent to adjacent county Emergency Management Directors, Chambers of Commerce, local and regional agencies, such as; OACAC, Health Departments, American Red Cross, Ambulance Districts, and the University of Missouri Extension office. A complete listing of meetings, dates and neighboring agencies invited to participate in the planning process is included in Appendix B.

**Table 1.2** shows the MPC members and the entities they represent, along with their titles. This includes representatives from local jurisdictions, stakeholders, and school districts.



**Table 1.2. Jurisdictional Representatives Lawrence County Mitigation Planning Committee**

| <b>Name</b>             | <b>Title</b>                   | <b>Department</b>      | <b>Jurisdiction/Agency/Organizatio</b> |
|-------------------------|--------------------------------|------------------------|--|
| Karen Brown             | Emergency Manager              | Emergency Management   | Lawrence County/ City of Monett        |
| Bonnie Witt-Schulte     | 911 + EMA Director             | Emergency Management   | Lawrence County                        |
| Janella Spencer         | RN Administrator               | Health Department      | Lawrence County                        |
| Brad Delay              | Sheriff                        | Sheriff's Office       | Lawrence County                        |
| David Botts             | Commissioner                   | County Commission      | Lawrence County                        |
| Tim Selvey              | Commissioner                   | County Commission      | Lawrence County                        |
| Tana Bradshaw           | Administrator                  | Health Department      | Lawrence County                        |
| Sam Goodman             | Commissioner                   | County Commission      | Lawrence County                        |
| Steve Woods             | Superintendent                 | Public Works           | City of Aurora                         |
| Mike Randall            | City Manager                   | Administration         | City of Aurora                         |
| Richard Witthuhn        | Chief of Police                | Police Department      | City of Aurora                         |
| Trent White             | Building Inspector             | Building Department    | City of Aurora                         |
| Curt Mooneyham          | Fire Captain                   | Fire Department        | City of Aurora                         |
| Robert Ward             | Fire Chief                     | Fire Department        | City of Aurora                         |
| Deborah Schoen          | City Clerk                     | Administration         | Village of Freistatt                   |
| Stacie Young            | Director                       | Emergency Management   | City of Marionville                    |
| Debbie Bateman          | City Clerk                     | Administration         | City of Marionville                    |
| Donna Beck              | City Clerk                     | Administration         | City of Miller                         |
| Lori Peck               | Police Officer                 | Police Department      | City of Miller                         |
| James Smith             | Fire Chief                     | Fire Department        | City of Miller                         |
| Max Springer            | City Administrator             | Administration         | City of Mount Vernon                   |
| David Hubert            | Chief of Police                | Police Department      | City of Mount Vernon                   |
| Bruce Conway            | Building Officer/Zoning Admin. | Building/Zoning        | City of Mount Vernon                   |
| Julie Johnson           | City Clerk                     | Administration         | City of Pierce City                    |
| Tim Jones               | Chief of Police                | Police Department      | City of Verona                         |
| Dede Hutson             | Aldermen                       | Board of Aldermen      | City of Verona                         |
| Linda Gates             | Aldermen                       | Board of Aldermen      | City of Verona                         |
| Mike Gates              | Verona Citizen                 | Verona Citizen         | City of Verona                         |
| Greg Hopkins            | Principal                      | Elementary Schools     | Marionville R-IX School District       |
| Larry Brown             | Superintendent                 | Administration         | Marionville R-IX School District       |
| Dustin Storm            | Superintendent                 | Administration         | Miller R-II School District            |
| Michael Calhoun         | Superintendent                 | Administration         | Monett R-I School District             |
| Scott Cook              | Superintendent                 | Administration         | Mt. Vernon R-V School District         |
| Russ Moreland           | Superintendent                 | Administration         | Pierce City R-VI School District       |
| Terry Winton            | Principal / Safety Director    | Verona High School     | Verona R-VII School District           |
| Cindy Rinker            | Mt. Vernon Branch Supervisor   | Mt. Vernon Branch      | Barry-Lawrence Regional Library        |
| Gary Adams              | Road Supervisor                | Administration         | Miller Benefit Special Rd. District    |
| Tammy Adams             | Natural Disaster Secretary     | Administration         | Miller Benefit Special Rd. District    |
| David Faucett           | Forman                         | Maintenance            | Green Benefit Special Rd. District     |
| Darrell Vandergrift Jr. | Commissioner                   | Administration         | Green Benefit Special Rd. District     |
| Justin Holder           | Commissioner                   | Administration         | Green Benefit Special Rd. District     |
| Billie Siuils           | Commissioner                   | Administration         | Buck Prairie Special Rd. District      |
| Thom Watson             | Commissioner                   | Administration         | Buck Prairie Special Rd. District      |
| Robert Schnake          | Road Supervisor                | Administration         | Mt. Vernon Special Rd. District        |
| Wayne Echols            | Commissioner                   | Administration         | Verona Benefit Special Rd District     |
| <b>Stakeholders</b>     |                                |                        |  |
| Shannon Scott           | Family Resource Specialist     | Lawrence County Office | OACAC                                  |
| Eldon Cole              | Manager, Lawrence County       | Missouri Extension     | University of Missouri Extension       |
| Greg Hickman            | Newton County EM               | Emergency Management   | Newton County                          |

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### 1.4.1 Multi-Jurisdictional Participation

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

The Plan serves as a written document of the planning process. Active participation of local jurisdiction representatives and stakeholders in the hazard mitigation planning process is essential if the Plan is to have value. To be eligible for mitigation funding, local governments must adopt the FEMA-approved update of the Plan. The participation of the local government stakeholders in the planning process is considered critical to successful implementation of this plan. Each jurisdiction that is seeking approval for the Plan must have its governing body adopt the updated plan, regardless of the degree of modifications. SMCOG collaborated with the local governments in Lawrence County to assure participation in the planning process, and the development of a plan that represents the needs and interests of Lawrence County and its local jurisdictions. Appendix D contains resolutions for jurisdictions adopting the Plan.

County Commissioners, incorporated communities, public schools, special districts, and various other stakeholders in mitigation planning were invited to a kick-off meeting for the Plan update on April 19, 2017. At this meeting it was explained that the Disaster Mitigation Act (DMA) requires each jurisdiction participating in the planning process officially adopt the plan. The criteria for participation that each jurisdiction must meet in order to be considered a “participant” in the Plan was established at this meeting and include the following:

- Participation in at least two (2) MPC meetings, by either direct participation or authorized representation;
- Each participating jurisdiction must provide to the MPC sufficient information to support plan development by completion and return of Data Collection Questionnaires and validating/correcting critical facility inventories;
- Provide documentation to show time donated to the planning effort
- All participants should formally adopt the mitigation plan prior to submittal to SEMA and FEMA for final approval.

In order to be included in the plan as a participating jurisdiction, each jurisdiction was required to send a representative to two (2) meetings, complete a data collection questionnaire, complete in-kind time documentation, and formally adopt the plan as minimum requirements. Jurisdictions that met the minimum requirements are considered to have satisfactorily participated in the planning process. Although not required to be considered a full participant, jurisdictions were strongly encouraged to seek public input at an open public meeting or through various forms of input solicitation.

It should be noted that several jurisdictions have minimal staff and found it difficult to attend meetings or complete the requirements. Four jurisdictions had partial completion of the participation requirements, but were either unable to attend the minimum number of meetings, complete the questionnaire, or adopt a resolution.

**Table 1.3** shows the representation of each participating jurisdiction at the planning meetings and the provision of responses to the data collection questionnaire. All jurisdictions participating in the Plan either reviewed or commented on the draft Plan, participated in the update/development of mitigation actions, documented the donation of time, and passed an

adoption resolution. Meeting sign-in sheets are located in Appendix B.

**Table 1.3. Jurisdictional Participation in Planning Process**

| Jurisdiction                         | Kick-off Meeting | Meeting #2 | Meeting #3 | Meeting #4 | Meeting #5 | Data Collection Questionnaire Response | Documented Donated Time | Adoption Resolution |
|--------------------------------------|------------------|------------|------------|------------|------------|--|-------------------------|---------------------|
| Lawrence County                      | x                | x          | x          | x          | x          | x                                      | x                       | x                   |
| City of Aurora                       | x                | x          |            | x          | x          | x                                      | x                       | x                   |
| Village of Freistatt                 |                  |            |            | x          | x          | x                                      | x                       | x                   |
| City of Marionville                  |                  | x          | x          |            |            | x                                      | x                       | x                   |
| City of Miller                       | x                | x          | x          | x          | x          | x                                      | x                       | x                   |
| City of Monett                       | x                | x          | x          | x          | x          | x                                      | x                       | x                   |
| City of Mt. Vernon                   | x                | x          | x          | x          | x          | x                                      | x                       | x                   |
| City of Pierce City                  |                  |            |            | x          | x          | x                                      | x                       | x                   |
| City of Verona                       |                  |            |            | x          | x          | x                                      | x                       | x                   |
| Marionville R-IX                     |                  | x          | x          |            |            | x                                      | x                       | x                   |
| Miller R-II                          | x                | x          | x          | x          | x          | x                                      | x                       | x                   |
| Monett R-I                           | x                | x          | x          | x          |            | x                                      | x                       | x                   |
| Mount Vernon R-V                     |                  | x          | x          |            |            | x                                      | x                       | x                   |
| Pierce City R-VI                     |                  |            |            | x          | x          | x                                      | x                       | x                   |
| Verona R-VII                         |                  | x          | x          | x          | x          | x                                      | x                       | x                   |
| Green Benefit Special Road District  | x                | x          | x          | x          |            | x                                      | x                       | x                   |
| Miller Benefit Special Road District | x                | x          | x          | x          | x          | x                                      | x                       | x                   |
| Barry/Lawrence Regional Library      | x                | x          | x          | x          | x          | x                                      | x                       | x                   |

### 1.4.2 The Planning Steps

FEMA’s Local Mitigation Planning Handbook (March 1, 2013), Local Mitigation Plan Review Guide (October 1, 2011), and Integrating Hazard Mitigation into Local Planning: Case Studies and Tools for Community Officials (March 1, 2013) were used as the sources for developing the Plan update process. The development of the plan followed the 10-step planning process adapted from FEMA’s Community Rating System (CRS) and Flood Mitigation Assistance programs. The 10-step process allows the Plan to meet funding eligibility requirements of the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, Community Rating System, and Flood Mitigation Assistance Program. Table 1.4 shows how the CRS process aligns with the Nine Task Process outlined in the 2013 Local Mitigation Planning Handbook.

Following **Table 1.4** is a summary of how SMCOG staff used the Nine Task Process to develop the update to the Plan.

**Table 1.4. County Mitigation Plan Update Process**

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

**Step 1: Organize the Planning Team (Handbook Tasks 1 & 2)**

In March 2017, SMCOG entered into cooperative agreements with SEMA and Lawrence County to prepare this multi-jurisdictional plan for public entities in Lawrence County. Discussions on the development of the Lawrence County Multi-Jurisdictional Natural Hazard Mitigation Plan began on March 27<sup>th</sup>, 2017 with an introductory scoping meeting attended by SMCOG staff and the County Emergency Management Director. This meeting was conducted to discuss the timeline for developing the hazard mitigation plan, the planning process, identification of stakeholders and community organizations to include in the planning process and a date for the kick-off meeting for April 19<sup>th</sup>, 2017 to initiate participation of jurisdictions and public entities in the planning process. The Emergency Management Director (EMD) and SMCOG staff identified prospective participant representatives and stakeholders, and a contact list was prepared for mailing an invitation letter to the kick-off meeting. The list of invitees included local elected officials, municipal government staff, county government staff, emergency services personnel, public school administrators, members from health and social services organizations, utility providers, Missouri University Extension staff, EMDs from adjacent counties, and volunteer organizations. A complete list of invitees is in Appendix B.

The MPC met on several occasions from April through October 2017 to collaborate on the development of the Plan update. Participants assisted in data collection; reviewed and revised the Plan's goals, objectives and mitigation strategies; and provided reviews and comments on the Plan throughout the update process. Communication with MPC members occurred throughout the planning process through phone conversations, letters, and email correspondence in addition to committee meetings.

Table 1.5 shows the meeting schedule and items discussed for MPC meetings.

**Table 1.5. Schedule of MPC Meetings**

| <b>Meeting</b>                | <b>Topic</b>  | <b>Date</b>                    |
|-------------------------------|---|--------------------------------|
| Informational Scoping Meeting | <ul style="list-style-type: none"> <li>• Discussion of the general process of updating the Hazard Mitigation Plan</li> <li>• Prepared planning committee members and reviewed contact list</li> <li>• Planned future dates for the planning committee</li> <li>• Discussed communication with the public, stakeholders, city officials, and other jurisdictions to make aware of hazard mitigation meetings</li> </ul>                                    | March 27 <sup>th</sup> , 2017  |
| Kick-off Meeting              | <ul style="list-style-type: none"> <li>• Hazard Mitigation definition and importance</li> <li>• The Disaster Mitigation Act of 2000</li> <li>• Planning Process Summary</li> <li>• Participation Requirements for jurisdictions</li> <li>• Instructions on how to properly fill-out questionnaires and in-kind documentation</li> <li>• Future Meeting Dates</li> </ul>   | April 19 <sup>th</sup> , 2017  |
| Planning Meeting #2           | <ul style="list-style-type: none"> <li>• Planning process review</li> <li>• Information presented to analyze natural hazards based on previous occurrences within the county and potential severity</li> <li>• Review of goals, objectives, and mitigation strategies from the 2013 mitigation plan and progress made over the past five years</li> <li>• Brief discussion on potential mitigation strategies for participating jurisdictions.</li> </ul> | May 31 <sup>st</sup> , 2017    |
| Planning Meeting #3           | <ul style="list-style-type: none"> <li>• Update on progress of plan document</li> <li>• Planning process timeline</li> <li>• Mitigation Strategies</li> <li>• Discussion of the relevance of current goals, objectives, and mitigation strategies from the 2013 mitigation plan and progress made over the past five years.</li> <li>• Discussion on new mitigation strategies for participating jurisdictions.</li> </ul>                                | June 21 <sup>st</sup> , 2017   |
| Meeting #4                    | <ul style="list-style-type: none"> <li>• Update on progress of plan document</li> <li>• Local plan participation</li> <li>• Planning process overview</li> <li>• Mitigation strategies/action prioritization- STAPLEE scoring and Action work sheet completion</li> <li>• Public participation reminders and draft plan comments</li> </ul>   | August 2 <sup>nd</sup> , 2017  |
| Meeting #5                    | <ul style="list-style-type: none"> <li>• Update on progress of plan document</li> <li>• Local plan participation</li> <li>• Planning process overview</li> <li>• Discussion regarding action tracking and Action Tracker website</li> <li>• Funding and implementation mechanisms</li> <li>• Plan adoption and maintenance</li> </ul>   | October 4 <sup>th</sup> , 2017 |

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

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

Options for soliciting public input on the Plan were discussed at the MPC kick-Off Meeting held on April 19<sup>th</sup>, 2017. SMCOG staff explained the importance of public involvement during the planning process. It was determined that SMCOG staff would advertise MPC meetings through press releases to the Aurora Advertiser, Monett Times, Lawrence County Record, and KSMU radio. In addition, meeting dates and invitations were posted on the SMCOG website along with drafts of the Plan for public comment during the drafting stage and prior to submission of the Plan to SEMA for approval. Press releases were sent to local news publications, and legal notices published in the Aurora Advertiser and Lawrence County Record when the drafts of the Plan were posted to the SMCOG website for public comment during the drafting stage on August 16, 2017. A final draft of the Plan was posted on the SMCOG website on November 13, 2017 prior to being submitted to SEMA for approval. Copies of affidavits of publication for legal notices, Screen captures of the SMCOG website, and copies of press releases are included in Appendix B.

It was also discussed at the kick-off meeting that solicitation of public input would be sought by members of the MPC through announcements at gatherings and other public meetings, such as board of alderman, county commission meetings, board of education meetings and local emergency planning committee meetings. The committee did not opt to conduct a public survey due to staffing limitations.

MPC members were asked to provide SMCOG any information regarding their efforts in seeking public input and what input was collected. Miller R-II schools discussed the planning process and draft plan at a board of education meeting. There were no specific comments except that the school district and board are in support of the updated Plan. Other members stated that elected officials discussed the plan, but there was no public comment.

This plan for public involvement did not result in any public comment on the Plan. The reasons for lack of public comment is likely due to the complexity of local hazard mitigation plans and overall public complacency with local government processes.

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

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

As stated in Section 1.4, neighboring communities, businesses, academia, and other non-profit interests were notified via email and letters, a notification was sent to adjacent county Emergency Management Directors, Chambers of Commerce, local and regional agencies, such as; OACAC, Health Departments, American Red Cross, Ambulance Districts, and the University of Missouri Extension office. A complete listing of agencies invited to participate in the planning process and what meetings they were invited to attend is included in Appendix B.

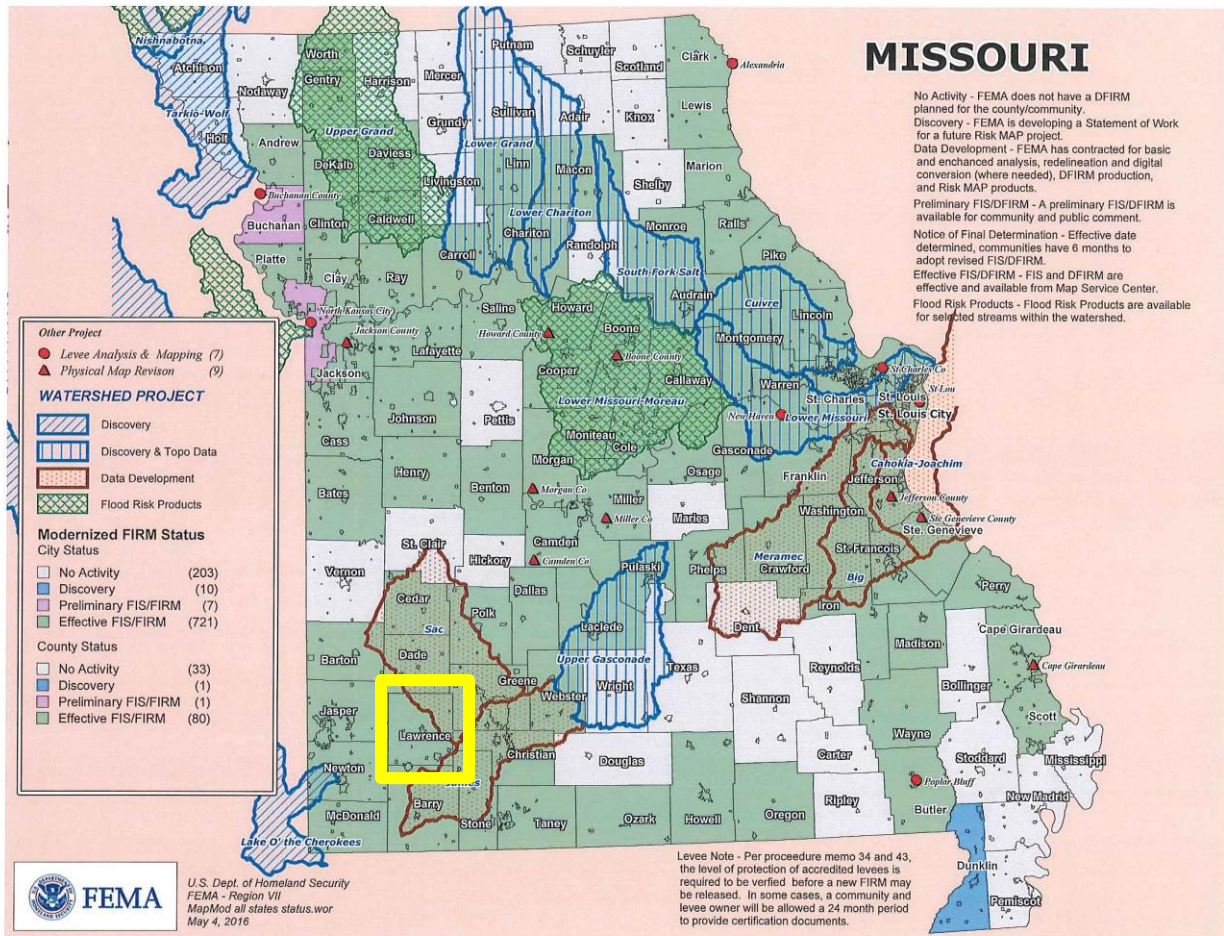
#### **Coordination with FEMA Risk MAP Project**

There was no coordination with FEMA RiskMAP projects during the update of this plan, as any ongoing efforts were unknown. It appears that Lawrence County has an effective FIRM and a portion of the planning area is currently in the data development phase of a watershed project. The James River watershed covers a large portion of Lawrence County and results of the watershed project could impact future mitigation efforts. Efforts to identify relevant projects will continue and specific action items will be integrated in the next five year update to this plan.

**Figure 1.1** displays locations of RiskMAP deployed watersheds and current projects in Missouri. Lawrence County is outlined in yellow.



**Figure 1.1. Map of RiskMAP projects**



**Integration of Other Data, Reports, Studies, and Plans**

A significant amount of information presented in the Plan has been updated and revised based on the review and incorporation of existing plans, studies, reports and technical information. Appendix A contains a listing of references to plans, studies, reports and technical information to incorporate into hazard profiles, risk assessment, profile and capability sections. A few examples of information incorporated from the review of existing plans, etc. include:

- 2013 Missouri State Hazard Mitigation Plan
- State Department of Natural Resources (DNR) dam information, the National Inventory of Dams (NID), dam inspection reports,
- Missouri Department of Conservation (MDC) wildfire statistics
- Wildland/Urban Interface and Intermix areas from the SILVIS Lab - Department of Forest Ecology and Management - University of Wisconsin

**Step 4: Assess the Hazard: Identify and Profile Hazards (Handbook Task 5)**

At the second MPC meeting on May 31, 2017, profiles of identified hazards from the State



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Hazard Mitigation Plan were presented. Storm event data from the National Climatic Data Center for the five year period since the adoption of the 2013 Lawrence County Plan were included in the hazard profiles. The presentation incorporated data from studies, reports, and technical information available through internet research. During the process of identifying hazards the MPC reviewed:

- Previous disaster declarations in the county
- Hazards in the most recent State Hazard Mitigation Plan
- Hazards identified in the previously approved hazard mitigation plan.

The MPC was asked to prioritize the identified hazards based on probability of occurrence, human impact, and property impact. Additional information about the conclusions drawn can be found in the Risk Assessment chapter of the Plan.

### ***Step 5: Assess the Problem: Identify Assets and Estimate Losses***

Identified assets in the planning area include population, structures, critical facilities and infrastructure, and other important assets that may be at risk to hazards. The inventory of assets for each jurisdiction was derived from parcel data from the Lawrence County Assessor, the Lawrence County Structures GIS dataset from MISDIS, and local jurisdiction data collection questionnaires. Potential losses to existing development were estimated based on hazard event scenarios. In most cases the county assessor's appraised improved values were used to estimate structure losses in impacted areas for structure occupancy types. The methodology for estimating losses varies by hazard. Loss estimates are included in each hazard profile of the Risk Assessment chapter.

### ***Step 6: Set Goals (Handbook Task 6)***

The MPC conducted a discussion session during their third meeting on June 21, 2017 to review and update the Plan goals. The MPC also reviewed the goals from current surrounding county plans.

In the 2013 Plan, the organization of the actions included broad goals and a set of objectives linking the actions to the goals. The MPC opted to keep the goals from the 2013 Plan while agreeing with modifications to the objective statements based on language from several surrounding area plans. The Plan update goals and objectives are as follows:

#### **Goal 1 – Protect lives and property from the effects of natural hazards.**

- ***Objective 1.1:*** *Promote public awareness of natural hazards and safety measures*
- ***Objective 1.2:*** *Provide adequate warning systems to alert the public of hazard events*
- ***Objective 1.3:*** *Provide adequate shelter for the population to reduce death and injury from hazard events*
- ***Objective 1.4:*** *Utilize prevention measures to reduce potential future loss from hazardous events*

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## **Goal 2 - Ensure the continued operation of government and emergency services.**

- **Objective 2.1** - *Strengthen multi-jurisdictional cooperation & communication among local governments, emergency services agencies, and entities responsible for critical and vulnerable facilities*
- **Objective 2.2** - *Increase and maintain appropriate emergency equipment and facilities*

## **Goal 3 - Ensure the functional operation of critical infrastructures serving the public and the local economy.**

- **Objective 3.1** - *Utilize engineered structural modifications to natural systems and public infrastructures to reduce damaging impacts of hazards*

### ***Step 7: Review Possible Mitigation Actions and Activities***

The focus of the MPC meeting on June 21, 2017 was an update of the mitigation strategies and discuss potential new strategies. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during the meeting:

- A list of actions proposed in the previous mitigation plan and discussing each individually regarding progress made and continued relevance
- Input during meetings
- Responses to Data Collection Questionnaires

Jurisdiction representatives on the MPC were encouraged to review the details of the risk assessment vulnerability analysis specific to their jurisdiction. During the meeting, few new strategies were proposed by the committee. SMCOG staff provided a draft of the goals and mitigation alternatives to the MPC at this meeting based on the review of progress towards completing the previously identified strategies.

Representatives were provided a link to the FEMA's publication, *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)*. This document was developed by FEMA as a resource for identification of a range of potential mitigation actions for reducing risk to natural hazards and disasters. MPC members were asked to provide any additional feedback to SMCOG staff prior to the next meeting.

### ***Step 8: Draft an Action Plan***

At the fourth MPC meeting on August 2, 2017, representatives were provided with pre-populated STAPLEE scoring sheets for each action item identified for their jurisdiction. The method was used to develop a priority score for proposed actions. This meeting also included action worksheets to clarify what department or position would be responsible for implementing the action, potential funding sources, timeline, and local planning mechanisms for implementation. The action plans are listed for each jurisdiction in the Mitigation Strategy chapter. MPC members worked in groups to score each action for their jurisdiction and provide information pertaining to implementing those actions on a local level. During the meeting, SMCOG staff provided an overview of scoring criteria and example action worksheets.

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***Step 9: Adopt the Plan (Handbook Task 8)***

The final meeting on October 4, 2017 provided a wrap-up and opportunity to answer any questions pertaining to plan adoption. The final plan must be approved by the governing body of each jurisdiction by resolution to be eligible for hazard mitigation assistance. Adoption resolutions are included in Appendix D.

***Step 10: Implement, Evaluate, and Revise the Plan (Handbook Tasks 7 & 9)***

At the final MPC meeting on October 4, 2017, SMCOG staff discussed the FEMA action tracker site for assistance in implementing mitigation actions. The MPC also discussed potential funding sources for mitigation projects, and the process for reviewing and monitoring the plan. The overall strategy has been updated and is presented in the Plan Maintenance chapter.

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## 2 PLANNING AREA PROFILE AND CAPABILITIES

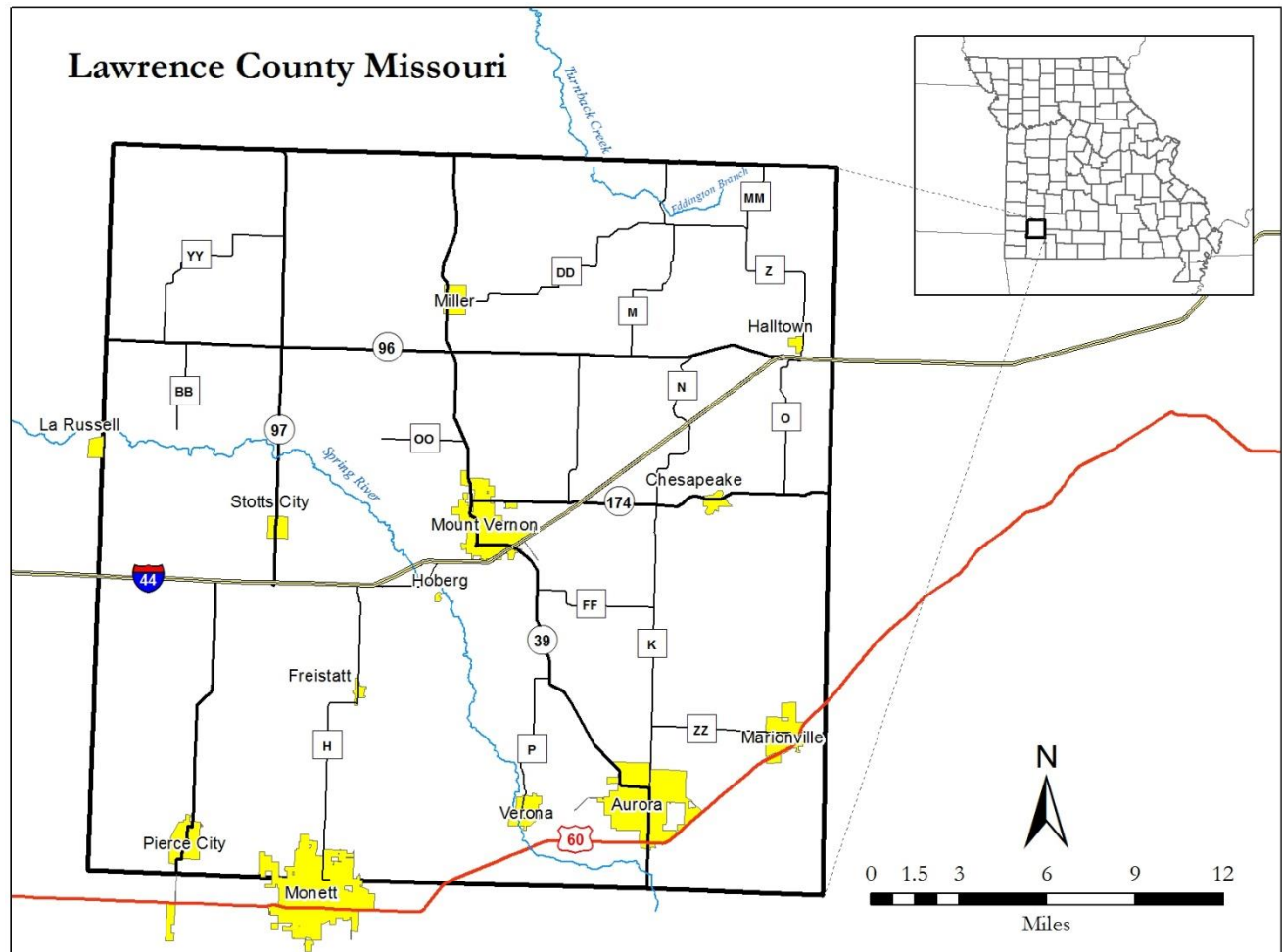
|            |  |             |
|------------|--|-------------|
| <b>2</b>   | <b>PLANNING AREA PROFILE AND CAPABILITIES .....</b>                    | <b>2.1</b>  |
| <b>2.1</b> | <b><i>Lawrence County Planning Area Profile.....</i></b>               | <b>2.2</b>  |
| 2.1.2      | Geography, Geology and Topography.....                                 | 2.2         |
| 2.1.3      | Climate .....  | 2.6         |
| 2.1.4      | Population/Demographics .....  | 2.6         |
| 2.1.5      | History .....  | 2.8         |
| 2.1.6      | Occupations .....  | 2.9         |
| 2.1.7      | Agriculture.....   | 2.10        |
| 2.1.8      | FEMA Hazard Mitigation Assistance Grants in Planning Area .....        | 2.10        |
| <b>2.2</b> | <b><i>Jurisdictional Profiles and Mitigation Capabilities.....</i></b> | <b>2.10</b> |
| 2.2.1      | Lawrence County (Unincorporated).....                                  | 2.10        |
| 2.2.2      | City of Aurora.....  | 2.13        |
| 2.2.3      | Village of Freistatt .....   | 2.16        |
| 2.2.4      | City of Marionville.....   | 2.19        |
| 2.2.5      | City of Miller .....   | 2.22        |
| 2.2.6      | City of Monett.....  | 2.25        |
| 2.2.7      | City of Mount Vernon.....  | 2.28        |
| 2.2.8      | City of Pierce City .....  | 2.31        |
| 2.2.9      | City of Verona.....  | 2.34        |
| 2.2.10     | Barry-Lawrence Regional Library District.....                          | 2.43        |
| 2.2.11     | Green Benefit Special Road District .....                              | 2.44        |
| 2.2.12     | Miller Benefit Special Road District .....                             | 2.44        |
| 2.2.13     | Public School District Profiles and Mitigation Capabilities .....      | 2.46        |

## 2.1 Lawrence County Planning Area Profile

Lawrence County is bordered by Barry, Christian, Dade, Greene, Jasper, Newton, and Stone counties in southwest Missouri.

Figure 2.1 is a map of the Lawrence County planning area that includes the cities, villages, and places. The inset on the map shows Lawrence County's location in southwest Missouri.

**Figure 2.1. Map of Lawrence County**



The total population of Lawrence County is 38,381, according to 2016 population estimates. This is a 9% increase from 2000 which is similar to the rate of growth in Missouri, but falls short of the United States percent growth of 15%. The median household income (MHI) of the county has grown 30% since 2000 coming to about \$40,500. The MHI in Lawrence County is lower than Missouri and the US, with a MHI of \$48,173 and \$53,889, respectively. Finally, the Median House Value (MHV) stands at \$98,100 in Lawrence County while Missouri stands at \$138,400 and the US at \$178,600.

### 2.1.2 Geography, Geology and Topography

Lawrence County includes 612 square miles of land and 1 square mile of water located in

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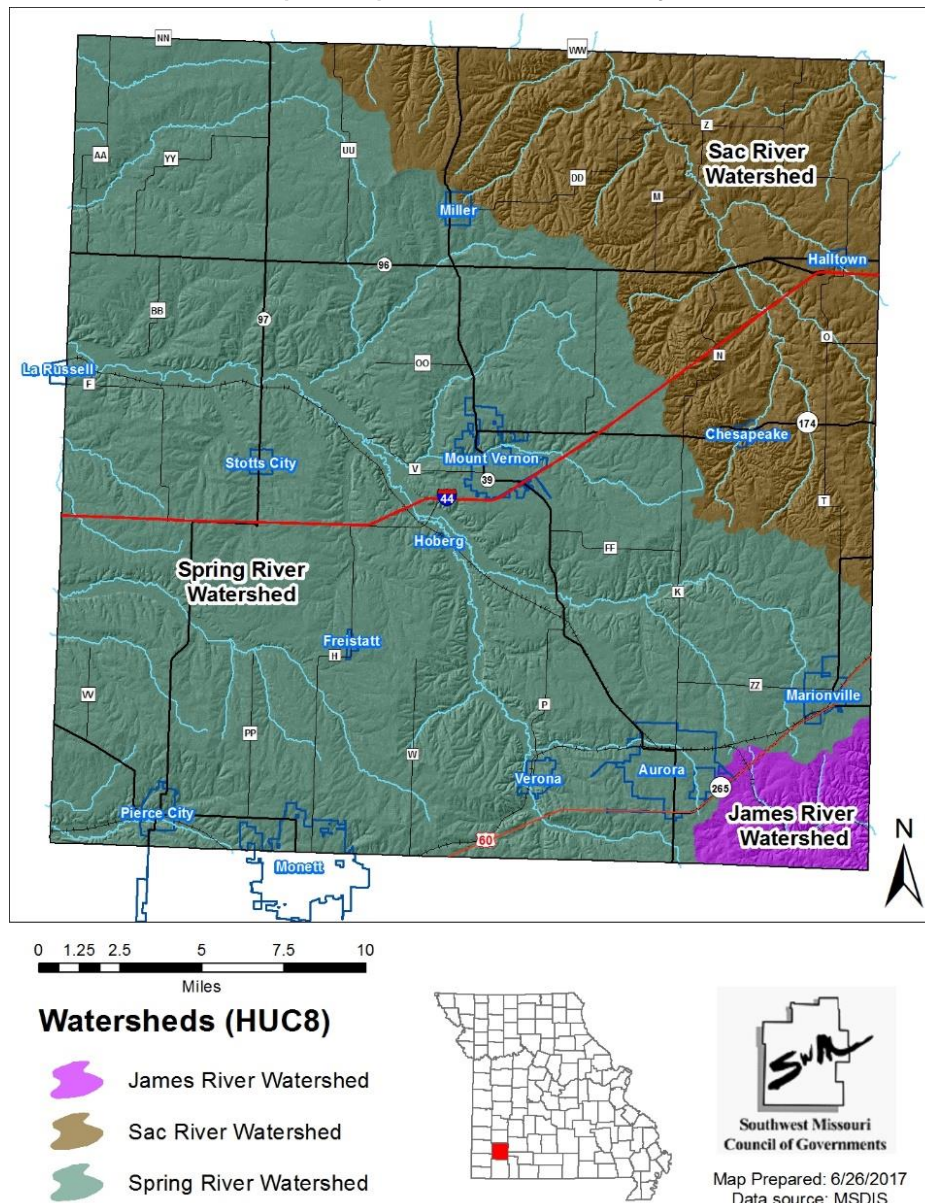
southwest Missouri. Approximately 32 percent of residents live in the unincorporated portions of the county. The county has five municipalities with populations over 1,000: Aurora, Marionville, Monett, Mt. Vernon, and Peirce City. Four of the communities experienced population increase, while one them, Peirce City, experienced population decline over the last decade. Monett and Mt. Vernon experienced a significant increase in population of 1,561 and 514, respectively.

The county is located in the southwest portion of the Ozark Highland ecoregion in Missouri. According to Nature Conservancy, the Ozark Highlands is diverse biologically and geographically with rugged hills, prairies, savannas, and open woodlands. The predominant underlying bedrock is carbonate (limestone and dolomite), giving rise to karst topographic features such as caves, underground streams, springs and sinkholes (TNC, 2003).

According to the USGS hydrologic unit codes (HUCs), Lawrence County lies within three (3) HUC 8 watersheds: The James River Basin, The Spring River Basin, and the Sac River Basin. The Spring River basin covers the majority of the county. The James River basin slightly encompasses the southeast corner of the county. The Sac River Basin is located in the Northeast portion of the county.

**Figure 2.2** is a map of HUC 8 watershed boundaries within Lawrence County.

**Figure 2.2. Watershed Boundaries (HUC 8) in Lawrence County**



The Ozark Highlands are divided into subsections of ecological land types that have similar geology, topography, climate, and vegetation patterns (Nigh and Schroeder, 2002). Lawrence County is entirely located in the Springfield Plain subsection of the Ozarks Highlands. Characteristics of this land type are described in The Atlas of Missouri Ecoregions:

Springfield Plain

**Topography** – gently undulating plain with generally low relief.

**Substrate** – Extensive Missipian aged Burlington Limestone with abundant chert; soils are primarily cherty silt loams and loams with a loess component; there are localized clay fragipan soils.

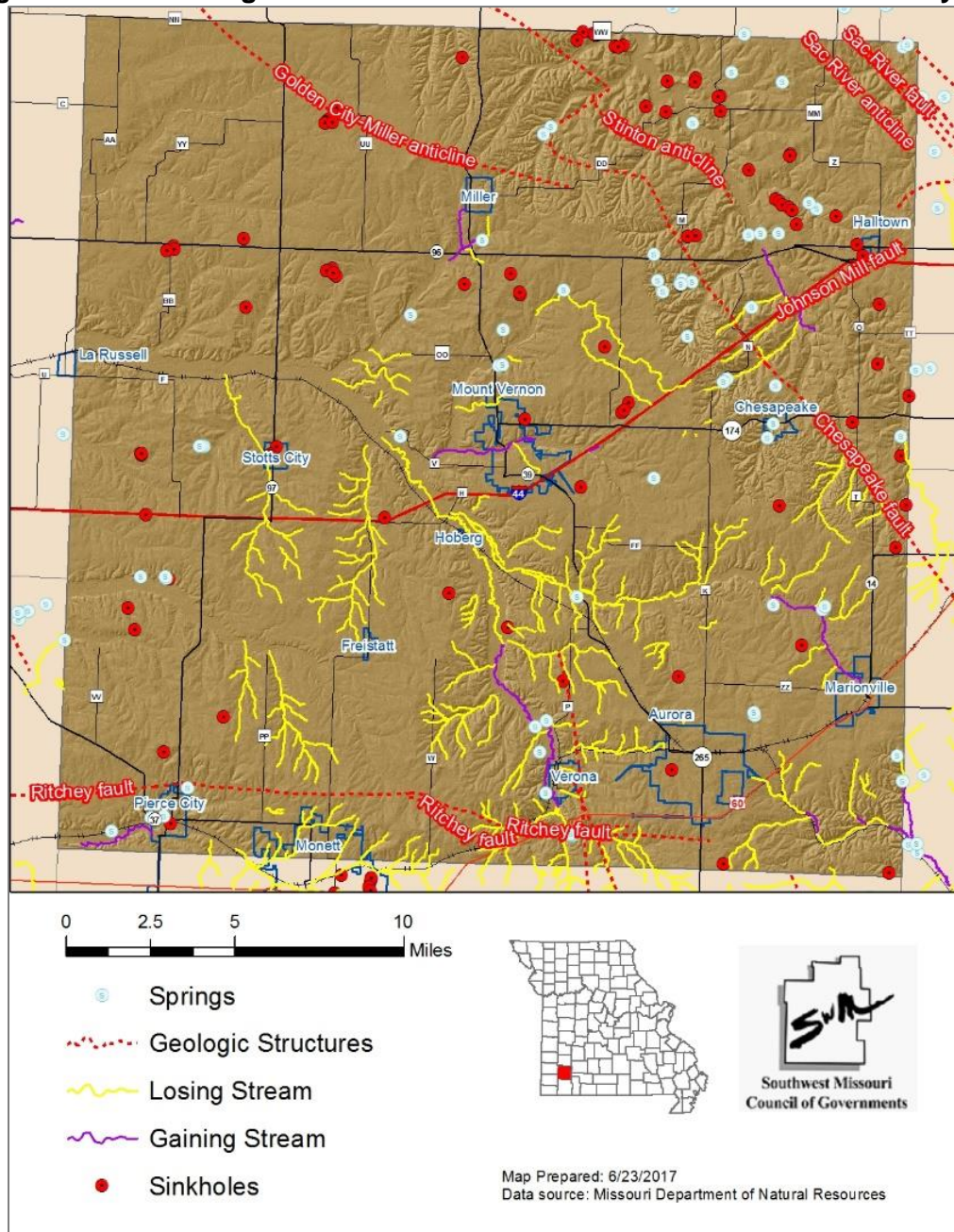
**Ecological System** – Extensive tall grass prairie areas in the higher flat regions with open savannas and oak woodlands, some on the high-base substrates, in dissected terrain and embedded limestone glades.



Much of Lawrence County is considered a sensitive karst region. Karst topography occurs in regions underlain by calcium-rich limestone or dolomite bedrock. Calcium is easily dissolved by carbonates in the air and surface waters that enter fractures and joints in the bedrock. Sinkholes, caves and losing streams are produced, which after time form a vast underground drainage network connecting surface water with underlying groundwater. Karst features represent a threat to groundwater quality as surface pollutants can easily enter the groundwater system with little filtration.

**Figure 2.3** is a map depicting geologic structures, inventory of mines, sinkholes, and springs within Lawrence County.

**Figure 2.3. Geological Features and Karst Features in Lawrence County**





## 2.1.3 Climate

Lawrence County has a continental climate with mild winters and hot summers. Based on information from the Midwest Regional Climate Center, Mt. Vernon, MO has an average annual temperature of 56 Fahrenheit. The average high in July is 78.6 Fahrenheit and the average low in January is 16.7 Fahrenheit. It averages 46.27 inches of precipitation, with snow accounting for 9.8 inches annually. Annual snow precipitation was derived from the Pierce City, MO Midwest Regional Climate Center.

## 2.1.4 Population/Demographics

**Table 2.1** provides the total county population and the populations for each city, village, and the unincorporated county for 2000, 2010, and 2015 with the number and percentage change. It should be noted that a portion of Monett falls Barry County, and population has not be parsed by county. In terms of percent change, the communities of Freistatt, Miller, Pierce City, and Verona experienced a decrease in population. Only four communities had their population increase. In terms of sheer magnitude Monett grew the largest adding 1,561 people from 2000 to 2015. Overall, the rate of growth across the county has only slightly increased since 2000.

**Table 2.1. Lawrence County Population 2000-2015 by Community**

| Jurisdiction         | 2000 Population | 2010 Population | 2015 Population | 2000-2015 # Change | 2000-2015 % Change |
|----------------------|-----------------|-----------------|-----------------|--------------------|--------------------|
| Lawrence County      | 35,204          | 38,634          | 38,244          | 3,040              | 8.6                |
| City of Aurora       | 7,014           | 7,508           | 7,473           | 459                | 6.5                |
| Village of Freistatt | 184             | 163             | 131             | -53                | -28.8              |
| City of Marionville  | 2,113           | 2,225           | 2,153           | 40                 | 1.9                |
| City of Miller       | 754             | 699             | 732             | -22                | -2.9               |
| City of Monett       | 7,396           | 8,873           | 8,957           | 1,561              | 21.1               |
| City of Mount Vernon | 4,017           | 4,575           | 4,531           | 514                | 12.8               |
| City of Pierce City  | 1,385           | 1,292           | 1,261           | -124               | -8.9               |
| City of Verona       | 714             | 619             | 591             | -123               | -17.2              |
| Unincorporated       | 11,128          | 12,231          | 12,107          | 979                | 8.8                |

Source: U.S. Bureau of the Census, Decennial Census, \*population includes the portions of these cities in adjacent counties

Lawrence County's number of most at-risk populations are slightly above the state and national averages. Children under 5 in the county, comprising 6.5 percent of the total population, is very close to state and national averages of 6.2 and 6.3 percent, respectively. The county also has a slightly higher elderly population, or those above the age of 65, at 17 percent of the population, compared to 15 percent for Missouri and 14.1 percent for the nation. In addition, Lawrence County's median age is about the same as the state and national median.

Lawrence County contains 16,573 housing units, 2,090 of which are vacant, at an average household size of 2.66, which is higher than the state, but slightly lower than the national average. **Table 2.2** provides the number of Lawrence County residents within specific age groups and a comparison of percentages with the state of Missouri and the United States.

**Table 2.2. Lawrence County Population Age Composition, Missouri, United States Comparison**

| Age Group                  | # of People | Percent | Percent Missouri | Percent United States |
|----------------------------|-------------|---------|------------------|-----------------------|
| Persons under 5 years old  | 2486        | 6.5%    | 6.2%             | 6.3%                  |
| Persons 5 to 9 years old   | 2715        | 7.1%    | 6.5%             | 6.5%                  |
| Persons 10 to 14 years old | 2830        | 7.4%    | 6.5%             | 6.5%                  |

|                            |        |       |       |       |
|----------------------------|--------|-------|-------|-------|
| Persons 15 to 19 years old | 2792   | 7.3%  | 6.7%  | 6.7%  |
| Persons 20 to 24 years old | 1912   | 5.0%  | 7.1%  | 7.1%  |
| Persons 25 to 34 years old | 4207   | 11.0% | 13.2% | 13.6% |
| Persons 35 to 44 years old | 4742   | 12.4% | 12.1% | 12.9% |
| Persons 45 to 54 years old | 5125   | 13.4% | 13.8% | 13.9% |
| Persons 55 to 59 years old | 2792   | 7.3%  | 6.9%  | 6.6%  |
| Persons 60 to 64 years old | 2180   | 5.7%  | 5.9%  | 5.8%  |
| Persons 65 to 74 years old | 3518   | 9.2%  | 8.3%  | 7.9%  |
| Persons 75 to 84 years old | 2180   | 5.7%  | 4.6%  | 4.2%  |
| Persons 85 and older       | 803    | 2.1%  | 2.0%  | 1.9%  |
| Total Population           | 38,244 | -     | -     | -     |
| Median age                 | 39.6   |       | 38.2  | 37.6  |

Source: U.S. Bureau of the Census, American Community Survey, 2011 – 2015 5-Year Estimates

The University of South Carolina developed an index to evaluate and rank the ability to respond to, cope with, recover from, and adapt to disasters. The index synthesizes 29 socioeconomic variables which research literature suggests contribute to reduction in a community’s ability to prepare for, respond to, and recover from hazards. SoVI® data sources include primarily those from the United States Census Bureau.

The index is a comparative metric that facilitates the examination of the differences in social vulnerability among counties. SoVI® is a valuable tool for policy makers and practitioners. It graphically illustrates the geographic variation in social vulnerability. It shows where there is uneven capacity for preparedness and response and where resources might be used most effectively to reduce the pre-existing vulnerability. SoVI® also is useful as an indicator in determining the differential recovery from disasters.

Lawrence County’s SoVI® score is 0.74000001, placing it in the 62.8<sup>th</sup> percentile when compared to the rest of the nation. This score means that 62.8 percent of the nation is more resilient to hazards and disasters. The main determinants of the score are qualities of the population based on race and class, wealth, elderly residents, Hispanic ethnicity, special needs individuals, Native American ethnicity, and the service industry employment.

**Table 2.3** provides additional demographic and economic indicators for Lawrence County, and incorporated communities compared to the state of Missouri and the United States. The county as a whole had a higher percentage of unemployed families living below the poverty level than the state of Missouri or the United States. In terms of education, the percentage of population in the county that were high school graduates was less than Missouri or the United States. Although the percentage of the county population that spoke a language other than English in the home is slightly higher than Missouri, it was considerably less than the United States.

**Table 2.3. Unemployment, Poverty, Education, and Language Percentage Demographics, Lawrence County, Missouri**

| Jurisdiction         | Total in Labor Force | Percent of Population Unemployed | Percent of Families Below the Poverty Level | Percentage of Population (High School graduate) | Percentage of Population (Bachelor's degree or higher) | Percentage of population (spoken language other than English) |
|----------------------|----------------------|----------------------------------|---|---|--|---|
| Lawrence County      | 17,043               | 7.0%                             | 14.5%                                       | 83.9%   | 16.8%  | 7.1%  |
| City of Aurora       | 3,495                | 10.1%                            | 14.6%                                       | 75.9%   | 13.8%  | 3.0%  |
| Village of Freistatt | 54                   | 11.1%                            | 5.6%  | 74.7%   | 11.1%  | 16.4%   |
| City of Marionville  | 914                  | 12.7%                            | 18.5%                                       | 82.3%   | 9.0%   | 1.4%  |
| City of Miller       | 310                  | 5.5%                             | 13.3%                                       | 86.2%   | 7.8%   | 0.3%  |
| City of Monett*      | 4,317                | 14.1%                            | 23.2%                                       | 75.5%   | 17.6%  | 22.4%   |
| City of Mount Vernon | 1,853                | 8.3%                             | 9.9%  | 86.4%   | 13.6%  | 0.9%  |
| City of Pierce City  | 568                  | 10.7%                            | 16.8%                                       | 81.2%   | 7.3%   | 3.5%  |
| City of Verona       | 263                  | 10.3%                            | 22.2%                                       | 66.7%   | 3.4%   | 22.6%   |
| State of Missouri    | 3,053,938            | 7.5%                             | 11.1%                                       | 88.4%   | 27.1%  | 6.0%  |
| United States        | 159,913,288          | 8.3%                             | 11.3%                                       | 86.7%   | 29.8%  | 21.0%   |

Source: U.S. Census, 2015 American Community Survey, 5-year Estimates. \*population includes the portions of these cities in adjacent counties.

## 2.1.5 History

Lawrence County was organized in 1845 out of northern Barry and southern Dade counties, with Mount Vernon designated as the county seat. It was named after Captain James Lawrence, a naval hero of the War of 1812. Earlier, this area was part of the original Greene County. The first settlers of European descent began arriving in present day Lawrence County in the early 1830s, after the removal of the Delaware Indians to Kansas. Judge John Williams was the first settler in the county circa 1831, settling about three miles northeast of Mount Vernon. Most early settlers came from Tennessee, Kentucky, Indiana, and Virginia. (<http://www.mtvernonchamber.com>).

Lawrence County is divided between Ozark forests and natural prairies. This has created a varied landscape within the county. Early settlers lived in forested areas near streams where game, water, and fish were abundant. Timber was available for the construction of shelters and fences and for fuel. Others settled on the open ranges, where the abundance of prairie grasses provided food for the cattle, work animals, and hogs (Hughes, 1982, <http://soils.missouri.edu>).

Farming was the principal industry for the early settlers in Lawrence County. At first, markets were too far away, so early farmers lived by subsistence cropping and raising livestock. The population increased slowly, and settlement was interrupted during the Civil War. (Hughes, <http://www.soils.missouri.edu>) Both Confederate and Union troops headquartered in Mt. Vernon, and over 100 different regiments either camped or passed through the county (<http://www.mtvernonchamber.com>). After the war, large numbers of farmers and businessmen came into the county, and a network of railroads was completed in the 1870s. When the open range was no longer available for livestock, the acreage of crops increased. Crops, especially wheat and corn, as well as livestock and livestock products, were produced for market. General farming produced an abundance of all of these products and led the way to a prosperous economy and rapid agricultural development. Introduced in 1905, favorable natural conditions and high prices for dairy products caused many farmers to turn to commercial dairy farming. During World War II, the commercial dairy

farm replaced the general farm as the leading farming practice.

Lead and zinc were also mined in the area. Important mines were discovered near Aurora and Stotts City in the 1880s. This added to the economy, especially in the peak production years of the 1890s (Hughes, 1982, <http://soils.missouri.edu>). By the end of WWI, most of the mines were shut down. During WWII, mining made a brief return (Lowry, *Aurora Centennial*, 1970).

After 1950, farm numbers began to decline in Lawrence County. There were 3,096 farms in 1950, and in 2002, there were only 1,873 farms in the county. Individual farm size increased though, as total farm acreage was 355,968 acres in 1950 and only dropped to 322,822 acres in 2007. Beef production greatly increased over commercial dairy farming by 2007 as over 70% of the farms were raising beef compared to 5% with dairies. The major grain crops still raised in Lawrence County are wheat, soybeans, oats, and corn (Census of Agriculture, 2007; [http://www.agcensus.usda.gov/Publications/2007/Online\\_Highlights/County\\_Profiles/Missouri/cp29109.pdf](http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Missouri/cp29109.pdf)).

### 2.1.6 Occupations

Occupation information for the Lawrence County labor force comes from the American Community Survey 5-year estimates 2011 - 2015. Management, Business, Science, and Arts Occupations includes education and healthcare practitioner and technician occupations among others. Service Occupation includes healthcare support and protective services, such as firefighters and law enforcement in addition to food preparation and personal care services. The other occupation classifications are well defined. **Table 2.4** contains occupation statistics for the incorporated cities and the county as a whole.

Lawrence County, Freistatt, Monett, and Mount Vernon have the highest percentages of management, business, science, and arts occupations while Aurora and Marionville have the highest percentages of service occupations. Percentages of sales and office occupations are highest in Marionville and Miller while Freistatt is the highest in natural resources, construction, and maintenance occupations. Production, transportation, and material moving occupations account for most occupations in Aurora, Pierce City, and Verona.

**Table 2.4. Occupation Statistics, Lawrence County, Missouri**

| Place                | Management, Business, Science, and Arts Occupations | Service Occupations | Sales and Office Occupations | Natural Resources, Construction, and Maintenance Occupations | Production, Transportation, and Material Moving Occupations |
|----------------------|---|---------------------|------------------------------|--|---|
| Lawrence County      | 28.5%   | 19.9%               | 18.2%                        | 11.9%  | 19.8%   |
| City of Aurora       | 23.8%   | 26.8%               | 16.5%                        | 8.6%   | 30.0%   |
| Village of Freistatt | 33.3%   | 12.5%               | 16.7%                        | 22.9%  | 14.6%   |
| City of Marionville  | 13.5%   | 36.0%               | 23.1%                        | 11.0%  | 16.4%   |
| City of Miller       | 19.1%   | 15.7%               | 35.1%                        | 9.9%   | 20.1%   |
| City of Monett       | 26.1%   | 21.4%               | 18.4%                        | 10.8%  | 23.2%   |
| City of Mount Vernon | 26.6%   | 24.0%               | 20.9%                        | 10.3%  | 18.5%   |
| City of Pierce City  | 23.9%   | 22.1%               | 18.5%                        | 10.7%  | 24.9%   |
| City of Verona       | 12.7%   | 21.2%               | 18.6%                        | 12.7%  | 34.7%   |

Source: U.S. Census, 2011 American Community Survey, 5-year Estimates.

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## 2.1.7 Agriculture

According to the United States Department of Agriculture (USDA) 2012 Agricultural Census, there were 1,849 farms covering 311,127 acres in Lawrence County. The average farm size was 168 acres, which was a little over half of the average farm size in Missouri at 303 acres, with a market value of \$204,905,000 of agricultural products sold. The average sales per farm is \$110,819. Of the total, only 7% was from crop sales while the other 93% came from livestock, poultry, and their products. Broilers and other meat-type chickens made up the majority of farm activities with 2,863,172 heads of meat-type chickens. Lawrence County is ranked number one in the number of livestock inventory items for cattle and calves and second in their value. In addition, 58.6% of principle operators reported a primary occupation of something other than farming. In a 2016 USDA study, 16.5% of the workforce worked in agriculture-related and agribusiness jobs.

## 2.1.8 FEMA Hazard Mitigation Assistance Grants in Planning Area

From 1993 – 2017, local governments in Lawrence County have been awarded \$4,297,699 in Hazard Mitigation Assistance grants. Hazard Mitigation Assistance in the county has been primarily used to fund the construction of safe rooms in communities and schools. **Table 2.5** lists information on Hazard Mitigation Assistance projects completed in the county.

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**Table 2.5. FEMA HMA Grants in Lawrence County from 1993-2017**

| Project Type                  | Sub applicant     | Award Date         | Project Total  |
|-------------------------------|-------------------|--------------------|----------------|
| Community Safe Room           | Monett R-I School | Approved; 8/10/10  | \$914,578      |
| Community Safe Room           | City of Monett    | Approved; 10/16/12 | \$833,349      |
| High School and Middle School | Monett R-I School | Approved; 9/26/12  | \$2,549,772    |
| Community Safe Room           | Pierce City       | Approved; 4/26/04  | \$133,000      |
| School Safe Room              | Pierce City R-IV  | Approved; 10/19/05 | \$1,076,342.56 |
| Total                         |                   |                    | \$4,757,031.56 |

Source: [FEMA Hazard Mitigation Grant Dataset](#)

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## 2.2 Jurisdictional Profiles and Mitigation Capabilities

This section will include individual profiles for each participating jurisdiction. It will also include a discussion of previous mitigation initiatives in the planning area. There will be a summary table indicating specific capabilities of each jurisdiction that relate to their ability to implement mitigation opportunities. The unincorporated county is profiled first, followed by the incorporated communities, the special districts, and the public school districts.

### 2.2.1 Lawrence County (Unincorporated)

Lawrence County's jurisdiction includes all unincorporated lands within the county boundaries. Lawrence County is classified as a Class III county in Missouri. The governing body of Lawrence County is the County Commission. The commission consists of a presiding commissioner, an eastern commissioner, and a western commissioner.

The County's elected governing body; the Board of County Commissioners directs the general administration of county government. The Commission sets broad operating policies and establishes budgets as mandated by State law. The County enters into contracts with other public agencies to ensure the smooth flow of services including law enforcement, construction and maintenance of public roads and bridges, and the operations of county offices, equipment and services. The

departments of the county government include:

- County Commission
- Circuit Clerk
- County Collector
- County Clerk
- Emergency Management
- Health Department
- Prosecuting Attorney
- Public Administrator
- Recorder of Deeds
- Sheriff
- Treasurer

Staff capabilities to mitigate the impact of natural hazards include the County Commission and the Office of Emergency Management.

The roles and responsibilities of the County Emergency Management Department (EMD) include coordinating with local government officials and cooperating private organizations to: 1) prevent avoidable disasters and reduce the vulnerability of the residents to any disaster that may strike; 2) establish capabilities for protecting citizens from the effects of disasters; 3) respond effectively to the actual occurrence of disasters; and 4) provide for recovery in the aftermath of any emergency involving extensive damage within the county. The EMD is responsible for the development and maintenance of the Local Emergency Operations Plan.

**Table 2.6** provides information about the mitigation capabilities and policies for the unincorporated county based on responses from the Data Collection Questionnaire.

**Table 2.6. Lawrence County Mitigation Capabilities**

| Capability                             | Y/N Date | Comments                  |
|--|----------|---------------------------|
| <b>Planning Capabilities</b>           |          |                           |
| Comprehensive Plan                     | No       |                           |
| Builder's Plan                         | No       |                           |
| Capital Improvement Plan               | Yes      | Continual Review          |
| Local Emergency Plan                   | N/A      |                           |
| County Emergency Plan                  | Yes      | Reviewed Bi-Annually 2015 |
| Local Recovery Plan                    | N/A      |                           |
| County Recovery Plan                   | Yes      |                           |
| Local Mitigation Plan                  | N/A      |                           |
| County Mitigation Plan                 | Yes      | Under Review              |
| Local Mitigation Plan (PDM) *          | N/A      |                           |
| County Mitigation Plan (PDM) *         | N/A      |                           |
| Debris Management Plan                 | Yes      | Part of EOP               |
| Economic Development Plan              | No       |                           |
| Transportation Plan                    | Yes      |                           |
| Land-use Plan                          | No       |                           |
| Flood Mitigation Assistance (FMA) Plan | No       |                           |

|  |             |               |
|--|-------------|---------------|
| Watershed Plan   | No          |               |
| Firewise or other fire mitigation plan                     | No          |               |
| School Mitigation Plan*                                    | N/A         |               |
| Critical Facilities Plan (Mitigation/Response/Recovery)    | Yes         | Listed in EOP |
| <b>Policies/Ordinance</b>                                  |             |               |
| Zoning Ordinance   | No          |               |
| Building Code  | No          |               |
| Floodplain Ordinance                                       | Yes         |               |
| Subdivision Ordinance                                      | No          |               |
| Tree Trimming Ordinance                                    | No          |               |
| Nuisance Ordinance   | No          |               |
| Storm Water Ordinance                                      | No          |               |
| Drainage Ordinance   | No          |               |
| Site Plan Review Requirements                              | No          |               |
| Historic Preservation Ordinance                            | No          |               |
| Landscape Ordinance  | No          |               |
| Iowa Wetlands and Riparian Areas Conservation Plan*        | No          |               |
| <b>Program</b>   |             |               |
| Zoning/Land Use Restrictions                               | No          |               |
| Codes Building Site/Design                                 | No          |               |
| National Flood Insurance Program (NFIP) Participant        | Yes         |               |
| NFIP Community Rating System (CRS) Participating Community | N/A         |               |
| Hazard Awareness Program                                   | N/A         |               |
| National Weather Service (NWS) Storm Ready                 | In Progress |               |
| Building Code Effectiveness Grading (BCEGs)                | No          |               |
| ISO Fire Rating  | N/A         |               |
| Economic Development Program                               | Yes         |               |
| Land Use Program   | No          |               |
| Public Education/Awareness                                 | Yes         |               |
| Property Acquisition                                       | No          |               |
| Planning/Zoning Boards                                     | No          |               |
| Stream Maintenance Program                                 | No          |               |
| Tree Trimming Program                                      | No          |               |
| Engineering Studies for Streams (Local/County/Regional)    | No          |               |
| Mutual Aid Agreements                                      | Yes         |               |
| <b>Studies/Reports/Maps</b>                                |             |               |
| Hazard Analysis/Risk Assessment (Local)                    | N/A         |               |
| Hazard Analysis/Risk Assessment (County)                   | Yes         | EOP / THIRA   |
| Flood Insurance Maps (FIRM)*                               | Yes         | EOP           |
| FEMA Flood Insurance Study (Detailed) *                    | Yes         | EOP           |
| Evacuation Route Map                                       | No          |               |
| Critical Facilities Inventory                              | No          |               |
| Vulnerable Population Inventory*                           | N/A         |               |
| Land Use Map*  | N/A         |               |
| <b>Staff/Department</b>                                    |             |               |

|   |     |   |
|---|-----|---|
| Building Code Official  | No  |   |
| Building Inspector  | No  |   |
| Mapping Specialist (GIS)                                      | Yes | 911 / EMA Offices                         |
| Engineer  | No  |   |
| Development Planner   | No  |   |
| Public Works Official   | No  |   |
| Emergency Management Coordinator                              | Yes |   |
| NFIP Floodplain Administrator                                 | Yes |   |
| Bomb and/or Arson Squad                                       | N/A | Mutual Aid Agreements                     |
| Emergency Response Team                                       | N/A | Mutual Aid Agreements                     |
| Hazardous Materials Expert                                    | Yes | LEPC – Monett Fire                        |
| Local Emergency Planning Committee                            | Yes |   |
| County Emergency Management Commission                        | N/A |   |
| Sanitation Department   | No  |   |
| Transportation Department                                     | No  |   |
| Economic Development Department                               | No  |   |
| Housing Department  | No  |   |
| Planning Consultant*  | N/A |   |
| Regional Planning Agencies*                                   | Yes | Southwest Missouri Council of Governments |
| Historic Preservation   | No  |   |
| <b>Non-Governmental Organizations (NGOs)</b>                  |     |   |
| American Red Cross  | Yes |   |
| Salvation Army  | No  |   |
| Veterans Groups   | Yes |   |
| Environmental Organization                                    | No  |   |
| Homeowner Associations  | N/A |   |
| Neighborhood Associations                                     | N/A |   |
| Chamber of Commerce   | N/A |   |
| Community Organizations (Lions, Kiwanis, etc.)                | Yes |   |
| <b>Local Funding Availability</b>                             |     |   |
| Ability to apply for Community Development Block Grants       | Yes |   |
| Ability to fund projects through Capital Improvements funding | Yes |   |
| Authority to levy taxes for a specific purpose                | Yes |   |
| Fees for water, sewer, gas, or electric services              | No  |   |
| Impact fees for new development                               | No  |   |
| Ability to incur debt through general obligation bonds        | Yes |   |
| Ability to incur debt through special tax bonds               | N/A |   |
| Ability to incur debt through private activities              | No  |   |
| Ability to withhold spending in hazard prone areas            | No  |   |

## 2.2.2 City of Aurora

The City of Aurora is located in the southeast portion of Lawrence County on Highway 60. It is a Third Class City with a City Manager/Council form of government. The council has 5 members.



In 2000, the population was 7,014 and grew 6.5% to 7,473 according to 2015 estimates. City departments include:

- City Manager/City Council
- City Clerk
- Building Inspector
- Building Code Official
- Public Works Official
- Emergency Management Coordinator
- NFIP Floodplain Administrator
- Engineer
- Transportation Department
- Local Emergency Management Commission

According to the U.S. Census Bureau, 15.5% of the houses in Aurora were constructed in 1939 or earlier. Additionally, in 2015, 14.6% of families in the city were below the poverty level, 16.1% of the population in Aurora was over the age of 65 and the median household income was \$36,158. Mitigation capabilities in Aurora include:

- Five (5) outdoor warning sirens
- Mutual aid agreement

**Table 2.7** provides information on the City of Aurora mitigation capabilities based on the Data Collection Questionnaire

**Table 2.7. City of Aurora Mitigation Capabilities**

| Capability                             | Y/N Date  | Comments   |
|--|-----------|--|
| <b>Planning Capabilities</b>           |           |  |
| Comprehensive Plan                     | Yes, 2008 |  |
| Builder's Plan                         | Yes, 2006 | International Building Code                      |
| Capital Improvement Plan               | N/A       |  |
| Local Emergency Plan                   | N/A       |  |
| County Emergency Plan                  | Yes       | Lawrence County HMP                              |
| Local Recovery Plan                    | N/A       |  |
| County Recovery Plan                   | N/A       |  |
| Local Mitigation Plan                  | N/A       |  |
| County Mitigation Plan                 | Yes       | Lawrence County HMP                              |
| Local Mitigation Plan (PDM) *          | N/A       |  |
| County Mitigation Plan (PDM) *         | N/A       |  |
| Debris Management Plan                 | N/A       |  |
| Economic Development Plan              | Yes       | Included in 2008 Comprehensive Plan              |
| Transportation Plan                    | Yes       | Included in 2008 Comprehensive Plan              |
| Land-use Plan                          | Yes       | Included in 2008 Comprehensive Plan              |
| Flood Mitigation Assistance (FMA) Plan | N/A       |  |
| Watershed Plan                         | Yes       | Budgeted to fund in 2017 Storm Water Master Plan |
| Firewise or other fire mitigation plan | No        | Used Firewise in the past                        |
| School Mitigation Plan*                | N/A       |  |

|  |           |   |
|--|-----------|---|
| Critical Facilities Plan (Mitigation/Response/Recovery)    | N/A       |   |
| <b>Policies/Ordinance</b>                                  |           |   |
| Zoning Ordinance   | Yes       |   |
| Building Code  | Yes, 2006 | IBC                                       |
| Floodplain Ordinance                                       | Yes       |   |
| Subdivision Ordinance                                      | Yes       |   |
| Tree Trimming Ordinance                                    | No        |   |
| Nuisance Ordinance   | Yes       |   |
| Storm Water Ordinance                                      | Yes       |   |
| Drainage Ordinance   | Yes       |   |
| Site Plan Review Requirements                              | Yes       |   |
| Historic Preservation Ordinance                            | No        |   |
| Landscape Ordinance  | No        |   |
| Iowa Wetlands and Riparian Areas Conservation Plan*        | N/A       |   |
| <b>Program</b>   |           |   |
| Zoning/Land Use Restrictions                               | Yes       |   |
| Codes Building Site/Design                                 | Yes       |   |
| National Flood Insurance Program (NFIP) Participant        | Yes       |   |
| NFIP Community Rating System (CRS) Participating Community | No        |   |
| Hazard Awareness Program                                   | N/A       | Use Tier 2 certification from state       |
| National Weather Service (NWS) Storm Ready                 | N/A       |   |
| Building Code Effectiveness Grading (BCEGs)                | N/A       |   |
| ISO Fire Rating  | 5         |   |
| Economic Development Program                               | Yes       |   |
| Land Use Program   | Yes       |   |
| Public Education/Awareness                                 | Yes       |   |
| Property Acquisition                                       | Yes       |   |
| Planning/Zoning Boards                                     | Yes       |   |
| Stream Maintenance Program                                 | N/A       |   |
| Tree Trimming Program                                      | N/A       |   |
| Engineering Studies for Streams (Local/County/Regional)    | Yes       | 2017 budgeted for Storm Water Master Plan |
| Mutual Aid Agreements                                      | Yes       |   |
| <b>Studies/Reports/Maps</b>                                |           |   |
| Hazard Analysis/Risk Assessment (Local)                    | Yes       |   |
| Hazard Analysis/Risk Assessment (County)                   | N/A       |   |
| Flood Insurance Maps (FIRM)*                               | N/A       |   |
| FEMA Flood Insurance Study (Detailed) *                    | N/A       |   |
| Evacuation Route Map                                       | N/A       |   |
| Critical Facilities Inventory                              | N/A       |   |
| Vulnerable Population Inventory                            | N/A       |   |
| Land Use Map   | Yes       |   |
| <b>Staff/Department</b>                                    |           |   |
| Building Code Official                                     | Yes       |   |
| Building Inspector   | Yes       |   |

|   |     |   |
|---|-----|---|
| Mapping Specialist (GIS)                                      | N   |   |
| Engineer  | Yes | Contracted                                |
| Development Planner   | No  |   |
| Public Works Official   | Yes |   |
| Emergency Management Coordinator                              | Yes |   |
| NFIP Floodplain Administrator                                 | Yes |   |
| Bomb and/or Arson Squad                                       | Yes | State Fire Marshall                       |
| Emergency Response Team                                       | No  |   |
| Hazardous Materials Expert                                    | N/A |   |
| Local Emergency Planning Committee                            | Yes |   |
| County Emergency Management Commission                        | N/A |   |
| Sanitation Department   | No  |   |
| Transportation Department                                     | Yes |   |
| Economic Development Department                               | No  |   |
| Housing Department  | No  |   |
| Planning Consultant*  | N/A |   |
| Regional Planning Agencies*                                   | Yes | Southwest Missouri Council of Governments |
| Historic Preservation   | No  |   |
| <b>Non-Governmental Organizations (NGOs)</b>                  |     |   |
| American Red Cross  | No  |   |
| Salvation Army  | No  |   |
| Veterans Groups   | No  |   |
| Environmental Organization                                    | No  |   |
| Homeowner Associations  | No  |   |
| Neighborhood Associations                                     | No  |   |
| Chamber of Commerce   | Yes |   |
| Community Organizations (Lions, Kiwanis, etc.)                | Yes |   |
| <b>Local Funding Availability</b>                             |     |   |
| Ability to apply for Community Development Block Grants       | Yes | Don't qualify for LMI                     |
| Ability to fund projects through Capital Improvements funding | Yes |   |
| Authority to levy taxes for a specific purpose                | Yes |   |
| Fees for water, sewer, gas, or electric services              | Yes | Yes for sewer                             |
| Impact fees for new development                               | Yes |   |
| Ability to incur debt through general obligation bonds        | Yes |   |
| Ability to incur debt through special tax bonds               | Yes |   |
| Ability to incur debt through private activities              | Yes |   |
| Ability to withhold spending in hazard prone areas            | No  |   |

### 2.2.3 Village of Freistatt

The Village of Freistatt is located in the southeast portion of Lawrence County. The government structure of the village consists of a Council with a Board Chairman and four Trustees. Freistatt is a small village that at the time of the 2000 census had 163 residents. The population estimate for Freistatt in 2015 was 131 residents. Freistatt has seen a population decrease of around -28% from 2000-2015. City departments in Freistatt include:

- Board Chairman/Board of Trustees
- Building Inspector
- Engineer
- Public Works Official
- Emergency Management Coordinator

According to the U.S. Census 2011-2015 American Community Survey, 17.1% of the houses in the village were constructed in 1939 or earlier. 5.9% of the families in the village were below poverty level and the median household income was \$21,750. Mitigation capabilities in Freistatt include:

- One (1) outdoor warning siren
- Mutual Aid agreements

**Table 2.8** provides information on the Village of Freistatt mitigation capabilities based on the Data Collection Questionnaire

**Table 2.8. Village of Freistatt Mitigation Capabilities**

| Capability  | Y/N Date | Comments                       |
|---|----------|--------------------------------|
| <b>Planning Capabilities</b>                            |          |                                |
| Comprehensive Plan                                      | Yes      | 2013                           |
| Builder's Plan  | No       |                                |
| Capital Improvement Plan                                | Yes      | Updated Annually               |
| Local Emergency Plan                                    | No       |                                |
| County Emergency Plan                                   | Yes      | 9-1-1 updates                  |
| Local Recovery Plan                                     | No       |                                |
| County Recovery Plan                                    | No       |                                |
| Local Mitigation Plan                                   | Yes      | 2013                           |
| County Mitigation Plan                                  | Yes      | 2017                           |
| Local Mitigation Plan (PDM) *                           | N/A      |                                |
| County Mitigation Plan (PDM) *                          | N/A      |                                |
| Debris Management Plan                                  | N/A      |                                |
| Economic Development Plan                               | No       |                                |
| Transportation Plan                                     | N/A      | State Hwy/County Road District |
| Land-use Plan   | No       |                                |
| Flood Mitigation Assistance (FMA) Plan                  | N/A      |                                |
| Watershed Plan  | No       |                                |
| Firewise or other fire mitigation plan                  | No       |                                |
| School Mitigation Plan*                                 | N/A      |                                |
| Critical Facilities Plan (Mitigation/Response/Recovery) | N/A      |                                |
| <b>Policies/Ordinance</b>                               |          |                                |
| Zoning Ordinance  | No       |                                |
| Building Code   | N/A      |                                |
| Floodplain Ordinance                                    | N/A      |                                |
| Subdivision Ordinance                                   | N/A      |                                |
| Tree Trimming Ordinance                                 | No       |                                |

|  |     |                             |
|--|-----|-----------------------------|
| Nuisance Ordinance   | Yes |                             |
| Storm Water Ordinance                                      | No  |                             |
| Drainage Ordinance   | No  |                             |
| Site Plan Review Requirements                              | N/A |                             |
| Historic Preservation Ordinance                            | No  |                             |
| Landscape Ordinance  | No  |                             |
| Iowa Wetlands and Riparian Areas Conservation Plan*        | N/A |                             |
| <b>Program</b>   |     |                             |
| Zoning/Land Use Restrictions                               | No  | Ordinance for land use      |
| Codes Building Site/Design                                 | N/A |                             |
| National Flood Insurance Program (NFIP) Participant        | Yes |                             |
| NFIP Community Rating System (CRS) Participating Community | N/A |                             |
| Hazard Awareness Program                                   | No  |                             |
| National Weather Service (NWS) Storm Ready                 | No  | Storm Siren                 |
| Building Code Effectiveness Grading (BCEGs)                | No  |                             |
| ISO Fire Rating  | N/A | Unknown rural FD ISO rating |
| Economic Development Program                               | No  |                             |
| Land Use Program   | No  |                             |
| Public Education/Awareness                                 | No  |                             |
| Property Acquisition                                       | No  |                             |
| Planning/Zoning Boards                                     | No  |                             |
| Stream Maintenance Program                                 | N/A |                             |
| Tree Trimming Program                                      | No  | Ordinance in place          |
| Engineering Studies for Streams (Local/County/Regional)    | N/A |                             |
| Mutual Aid Agreements                                      | Yes |                             |
| <b>Studies/Reports/Maps</b>                                |     |                             |
| Hazard Analysis/Risk Assessment (Local)                    | Yes |                             |
| Hazard Analysis/Risk Assessment (County)                   | Yes |                             |
| Flood Insurance Maps (FIRM)*                               | N/A |                             |
| FEMA Flood Insurance Study (Detailed) *                    | N/A |                             |
| Evacuation Route Map                                       | No  |                             |
| Critical Facilities Inventory                              | N/A |                             |
| Vulnerable Population Inventory                            | No  |                             |
| Land Use Map   | No  |                             |
| <b>Staff/Department</b>                                    |     |                             |
| Building Code Official                                     | No  |                             |
| Building Inspector   | Yes |                             |
| Mapping Specialist (GIS)                                   | No  |                             |
| Engineer   | Yes |                             |
| Development Planner  | No  |                             |
| Public Works Official                                      | Yes |                             |
| Emergency Management Coordinator                           | Yes | Monett 9-1-1                |
| NFIP Floodplain Administrator                              | Yes |                             |
| Bomb and/or Arson Squad                                    | No  |                             |
| Emergency Response Team                                    | No  |                             |

|   |     |   |
|---|-----|---|
| Hazardous Materials Expert                                    | No  |   |
| Local Emergency Planning Committee                            | No  |   |
| County Emergency Management Commission                        | Yes |   |
| Sanitation Department   | No  |   |
| Transportation Department                                     | No  |   |
| Economic Development Department                               | No  |   |
| Housing Department  | No  |   |
| Planning Consultant*  | No  |   |
| Regional Planning Agencies*                                   | Yes | Southwest Missouri Council of Governments |
| Historic Preservation   | No  |   |
| <b>Non-Governmental Organizations (NGOs)</b>                  |     |   |
| American Red Cross  | No  |   |
| Salvation Army  | No  |   |
| Veterans Groups   | Yes | American Legion                           |
| Environmental Organization                                    | No  |   |
| Homeowner Associations  | No  |   |
| Neighborhood Associations                                     | Yes | Neighborhood Watch                        |
| Chamber of Commerce   | No  |   |
| Community Organizations (Lions, Kiwanis, etc.)                | Yes | Lions Club                                |
| <b>Local Funding Availability</b>                             |     |   |
| Ability to apply for Community Development Block Grants       | Yes | Training Needed                           |
| Ability to fund projects through Capital Improvements funding | No  |   |
| Authority to levy taxes for a specific purpose                | Yes |   |
| Fees for water, sewer, gas, or electric services              | Yes | Water/Sewer                               |
| Impact fees for new development                               | No  |   |
| Ability to incur debt through general obligation bonds        | Yes |   |
| Ability to incur debt through special tax bonds               | Yes |   |
| Ability to incur debt through private activities              | No  |   |
| Ability to withhold spending in hazard prone areas            | No  |   |

## 2.2.4 City of Marionville

The City of Marionville is located in the southeast portion of Lawrence County. Marionville has seen a +1.9% population change between 2000 and 2015. The latest U.S. census population estimate is 2,153 residents. The governing body of Marionville consists of a mayor and a board of six (6) Aldermen. City departments include:

- Mayor/Board of Aldermen
- City Clerk
- Building Code Official
- Building Inspector
- Engineer
- Development Planner
- Public Works Official
- Emergency Management Coordinator
- NFIP Floodplain Administrator

According to the U.S. Census 2011-2015 American Community Survey, 16.1% of the houses in the city were constructed in 1939 or earlier. The median household income was \$28,438 and 18.5% of the families in the city were below the poverty level. Mitigation capabilities in Marionville include:

- Five (5) outdoor warning sirens
- Mutual Aid agreements

**Table 2.9** provides information on the City of Marionville mitigation capabilities based on the Data Collection Questionnaire

**Table 2.9. City of Marionville Mitigation Capabilities**

| Capability  | Y/N Date  | Comments                    |
|---|-----------|-----------------------------|
| <b>Planning Capabilities</b>                            |           |                             |
| Comprehensive Plan                                      | Yes       |                             |
| Builder's Plan  | N/A       |                             |
| Capital Improvement Plan                                | N/A       |                             |
| Local Emergency Plan                                    | N/A       |                             |
| County Emergency Plan                                   | N/A       |                             |
| Local Recovery Plan                                     | N/A       |                             |
| County Recovery Plan                                    | N/A       |                             |
| Local Mitigation Plan                                   | N/A       |                             |
| County Mitigation Plan                                  | Yes       | Lawrence County             |
| Local Mitigation Plan (PDM) *                           | N/A       |                             |
| County Mitigation Plan (PDM) *                          | N/A       |                             |
| Debris Management Plan                                  | N/A       |                             |
| Economic Development Plan                               | N/A       |                             |
| Transportation Plan                                     | No        |                             |
| Land-use Plan   | Yes; 1998 |                             |
| Flood Mitigation Assistance (FMA) Plan                  | Yes       |                             |
| Watershed Plan  | N/A       |                             |
| Firewise or other fire mitigation plan                  | N/A       |                             |
| School Mitigation Plan*                                 | N/A       |                             |
| Critical Facilities Plan (Mitigation/Response/Recovery) | N/A       |                             |
| <b>Policies/Ordinance</b>                               |           |                             |
| Zoning Ordinance  | Yes       |                             |
| Building Code   | Yes; 2012 | International Building Code |
| Floodplain Ordinance                                    | 7         |                             |
| Subdivision Ordinance                                   | Yes       |                             |
| Tree Trimming Ordinance                                 | No        |                             |
| Nuisance Ordinance                                      | Yes       |                             |
| Storm Water Ordinance                                   | Yes       |                             |
| Drainage Ordinance                                      | Yes       |                             |
| Site Plan Review Requirements                           | Yes       |                             |
| Historic Preservation Ordinance                         | No        |                             |
| Landscape Ordinance                                     | Yes       |                             |

|  |     |                          |
|--|-----|--------------------------|
| Iowa Wetlands and Riparian Areas Conservation Plan*        | N/A |                          |
| <b>Program</b>   |     |                          |
| Zoning/Land Use Restrictions                               | Yes |                          |
| Codes Building Site/Design                                 | Yes |                          |
| National Flood Insurance Program (NFIP) Participant        | Yes |                          |
| NFIP Community Rating System (CRS) Participating Community | N/A |                          |
| Hazard Awareness Program                                   | Yes |                          |
| National Weather Service (NWS) Storm Ready                 | Yes |                          |
| Building Code Effectiveness Grading (BCEGs)                | Yes |                          |
| ISO Fire Rating  | 7   |                          |
| Economic Development Program                               | Yes | Enhanced Enterprise Zone |
| Land Use Program   | N/A |                          |
| Public Education/Awareness                                 | No  |                          |
| Property Acquisition                                       | No  |                          |
| Planning/Zoning Boards                                     | Yes |                          |
| Stream Maintenance Program                                 | No  |                          |
| Tree Trimming Program                                      | No  |                          |
| Engineering Studies for Streams (Local/County/Regional)    | No  |                          |
| Mutual Aid Agreements                                      | Yes |                          |
| <b>Studies/Reports/Maps</b>                                |     |                          |
| Hazard Analysis/Risk Assessment (Local)                    | N/A |                          |
| Hazard Analysis/Risk Assessment (County)                   | N/A |                          |
| Flood Insurance Maps (FIRM)*                               | N/A |                          |
| FEMA Flood Insurance Study (Detailed) *                    | N/A |                          |
| Evacuation Route Map                                       | N/A |                          |
| Critical Facilities Inventory                              | No  |                          |
| Vulnerable Population Inventory                            | N/A |                          |
| Land Use Map   | Yes |                          |
| <b>Staff/Department</b>                                    |     |                          |
| Building Code Official                                     | Yes |                          |
| Building Inspector   | Yes |                          |
| Mapping Specialist (GIS)                                   | No  |                          |
| Engineer   | Yes | Part-time                |
| Development Planner  | Yes |                          |
| Public Works Official                                      | Yes |                          |
| Emergency Management Coordinator                           | Yes |                          |
| NFIP Floodplain Administrator                              | Yes |                          |
| Bomb and/or Arson Squad                                    | No  |                          |
| Emergency Response Team                                    | No  |                          |
| Hazardous Materials Expert                                 | No  |                          |
| Local Emergency Planning Committee                         | No  |                          |
| County Emergency Management Commission                     | N/A |                          |
| Sanitation Department                                      | No  |                          |
| Transportation Department                                  | No  |                          |
| Economic Development Department                            | No  |                          |



|   |     |   |
|---|-----|---|
| Housing Department  | No  |   |
| Planning Consultant*  | N/A |   |
| Regional Planning Agencies*                                   | Yes | Southwest Missouri Council of Governments |
| Historic Preservation   | No  |   |
| <b>Non-Governmental Organizations (NGOs)</b>                  |     |   |
| American Red Cross  | No  |   |
| Salvation Army  | No  |   |
| Veterans Groups   | No  |   |
| Environmental Organization                                    | No  |   |
| Homeowner Associations  | No  |   |
| Neighborhood Associations                                     | No  |   |
| Chamber of Commerce   | No  |   |
| Community Organizations (Lions, Kiwanis, etc.)                | Yes |   |
| <b>Local Funding Availability</b>                             |     |   |
| Ability to apply for Community Development Block Grants       | No  |   |
| Ability to fund projects through Capital Improvements funding | Yes |   |
| Authority to levy taxes for a specific purpose                | Yes |   |
| Fees for water, sewer, gas, or electric services              | Yes |   |
| Impact fees for new development                               | N/A |   |
| Ability to incur debt through general obligation bonds        | N/A |   |
| Ability to incur debt through special tax bonds               | N/A |   |
| Ability to incur debt through private activities              | N/A |   |
| Ability to withhold spending in hazard prone areas            | No  |   |

## 2.2.5 City of Miller

The City of Miller is located in the northern portion of Lawrence County. The 2015 population of Miller is 732. There has been a -2.9% decrease in population from 2000 to 2015. The governing body of Miller is a mayor and a city council. City departments include:

- Mayor/City council
- City Clerk
- Building Code Official
- Building Inspector
- Engineer
- Public Works Official
- Emergency Management Coordinator
- Bomb/Arson Squad
- Emergency Response Team
- Hazardous Materials Expert

According to the U.S. Census 2011-2015 American Community Survey, 29.1% of the houses in the city were constructed in 1939 or earlier. The median household income was \$35,052 and 13.3% of the families in the city were below the poverty level. Mitigation capabilities for Miller include:

- One (1) outdoor warning siren

- Mutual Aid agreements
- Part-time building inspector/code official

**Table 2.10** provides information on the City of Miller mitigation capabilities based on the Data Collection Questionnaire

**Table 2.10. City of Miller Mitigation Capabilities**

| Capability  | Y/N Date  | Comments           |
|---|-----------|--------------------|
| <b>Planning Capabilities</b>                            |           |                    |
| Comprehensive Plan                                      | No        |                    |
| Builder's Plan  | N/A       |                    |
| Capital Improvement Plan                                | Yes; 2016 | Sewer Improvements |
| Local Emergency Plan                                    | Yes; 2004 |                    |
| County Emergency Plan                                   | Yes; 2005 |                    |
| Local Recovery Plan                                     | Yes; 2005 | Adopted County     |
| County Recovery Plan                                    | Yes; 2005 |                    |
| Local Mitigation Plan                                   | N/A       |                    |
| County Mitigation Plan                                  | N/A       |                    |
| Local Mitigation Plan (PDM) *                           | N/A       |                    |
| County Mitigation Plan (PDM) *                          | N/A       |                    |
| Debris Management Plan                                  | N/A       |                    |
| Economic Development Plan                               | N/A       |                    |
| Transportation Plan                                     | N/A       |                    |
| Land-use Plan   | N/A       |                    |
| Flood Mitigation Assistance (FMA) Plan                  | N/A       |                    |
| Watershed Plan  | N/A       |                    |
| Firewise or other fire mitigation plan                  | N/A       |                    |
| School Mitigation Plan*                                 | N/A       |                    |
| Critical Facilities Plan (Mitigation/Response/Recovery) | N/A       |                    |
| <b>Policies/Ordinance</b>                               |           |                    |
| Zoning Ordinance  | No        |                    |
| Building Code   | Yes       | 1996               |
| Floodplain Ordinance                                    | No        |                    |
| Subdivision Ordinance                                   | No        |                    |
| Tree Trimming Ordinance                                 | Yes       |                    |
| Nuisance Ordinance                                      | Yes       |                    |
| Storm Water Ordinance                                   | Yes       |                    |
| Drainage Ordinance                                      | N/A       |                    |
| Site Plan Review Requirements                           | N/A       |                    |
| Historic Preservation Ordinance                         | N/A       |                    |
| Landscape Ordinance                                     | N/A       |                    |
| Iowa Wetlands and Riparian Areas Conservation Plan*     | N/A       |                    |
| <b>Program</b>  |           |                    |
| Zoning/Land Use Restrictions                            | Yes       |                    |
| Codes Building Site/Design                              | Yes       |                    |

|  |     |  |
|--|-----|--|
| National Flood Insurance Program (NFIP) Participant        | N/A |  |
| NFIP Community Rating System (CRS) Participating Community | N/A |  |
| Hazard Awareness Program                                   | Yes |  |
| National Weather Service (NWS) Storm Ready                 | No  |  |
| Building Code Effectiveness Grading (BCEGs)                | Yes | Building Inspector                           |
| ISO Fire Rating  | 7   |  |
| Economic Development Program                               | No  |  |
| Land Use Program   | No  |  |
| Public Education/Awareness                                 | Yes | Newsletters – Bulletin Board,<br>Facebook    |
| Property Acquisition                                       | N/A |  |
| Planning/Zoning Boards                                     | No  |  |
| Stream Maintenance Program                                 | N/A |  |
| Tree Trimming Program                                      | N/A |  |
| Engineering Studies for Streams (Local/County/Regional)    | N/A |  |
| Mutual Aid Agreements                                      | Yes | Local Cities                                 |
| <b>Studies/Reports/Maps</b>                                |     |  |
| Hazard Analysis/Risk Assessment (Local)                    | No  |  |
| Hazard Analysis/Risk Assessment (County)                   | No  |  |
| Flood Insurance Maps (FIRM)*                               | N/A |  |
| FEMA Flood Insurance Study (Detailed) *                    | N/A |  |
| Evacuation Route Map                                       | No  |  |
| Critical Facilities Inventory                              | N/A |  |
| Vulnerable Population Inventory                            | No  |  |
| Land Use Map   | No  |  |
| <b>Staff/Department</b>                                    |     |  |
| Building Code Official                                     | Yes | Part-time                                    |
| Building Inspector   | Yes | Part-time                                    |
| Mapping Specialist (GIS)                                   | No  |  |
| Engineer   | Yes | Part-time                                    |
| Development Planner  | No  |  |
| Public Works Official                                      | Yes | Part-time                                    |
| Emergency Management Coordinator                           | Yes | Part-time                                    |
| NFIP Floodplain Administrator                              | No  |  |
| Bomb and/or Arson Squad                                    | Yes | Part-time                                    |
| Emergency Response Team                                    | Yes | Part-time                                    |
| Hazardous Materials Expert                                 | Yes | Part-time                                    |
| Local Emergency Planning Committee                         | No  |  |
| County Emergency Management Commission                     | Yes | Part-time                                    |
| Sanitation Department                                      | N/A |  |
| Transportation Department                                  | N/A |  |
| Economic Development Department                            | N/A |  |
| Housing Department   | N/A |  |
| Planning Consultant*                                       | N/A |  |
| Regional Planning Agencies*                                | Yes | Southwest Missouri Council of<br>Governments |

|   |     |              |
|---|-----|--------------|
| Historic Preservation   | N/A |              |
| <b>Non-Governmental Organizations (NGOs)</b>                  |     |              |
| American Red Cross  | No  |              |
| Salvation Army  | No  |              |
| Veterans Groups   | Yes | Am Legion    |
| Environmental Organization                                    | No  |              |
| Homeowner Associations  | No  |              |
| Neighborhood Associations                                     | No  |              |
| Chamber of Commerce   | No  |              |
| Community Organizations (Lions, Kiwanis, etc.)                | Yes | Lions Club   |
| <b>Local Funding Availability</b>                             |     |              |
| Ability to apply for Community Development Block Grants       | Yes |              |
| Ability to fund projects through Capital Improvements funding | Yes |              |
| Authority to levy taxes for a specific purpose                | Yes |              |
| Fees for water, sewer, gas, or electric services              | Yes | Water, sewer |
| Impact fees for new development                               | No  |              |
| Ability to incur debt through general obligation bonds        | Yes |              |
| Ability to incur debt through special tax bonds               | Yes |              |
| Ability to incur debt through private activities              | No  |              |
| Ability to withhold spending in hazard prone areas            | N/A |              |

## 2.2.6 City of Monett

Monett is located in the southern portion of Lawrence County and is the largest city within the county, with a population of 8,957. Monett resides in both Barry and Lawrence Counties. According to the U.S. Census, Monett had a population of 7,396 in 2000, and 8,957 in 2015. Monett has seen an increase of 21.1% from 2000 to 2015. The governing body of Monett includes a mayor and two council members. The city departments include:

A portion of Monett lies in Lawrence County, while a portion also lies in Barry County.

- Mayor/City Council
- City Clerk
- Police Department
- City Collector
- Parks and Recreation
- Airport
- Planning and Zoning
- Utilities
- Human Resources
- Emergency Management
- Sanitation
- Fire Department
- Street Department
- Building Inspector
- Building Code Official

According to the U.S. Census 2011-2015 American Community Survey, 21.1% of the houses

in the city were constructed in 1939 or earlier. The median household income was \$36,872 and 23.2% of the families in the city were below the poverty level. Mitigation capabilities in Monett include:

- Eight (8) outdoor warning sirens
- Schools designated as storm shelters/saferooms
- Mutual Aid agreements

**Table 2.11** provides information on the City of Monett mitigation capabilities based on the Data Collection Questionnaire

**Table 2.11. City of Monett Mitigation Capabilities**

| Capability  | YES/NO Date | Comments                    |
|---|-------------|-----------------------------|
| <b>Planning Capabilities</b>                            |             |                             |
| Comprehensive Plan                                      | N/A         |                             |
| Builder's Plan  | N/A         |                             |
| Capital Improvement Plan                                | Yes         | Reviewed yearly             |
| Local Emergency Plan                                    | Yes         | Review October 2015         |
| County Emergency Plan                                   | N/A         |                             |
| Local Recovery Plan                                     | Yes         | EOP                         |
| County Recovery Plan                                    | N/A         |                             |
| Local Mitigation Plan                                   | N/A         | EOP                         |
| County Mitigation Plan                                  | N/A         |                             |
| Local Mitigation Plan (PDM) *                           | N/A         | Refer to County Plan        |
| County Mitigation Plan (PDM) *                          | N/A         |                             |
| Debris Management Plan                                  | Yes         | Part of EOP                 |
| Economic Development Plan                               | No          |                             |
| Transportation Plan                                     | Yes         | 8/2015 On-going development |
| Land-use Plan   | Yes         | 1997                        |
| Flood Mitigation Assistance (FMA) Plan                  | No          |                             |
| Watershed Plan  | No          |                             |
| Firewise or other fire mitigation plan                  | No          |                             |
| School Mitigation Plan*                                 | N/A         |                             |
| Critical Facilities Plan (Mitigation/Response/Recovery) | Yes         | Listed in EOP               |
| <b>Policies/Ordinance</b>                               |             |                             |
| Zoning Ordinance  | Yes         |                             |
| Building Code   | Yes         | IBC, 2006                   |
| Floodplain Ordinance                                    | Yes 2000    |                             |
| Subdivision Ordinance                                   | Yes         |                             |
| Tree Trimming Ordinance                                 | Yes         | Ordinance #3225             |
| Nuisance Ordinance                                      | Yes         |                             |
| Storm Water Ordinance                                   | Yes         | 1994                        |
| Drainage Ordinance                                      | No          |                             |
| Site Plan Review Requirements                           | Yes         |                             |
| Historic Preservation Ordinance                         | No          |                             |
| Landscape Ordinance                                     | Yes         |                             |

|  |     |                   |
|--|-----|-------------------|
| Iowa Wetlands and Riparian Areas Conservation Plan*        | N/A |                   |
| <b>Program</b>   |     |                   |
| Zoning/Land Use Restrictions                               | Yes |                   |
| Codes Building Site/Design                                 | Yes |                   |
| National Flood Insurance Program (NFIP) Participant        | Yes |                   |
| NFIP Community Rating System (CRS) Participating Community | N/A |                   |
| Hazard Awareness Program                                   | No  |                   |
| National Weather Service (NWS) Storm Ready                 | Yes |                   |
| Building Code Effectiveness Grading (BCEGs)                | 9   |                   |
| ISO Fire Rating  | 4   |                   |
| Economic Development Program                               | No  |                   |
| Land Use Program   | No  | Under Development |
| Public Education/Awareness                                 | Yes |                   |
| Property Acquisition                                       | No  |                   |
| Planning/Zoning Boards                                     | Yes |                   |
| Stream Maintenance Program                                 | N/A |                   |
| Tree Trimming Program                                      | Yes |                   |
| Engineering Studies for Streams (Local/County/Regional)    | N/A |                   |
| Mutual Aid Agreements                                      | Yes |                   |
| <b>Studies/Reports/Maps</b>                                |     |                   |
| Hazard Analysis/Risk Assessment (Local)                    | Yes | EOP / THIRA       |
| Hazard Analysis/Risk Assessment (County)                   | N/A |                   |
| Flood Insurance Maps (FIRM)*                               | N/A |                   |
| FEMA Flood Insurance Study (Detailed) *                    | N/A |                   |
| Evacuation Route Map                                       | Yes | EOP               |
| Critical Facilities Inventory                              | Yes | EOP               |
| Vulnerable Population Inventory                            | No  |                   |
| Land Use Map   | Yes | 1997              |
| <b>Staff/Department</b>                                    |     |                   |
| Building Code Official                                     | Yes | Full-time         |
| Building Inspector   | Yes | Full-time         |
| Mapping Specialist (GIS)                                   | Yes | Part-time         |
| Engineer   | Yes | Contracted        |
| Development Planner  | No  |                   |
| Public Works Official                                      | Yes | Full-time         |
| Emergency Management Coordinator                           | Yes | Full-time         |
| NFIP Floodplain Administrator                              | Yes | Full-time         |
| Bomb and/or Arson Squad                                    | No  | Mutual Aid        |
| Emergency Response Team                                    | Yes | CERT              |
| Hazardous Materials Expert                                 | Yes | Full-time         |
| Local Emergency Planning Committee                         | Yes | Volunteer         |
| County Emergency Management Commission                     | N/A |                   |
| Sanitation Department                                      | Yes | Full-time         |
| Transportation Department                                  | No  |                   |
| Economic Development Department                            | Yes | Full-time         |

|   |     |   |
|---|-----|---|
| Housing Department  | No  |   |
| Planning Consultant*  | N/A |   |
| Regional Planning Agencies*                                   | Yes | Southwest Missouri Council of Governments |
| Historic Preservation   | No  |   |
| <b>Non-Governmental Organizations (NGOs)</b>                  |     |   |
| American Red Cross  | Yes |   |
| Salvation Army  | No  |   |
| Veterans Groups   | Yes |   |
| Environmental Organization                                    | No  |   |
| Homeowner Associations  | Yes |   |
| Neighborhood Associations                                     | No  |   |
| Chamber of Commerce   | Yes |   |
| Community Organizations (Lions, Kiwanis, etc.)                | Yes | LIONS, JAYCEES, KIWANIS, KOC              |
| <b>Local Funding Availability</b>                             |     |   |
| Ability to apply for Community Development Block Grants       | Yes |   |
| Ability to fund projects through Capital Improvements funding | Yes |   |
| Authority to levy taxes for a specific purpose                | Yes |   |
| Fees for water, sewer, gas, or electric services              | Yes |   |
| Impact fees for new development                               | Yes |   |
| Ability to incur debt through general obligation bonds        | Yes |   |
| Ability to incur debt through special tax bonds               | Yes |   |
| Ability to incur debt through private activities              | Yes |   |
| Ability to withhold spending in hazard prone areas            | Yes |   |

## 2.2.7 City of Mount Vernon

The City of Mount Vernon is centrally located in Lawrence County along I-44. The 2015 population for Mount Vernon is estimated at 4,531, which is a 12.8% increase since 2000. The governing body of Mount Vernon includes a mayor and eight city council members. City departments include:

- Mayor/City Council
- City Administrator
- City Clerk
- Building Code Official
- Building Inspector
- Public Works Official
- Emergency Management Coordinator
- NFIP Floodplain Administrator
- Sanitation Department
- Transportation Department
- Economic Development Department

According to the U.S. Census 2011-2015 American Community Survey, 11.5% of the houses in the city were constructed in 1939 or earlier. The median household income was \$32,975 and 9.9% of the families in the city were below the poverty level. Mitigation capabilities for Mount Vernon include:

- Eight (8) outdoor warning sirens
- Mutual Aid agreements

**Table 2.12** provides information on the City of Verona mitigation capabilities based on the Data Collection Questionnaire

**Table 2.12. City of Mount Vernon Mitigation Capabilities**

| Capability  | Y/N Date       | Comments   |
|---|----------------|--|
| <b>Planning Capabilities</b>                            |                |  |
| Comprehensive Plan                                      | Yes; 2008      | Last updated in 2014   |
| Builder's Plan  | Yes; 2006      | International Building Code  |
| Capital Improvement Plan                                | Yes            | Updated each year  |
| Local Emergency Plan                                    | Yes            | Updated in 2012 and currently being updated                            |
| County Emergency Plan                                   | Yes            |  |
| Local Recovery Plan                                     | Yes            |  |
| County Recovery Plan                                    | Yes            |  |
| Local Mitigation Plan                                   | Yes            |  |
| County Mitigation Plan                                  | Yes            |  |
| Local Mitigation Plan (PDM) *                           | Yes            |  |
| County Mitigation Plan (PDM) *                          | Yes            |  |
| Debris Management Plan                                  | Yes            |  |
| Economic Development Plan                               | Yes            |  |
| Transportation Plan                                     | No             |  |
| Land-use Plan   | Yes            |  |
| Flood Mitigation Assistance (FMA) Plan                  | No             |  |
| Watershed Plan  | No             |  |
| Firewise or other fire mitigation plan                  | No             |  |
| School Mitigation Plan*                                 | N/A            |  |
| Critical Facilities Plan (Mitigation/Response/Recovery) | No             |  |
| <b>Policies/Ordinance</b>                               |                |  |
| Zoning Ordinance  | Yes            |  |
| Building Code   | Version 2006   |  |
| Floodplain Ordinance                                    | Yes 3/26, 1975 |  |
| Subdivision Ordinance                                   | Yes            |  |
| Tree Trimming Ordinance                                 | No             |  |
| Nuisance Ordinance                                      | Yes            |  |
| Storm Water Ordinance                                   | No             | Storm Water regulations are included in the Sub-Division Regulations   |
| Drainage Ordinance                                      | No             | Drainage is covered in Zoning Regulations and Sub-division regulations |
| Site Plan Review Requirements                           | Yes            |  |
| Historic Preservation Ordinance                         | No             |  |
| Landscape Ordinance                                     | No             |  |
| Iowa Wetlands and Riparian Areas Conservation Plan*     | N/A            |  |



| <b>Program</b>   |     |                                      |
|--|-----|--------------------------------------|
| Zoning/Land Use Restrictions                               | Yes |                                      |
| Codes Building Site/Design                                 | Yes |                                      |
| National Flood Insurance Program (NFIP) Participant        | Yes |                                      |
| NFIP Community Rating System (CRS) Participating Community | No  |                                      |
| Hazard Awareness Program                                   | N/A |                                      |
| National Weather Service (NWS) Storm Ready                 | No  |                                      |
| Building Code Effectiveness Grading (BCEGs)                | No  |                                      |
| ISO Fire Rating  | 6   |                                      |
| Economic Development Program                               | Yes |                                      |
| Land Use Program   | Yes |                                      |
| Public Education/Awareness                                 | No  |                                      |
| Property Acquisition                                       | No  |                                      |
| Planning/Zoning Boards                                     | Yes |                                      |
| Stream Maintenance Program                                 | Yes |                                      |
| Tree Trimming Program                                      | Yes |                                      |
| Engineering Studies for Streams (Local/County/Regional)    | No  |                                      |
| Mutual Aid Agreements                                      | Yes |                                      |
| <b>Studies/Reports/Maps</b>                                |     |                                      |
| Hazard Analysis/Risk Assessment (Local)                    | Yes |                                      |
| Hazard Analysis/Risk Assessment (County)                   | Yes |                                      |
| Flood Insurance Maps (FIRM)*                               | N/A |                                      |
| FEMA Flood Insurance Study (Detailed) *                    | N/A |                                      |
| Evacuation Route Map                                       | No  |                                      |
| Critical Facilities Inventory                              | Yes |                                      |
| Vulnerable Population Inventory                            | Yes |                                      |
| Land Use Map   | Yes |                                      |
| <b>Staff/Department</b>                                    |     |                                      |
| Building Code Official                                     | Yes | Full-time                            |
| Building Inspector   | Yes | Full-time                            |
| Mapping Specialist (GIS)                                   | No  |                                      |
| Engineer   | No  |                                      |
| Development Planner  | No  |                                      |
| Public Works Official                                      | Yes | Full-time                            |
| Emergency Management Coordinator                           | Yes | Full-time (Police Chief)             |
| NFIP Floodplain Administrator                              | Yes | Full-time (Code Enforcement Officer) |
| Bomb and/or Arson Squad                                    | No  |                                      |
| Emergency Response Team                                    | No  | Handled by Fire Department           |
| Hazardous Materials Expert                                 | No  | Handled by Fire Department           |
| Local Emergency Planning Committee                         | No  |                                      |
| County Emergency Management Commission                     | No  |                                      |
| Sanitation Department                                      | Yes | Full-time Contracted out             |
| Transportation Department                                  | Yes | Full-time                            |
| Economic Development Department                            | Yes | Full-time (City Administrator)       |
| Housing Department   | No  |                                      |

|   |     |  |
|---|-----|--|
| Planning Consultant*  | N/A |  |
| Regional Planning Agencies*                                   | Yes | Southwest Missouri Council of Governments                          |
| Historic Preservation   | No  |  |
| <b>Non-Governmental Organizations (NGOs)</b>                  |     |  |
| American Red Cross  | No  | Closest is in Springfield  |
| Salvation Army  | No  | Closest is in Springfield  |
| Veterans Groups   | Yes | VFW and American Legion  |
| Environmental Organization                                    | No  |  |
| Homeowner Associations  | No  |  |
| Neighborhood Associations                                     | No  |  |
| Chamber of Commerce   | Yes | Full-time  |
| Community Organizations (Lions, Kiwanis, etc.)                | Yes | Rotary Club, Community Betterment, Emergency Services for Children |
| <b>Local Funding Availability</b>                             |     |  |
| Ability to apply for Community Development Block Grants       | Yes |  |
| Ability to fund projects through Capital Improvements funding | Yes |  |
| Authority to levy taxes for a specific purpose                | Yes |  |
| Fees for water, sewer, gas, or electric services              | Yes |  |
| Impact fees for new development                               | Yes |  |
| Ability to incur debt through general obligation bonds        | Yes |  |
| Ability to incur debt through special tax bonds               | Yes |  |
| Ability to incur debt through private activities              | Yes |  |
| Ability to withhold spending in hazard prone areas            | N/A |  |

## 2.2.8 City of Pierce City

Pierce City is located in the southwest portion of Lawrence County. Pierce City has seen a -8.9% decrease between 2000 and 2015. The U.S. Census puts Pierce City's 2000 population at 1,385, and its 2015 population at 1,292. The governing body of Pierce City includes a mayor and an eight member board aldermen. City departments include:

- Mayor/Board of Aldermen
- City Clerk
- Building Inspector
- Public Works Official
- NFIP Floodplain Administrator
- Emergency Response Team

According to the U.S. Census, 27.1% of the housing units in Pierce City were built in 1939 or earlier. Additionally, 16.2% of the population is over the age of 65, the median household income in 2010 was \$37,679, and 16.8% of the families in Pierce City were living below the poverty level. Mitigation capabilities for Pierce City include:

- FEMA approved school shelters
- Three (3) outdoor warning sirens

**Table 2.13** provides information on the City of Pierce City mitigation capabilities based on the Data Collection Questionnaire

**Table 2.13. City of Pierce City Mitigation Capabilities**

| Capability   | Y/N Date | Comments             |
|--|----------|----------------------|
| <b>Planning Capabilities</b>                               |          |                      |
| Comprehensive Plan   | No       |                      |
| Builder's Plan   | No       |                      |
| Capital Improvement Plan                                   | No       |                      |
| Local Emergency Plan                                       | No       |                      |
| County Emergency Plan                                      | N/A      |                      |
| Local Recovery Plan  | No       |                      |
| County Recovery Plan                                       | N/A      |                      |
| Local Mitigation Plan                                      | No       |                      |
| County Mitigation Plan                                     | N/A      |                      |
| Local Mitigation Plan (PDM) *                              | N/A      |                      |
| County Mitigation Plan (PDM) *                             | Yes      |                      |
| Debris Management Plan                                     | N/A      |                      |
| Economic Development Plan                                  | No       |                      |
| Transportation Plan  | No       |                      |
| Land-use Plan  | No       | Has zoning           |
| Flood Mitigation Assistance (FMA) Plan                     | No       | Have flood zone maps |
| Watershed Plan   | No       |                      |
| Firewise or other fire mitigation plan                     | No       |                      |
| School Mitigation Plan*                                    | N/A      |                      |
| Critical Facilities Plan (Mitigation/Response/Recovery)    | No       |                      |
| <b>Policies/Ordinance</b>                                  |          |                      |
| Zoning Ordinance   | Yes      |                      |
| Building Code  | Yes      | A little             |
| Floodplain Ordinance                                       | Yes      |                      |
| Subdivision Ordinance                                      | Yes      |                      |
| Tree Trimming Ordinance                                    | No       |                      |
| Nuisance Ordinance   | Yes      |                      |
| Storm Water Ordinance                                      | N/A      |                      |
| Drainage Ordinance   | No       |                      |
| Site Plan Review Requirements                              | Yes      | Building Permits     |
| Historic Preservation Ordinance                            | No       |                      |
| Landscape Ordinance  | No       |                      |
| Iowa Wetlands and Riparian Areas Conservation Plan*        | N/A      |                      |
| <b>Program</b>   |          |                      |
| Zoning/Land Use Restrictions                               | Yes      |                      |
| Codes Building Site/Design                                 | Yes      |                      |
| National Flood Insurance Program (NFIP) Participant        | Yes      |                      |
| NFIP Community Rating System (CRS) Participating Community | N/A      |                      |
| Hazard Awareness Program                                   | No       |                      |

|   |     |   |
|---|-----|---|
| National Weather Service (NWS) Storm Ready              | N/A |   |
| Building Code Effectiveness Grading (BCEGs)             | No  |   |
| ISO Fire Rating   | N/A |   |
| Economic Development Program                            | No  |   |
| Land Use Program  | No  |   |
| Public Education/Awareness                              | No  |   |
| Property Acquisition                                    | No  |   |
| Planning/Zoning Boards                                  | Yes |   |
| Stream Maintenance Program                              | No  |   |
| Tree Trimming Program                                   | No  |   |
| Engineering Studies for Streams (Local/County/Regional) | No  |   |
| Mutual Aid Agreements                                   | N/A |   |
| <b>Studies/Reports/Maps</b>                             |     |   |
| Hazard Analysis/Risk Assessment (Local)                 | No  |   |
| Hazard Analysis/Risk Assessment (County)                | N/A |   |
| Flood Insurance Maps (FIRM)*                            | N/A |   |
| FEMA Flood Insurance Study (Detailed) *                 | N/A |   |
| Evacuation Route Map                                    | N/A |   |
| Critical Facilities Inventory                           | N/A |   |
| Vulnerable Population Inventory                         | No  |   |
| Land Use Map  | No  |   |
| <b>Staff/Department</b>                                 |     |   |
| Building Code Official                                  | No  |   |
| Building Inspector                                      | Yes | When needed                               |
| Mapping Specialist (GIS)                                | No  |   |
| Engineer  | No  |   |
| Development Planner                                     | No  |   |
| Public Works Official                                   | Yes | Full-time                                 |
| Emergency Management Coordinator                        | No  |   |
| NFIP Floodplain Administrator                           | Yes | When needed                               |
| Bomb and/or Arson Squad                                 | No  |   |
| Emergency Response Team                                 | Yes |   |
| Hazardous Materials Expert                              | No  |   |
| Local Emergency Planning Committee                      | No  |   |
| County Emergency Management Commission                  | N/A |   |
| Sanitation Department                                   | No  |   |
| Transportation Department                               | No  |   |
| Economic Development Department                         | No  |   |
| Housing Department                                      | No  |   |
| Planning Consultant*                                    | N/A |   |
| Regional Planning Agencies*                             | Yes | Southwest Missouri Council of Governments |
| Historic Preservation                                   | No  |   |
| <b>Non-Governmental Organizations (NGOs)</b>            |     |   |
| American Red Cross                                      | No  |   |

|   |     |  |
|---|-----|--|
| Salvation Army  | No  |  |
| Veterans Groups   | No  |  |
| Environmental Organization                                    | No  |  |
| Homeowner Associations  | No  |  |
| Neighborhood Associations                                     | No  |  |
| Chamber of Commerce   | No  |  |
| Community Organizations (Lions, Kiwanis, etc.)                | No  |  |
| <b>Local Funding Availability</b>                             |     |  |
| Ability to apply for Community Development Block Grants       | Yes |  |
| Ability to fund projects through Capital Improvements funding | Yes |  |
| Authority to levy taxes for a specific purpose                | Yes |  |
| Fees for water, sewer, gas, or electric services              | Yes |  |
| Impact fees for new development                               | Yes |  |
| Ability to incur debt through general obligation bonds        | Yes |  |
| Ability to incur debt through special tax bonds               | Yes |  |
| Ability to incur debt through private activities              | No  |  |
| Ability to withhold spending in hazard prone areas            | No  |  |

## 2.2.9 City of Verona

The City of Verona is located in the southern portion Lawrence County. The 2015 population of Verona is 591, which is a -17.2% decrease since 2000. The governing body of Verona is a mayor and four city council members. City departments include:

- Mayor/City Council
- City Clerk
- Building Code Official
- Building Inspector
- Public Works Official
- Emergency Management Coordinator
- Sanitation Department

According to the U.S. Census 2011-2015 American Community Survey, 22.9% of the houses in the city were constructed in 1939 or earlier. The median household income was \$33,542 and 22.2% of the families in the city were below the poverty level. Mitigation capabilities/activities in Verona include:

- One (1) outdoor warning siren
- Part-time building code official/inspector
- Mutual Aid agreements
- Reverse 911

**Table 2.14** provides information on the City of Verona mitigation capabilities based on the Data Collection Questionnaire

**Table 2.14. City of Verona Mitigation Capabilities**

| Capability  | Y/N Date          | Comments |
|---|-------------------|----------|
| <b>Planning Capabilities</b>                            |                   |          |
| Comprehensive Plan                                      | Yes; 2013         |          |
| Builder's Plan  | Yes; 2012         |          |
| Capital Improvement Plan                                | Yes; 2013         |          |
| Local Emergency Plan                                    | Yes; 2014         |          |
| County Emergency Plan                                   | Yes; Jan. 1, 2014 |          |
| Local Recovery Plan                                     | Yes; 2014         |          |
| County Recovery Plan                                    | Yes; Jan. 1, 2014 |          |
| Local Mitigation Plan                                   | Yes; 2014         |          |
| County Mitigation Plan                                  | Yes               |          |
| Local Mitigation Plan (PDM) *                           | N/A               |          |
| County Mitigation Plan (PDM) *                          | N/A               |          |
| Debris Management Plan                                  | Yes; Jan. 1, 2014 |          |
| Economic Development Plan                               |                   |          |
| Transportation Plan                                     | Yes; Jan. 1, 2014 |          |
| Land-use Plan   | Yes; Jan. 1, 2014 |          |
| Flood Mitigation Assistance (FMA) Plan                  | Yes; Jan. 1, 2014 |          |
| Watershed Plan  | No                |          |
| Firewise or other fire mitigation plan                  | No                |          |
| School Mitigation Plan*                                 | N/A               |          |
| Critical Facilities Plan (Mitigation/Response/Recovery) | No                |          |
| <b>Policies/Ordinance</b>                               |                   |          |
| Zoning Ordinance  | Yes               |          |
| Building Code   | Yes               | 2012     |
| Floodplain Ordinance                                    | Yes               | 2010     |
| Subdivision Ordinance                                   | No                |          |
| Tree Trimming Ordinance                                 | No                |          |
| Nuisance Ordinance                                      | Yes               |          |
| Storm Water Ordinance                                   | Yes               |          |
| Drainage Ordinance                                      | Yes               |          |
| Site Plan Review Requirements                           | Yes               |          |
| Historic Preservation Ordinance                         | No                |          |
| Landscape Ordinance                                     | No                |          |
| Iowa Wetlands and Riparian Areas Conservation Plan*     | N/A               |          |
| <b>Program</b>  |                   |          |
| Zoning/Land Use Restrictions                            | Yes               |          |

|  |     |                               |
|--|-----|-------------------------------|
| Codes Building Site/Design                                 | Yes |                               |
| National Flood Insurance Program (NFIP) Participant        | Yes |                               |
| NFIP Community Rating System (CRS) Participating Community | No  |                               |
| Hazard Awareness Program                                   | No  |                               |
| National Weather Service (NWS) Storm Ready                 | N/A |                               |
| Building Code Effectiveness Grading (BCEGs)                | Yes |                               |
| ISO Fire Rating  | No  |                               |
| Economic Development Program                               | N/A |                               |
| Land Use Program   | Yes |                               |
| Public Education/Awareness                                 | N/A |                               |
| Property Acquisition                                       | N/A |                               |
| Planning/Zoning Boards                                     | Yes |                               |
| Stream Maintenance Program                                 | N/A |                               |
| Tree Trimming Program                                      | N/A |                               |
| Engineering Studies for Streams (Local/County/Regional)    | N/A |                               |
| Mutual Aid Agreements                                      | Yes |                               |
| <b>Studies/Reports/Maps</b>                                |     |                               |
| Hazard Analysis/Risk Assessment (Local)                    | Yes |                               |
| Hazard Analysis/Risk Assessment (County)                   | Yes |                               |
| Flood Insurance Maps (FIRM)*                               | N/A |                               |
| FEMA Flood Insurance Study (Detailed) *                    | N/A |                               |
| Evacuation Route Map                                       | Yes |                               |
| Critical Facilities Inventory                              | Yes |                               |
| Vulnerable Population Inventory                            | Yes |                               |
| Land Use Map   | Yes |                               |
| <b>Staff/Department</b>                                    |     |                               |
| Building Code Official                                     | Yes | Part Time                     |
| Building Inspector   | Yes | Part Time                     |
| Mapping Specialist (GIS)                                   | N/A |                               |
| Engineer   | N/A |                               |
| Development Planner  | N/A |                               |
| Public Works Official                                      | Yes | Full Time                     |
| Emergency Management Coordinator                           | Yes | Part Time                     |
| NFIP Floodplain Administrator                              | Yes |                               |
| Bomb and/or Arson Squad                                    | N/A |                               |
| Emergency Response Team                                    | N/A |                               |
| Hazardous Materials Expert                                 | N/A |                               |
| Local Emergency Planning Committee                         | N/A |                               |
| County Emergency Management Commission                     | Yes |                               |
| Sanitation Department                                      | Yes | Full Time                     |
| Transportation Department                                  | N/A |                               |
| Economic Development Department                            | N/A |                               |
| Housing Department   | N/A |                               |
| Planning Consultant*                                       | N/A |                               |
| Regional Planning Agencies*                                | Yes | Southwest Missouri Council of |

|   |     |              |
|---|-----|--------------|
|   |     | Governments  |
| Historic Preservation   | N/A |              |
| <b>Non-Governmental Organizations (NGOs)</b>                  |     |              |
| American Red Cross  | No  |              |
| Salvation Army  | No  |              |
| Veterans Groups   | No  |              |
| Environmental Organization                                    | No  |              |
| Homeowner Associations  | No  |              |
| Neighborhood Associations                                     | No  |              |
| Chamber of Commerce   | No  |              |
| Community Organizations (Lions, Kiwanis, etc.)                | Yes | Masons Lodge |
| <b>Local Funding Availability</b>                             |     |              |
| Ability to apply for Community Development Block Grants       | Yes |              |
| Ability to fund projects through Capital Improvements funding | Yes |              |
| Authority to levy taxes for a specific purpose                | Yes |              |
| Fees for water, sewer, gas, or electric services              | Yes |              |
| Impact fees for new development                               | Yes |              |
| Ability to incur debt through general obligation bonds        | Yes |              |
| Ability to incur debt through special tax bonds               | Yes |              |
| Ability to incur debt through private activities              | Yes |              |
| Ability to withhold spending in hazard prone areas            | Yes |              |



**Table 2.15. Mitigation Capabilities Summary Table**

| <b>CAPABILITIES</b>                                     | <b>Lawrence County</b> | <b>City of Aurora</b> | <b>Village of Freistatt</b> | <b>City of Marionville</b> | <b>City of Miller</b> | <b>City of Monett</b> | <b>City of Mount Vernon</b> | <b>City of Pierce City</b> | <b>City of Verona</b> |
|---|------------------------|-----------------------|-----------------------------|----------------------------|-----------------------|-----------------------|-----------------------------|----------------------------|-----------------------|
| <b>Planning Capabilities</b>                            |                        |                       |                             |                            |                       |                       |                             |                            |                       |
| Comprehensive Plan                                      | No                     | Yes, 2008             | Yes                         | Yes                        | N/A                   | N/A                   | Yes; 2008                   | No                         | Yes; 2013             |
| Builder's Plan  | No                     | Yes, 2006             | No                          | N/A                        | N/A                   | N/A                   | Yes; 2006                   | No                         | Yes; 2012             |
| Capital Improvement Plan                                | Yes                    | N/A                   | Yes                         | N/A                        | Yes; 2016             | Yes                   | Yes                         | No                         | Yes; 2013             |
| Local Emergency Plan                                    | N/A                    | N/A                   | No                          | N/A                        | Yes; 2004             | Yes                   | Yes                         | No                         | Yes; 2014             |
| County Emergency Plan                                   | Yes                    | Yes                   | Yes                         | N/A                        | Yes; 2005             | N/A                   | Yes                         | N/A                        | Yes; Jan. 1, 2014     |
| Local Recovery Plan                                     | N/A                    | N/A                   | No                          | N/A                        | Yes; 2005             | Yes                   | Yes                         | No                         | Yes; 2014             |
| County Recovery Plan                                    | Yes                    | N/A                   | No                          | N/A                        | Yes; 2005             | N/A                   | Yes                         | N/A                        | Yes; Jan. 1, 2014     |
| Local Mitigation Plan                                   | N/A                    | N/A                   | Yes                         | N/A                        | N/A                   | N/A                   | Yes                         | No                         | Yes; 2014             |
| County Mitigation Plan                                  | Yes                    | Yes                   | Yes                         | Yes                        | N/A                   | N/A                   | Yes                         | N/A                        | Yes                   |
| Local Mitigation Plan (PDM)                             | N/A                    | N/A                   | N/A                         | N/A                        | N/A                   | N/A                   | Yes                         | N/A                        | N/A                   |
| County Mitigation Plan (PDM)                            | N/A                    | N/A                   | N/A                         | N/A                        | N/A                   | N/A                   | Yes                         | Yes                        | N/A                   |
| Debris Management Plan                                  | Yes                    | N/A                   | N/A                         | N/A                        | N/A                   | Yes                   | Yes                         | N/A                        | Yes; Jan. 1, 2014     |
| Economic Development Plan                               | No                     | Yes                   | No                          | N/A                        | N/A                   | No                    | Yes                         | No                         |                       |
| Transportation Plan                                     | Yes                    | Yes                   | N/A                         | No                         | N/A                   | Yes                   | No                          | No                         | Yes; Jan. 1, 2014     |
| Land-use Plan   | No                     | Yes                   | No                          | Yes; 1998                  | N/A                   | Yes                   | Yes                         | No                         | Yes; Jan. 1, 2014     |
| Flood Mitigation Assistance (FMA) Plan                  | No                     | N/A                   | N/A                         | Yes                        | N/A                   | No                    | No                          | No                         | Yes; Jan. 1, 2014     |
| Watershed Plan  | No                     | Yes                   | No                          | N/A                        | N/A                   | No                    | No                          | No                         | No                    |
| Firewise or other fire mitigation plan                  | No                     | No                    | No                          | N/A                        | N/A                   | No                    | No                          | No                         | No                    |
| School Mitigation Plan                                  | N/A                    | N/A                   | N/A                         | N/A                        | N/A                   | N/A                   | N/A                         | N/A                        | N/A                   |
| Critical Facilities Plan (Mitigation/Response/Recovery) | Yes                    | N/A                   | N/A                         | N/A                        | N/A                   | Yes                   | No                          | No                         | No                    |
| <b>Policies/Ordinance</b>                               |                        |                       |                             |                            |                       |                       |                             |                            |                       |
| Zoning Ordinance  | No                     | Yes                   | No                          | Yes                        | No                    | Yes                   | Yes                         | Yes                        | Yes                   |

| CAPABILITIES   | Lawrence County | City of Aurora | Village of Freistatt | City of Marionville | City of Miller | City of Monett | City of Mount Vernon | City of Pierce City | City of Verona |
|--|-----------------|----------------|----------------------|---------------------|----------------|----------------|----------------------|---------------------|----------------|
| Building Code  | No              | Yes, 2006      | N/A                  | Yes; 2012           | Yes            | Yes            | Version 2006         | Yes                 | Yes            |
| Floodplain Ordinance                                       | Yes             | Yes            | N/A                  | 7                   | No             | Yes 2000       | Yes 3/26, 1975       | Yes                 | Yes            |
| Subdivision Ordinance                                      | No              | Yes            | N/A                  | Yes                 | No             | Yes            | Yes                  | Yes                 | No             |
| Tree Trimming Ordinance                                    | No              | No             | No                   | No                  | Yes            | Yes            | No                   | No                  | No             |
| Nuisance Ordinance   | No              | Yes            | Yes                  | Yes                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Storm Water Ordinance                                      | No              | Yes            | No                   | Yes                 | Yes            | Yes            | No                   | N/A                 | Yes            |
| Drainage Ordinance   | No              | Yes            | No                   | Yes                 | N/A            | No             | No                   | No                  | Yes            |
| Site Plan Review Requirements                              | No              | Yes            | N/A                  | Yes                 | N/A            | Yes            | Yes                  | Yes                 | Yes            |
| Historic Preservation Ordinance                            | No              | No             | No                   | No                  | N/A            | No             | No                   | No                  | No             |
| Landscape Ordinance  | No              | No             | No                   | Yes                 | N/A            | Yes            | No                   | No                  | No             |
| Iowa Wetlands and Riparian Areas Conservation Plan         | No              | N/A            | N/A                  | N/A                 | N/A            | N/A            | N/A                  | N/A                 | N/A            |
| <b>Program</b>   |                 |                |                      |                     |                |                |                      |                     |                |
| Zoning/Land Use Restrictions                               | No              | Yes            | No                   | Yes                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Codes Building Site/Design                                 | No              | Yes            | N/A                  | Yes                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| National Flood Insurance Program (NFIP) Participant        | Yes             | Yes            | Yes                  | Yes                 | N/A            | Yes            | Yes                  | Yes                 | Yes            |
| NFIP Community Rating System (CRS) Participating Community | N/A             | No             | N/A                  | N/A                 | N/A            | N/A            | No                   | N/A                 | No             |
| Hazard Awareness Program                                   | N/A             | N/A            | No                   | Yes                 | Yes            | No             | N/A                  | No                  | No             |
| National Weather Service (NWS) Storm Ready                 | In Progress     | N/A            | No                   | Yes                 | No             | Yes            | No                   | N/A                 | N/A            |
| Building Code Effectiveness Grading (BCEGs)                | No              | N/A            | No                   | Yes                 | Yes            | 9              | No                   | No                  | Yes            |
| ISO Fire Rating  | N/A             | 5              | N/A                  | 7                   | 7              | 4              | 6                    | N/A                 | No             |
| Economic Development Program                               | Yes             | Yes            | No                   | Yes                 | No             | No             | Yes                  | No                  | N/A            |
| Land Use Program   | No              | Yes            | No                   | N/A                 | No             | No             | Yes                  | No                  | Yes            |
| Public Education/Awareness                                 | Yes             | Yes            | No                   | No                  | Yes            | Yes            | No                   | No                  | N/A            |
| Property Acquisition                                       | No              | Yes            | No                   | No                  | N/A            | No             | No                   | No                  | N/A            |
| Planning/Zoning Boards                                     | No              | Yes            | No                   | Yes                 | No             | Yes            | Yes                  | Yes                 | Yes            |
| Stream Maintenance Program                                 | No              | N/A            | N/A                  | No                  | N/A            | N/A            | Yes                  | No                  | N/A            |

| CAPABILITIES  | Lawrence County | City of Aurora | Village of Freistatt | City of Marionville | City of Miller | City of Monett | City of Mount Vernon | City of Pierce City | City of Verona |
|---|-----------------|----------------|----------------------|---------------------|----------------|----------------|----------------------|---------------------|----------------|
| Tree Trimming Program                                   | No              | N/A            | No                   | No                  | N/A            | Yes            | Yes                  | No                  | N/A            |
| Engineering Studies for Streams (Local/County/Regional) | No              | Yes            | N/A                  | No                  | N/A            | N/A            | No                   | No                  | N/A            |
| Mutual Aid Agreements                                   | Yes             | Yes            | Yes                  | Yes                 | Yes            | Yes            | Yes                  | N/A                 | Yes            |
| <b>Studies/Reports/Maps</b>                             |                 |                |                      |                     |                |                |                      |                     |                |
| Hazard Analysis/Risk Assessment (Local)                 | N/A             | Yes            | Yes                  | N/A                 | No             | Yes            | Yes                  | No                  | Yes            |
| Hazard Analysis/Risk Assessment (County)                | Yes             | N/A            | Yes                  | N/A                 | No             | N/A            | Yes                  | N/A                 | Yes            |
| Flood Insurance Maps                                    | Yes             | N/A            | N/A                  | N/A                 | N/A            | N/A            | N/A                  | N/A                 | N/A            |
| FEMA Flood Insurance Study (Detailed)                   | Yes             | N/A            | N/A                  | N/A                 | N/A            | N/A            | N/A                  | N/A                 | N/A            |
| Evacuation Route Map                                    | No              | N/A            | No                   | N/A                 | No             | Yes            | No                   | N/A                 | Yes            |
| Critical Facilities Inventory                           | No              | N/A            | N/A                  | No                  | N/A            | Yes            | Yes                  | N/A                 | Yes            |
| Vulnerable Population Inventory                         | N/A             | N/A            | No                   | N/A                 | No             | No             | Yes                  | No                  | Yes            |
| Land Use Map  | N/A             | Yes            | No                   | Yes                 | No             | Yes            | Yes                  | No                  | Yes            |
| <b>Staff/Department</b>                                 |                 |                |                      |                     |                |                |                      |                     |                |
| Building Code Official                                  | No              | Yes            | No                   | Yes                 | Yes            | Yes            | Yes                  | No                  | Yes            |
| Building Inspector                                      | No              | Yes            | Yes                  | Yes                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Mapping Specialist (GIS)                                | Yes             | N              | No                   | No                  | No             | Yes            | No                   | No                  | N/A            |
| Engineer  | No              | Yes            | Yes                  | Yes                 | Yes            | Yes            | No                   | No                  | N/A            |
| Development Planner                                     | No              | No             | No                   | Yes                 | No             | No             | No                   | No                  | N/A            |
| Public Works Official                                   | No              | Yes            | Yes                  | Yes                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Emergency Management Coordinator                        | Yes             | Yes            | Yes                  | Yes                 | Yes            | Yes            | Yes                  | No                  | Yes            |
| NFIP Floodplain Administrator                           | Yes             | Yes            | Yes                  | Yes                 | No             | Yes            | Yes                  | Yes                 | Yes            |
| Bomb and/or Arson Squad                                 | N/A             | Yes            | No                   | No                  | Yes            | No             | No                   | No                  | N/A            |
| Emergency Response Team                                 | N/A             | No             | No                   | No                  | Yes            | Yes            | No                   | Yes                 | N/A            |
| Hazardous Materials Expert                              | Yes             | N/A            | No                   | No                  | Yes            | Yes            | No                   | No                  | N/A            |
| Local Emergency Planning Committee                      | Yes             | Yes            | No                   | No                  | No             | Yes            | No                   | No                  | N/A            |
| County Emergency Management Commission                  | N/A             | N/A            | Yes                  | N/A                 | Yes            | N/A            | No                   | N/A                 | Yes            |

| CAPABILITIES                                       | Lawrence County | City of Aurora | Village of Freistatt | City of Marionville | City of Miller | City of Monett | City of Mount Vernon | City of Pierce City | City of Verona |
|--|-----------------|----------------|----------------------|---------------------|----------------|----------------|----------------------|---------------------|----------------|
| Sanitation Department                              | No              | No             | No                   | No                  | N/A            | Yes            | Yes                  | No                  | Yes            |
| Transportation Department                          | No              | Yes            | No                   | No                  | N/A            | No             | Yes                  | No                  | N/A            |
| Economic Development Department                    | No              | No             | No                   | No                  | N/A            | Yes            | Yes                  | No                  | N/A            |
| Housing Department                                 | No              | No             | No                   | No                  | N/A            | No             | No                   | No                  | N/A            |
| Planning Consultant                                | N/A             | N/A            | No                   | N/A                 | N/A            | N/A            | N/A                  | N/A                 | N/A            |
| Regional Planning Agencies                         | Yes             | Yes            | Yes                  | Yes                 | Yes            | Yes            | N/A                  | Yes                 | Yes            |
| Historic Preservation                              | No              | No             | No                   | No                  | N/A            | No             | No                   | No                  | N/A            |
| <b>Non-Governmental Organizations (NGOs)</b>       |                 |                |                      |                     |                |                |                      |                     |                |
| American Red Cross                                 | Yes             | No             | No                   | No                  | No             | Yes            | No                   | No                  | No             |
| Salvation Army                                     | No              | No             | No                   | No                  | No             | No             | No                   | No                  | No             |
| Veterans Groups                                    | Yes             | No             | Yes                  | No                  | Yes            | Yes            | Yes                  | No                  | No             |
| Environmental Organization                         | No              | No             | No                   | No                  | No             | No             | No                   | No                  | No             |
| Homeowner Associations                             | N/A             | No             | No                   | No                  | No             | Yes            | No                   | No                  | No             |
| Neighborhood Associations                          | N/A             | No             | Yes                  | No                  | No             | No             | No                   | No                  | No             |
| Chamber of Commerce                                | N/A             | Yes            | No                   | No                  | No             | Yes            | Yes                  | No                  | No             |
| Community Organizations (Lions, Kiwanis, etc.)     | Yes             | Yes            | Yes                  | Yes                 | Yes            | Yes            | Yes                  | No                  | Yes            |
| <b>Financial Resources</b>                         |                 |                |                      |                     |                |                |                      |                     |                |
| Apply for Community Development Block Grants       | Yes             | Yes            | Yes                  | No                  | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Fund projects through Capital Improvements funding | Yes             | Yes            | No                   | Yes                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Authority to levy taxes for specific purposes      | Yes             | Yes            | Yes                  | Yes                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Fees for water, sewer, gas, or electric services   | No              | Yes            | Yes                  | Yes                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Impact fees for new development                    | No              | Yes            | No                   | N/A                 | No             | Yes            | Yes                  | Yes                 | Yes            |
| Incur dept through general obligation bonds        | Yes             | Yes            | Yes                  | N/A                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Incur debt through special tax bonds               | N/A             | Yes            | Yes                  | N/A                 | Yes            | Yes            | Yes                  | Yes                 | Yes            |
| Incur debt through private activities              | No              | Yes            | No                   | N/A                 | No             | Yes            | Yes                  | No                  | Yes            |

| <b>CAPABILITIES</b>                     | <b>Lawrence County</b> | <b>City of Aurora</b> | <b>Village of Freistatt</b> | <b>City of Marionville</b> | <b>City of Miller</b> | <b>City of Monett</b> | <b>City of Mount Vernon</b> | <b>City of Pierce City</b> | <b>City of Verona</b> |
|---|------------------------|-----------------------|-----------------------------|----------------------------|-----------------------|-----------------------|-----------------------------|----------------------------|-----------------------|
| Withhold spending in hazard prone areas | No                     | No                    | No                          | No                         | N/A                   | Yes                   | N/A                         | No                         | Yes                   |

Source: Data Collection Questionnaires, 2017

## 2.2.10 Barry-Lawrence Regional Library District

Barry-Lawrence Regional Library has ten locations throughout Barry and Lawrence Counties, five of which are located within Lawrence County. The district was initially established on July 13, 1954 when the library boards joined to provide service to the counties. The library district is supported by a tax levy from both counties, Missouri state aid, donations, and miscellaneous income. A Board of Trustees is the governing body for the library district, and consists of 8 members: 4 from Barry County and 4 from Lawrence County. The board members are appointed by their county commissioners and serve 4 year terms. Departments for the district include:

- Board of Trustees
- Building Official

Past or ongoing projects or programs designed to reduce disaster losses include:

- Fire Evacuation Training
- Tornado Sheltering Exercises
- Designated Tornado Shelter/Saferoom

**Table 2.16. Barry-Lawrence Regional Library District Mitigation Capabilities**

| Capability                            | Status Including Date of Document or Policy                              |
|---------------------------------------|--|
| <b>Planning Elements</b>              |  |
| Master Plan/Date                      | No   |
| Capital Improvement Plan/Date         | No   |
| School Emergency Plan                 | No   |
| Weapons Policy/Date                   | No   |
| <b>Personnel Resources</b>            |  |
| Full-Time Building Official           | Yes  |
| Emergency Manager                     | No   |
| Grant Writer                          | No   |
| Public Information Officer            | No   |
| <b>Financial Resources</b>            |  |
| Capital Improvements Project Funding  | No   |
| Local Funds                           | No   |
| General Obligation Bonds              | No   |
| Special Tax Bonds                     | No   |
| Private Activities Donations          | No   |
| State and Federal Grant Funds         | Not Sure   |
| <b>Other</b>                          |  |
| Fire Evacuation Training              | Yes  |
| Tornado Sheltering Exercises          | Yes  |
| Public Address/Emergency Alert System | No, but have smoke alarms and most town have an early warning systems.   |
| NOAA Weather Radios                   | No   |
| Tornado Shelter/Saferoom              | Designated areas in each building to take shelter in. Not FEMA approved. |

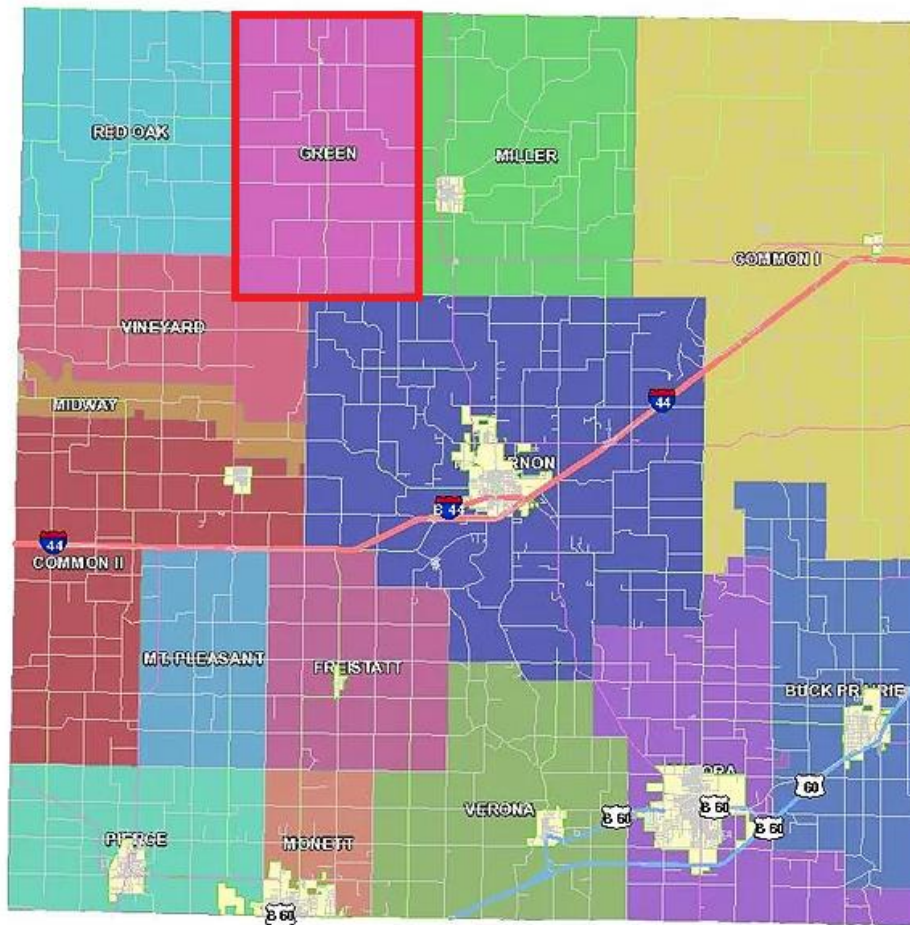
| Capability    | Status Including Date of Document or Policy |
|---------------|---|
| Campus Police | N/A   |

### 2.2.11 Green Benefit Special Road District

Green Benefit Special Road District is a commissioner based district that monitors roads in the northwest portion of Lawrence County. **Figure 2.4** shows the Green Benefit Road District boundaries. Departments for Green Benefit include:

- Commissioners
- Maintenance Department

**Figure 2.4. Green Benefit Special Road District Boundaries**



### 2.2.12 Miller Benefit Special Road District

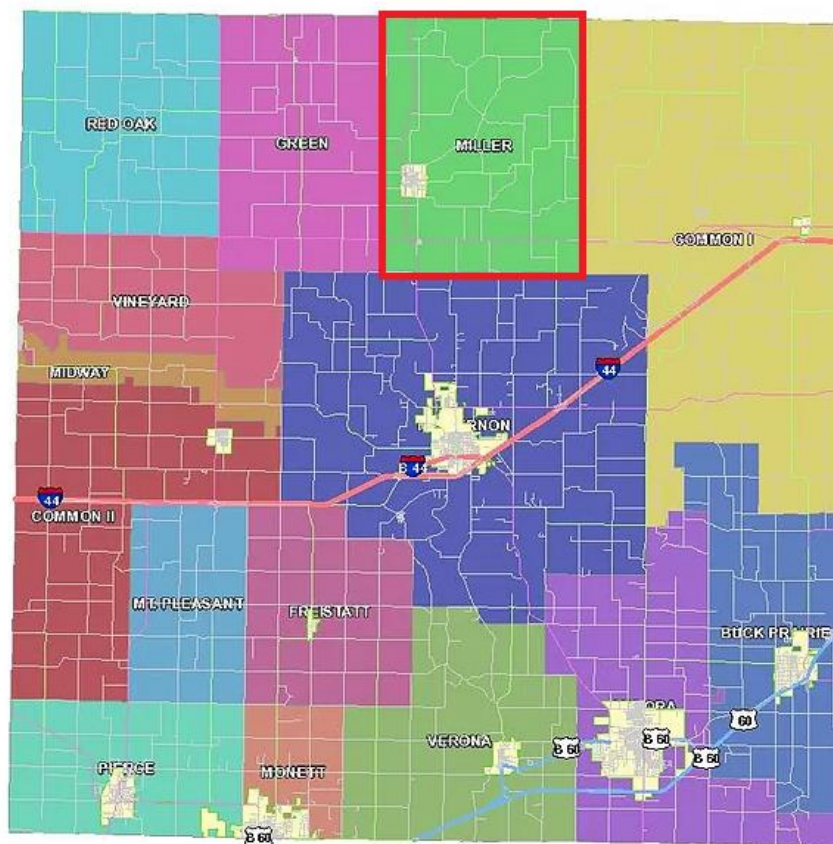
Miller Benefit Special Road District oversees roads in the northern portion of Lawrence County. **Figure 2.5** shows the boundaries of Miller Benefit Special Road District. The road district is overseen by its own elected board that consists of three commissioners. Departments for Miller Benefit Special Road District include:

- Commission/Board
- Engineer
- Emergency Management Coordinator
- County Emergency Management Commission

Past or ongoing projects or programs designed to reduce disaster losses include:

- Site Plan Review Requirements
- Tree Trimming Ordinance
- Engineering Studies for Streams

**Figure 2.5. Miller Benefit Road District Boundaries**

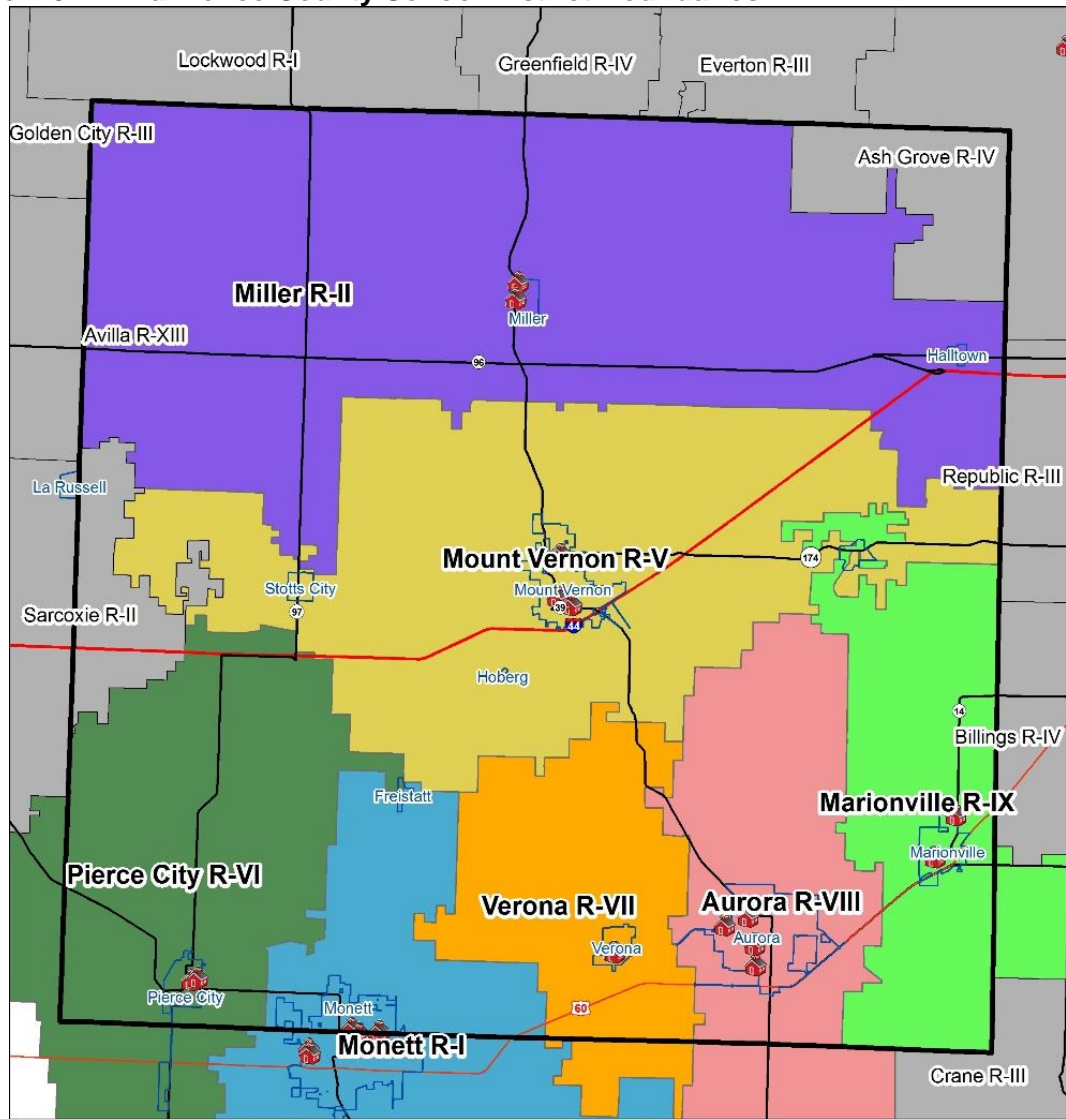




## 2.2.13 Public School District Profiles and Mitigation Capabilities

This section provides general information about participating school districts in the plan. There are seven school districts with facilities in Lawrence County. Aurora R-VIII is the only school district with facilities in the county to not participate in this plan. **Figure 2.6** is a map of school district boundaries in Lawrence County.

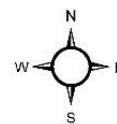
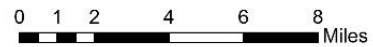
**Figure 2.6. Lawrence County School District Boundaries**



**School District Name**

- Aurora R-VIII School District
- Marionville R-IX School District
- Miller R-II School District
- Monett R-I School District
- Mount Vernon R-V School District
- Pierce City R-VI School District
- Verona R-VII School District

- Public School Facilities
- Lawrence County



**Table 2.17. Lawrence County School Buildings and Enrollment Data, 2017**

| District Name    | Building Name           | Building Enrolment |
|------------------|-------------------------|--------------------|
| Marionville R-IX | Marionville High        | 214                |
| Marionville R-IX | Marionville Middle      | 146                |
| Marionville R-IX | Marionville Elementary  | 395                |
| Miller R-II      | Miller High             | 256                |
| Miller R-II      | Central Elementary      | 304                |
| Monett R-I       | Monett High             | 733                |
| Monett R-I       | Monett Middle           | 366                |
| Monett R-I       | Central Park Elementary | 359                |
| Monett R-I       | Monett Elementary       | 579                |
| Monett R-I       | Monett Intermediate     | 363                |
| Mt. Vernon R-V   | Mt. Vernon High         | 465                |
| Mt. Vernon R-V   | Mt. Vernon Middle       | 311                |
| Mt. Vernon R-V   | Mt. Vernon Elementary   | 359                |
| Mt. Vernon R-V   | Mt. Vernon Intermediate | 311                |
| Pierce City R-VI | Pierce City High        | 203                |
| Pierce City R-VI | Pierce City Middle      | 214                |
| Pierce City R-VI | Central Elementary      | 273                |
| Verona R-VII     | Verona High             | 193                |
| Verona R-VII     | Verona Elementary       | 219                |

<http://mcids.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx>

**Marionville R-IX**

**Table 2.18. Marionville R-IX School District Mitigation Capabilities**

| Capability                           | Status Including Date of Document or Policy        |
|--------------------------------------|--|
| <b>Planning Elements</b>             |  |
| Master Plan/Date                     | N/A  |
| Capital Improvement Plan/Date        | Yes; 2017  |
| School Emergency Plan                | Yes; 2017  |
| Weapons Policy/Date                  | Yes; 2017  |
| <b>Personnel Resources</b>           | <b>Status Including Date of Document or Policy</b> |
| Full-Time Building Official          | Yes; Principal                                     |
| Emergency Manager                    | N/A  |
| Grant Writer                         | N/A  |
| Public Information Officer           | N/A  |
| <b>Financial Resources</b>           | <b>Status Including Date of Document or Policy</b> |
| Capital Improvements Project Funding | Yes  |
| Local Funds                          | Yes  |
| General Obligation Bonds             | Yes  |
| Special Tax Bonds                    | N/A  |
| Private Activities Donations         | Yes  |
| State and Federal Grant Funds        | Yes  |
| <b>Other</b>                         | <b>Status Including Date of Document or Policy</b> |
| Fire Evacuation Training             | Yes  |

| Capability                            | Status Including Date of Document or Policy |
|---------------------------------------|---|
| Tornado Sheltering Exercises          | Yes   |
| Public Address/Emergency Alert System | Yes; District wide                          |
| NOAA Weather Radios                   | Yes   |
| Tornado Shelter/Saferoom              | Yes, but not by FEMA standards              |
| Campus Police                         | Yes; School Resource Officer                |

## Miller R-II School District

**Table 2.19. Miller R-II School District Mitigation Capabilities**

| Capability                            | Status Including Date of Document or Policy              |
|---------------------------------------|--|
| <b>Planning Elements</b>              |  |
| Master Plan/Date                      | Yes; May 2015  |
| Capital Improvement Plan/Date         | Yes; August /2016  |
| School Emergency Plan                 | Yes; January 2016  |
| Weapons Policy/Date                   | Yes; October 2014  |
| <b>Personnel Resources</b>            |  |
| Full-Time Building Official           | Yes; Two full-time positions (High School & Elementary)  |
| Emergency Manager                     | No   |
| Grant Writer                          | No   |
| Public Information Officer            | No   |
| <b>Financial Resources</b>            |  |
| Capital Improvements Project Funding  | No   |
| Local Funds                           | No   |
| General Obligation Bonds              | No   |
| Special Tax Bonds                     | No   |
| Private Activities Donations          | No   |
| State and Federal Grant Funds         | No   |
| <b>Other</b>                          |  |
| Fire Evacuation Training              | Yes  |
| Tornado Sheltering Exercises          | Yes  |
| Public Address/Emergency Alert System | Yes  |
| NOAA Weather Radios                   | N/A  |
| Tornado Shelter/Saferoom              | No   |
| Campus Police                         | No; Rely on Miller Police Department for security needs. |

## Monett R-I School District

**Table 2.20. Monett R-I School District Mitigation Capabilities**

| Capability                    | Status Including Date of Document or Policy |
|-------------------------------|---|
| <b>Planning Elements</b>      |   |
| Master Plan/Date              | No  |
| Capital Improvement Plan/Date | Yes; March 2016                             |
| School Emergency Plan         | Yes; 2014                                   |

| <b>Capability</b>                     | <b>Status Including Date of Document or Policy</b>                                |
|---------------------------------------|---|
| Weapons Policy/Date                   | Yes; 2010   |
| <b>Personnel Resources</b>            | <b>Status Including Date of Document or Policy</b>                                |
| Full-Time Building Official           | Yes   |
| Emergency Manager                     | Yes   |
| Grant Writer                          | No  |
| Public Information Officer            | No  |
| <b>Financial Resources</b>            | <b>Status Including Date of Document or Policy</b>                                |
| Capital Improvements Project Funding  | Yes   |
| Local Funds                           | Yes   |
| General Obligation Bonds              | Yes   |
| Special Tax Bonds                     | No  |
| Private Activities Donations          | Yes   |
| State and Federal Grant Funds         | Yes   |
| <b>Other</b>                          | <b>Status Including Date of Document or Policy</b>                                |
| Fire Evacuation Training              | Yes   |
| Tornado Sheltering Exercises          | Yes   |
| Public Address/Emergency Alert System | Yes   |
| NOAA Weather Radios                   | Yes   |
| Tornado Shelter/Saferoom              | Yes   |
| Campus Police                         | No. School Resource Officer. Rely on Monett Police Department for security needs. |

## Mt. Vernon R-V School District

**Table 2.21. Mt. Vernon R-V School District Mitigation Capabilities**

| <b>Capability</b>                    | <b>Status Including Date of Document or Policy</b> |
|--------------------------------------|--|
| <b>Planning Elements</b>             |  |
| Master Plan/Date                     | No   |
| Capital Improvement Plan/Date        | No   |
| School Emergency Plan                | Yes; February 2009                                 |
| Weapons Policy/Date                  | Yes; May 2014                                      |
| <b>Personnel Resources</b>           | <b>Status Including Date of Document or Policy</b> |
| Full-Time Building Official          | Yes  |
| Emergency Manager                    | Yes  |
| Grant Writer                         | N/A  |
| Public Information Officer           | Yes; Superintendent                                |
| <b>Financial Resources</b>           | <b>Status Including Date of Document or Policy</b> |
| Capital Improvements Project Funding | Yes  |
| Local Funds                          | Yes  |
| General Obligation Bonds             | Yes  |
| Special Tax Bonds                    | No   |
| Private Activities Donations         | Yes  |
| State and Federal Grant Funds        | Yes  |
| <b>Other</b>                         | <b>Status Including Date of Document or Policy</b> |

| Capability                            | Status Including Date of Document or Policy  |
|---------------------------------------|--|
| Fire Evacuation Training              | Yes  |
| Tornado Sheltering Exercises          | Yes  |
| Public Address/Emergency Alert System | Yes  |
| NOAA Weather Radios                   | Yes  |
| Tornado Shelter/Saferoom              | No   |
| Campus Police                         | Yes; One police officer assigned to the school district each day that students are in session. |

## Verona R-VII School District

**Table 2.22. Verona R-VII School District Mitigation Capabilities**

| Capability                            | Status Including Date of Document or Policy   |
|---------------------------------------|---|
| <b>Planning Elements</b>              |   |
| Master Plan/Date                      | No  |
| Capital Improvement Plan/Date         | No  |
| School Emergency Plan                 | Yes; August 10, 2016  |
| Weapons Policy/Date                   | Yes; May 2015   |
| <b>Personnel Resources</b>            |   |
| Full-Time Building Official           | Yes; JH/HS Principal  |
| Emergency Manager                     | Yes; District Safety Director   |
| Grant Writer                          | No  |
| Public Information Officer            | No  |
| <b>Financial Resources</b>            |   |
| Capital Improvements Project Funding  | Yes   |
| Local Funds                           | Yes   |
| General Obligation Bonds              | No  |
| Special Tax Bonds                     | No  |
| Private Activities Donations          | Yes   |
| State and Federal Grant Funds         | Yes   |
| <b>Other</b>                          |   |
| Fire Evacuation Training              | Yes   |
| Tornado Sheltering Exercises          | Yes   |
| Public Address/Emergency Alert System | Yes   |
| NOAA Weather Radios                   | No  |
| Tornado Shelter/Saferoom              | No  |
| Campus Police                         | No, rely on Verona Police Department and Lawrence County Sheriff's Department for security. |

**Table 2.23. Summary of Lawrence County School District Mitigation Capabilities**

| Capability                              | Marionville R-IX    | Miller R-II | Monett R-I | Mt. Vernon R-V | Pierce City R-VI | Verona R-VII |
|---|---------------------|-------------|------------|----------------|------------------|--------------|
| <b>Planning Elements</b>                |                     |             |            |                |                  |              |
| Master Plan/ Date                       | N/A                 | Yes, 2015   | No         | No             | Yes, 2008        | No           |
| Capital Improvement Plan/Date           | Yes, 2017           | Yes, 2016   | Yes, 2016  | No             | No               | No           |
| School Emergency Plan / Date            | Yes, 2017           | Yes, 2016   | Yes, 2014  | Yes, 2009      | Yes              | Yes; 2016    |
| Weapons Policy/Date                     | Yes, 2017           | Yes, 2014   | Yes, 2010  | Yes, 2014      | Yes              | Yes; 2014    |
| <b>Personnel Resources</b>              |                     |             |            |                |                  |              |
| Full-Time Building Official (Principal) | Yes                 | Yes         | Yes        | Yes            | No               | Yes          |
| Emergency Manager                       | N/A                 | No          | Yes        | Yes            | No               | Yes          |
| Grant Writer                            | N/A                 | No          | No         | N/A            | No               | No           |
| Public Information Officer              | N/A                 | No          | No         | Yes            | No               | No           |
| <b>Financial Resources</b>              |                     |             |            |                |                  |              |
| Capital Improvements Project Funding    | Yes                 | No          | Yes        | Yes            | Yes              | Yes          |
| Local Funds                             | Yes                 | No          | Yes        | Yes            | Yes              | Yes          |
| General Obligation Bonds                | Yes                 | No          | Yes        | Yes            | No               | No           |
| Special Tax Bonds                       | N/A                 | No          | No         | Yes            | No               | No           |
| Private Activities/Donations            | Yes                 | No          | Yes        | Yes            | Yes              | Yes          |
| State And Federal Funds/Grants          | Yes                 | No          | Yes        | Yes            | Yes              | Yes          |
| Public Education Programs               | N/A                 | N/A         | N/A        | N/A            | N/A              | N/A          |
| Privately Or Self- Insured?             | N/A                 | N/A         | N/A        | N/A            | N/A              | N/A          |
| <b>Other</b>                            |                     |             |            |                |                  |              |
| Fire Evacuation Training                | Yes                 | Yes         | Yes        | Yes            | Yes              | Yes          |
| Tornado Sheltering Exercises            | Yes                 | Yes         | Yes        | Yes            | Yes              | Yes          |
| Public Address/Emergency Alert System   | Yes                 | Yes         | Yes        | Yes            | Yes              | Yes          |
| NOAA Weather Radios                     | Yes                 | Yes         | Yes        | Yes            | Yes              | No           |
| Lock-Down Security Training             | N/A                 | N/A         | N/A        | N/A            | N/A              | N/A          |
| Mitigation Programs                     | N/A                 | N/A         | N/A        | N/A            | N/A              | N/A          |
| Tornado Shelter/Saferoom                | Yes (non-FEMA)      | No          | Yes        | No             | Yes              | No           |
| Campus Police                           | SRO (starting 8/17) | Local PD    | Local PD   | Local PD       | Local PD         | Local PD     |

Data Collection Questionnaires, 2017

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## 3 RISK ASSESSMENT

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

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

This is an update of the previous Lawrence County Hazard Mitigation Plan adopted in March of 2013. According to the U.S. Census Bureau July 1, 2016 population estimate, the population of Lawrence County fell to 38,381 from 38,634 at the time of the 2010 decennial census. The population has decreased by approximately 253 people since the Lawrence County Hazard Mitigation Plan was adopted in 2013. According to the building permit data from the U.S. Department of Housing and Urban Development (SOCDS), 76 total building units were constructed 2010-2016. Of the total, 68 units were single-family dwellings while 8 units were multi-family dwellings. Building permit data is derived from the Census Bureau's Building Permits Survey.

Lawrence County has since remained a third class county in Missouri. According to Missouri Revised statutes (RSMO 48.020), "All counties having an assessed valuation of less than the assessed valuation necessary for that county to be in the second classification shall automatically be in the third classification."

This chapter is divided into four main parts:

- **Section 3.1 Hazard Identification** identifies the hazards that threaten the planning area and provides a factual basis for elimination of hazards from further consideration;
- **Section 3.2 Assets at Risk** provides the planning area's total exposure to natural hazards, considering critical facilities and other community assets at risk;
- **Section 3.3 Future Land Use and Development** discusses areas of planned future development
- **Section 3.4 Hazard Profiles and Vulnerability Analysis** provides more detailed information about the hazards impacting the planning area. For each hazard, there are three sections: 1) Hazard Profile provides a general description and discusses the threat to the planning area, the geographic location at risk, potential severity/magnitude/extent, previous occurrences of hazard events, probability of future occurrence, risk summary by jurisdiction, impact of future development on the risk; 2) Vulnerability Assessment further defines and quantifies populations, buildings, critical facilities, and other community/school or special district assets at risk to natural hazards; and 3) Problem Statement briefly summarizes the problem and develops possible solutions.

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## 3.1 Hazard Identification

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

The Plan profiles all natural hazards that can affect Lawrence County. The natural hazards that can affect the county have been identified in the 2013 Lawrence County Plan and the 2013 Missouri State Plan. Natural hazards are naturally occurring climatological, hydrological or geologic events that have a negative effect on people and the built environment. Natural hazards identified in the 2013 Lawrence County Plan included:

- Dam Failure
- Drought
- Earthquake
- Extreme Heat
- Wildfire
- Riverine and Flash Flood
- Land Subsidence/ Sinkholes
- Thunderstorm/ High Winds/ Lightning/ Hail
- Tornado
- Winter Weather/ Snow/ Ice/ Severe Cold

No new natural hazards have been identified since the adoption of the previous plan. The 2013 Missouri State Plan also addresses human-caused, and technological hazards; however, these will not be included in this plan update.

### 3.1.1 Review of Existing Mitigation Plans

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The MPC reviewed the hazards identified in the previously approved plan, as well as the hazards identified in the state plan at the May 31<sup>st</sup>, 2017 meeting. The hazards identified in the 2013 Lawrence County Plan are identified in the 2013 Missouri State Plan. The State Plan also includes levee failure as well as structural and urban fire in addition to wildfire. Human-caused and technological hazards identified in the State Plan include:

- CBRNE Attack
- Civil Disorder
- Cyber Disruption
- Hazardous Materials
- Mass Transportation Accidents
- Nuclear Power Plants
- Public Health Emergencies/Environmental Issues
- Special Events
- Terrorism
- Utility Interruptions and System Failures

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In Missouri, local plans customarily include only natural hazards, as only natural hazards are required by federal regulations to be included. The MPC was informed that they may decide to include technological hazards and human-caused threats in the plan, although this is not required by federal regulations. The MPC determined to include only natural hazards. The MPC agreed that human-caused and technological hazards are addressed in a Regional Homeland Security Oversight Committee (RHSOC) Threat and Hazard Identification Risk Assessment (THIRA) and that including only natural hazards would meet the needs of local entities participating in the plan update.

Levee failure was omitted due to the fact that the National Levee Database, maintained by the U.S. Army Corps of Engineers (USACE), shows no federal levees located in the Lawrence County and planning committee research revealed no records of levees within Lawrence County. Although it is likely that levees exist, such as low-head agricultural levees, no records indicate that a breach or overtopping of these levees would impact property other than that of the levee owner. Damage to residential structures is unlikely. Therefore, these hazards are not included in this risk assessment for Lawrence County. Landslides occur in all 50 states; however, this hazard is not likely to have much of a notable impact on Lawrence County due to soil profile, geology, and climate factors. In addition, the risk of coastal storms, hurricanes, tsunamis, avalanche, and volcanic activity does not exist in Lawrence County due to the county's location in the central United States.

### **3.1.2 Review Disaster Declaration History**

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From 1990 to present, Lawrence County has experienced severe storms, tornadoes, flooding, and severe winter storms. All of these natural hazard events triggered federal disaster declarations. Federal and/or state declarations may be granted when the severity and magnitude of an event surpasses the ability of the local government to respond and recover. Disaster assistance is supplemental and sequential. When the local government's capacity has been surpassed, a state disaster declaration may be issued, allowing for the provision of state assistance. If the disaster is so severe that both the local and state governments' capacities are exceeded; a federal emergency or disaster declaration may be issued allowing for the provision of federal assistance.

State and federal officials conduct a Preliminary Damage Assessment (PDA) to show that the disaster is of such severity and magnitude that effective response is beyond state and local capabilities. Based on the governor's request, the president may declare that a major disaster or emergency exists, thus activating federal programs to assist in the response and recovery effort. Not all programs are activated for every disaster. Some declarations will provide only individual assistance or public assistance, while others provide both.

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

Since 1990, Lawrence County has experienced eight (8) hazard events that triggered federal disaster declarations. The most recent occurred on May 19<sup>th</sup>. Flooding was included in 15 out of 19 events that triggered a FEMA disaster declaration. Nine declarations also included tornados. Seven of these declarations triggered both individual and public assistance.

**Table 3.1** lists the federal FEMA disaster declarations that included the planning area from 1990 to present.

**Table 3.1. FEMA Disaster Declarations that included Lawrence County, Missouri, 1990-Present**

| Disaster Number | Description   | Declaration Date Incident Period  | Individual Assistance (IA) Public Assistance (PA) |
|-----------------|---|-----------------------------------|---|
| 4317            | Severe Storms, Tornadoes, Straight-line Winds, and Flooding | June 2 <sup>nd</sup> , 2017       | Public Assistance                                 |
| 4250            | Severe Storms, Tornadoes, Straight-line Winds, and Flooding | January 21 <sup>st</sup> , 2016   | Individual & Public Assistance                    |
| 1980            | Severe Storms, Tornadoes, and Flooding                      | May 9 <sup>th</sup> , 2011        | Individual Assistance                             |
| 1847            | Severe Storms, Tornadoes, and Flooding                      | June 19 <sup>th</sup> , 2009      | Individual Assistance                             |
| 1749            | Severe Storms and Flooding                                  | March 19 <sup>th</sup> , 2009     | Public Assistance                                 |
| 1728            | Severe Storms and Flooding                                  | September 21 <sup>st</sup> , 2007 | Public Assistance                                 |
| 1676            | Severe Winter Storms and Flooding                           | January 15 <sup>th</sup> , 2007   | Public Assistance                                 |
| 1631            | Severe Storms, Tornadoes, and Flooding                      | March 16 <sup>th</sup> , 2006     | Individual & Public Assistance                    |
| 1463            | Severe Storms, Tornadoes, and Flooding                      | May 6 <sup>th</sup> , 2003        | Individual Assistance                             |
| 995             | Flooding, Severe Storm                                      | July 9 <sup>th</sup> , 1993       | Individual & Public Assistance                    |

Source: Missouri State Hazard Plan 2013; Federal Emergency Management Agency <http://www.fema.gov/disasters>

### 3.1.3 Research Additional Sources

A variety of sources were researched for data on natural hazards. Primary sources included FEMA, SEMA, National Climate Data Center (NCDC), and National Oceanic and Atmospheric Administration (NOAA). The U.S. Geological Survey (USGS) and the Center for Earthquake Research and Information (CERI) were major sources for earthquake information. The Missouri Department of Natural Resources (MDNR) Dam Safety Division provided information concerning dams and the Missouri Department of Conservation (MDC). Other information sources included county officials, existing city, county, regional and state plans; and information from local officials. The additional sources of data on locations and past impacts of hazards in Lawrence County include:

- Data Collection Questionnaires completed by each jurisdiction
- State of Missouri GIS data
- Lawrence County Multi-Jurisdictional Natural Hazard Mitigation Plan (2013)
- Environmental Protection Agency
- Flood Insurance Administration
- Hazards US (HAZUS)
- Missouri Department of Transportation
- Missouri Division of Fire Marshal Safety
- Missouri Public Service Commission

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- National Fire Incident Reporting System (NFIRS)
  - National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC);
  - Pipeline and Hazardous Materials Safety Administration
  - County and local Comprehensive Plans to the extent available
  - County Emergency Management
  - County Flood Insurance Rate Map, FEMA
  - Flood Insurance Study, FEMA
  - SILVIS Lab, Department of Forest Ecology and Management, University of Wisconsin
  - U.S. Army Corps of Engineers
  - U.S. Department of Transportation
  - United States Geological Survey (USGS)
  - Various articles and publications available on the internet (you should state that you will give citations to the sources in the body of the plan)

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

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

The database currently contains data from January 1950 to February 2017, as entered by the NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The following timelines show the different time spans for each period of unique data collection and processing procedures.

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

recorded as defined in NWS Directive 10-1605.

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

### 3.1.4 Hazards Identified

The natural hazards that can possibly or have affected Lawrence County are profiled in alphabetical order. All hazards do not affect every jurisdiction participating in the Plan. **Table 3.2** provides a summary of the jurisdictions that may be affected by each hazard. An “x” in the table indicates that jurisdictions are affected by the hazard, and a “-” indicates the hazard is not applicable to that jurisdiction.

**Table 3.2. Hazards Identified for Each Jurisdiction**

| Jurisdiction                         | Dam Failure | Drought | Earthquake | Extreme Heat | Wildfires | Flooding (River and Flash) | Land Subsidence/Sinkholes | Winter Weather/ Snow/ Ice/ Severe Cold | Thunderstorm/Lightning/ Hail/High Wind | Tornado |
|--------------------------------------|-------------|---------|------------|--------------|-----------|----------------------------|---------------------------|--|--|---------|
| <b>Lawrence County</b>               | x           | x       | x          | x            | x         | x                          | x                         | x                                      | x                                      | x       |
| Aurora                               | -           | x       | x          | x            | x         | x                          | x                         | x                                      | x                                      | x       |
| Freistatt                            | -           | x       | x          | x            | -         | x                          | -                         | x                                      | x                                      | x       |
| Marionville                          | -           | x       | x          | x            | -         | x                          | -                         | x                                      | x                                      | x       |
| Miller                               | -           | x       | x          | x            | x         | x                          | -                         | x                                      | x                                      | x       |
| Monett                               | -           | x       | x          | x            | -         | x                          | -                         | x                                      | x                                      | x       |
| Mount Vernon                         | -           | x       | x          | x            | -         | x                          | x                         | x                                      | x                                      | x       |
| Peirce City                          | -           | x       | x          | x            | x         | x                          | x                         | x                                      | x                                      | x       |
| Verona                               | -           | x       | x          | x            | x         | x                          | -                         | x                                      | x                                      | x       |
| <b>Schools and Special Districts</b> |             |         |            |              |           |                            |                           |  |  |         |
| Marionville R-IX                     | -           | x       | x          | x            | -         | x                          | -                         | x                                      | x                                      | x       |
| Miller R-II                          | -           | x       | x          | x            | x         | x                          | -                         | x                                      | x                                      | x       |
| Monett R-I                           | -           | x       | x          | x            | -         | x                          | x                         | x                                      | x                                      | x       |
| Mt. Vernon R-V                       | -           | x       | x          | x            | -         | x                          | x                         | x                                      | x                                      | x       |
| Pierce City R-VI                     | -           | x       | x          | x            | x         | x                          | x                         | x                                      | x                                      | x       |
| Verona R-VII                         | -           | x       | x          | x            | x         | x                          | -                         | x                                      | x                                      | x       |
| Barry-Lawrence Regional Library      | -           | -       | x          | x            | -         | x                          | -                         | x                                      | x                                      | x       |
| Green Benefit Special Road District  | -           | x       | x          | x            | x         | x                          | -                         | x                                      | x                                      | x       |
| Miller Benefit Special Road District | -           | x       | x          | x            | x         | x                          | -                         | x                                      | x                                      | x       |

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### 3.1.5 Multi-Jurisdictional Risk Assessment

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The risk assessment assesses each participating jurisdiction's vulnerability to each hazard that can affect Lawrence County. Many of the hazards identified in the risk assessment have the same probability of occurrence throughout Lawrence County. The hazards that vary across the county in terms of risk include dam failure, flash flood, grass or wildland fire, river flood, flash flood, and sinkholes/land subsidence. These differences are detailed in each hazard profile under geographic location and vulnerability.

Lawrence County's climate is fairly uniform throughout the planning area. Since 2010, the county has experienced a -0.7% decrease in population. Building construction throughout the county has been minimal with urban areas such as Aurora, Monett, and Mount Vernon experiencing the most development. Population estimates do not foresee a great influx of people residing in Lawrence County in the future, but growth management is still a concern in urban areas.

Naturally, the urbanized areas of Lawrence County have a greater density of important assets, which are more vulnerable to weather-related hazards. This increase in vulnerability, however, may be mitigated through updated building codes and code enforcement as well as land use planning.

These capabilities and resources to mitigate the impact of natural hazards vary across jurisdictions in Lawrence County. These differences will be discussed in greater detail in the vulnerability sections of each hazard.

## 3.2 Assets at Risk

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This section assesses Lawrence County population, structures, critical facilities and infrastructure, and other important assets that may be at risk to hazards. The inventory of assets for each jurisdiction were derived from parcel data from the Lawrence County Assessor, the Lawrence County Structures dataset downloaded from Missouri Spatial Data information Service (MSDIS), local jurisdiction data collection questionnaires, and HAZUS MH 4.0. Minimal development has occurred in Lawrence County since the previous update. It should be noted that the City of Monett was included in this plan update, but was not included in the previous plan. Monett is located in both Lawrence and Barry Counties, and also participated in the 2016 Barry County plan update.

### 3.2.1 Total Exposure of Population and Structures

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#### Unincorporated County and Incorporated Cities

In the following three tables, population data is based on 2010 Census Bureau and 2011-2015 American Community Survey 5-year estimates. Building counts and building exposure values are based on parcel data provided by the State of Missouri Geographic Information Systems (GIS) database which can be found at the following website, <http://www.msdis.missouri.edu/data/datalist.html>.

Contents exposure values were calculated by factoring a multiplier to the building exposure values based on usage type. The multipliers were derived from the HAZUS MH 2.1 and are defined below in **Table 3.3**. Land values have been purposely excluded from consideration because land remains following disasters, and subsequent market devaluations are frequently short term and difficult to

quantify. Another reason for excluding land values is that state and federal disaster assistance programs generally do not address loss of land (other than crop insurance). It should be noted that the total valuation of buildings is based on county assessors' data which may not be current. In addition, government-owned properties are usually taxed differently or not at all, and so may not be an accurate representation of true value. Public school district assets and special districts assets are included in the total exposure tables assets by community and county.

**Table 3.3** shows the total population, building count, estimated value of buildings, estimated value of contents and estimated total exposure to parcels for the unincorporated county and each incorporated city. For multi-county communities, the population and building data may include data on assets located outside Lawrence County. **Table 3.4** that follows provides the building value exposures for the county and each city in the planning area broken down by usage type. Due to data limitations, the values by usage type were estimated by overlapping structure point data from MSDIS and taking the assessed value for the type of point that lay within each parcel. Finally, **Table 3.5** provides the building count total for Lawrence County and each city in the planning area broken out by building usage types (residential, commercial, industrial, and agricultural).

**Table 3.3. Maximum Population and Building Exposure by Jurisdiction**

| Jurisdiction                   | 2015 Population | Building Count | Building Exposure    | Contents Exposure    | Total Exposure       |
|--------------------------------|-----------------|----------------|----------------------|----------------------|----------------------|
| Aurora                         | 7,473           | 5,523          | \$34,791,300         | \$20,167,180         | \$54,958,480         |
| Freistatt                      | 131             | 257            | \$681,570            | \$412,205            | \$1,093,775          |
| Marionville                    | 2,153           | 1,,724         | \$7,338,010          | \$4,228,010          | \$11,566,020         |
| Miller                         | 732             | 913            | \$2,026,050          | \$1,186,910          | \$3,212,960          |
| Monett*                        | 8,957           | 2,297          | \$19,124,600         | \$9,740,240          | \$28,864,840         |
| Mount Vernon                   | 4,531           | 3,222          | \$23,338,070         | \$13,292,635         | \$36,630,705         |
| Peirce City                    | 1,261           | 1,168          | \$5,025,570          | \$2,864,525          | \$7,890,095          |
| Verona                         | 591             | 594            | \$1,246,420          | \$696,975            | \$1,943,395          |
| Unincorporated Lawrence County | 11,991          | 30,836         | \$109,709,170        | \$84,858,515         | \$194,567,685        |
| <b>Totals</b>                  | <b>38,244</b>   | <b>47,148</b>  | <b>\$203,280,760</b> | <b>\$137,447,195</b> | <b>\$340,727,955</b> |

Sources: Population, 2011-2015 American Community Survey 5-Year Estimates; Building Count and Building Exposure, Missouri GIS Database: [http://sema.dps.mo.gov/programs/mitigation\\_management.php](http://sema.dps.mo.gov/programs/mitigation_management.php);

Contents Exposure derived by applying multiplier to Building Exposure based on HAZUS MH 2.1 standard contents multipliers per usage type as follows: Residential (50%), Commercial (100%), Industrial (150%), Agricultural (100%). For purposes of these calculations, government, school, and utility were calculated at the commercial contents rate.

\* = Building counts only include structures in Lawrence County



**Table 3.4. Building Values/Exposure by Usage Type**

| Jurisdiction                   | Residential          | Commercial          | Agricultural        | Total                |
|--------------------------------|----------------------|---------------------|---------------------|----------------------|
| Aurora                         | \$29,248,240         | \$5,356,370         | \$186,690           | \$34,791,300         |
| Freistatt                      | \$538,730            | \$139,570           | \$3,270             | \$681,570            |
| Marionville                    | \$6,220,000          | \$1,113,260         | \$4,750             | \$7,338,010          |
| Miller                         | \$1,678,280          | \$339,140           | \$8,630             | \$2,026,050          |
| Monett*                        | \$18,768,720         | \$350,570           | \$5,310             | \$19,124,600         |
| Mount Vernon                   | \$20,090,870         | \$3,123,700         | \$123,500           | \$23,338,070         |
| Peirce City                    | \$4,322,090          | \$694,120           | \$9,360             | \$5,025,570          |
| Verona                         | \$1,098,890          | \$130,940           | \$16,590            | \$1,246,420          |
| Unincorporated Lawrence County | \$49,701,310         | \$1,733,590         | \$58,274,270        | \$109,709,170        |
| <b>Totals</b>                  | <b>\$131,667,130</b> | <b>\$12,981,260</b> | <b>\$58,632,370</b> | <b>\$203,280,760</b> |

Source: Lawrence County GIS, Missouri GIS Database, [http://sema.dps.mo.gov/programs/mitigation\\_management.php](http://sema.dps.mo.gov/programs/mitigation_management.php);

\* = Building counts only include structures in Lawrence County

**Table 3.5. Building Counts by Usage Type**

| Jurisdiction                                | Residential Counts | Commercial Counts | Agricultural Counts | Total         |
|---|--------------------|-------------------|---------------------|---------------|
| Aurora                                      | 2,698              | 295               | 119                 | 5,523         |
| Freistatt                                   | 78                 | 9                 | 16                  | 257           |
| Marionville                                 | 719                | 62                | 68                  | 1,724         |
| Miller                                      | 234                | 40                | 8                   | 913           |
| Monett*                                     | 1,136              | 24                | 17                  | 2,297         |
| Mount Vernon                                | 1,583              | 149               | 41                  | 3,222         |
| Peirce City                                 | 466                | 25                | 8                   | 1,168         |
| Verona                                      | 172                | 17                | 17                  | 594           |
| Unincorporated Lawrence County <sup>^</sup> | 5,940              | 130               | 14,144              | 30,836        |
| <b>Totals</b>                               | <b>13,189</b>      | <b>778</b>        | <b>14,488</b>       | <b>47,148</b> |

Source: Missouri GIS Database, [http://sema.dps.mo.gov/programs/mitigation\\_management.php](http://sema.dps.mo.gov/programs/mitigation_management.php); Public School Districts and Special Districts

\* = Building counts only include structures in Lawrence County

<sup>^</sup> = Does not include structures in non-participating jurisdictions

Even though schools and special districts' total assets are included in the tables above, additional discussion is needed, based on the data that is available from the districts' completion of the Data Collection Questionnaire and district maintained websites. The number of enrolled students at the participating public school districts is provided in **Table 3.6** below. Additional information includes the number of buildings, building values (building exposure) and contents value (contents exposure). These numbers will represent the total enrollment and building count for the public school districts regardless of the county in which they are located.

**Table 3.6. Population and Building Exposure by Jurisdiction-Public School Districts**

| Public School District | Enrolment | Building Count | Building Exposure (\$) | Contents Exposure (\$) | Total Exposure (\$) |
|------------------------|-----------|----------------|------------------------|------------------------|---------------------|
| Marionville R-IX       | 755       | 11             | \$23,606,198           | \$4,555,619            | \$28,161,187        |
| Miller R-II            | 560       | 7              | \$15,594,120           | \$2,347,880            | \$17,942,000        |
| Monett R-I             | 2,400     | 27             | \$70,576,063           | \$6,548,040            | \$77,124,103        |
| Mt. Vernon R-V         | 1,446     | 16             | \$50,541,743           | \$5,147,168            | \$55,689,431        |
| Pierce City R-VI       | 690       | 17             | \$20,861,930           | \$2,920,994            | \$23,782,924        |
| Verona R-VII           | 412       | 7              | \$10,939,588           | \$1,144,505            | \$12,084,093        |
| <b>Totals</b>          | 6263      | 85             | \$192,119,642          | \$22,664,206           | \$214,783,738       |

Source: <http://mcids.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx>. The Building Exposure, Contents Exposure, and Total Exposure amounts come from the completed Data Collection Questionnaires from Public School Districts. In general, the school districts obtain this information from their insurance coverage amounts.

### 3.2.2 Critical and Essential Facilities and Infrastructure

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

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

**Table 3.7** includes a summary of the inventory of critical and essential facilities and infrastructure in the planning area. The list was compiled from the Data Collection Questionnaire as well as the following sources:

- Lawrence County Parcel Data
- HAZUS 4.0
- MSDIS Database

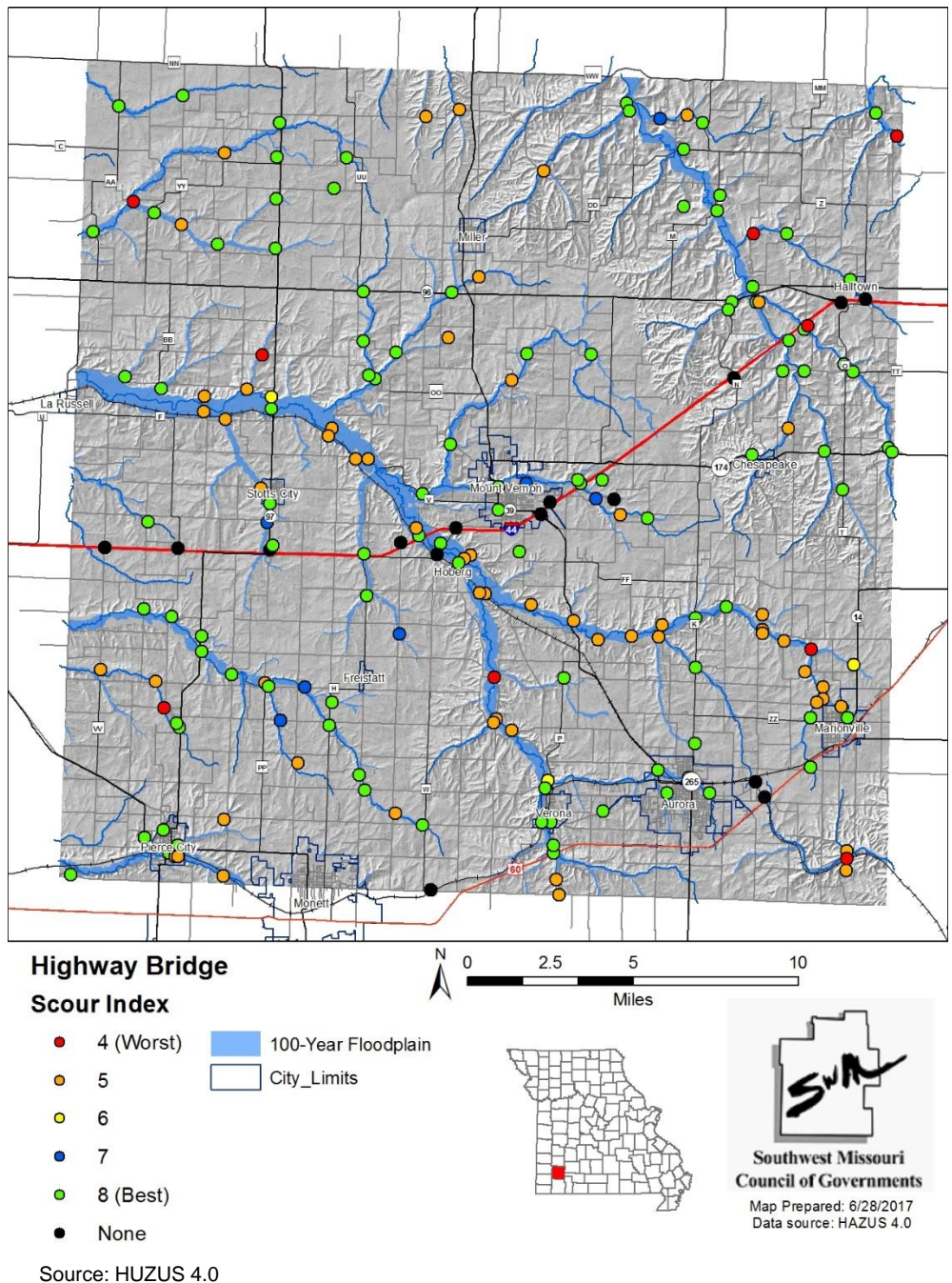
**Table 3.7. Inventory of Critical/Essential Facilities and Infrastructure by Jurisdiction**

| Jurisdiction                             | Airport Facility | Bus Facility | Childcare Facility | Communications Tower | Electric Power Facility | Emergency Operations | Fire Service | Government | Housing   | Shelters | Highway Bridge | Hospital/Health Care | Military | Natural Gas Facility | Nursing Homes | Police Station | Potable Water Facility | Rail     | School Facilities (Public/Private) | Wastewater Facility | TOTALS     |
|--|------------------|--------------|--------------------|----------------------|-------------------------|----------------------|--------------|------------|-----------|----------|----------------|----------------------|----------|----------------------|---------------|----------------|------------------------|----------|------------------------------------|---------------------|------------|
| Aurora                                   | 1                | 0            | 8                  | 0                    | 3                       | 0                    | 2            | 6          | 5         | 0        | 4              | 1                    | 0        | 2                    | 2             | 1              | 0                      | Y        | 1/1                                | 1                   | 38         |
| Freistatt                                | 0                | 0            | 0                  | 0                    | 0                       | 0                    | 0            | 0          | 0         | 0        | 0              | 0                    | 0        | 0                    | 0             | 0              | 0                      | N        | 0/1                                | 1                   | 2          |
| Marionville                              | 0                | 0            | 1                  | 0                    | 0                       | 0                    | 1            | 1          | 3         | 0        | 1              | 0                    | 0        | 0                    | 1             | 1              | 0                      | Y        | 2/0                                | 1                   | 12         |
| Miller                                   | 0                | 0            | 1                  | 1                    | 0                       | 0                    | 0            | 12         | 0         | 0        | 0              | 0                    | 0        | 0                    | 0             | 1              | 0                      | N        | 2/1                                | 1                   | 19         |
| Monett (Lawrence)                        | 1                | 0            | 4                  | 0                    | 0                       | 0                    | 0            | 0          | 6         | 0        | 0              | 0                    | 0        | 0                    | 0             | 0              | 0                      | Y        | 2/0                                | 0                   | 13         |
| Monett (Barry)                           | 1                | 0            | 2                  | 3                    | 0                       | 1                    | 2            | 5          | 3         | 3        | 16             | 1                    | 0        | 0                    | 1             | 1              | 0                      | Y        | 5/0                                | 1                   | 45         |
| Mount Vernon                             | 0                | 1            | 7                  | 2                    | 2                       | 1                    | 1            | 12         | 3         | 0        | 3              | 1                    | 0        | 0                    | 2             | 1              | 0                      | Y        | 4/0                                | 1                   | 41         |
| Peirce City                              | 0                | 0            | 2                  | 0                    | 0                       | 0                    | 1            | 2          | 0         | 0        | 5              | 0                    | 0        | 0                    | 0             | 1              | 0                      | Y        | 3/1                                | 1                   | 16         |
| Verona                                   | 0                | 0            | 0                  | 0                    | 0                       | 0                    | 0            | 1          | 0         | 0        | 2              | 0                    | 0        | 0                    | 0             | 1              | 0                      | Y        | 2/0                                | 1                   | 7          |
| Unincorporated Lawrence                  | 5                | 0            | 1                  | 33                   | 0                       | 0                    | 1            | 0          | 0         | 0        | 188            | 0                    | 0        | 16                   | 0             | 0              | 0                      | Y        | 0/1                                | 1                   | 246        |
| Barry-Lawrence Regional Library District | 0                | 0            | 0                  | 0                    | 0                       | 0                    | 0            | 5          | 0         | 0        | 0              | 0                    | 0        | 0                    | 0             | 0              | 0                      | 0        | 0                                  | 0                   | 5          |
| Green Benefit Road District              | 0                | 0            | 0                  | 0                    | 0                       | 0                    | 0            | 1          | 0         | 0        | 0              | 0                    | 0        | 0                    | 0             | 0              | 0                      | 0        | 0                                  | 0                   | 1          |
| Miller Benefit Road District             | 0                | 0            | 0                  | 0                    | 0                       | 0                    | 0            | 1          | 0         | 0        | 0              | 0                    | 0        | 0                    | 0             | 0              | 0                      | 0        | 0                                  | 0                   | 1          |
| <b>TOTALS</b>                            | <b>8</b>         | <b>1</b>     | <b>26</b>          | <b>39</b>            | <b>5</b>                | <b>2</b>             | <b>8</b>     | <b>45</b>  | <b>20</b> | <b>3</b> | <b>219</b>     | <b>3</b>             | <b>0</b> | <b>18</b>            | <b>6</b>      | <b>7</b>       | <b>0</b>               | <b>0</b> | <b>24</b>                          | <b>9</b>            | <b>445</b> |

Source: Data Collection Questionnaires; HAZUS, etc.

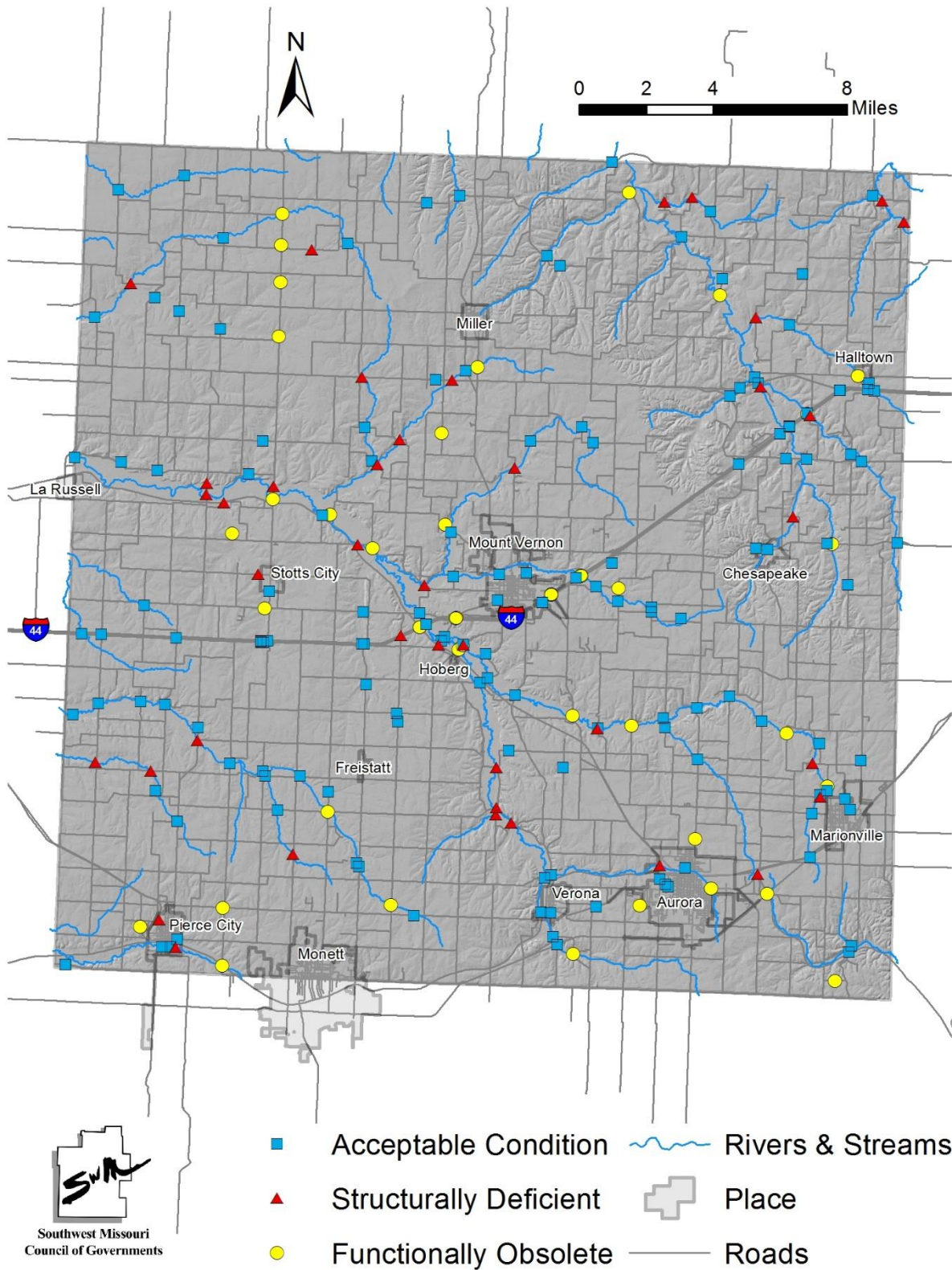
**Figure 3.1** is a map that shows the locations of bridges in the planning area included in the National Bridge Inventory data set. This data was extracted from FEMA HAZUS MH 4.4 software which reflects conditions from 2016. The HAZUS data contains a “scour index”, which is a number indicating the vulnerability of a bridge to scour during a flood. Bridges with a scour index between 1 and 3 are considered “scour critical”, or a bridge with a foundation determined to be unstable for the observed or evaluated scour condition. According to this information, there are no scour critical bridges identified in the planning area; however, several are scored a four on the scour index. Included on the map is the mapped 100-year floodplain.

**Figure 3.1. Lawrence County Bridges**





**Figure 3.2. Structurally Deficient Bridges**



Source: National Bridge Inventory

### 3.2.3 Other Assets

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

- These types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- Knowing about these resources in advance allows for consideration immediately following a hazard event, which is when the potential for damages is higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- The presence of natural resources can reduce the impacts of future natural hazards, such as wetlands and riparian habitats which help absorb floodwaters.
- Losses to economic assets like these (e.g., major employers or primary economic sectors) could have severe impacts on a community and its ability to recover from disaster.

Threatened and Endangered Species: **Table 3.8** shows Federally Threatened, Endangered, Proposed and Candidate Species in Lawrence County.

**Table 3.8. Threatened and Endangered Species in Lawrence County**

| Common Name                    | Scientific Name                | Status                      |
|--------------------------------|--------------------------------|-----------------------------|
| Grey Bat                       | Myotis grisescens              | Endangered                  |
| Indiana bat                    | Myotis sodalis                 | Endangered                  |
| Northern long-eared bat        | Myotis septentrionalis         | Threatened                  |
| Arkansas darter                | Etheostoma cragini             | Candidate                   |
| Neosho mucket                  | Lampsilis rafinesqueana        | Endangered/Critical Habitat |
| Rabbitsfoot                    | Quadrula cylindrica cylindrica | Threatened                  |
| Ozark Cavefish                 | Amblyopsis rosea               | Threatened                  |
| Geocarpon                      | Geocarpon minimum              | Threatened                  |
| Missouri Bladderpod            | Physaria filiformis            | Threatened                  |
| Western prairie fringed orchid | Plantantera praeclara          | Threatened                  |

Source: U.S. Fish and Wildlife Service, <http://www.fws.gov/midwest/Endangered/lists/missouri-cty.html>; <http://ecos.fws.gov/ipac/>

Natural Resources: The Missouri Department of Conservation (MDC) provides a database of lands the MDC owns, leases, or manages for public use. **Table 3.9** provide the names and locations of parks and conservation areas in Lawrence County.

**Table 3.9. Areas and Parks in Lawrence County**

| Area Name                            | Address                            | City            |
|--------------------------------------|------------------------------------|-----------------|
| Robert E. Talbot Conservation Area   | Highway 96 near Stotts City        | Stotts City, MO |
| Paris Spring Access                  | Highway 266 near Halltown          | Halltown, MO    |
| Providence Prairie Conservation Area | NW Lawrence County near Highway 97 | Miller, MO      |
| Kickapoo Prairie Conservation Area   | NW Lawrence County near Highway 97 | Miller, MO      |
| Park Name                            | Address                            | City            |
| Oak Park                             | Aurora, MO 65605                   | Aurora, MO      |
| Crosby Park                          | Aurora, MO 65605                   | Aurora, MO      |
| White Park                           | Aurora, MO 65605                   | Aurora, MO      |
| Baldwin Park                         | Aurora, MO 65605                   | Aurora, MO      |

|                         |                                  |                 |
|-------------------------|----------------------------------|-----------------|
| Wynne Park              | Mt. Vernon Blvd & McCanse Street | Mt. Vernon, MO  |
| Shafer Park             | 800 Shafer Street                | Mt. Vernon, MO  |
| Kings Park              | Kings Street & McCanse Street    | Mt. Vernon, MO  |
| The Gibbs Park          | South Street & Hazel Street      | Mt. Vernon, MO  |
| Spirit of 76 Park       | 501 N Main Street                | Mt. Vernon, MO  |
| Williams Creek Pond     | Adjoins Spirit of '76            | Mt. Vernon, MO  |
| Gary Ewing Park         | 1225 E. Highway 174              | Mt. Vernon, MO  |
| Pierce City Park        | Pierce City, MO 65723            | Pierce City, MO |
| Memorial Sports Complex | 904 Ballpark Road                | Pierce City, MO |
| Verona City Park        | 137 E Main Street                | Verona, MO      |

Source: <http://mdc4.mdc.mo.gov/applications/moatlas/AreaList.aspx?txtUserID=guest&txtAreaNm=s>  
 And <http://www.aurora-cityhall.org/parks.php>, <http://www.mtvernon-cityhall.org/index.cfm?content=48>,

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

Properties in Lawrence County listed in the National Register of Historic Places are listed in **Table 3.10**.

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

| Property                                      | Address                    | City        | Date Listed |
|---|----------------------------|-------------|-------------|
| Coleman, Lewis Shaw, House                    | 227 E. College Street      | Aurora      | 10/17/16    |
| Lawrence County Bank Building                 | 100 West Commercial Street | Pierce City | 03/10/05    |
| Lawrence County Courthouse                    | City Square                | Mt. Vernon  | 09/23/80    |
| Old Spanish Fort Archeological Site           | Address Restricted         | N/A         | 01/25/71    |
| Pierce City Fire Station, Courthouse and Jail | Walnut Street              | Pierce City | 08/28/98    |

Source: Missouri Department of natural Resources – Missouri National Register Listings by County <http://dnr.mo.gov/shpo/mnrlist.htm>

**Economic Resources:** **Table 3.11** shows major non-government employers in the planning area.

**Table 3.11. Major Non-Government Employers in Lawrence County**

| Employer Name                  | Main Locations | Product or Service            | Employees |
|--------------------------------|----------------|-------------------------------|-----------|
| St. John's Hospital Aurora     | Aurora         | Acute care hospital           | 215       |
| Ag Forte, LLC                  | Aurora         | Turkey Hatchery               | 350       |
| MWM Dexter                     | Aurora         | Commercial Printer            | 120       |
| Wal-Mart                       | Aurora         | Discount department store     | 250       |
| TT Group                       | Aurora         | Shoe Manufacturing            | 100       |
| Aurora Nursing Center          | Aurora         | Elderly Health Care           | 95        |
| Alpine Wood Products           | Marionville    | Wood Products                 | 50        |
| Architectural Systems          | Monett         | Engineering & Fabrication     | 390       |
| EFCO, A Pella Company          | Monett         | Windows/Construction Material | 1,516     |
| International Dehydrated Foods | Monett         | Food Products Supplier        | 220       |
| Monett Metals                  | Monett         | Metal Casting                 | 110       |
| Schreiber Foods                | Monett         | Food Products Supplier        | 160       |

|                       |            |                           |     |
|-----------------------|------------|---------------------------|-----|
| Tyson Foods           | Monett     | Poultry Products Supplier | 700 |
| WinTech               | Monett     | Window Supplier           | 110 |
| Cox Monnett Hospital  | Monett     | Healthcare                | 334 |
| Wal-Mart Super Center | Monett     | Retail/Food               | 325 |
| Schreiber Foods       | Mt. Vernon | Grocer                    | 240 |
| Wilmoth Companies     | Mt. Vernon | Oil Company               | 220 |
| Gene Taylor CBOC      | Mt. Vernon | Veteran Care              | 180 |
| Walmart               | Mt. Vernon | Retail/Food               | 175 |
| Reyco-Granning        | Mt. Vernon | Auto Suspension           | 169 |
| Positronics           | Mt. Vernon | Manufacturer              | 141 |
| Lawrence County Manor | Mt. Vernon | Nursing/Rehabilitation    | 85  |

Source: Data Collection Questionnaires; local Economic Development Commissions

**Agriculture:** Lawrence county agriculture plays a big part in the county's economy. Lawrence County was ranked 7<sup>th</sup> in Missouri for total value of agricultural products sold and 3<sup>rd</sup> in total value of livestock, poultry, and other products. Lawrence County is also ranked 1<sup>st</sup> in Missouri for the number of total livestock of cattle and calves at 109,706 heads. Livestock sales account for 93% of total products sold at market value. The tables show revenue increasing by 19% from 2007 to 2012 and 20% on average for individual farms. Although revenues have increased, the number of farms have fallen slightly along with the total acreage in the county. **Tables 3.12** provides a summary of the agricultural presence in Lawrence County.

**Table 3.12. Agriculture Presence in Lawrence County**

| Category                             | 2012                | 2007          | Percent Change |
|--------------------------------------|---------------------|---------------|----------------|
| Number of Farms                      | 1,849               | 1,873         | -1%            |
| Land in Farms                        | 311,127 acres       | 322,822 acres | -4%            |
| Average Size of Farms                | 168 acres           | 172 acres     | -2%            |
| <b>Market Value of Products Sold</b> |                     |               |                |
| Crop Sales                           | \$15,166,000 (7%)   | N/A           |                |
| Livestock Sales                      | \$189,739,000 (93%) | N/A           |                |
| Total                                | \$204,905,000       | \$172,461,000 | +19%           |
| Average Per Farm                     | \$110,819           | \$92,077      | +20%           |
| <b>Payments</b>                      |                     |               |                |
| Government Payments                  | \$1,959,000         | \$2,967,000   | -34%           |
| Average Per Farm Receiving Payments  | \$5,695             | \$6,759       | -16%           |

Source: USDA Census of Agriculture; <https://www.agcensus.usda.gov/>

## 3.3 Land Use and Development

### 3.3.1 Development Since Previous Plan Update

Lawrence County has experienced slight growth since 2000, with a population increase of approximately 8.6% from 2000 to 2015. However, based on the 2015 population estimate, the County population has decreased since 2010.

**Table 3.13** provides the population growth statistics for all jurisdictions in Lawrence County based on 2000/2010 census and 2015 U.S. Census ACS population estimates.



**Table 3.13. Lawrence County Population Growth, 2000-2015**

| Jurisdiction         | Total Population 2000 | Total Population 2010 | Total population 2015 | 2000-2015 # Change | 2000-2015 % Change |
|----------------------|-----------------------|-----------------------|-----------------------|--------------------|--------------------|
| Lawrence County      | 35,204                | 38,634                | 38,244                | 3,040              | 8.6%               |
| City of Aurora       | 7,014                 | 7,508                 | 7,473                 | 459                | 6.5%               |
| Village of Freistatt | 184                   | 163                   | 131                   | -53                | -28.8%             |
| City of Marionville  | 2,113                 | 2,225                 | 2,153                 | 40                 | 1.9%               |
| City of Miller       | 754                   | 699                   | 732                   | -22                | -2.9%              |
| City of Monett       | 7,396                 | 8,873                 | 8,957                 | 1,561              | 21.1%              |
| City of Mount Vernon | 4,017                 | 4,575                 | 4,531                 | 514                | 12.8%              |
| City of Pierce City  | 1,385                 | 1,292                 | 1,261                 | -124               | -8.9%              |
| City of Verona       | 714                   | 619                   | 591                   | -123               | -17.2%             |
| Unincorporated       | 11,128                | 12,231                | 12,107                | 979                | 8.8%               |

Source: U.S. Bureau of the Census, Decennial Census; Population Statistics are for entire incorporated areas as reported by the Census bureau

Population growth or decline is generally accompanied by increases or decreases in the number of housing units. Increases in population add to the built environment and increase risk and exposure to hazard events.

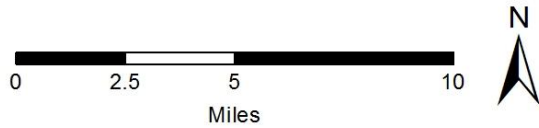
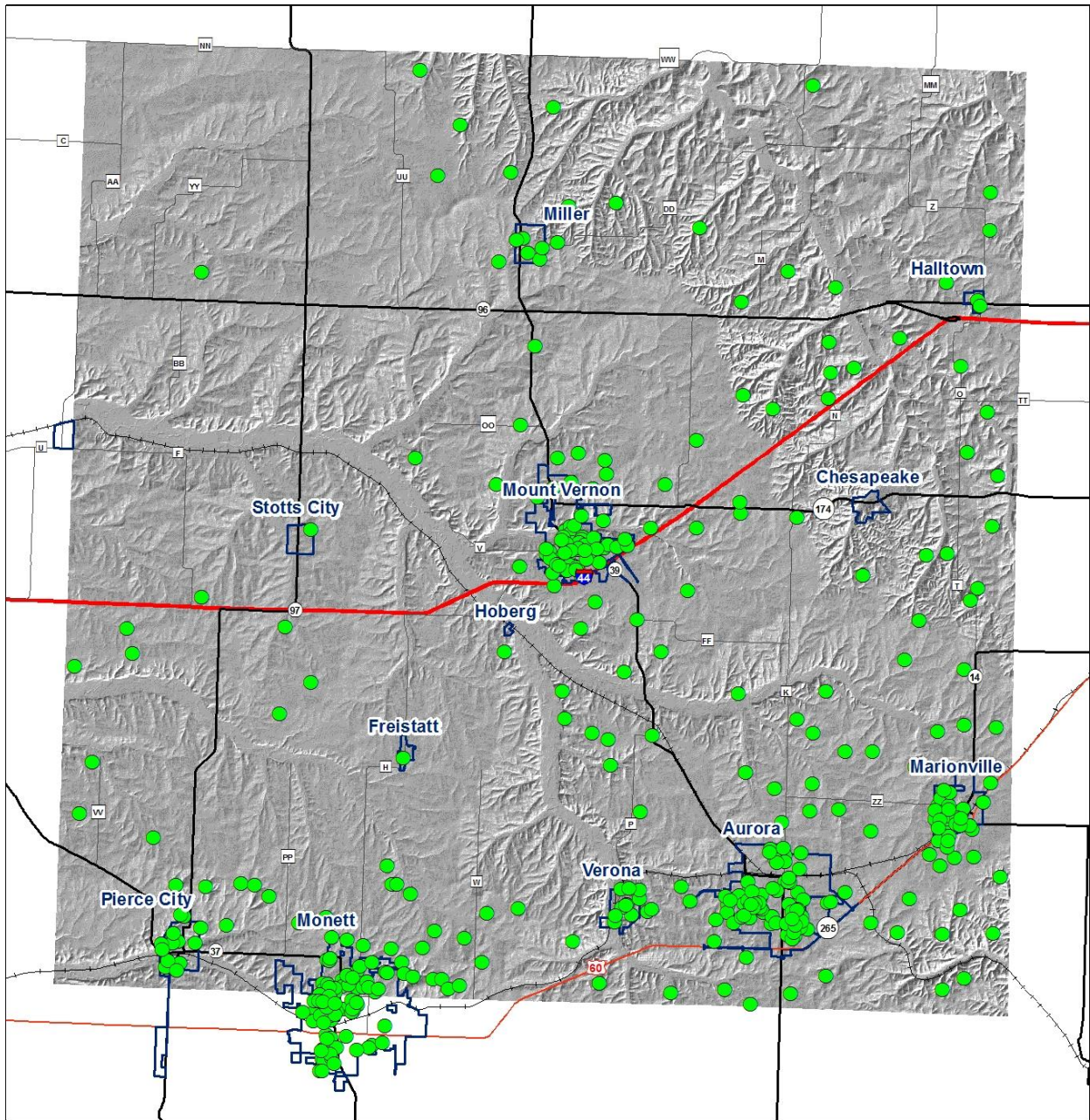
**Table 3.14** provides the change in numbers of housing units in the planning area from 2000 to 2015. It should be noted that the total 2015 housing units has a higher chance of inaccuracies

**Table 3.14. Change in Housing Units, 2000-2015**

| Jurisdiction         | Housing Units 2000 | Housing Units 2010 | Housing Units 2015 | 2000-2010 # Change | 2000-2010 % Change |
|----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Lawrence County      | 14,789             | 16,649             | 16,573             | 1,784              | 12.1%              |
| City of Aurora       | 3,093              | 3,396              | 3,382              | 289                | 9.3%               |
| Village of Freistatt | 86                 | 90                 | 123                | 37                 | 43.0%              |
| City of Marionville  | 993                | 1,018              | 958                | -35                | -3.5%              |
| City of Miller       | 378                | 363                | 399                | 21                 | 5.6%               |
| City of Monett       | 3,130              | 3,828              | 3,648              | 518                | 16.5%              |
| City of Mount Vernon | 1,730              | 2,013              | 2,006              | 151                | 15.8%              |
| City of Pierce City  | 646                | 602                | 634                | -12                | -1.9%              |
| City of Verona       | 252                | 239                | 240                | -12                | -4.8%              |

Source: U.S. Bureau of the Census, Decennial Census; Population Statistics are for entire incorporated areas as reported by the U.S. Census Bureau

**Figure 3.3. Lawrence County Dot Density by Census Block, 2000 Population**



**Population by Census Block, 2000**

- 1 Dot = 60
- POP00

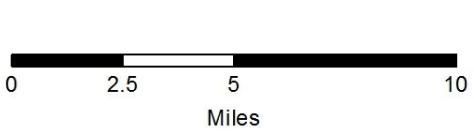
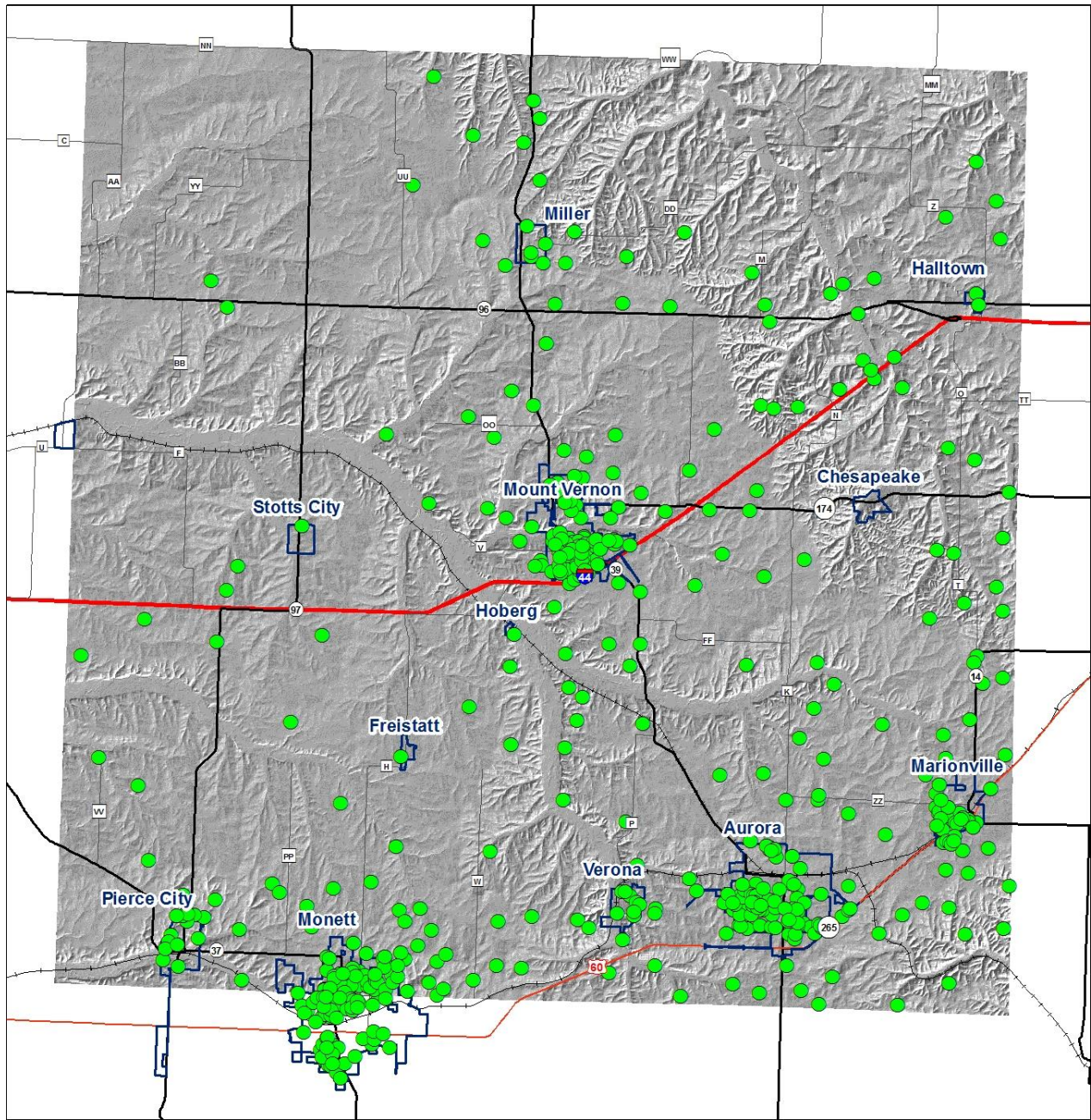


**Southwest Missouri  
Council of Governments**

Map Prepared: 6/28/2017  
Data source: U.S. Census



**Figure 3.4. Lawrence County Dot Density by Census Block, 2010 Population**



**Population by Census Block, 2010**

- 1 Dot = 60
- POP10



Southwest Missouri  
Council of Governments  
Map Prepared: 6/28/2017  
Data source: U.S. Census

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Lawrence County communities have, overall, experience little growth since the previous plan update. The City of Monett has been the primary community to experience growth.

### ***City of Aurora***

Aurora is the most populated jurisdiction entirely located in Lawrence County at about 7,500 people in 2010. ACS data shows the population decreased slightly between 2010 and 2015, but since 2000, the population has grown by 6.5%. The city has a comprehensive plan in place but has not been updated since 2008. Several areas within the city have been developed since the last plan update including residential subdivisions, commercial, and industrial additions.

### ***Village of Freistatt***

The Village of Freistatt is a small community of about 131 people. The population of this community has declined -28.8% between 2000 and 2015, and nearly -20% between 2010 and 2015. The village is located in the southern portion of Lawrence County, a few miles off of I-44. Freistatt has a comprehensive plan that was updated in 2013. There has been very little development within the village limits since the previous plan.

### ***City of Marionville***

Since 2000, the population of Marionville has stayed relatively the same. Marionville has a comprehensive plan, which also includes a land use plan, but it has not been updated since 1998. The only significant development to occur since the previous update is an apartment complex. The community is located along MO 60 highway.

### ***City of Miller***

The city of Miller is located in the northwest portion of the county. The city has a capital improvement plan in place, but does not have a comprehensive plan. Since the previous plan, a Dollar General store was constructed along Highway 37. The population of Miller decreased slightly between 2000 and 2010, but is estimated to have increased between 2010 and 2015.

### ***City of Monett***

The City of Monett's comprehensive plan has not been updated since 1998. The city also has an Airport Master Plan to manage growth for the Municipal Monett Airport. Monett has grown to a population of about 8,935 people, 20% more than in 2000. In addition, there are 15% more housing units bringing the total to around 3,579 units. Since the last plan update, there have been numerous new commercial developments in the city, including a new shopping center. Monett also saw the construction of new waste water plant. Despite new development, Monett has not annexed any land in the past 5 years.

### ***City of Mount Vernon***

The City of Mount Vernon is the county seat and centrally located in the county. Mt. Vernon recently updated their Comprehensive Plan and the Capital Improvements Plan is updated annually. Other plans include a builders plan and land use plan. The population of the city has increased by 12.8% between 2000 and 2015. ACS 2015 currently estimates the population at 4,531 people, but the 2010 population was counted at 4,575, thus estimating a slight decrease in population since the previous plan update. Development since the previous update includes a two commercial developments and one industrial development.



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### ***City of Aurora***

Aurora is a third class city and has experienced relatively steady growth over the past 10 years, and expects that growth to continue. The city expects to see development along the Highway 60 corridor. The city does have a comprehensive plan, but it has not been updated since 2008. Money has been budgeted to prepare a storm water master plan in the coming year. Aurora expects to install a new waste water sewer interceptor and pipeline improvements, construct a new railroad overpass on Hwy 39, and an expansion on the White Park walking trail in the next five years. There are no plans for development to occur in high hazard areas.

### ***Village of Freistatt***

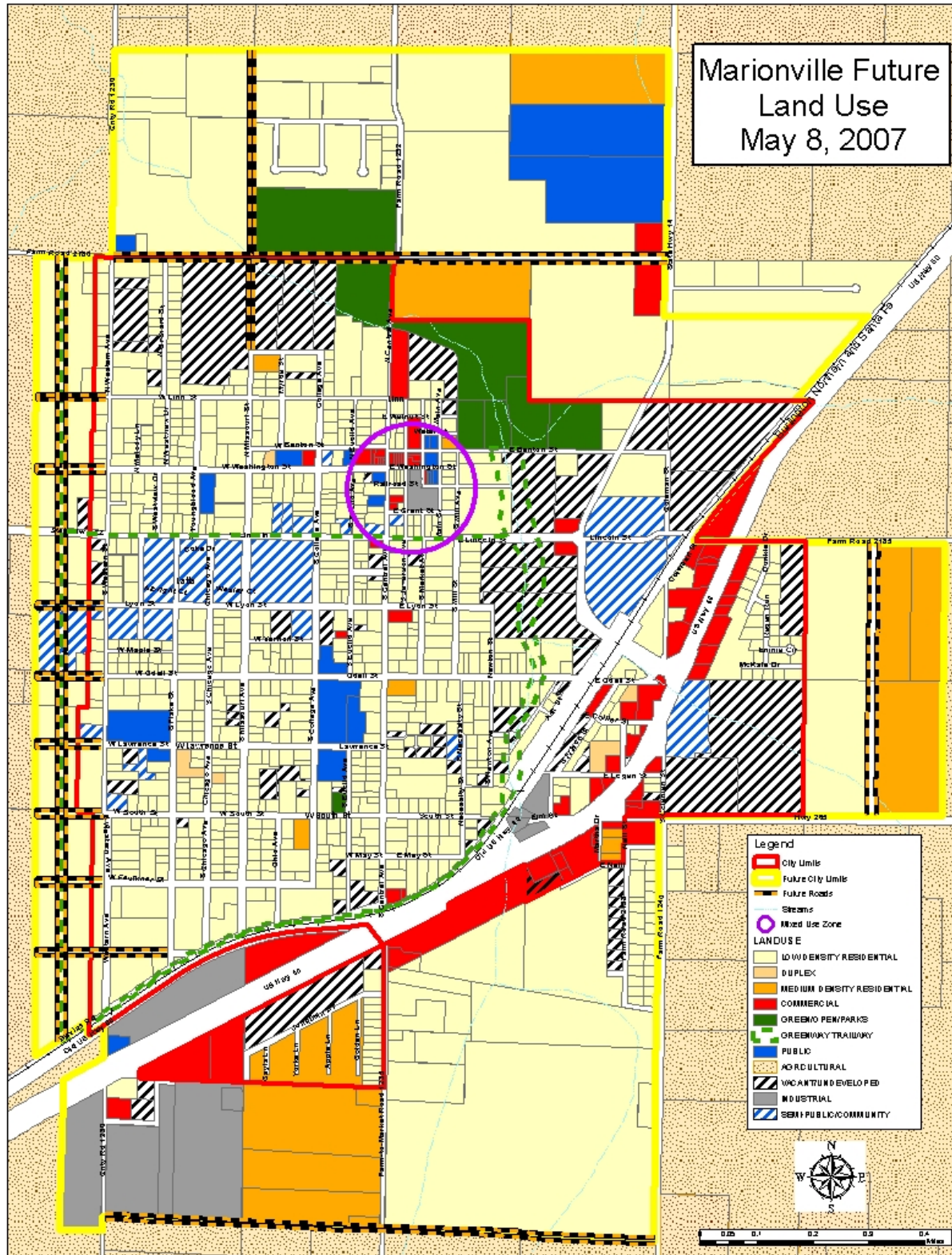
The Village of Freistatt is a small community and plans to remain that way. The Village does have a comprehensive plan, but did not provide the document as part of this Plan update process. There is no anticipated development within the community over the next five years besides the hopes of adding a storm shelter when funds become available.

### ***City of Marionville***

Marionville is a growing community with a comprehensive and land use plan in place. According to the city's comprehensive plan, the community hopes to develop a large number of vacant lots in the city limits. The City has plans to construct a municipal complex that would include a community meeting room, a court, and police department. **Figure 3.6** shows the future land use based on the map in the city's 2008 comprehensive plan.



Figure 3.6. Marionville Future Land Use included in 2008 Comprehensive Plan



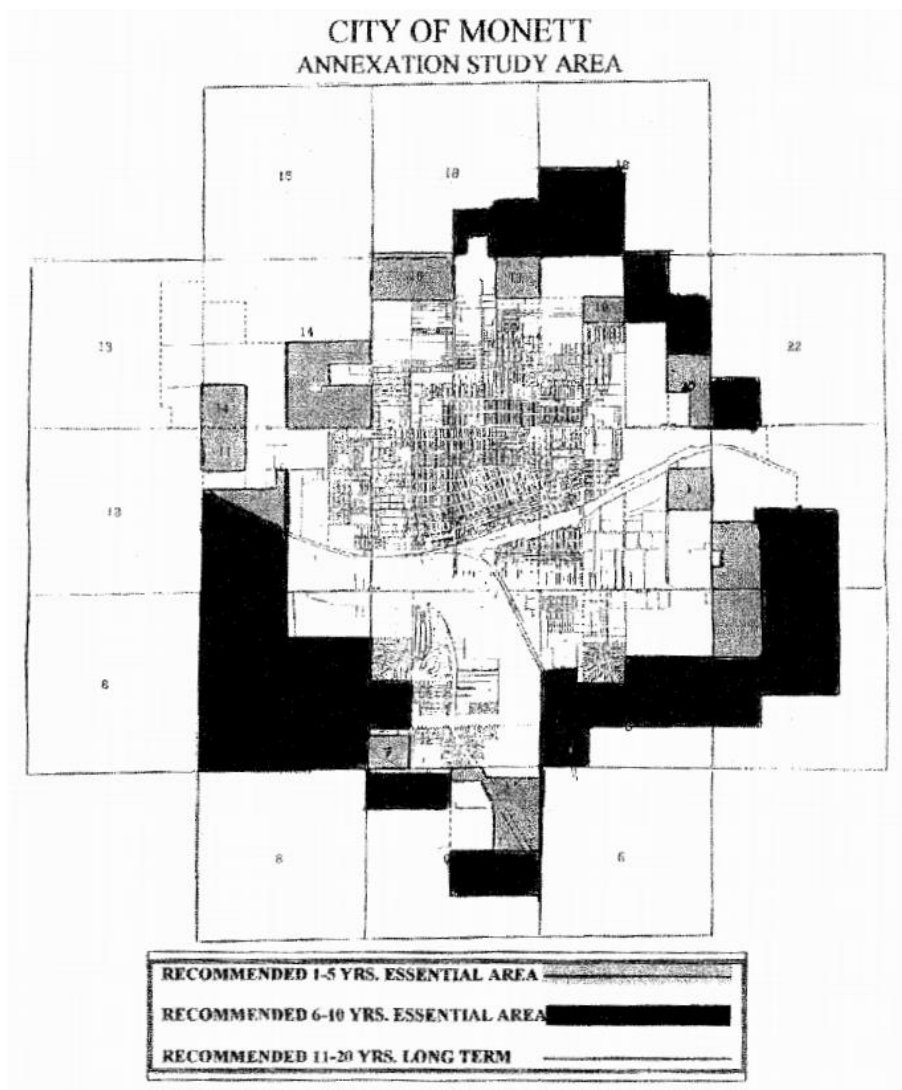
**City of Miller**

The city of Miller is a small community and has no plans to change. There has been very little development occurred over the past five years, and very little is expected to occur in the next five. The city plans to make sewage lagoon improvements in the near future. There are no plans for development to occur in high hazard areas.

**City of Monett**

The city of Monett has experienced the most population growth in Lawrence County and expects to continue its growth for the next 5 years. The city's current comprehensive plan was updated in 1996 and is likely outdated, but discusses options for annexation of land to accommodate the expected growth. **Figure 3.7** shows recommended annexation outlined in the 1970 comprehensive growth management plan. The growth management plan states that growth is occurring on the west side next to the golf course and more land is suitable for development. Additionally, development is occurring on the north side of the city along Highway H. It is likely that additional commercial development will occur along Highway 60 and Business 60 on the east side of the city.

**Figure 3.7. Proposed Annexation in the Comprehensive Growth Management Plan**

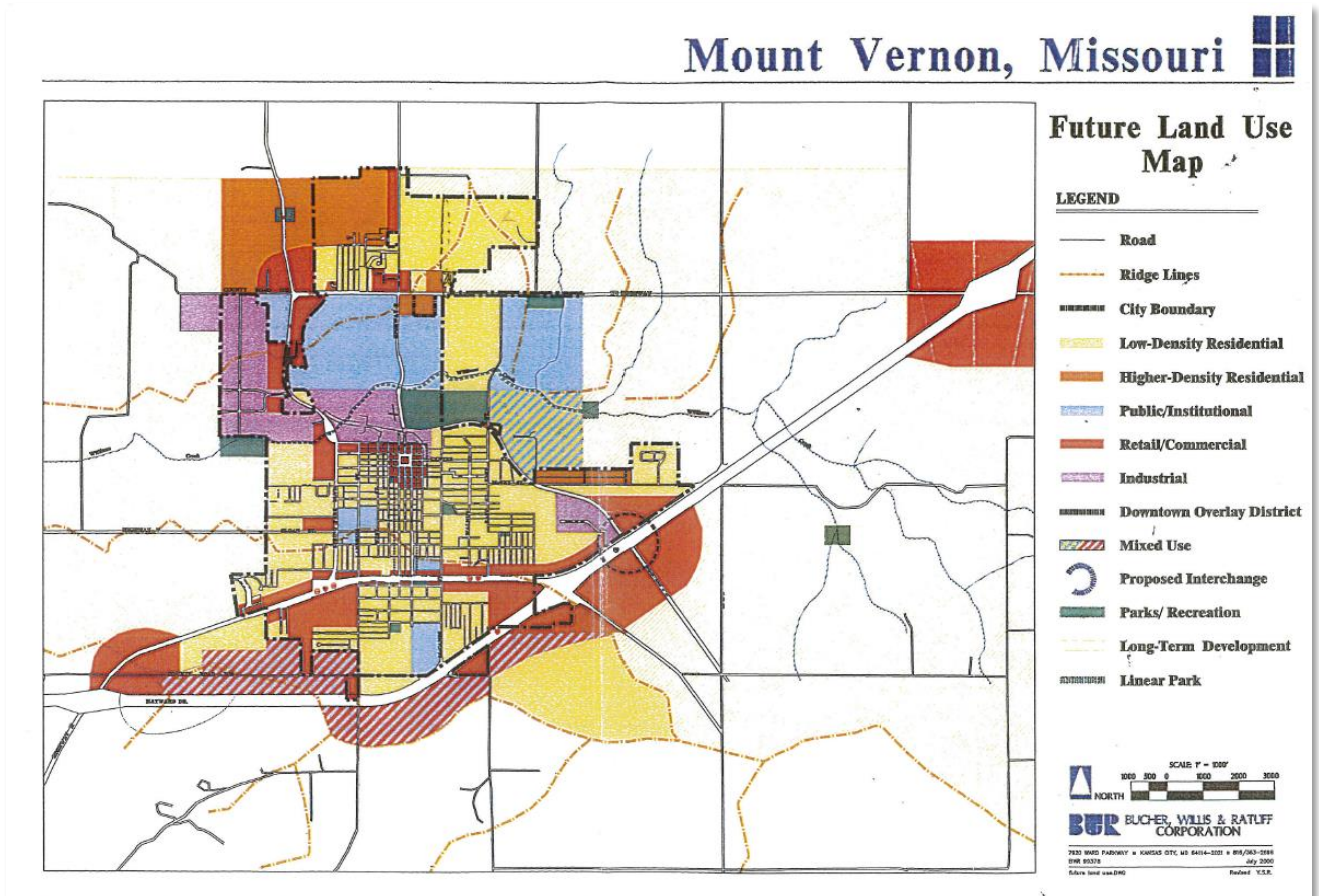




### City of Mount Vernon

Mount Vernon has experienced a population growth over the past decade and expects to maintain that growth in the coming years. The city has plans to extend its water, sewer, and electric utilities south of the interstate within the next five years. Mount Vernon does not expect any new development in the 100-year floodplain or any new facilities that would be put at risk by any hazards. Mt. Vernon does have a comprehensive plan and future land use map to assist in managing future growth. Figure 3.8 displays the Mount Vernon Future Land Use Map.

Figure 3.8. Mount Vernon Future Land use Map



### City of Pierce City

The city of Pierce City is a small community that has experienced very little growth in the past decade. The city expects no major development during the next five years. There is no comprehensive or land use plan in place currently for the city. There are no plans for development to occur in high hazard areas.

### City of Verona

Verona is a small community that has seen a decline in population during the past decade. City personnel do not expect the city to grow in the next five years, and they expect no new development to occur. There are no plans for development to occur in high hazard areas.

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## **School District's Future Development**

### ***Marionville R-IX School District***

Marionville R-IX School District has a current enrollment of 755 students. Over the next five years, the school district expects a 0% increase or decrease in enrollment. The district has designated tornado shelters and safe rooms, but they are not up to FEMA standards. The school district plans to remodel the Middle School gymnasium, dressing rooms, and stage area within the next five years.

### ***Miller R-II School District***

Miller R-II School District expects its enrollment to stay about the same as its current number of 560 students over the next five years. The district does not have any tornado shelters or safe rooms in place. Over the next five years, the district hopes to build another gymnasium, although the area for the gym has not been chosen yet.

### ***Monett R-I***

Monett R-I School District enrollment is expected to increase steadily at less than 1% annually over the next five years. The district currently has tornado shelters and safe rooms that are in accordance with FEMA standards. Monett constructed a new performing arts center and an addition to the high school, along with FEMA shelters at Central Park Elementary, Monett Intermediate, Monett Middle School and Monett High School. Plans to expand at the elementary school that would include a pre-school at the vacant buildings near the campus are in the works, and possibly a connection at the middle school which would connect the two buildings.

### ***Mt. Vernon R-V School District***

Mt. Vernon R-V has a current enrollment of 1,446 students. The district estimates it may see a 5% range in increase and decrease over the next five years. The district does not currently have any tornado shelters or safe rooms. There are no plans for construction or remodels for the district; however a new football/track complex was built on the High School campus in 2014, along with concession stand, locker room, and restroom facilities.

### ***Pierce City R-VI School District***

Current enrollment at the school district is 690, with an expected 0% change over the next five years. The district has a FEMA approved building that will shelter all students and staff in the event of a hazard. Pierce City R-VI constructed a new middle school building in 2012.

### ***Verona R-VII School District***

Verona R-VII has a current enrollment of 412 students between its elementary and high school. The school district expects no change in enrollment in the next five years. The district has plans to possibly build a new gymnasium in the coming years. The district does not currently have tornado shelters or same rooms. Verona R-VII built a new locker room off of the gymnasium in the past five years.

## **Special District's Future Development**

### ***Barry-Lawrence Regional Library District***

The Barry-Lawrence Regional Library District, Lawrence County branches do not anticipate any future development in the next five years. Each branch has designated areas for shelter, but no FEMA standard shelters. The district does not anticipate any new development or expansion in the next five years.

### ***Green Benefit Special Road District***

The boundaries for road districts have been established by policy, and the County and individual districts have no plans for changes. Green Benefit Special Road District does not have any plans for new buildings or development, and does not know of any planned development that would be located

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in the floodplain. The Road District does not currently have a designated public shelter or saferoom, but would like to add one in the future.

### ***Miller Benefit Special Road District***

The boundaries for road districts have been established by policy, and the County and individual districts have no plans for changes. The Road District does not expect to see any new development in the floodplain over the next five years. Miller Benefit Road District plans to construct a new maintenance building on the current facility lot, and add a heated room for the mechanics.

## **3.4 Hazard Profiles, Vulnerability, and Problem Statements**

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Each hazard identified in Section 3.1.4 will be analyzed individually in a hazard profile. The profile will consist of a general hazard description, location, severity/magnitude/extent, previous events, future probability, a discussion of risk variations between jurisdictions, and how anticipated development could impact risk. At the end of each hazard profile will be a vulnerability assessment, followed by a summary problem statement.

### **Hazard Profiles**

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

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

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

**Geographic Location:** This section describes the geographic location of the hazard in the planning area. Where available, use maps to indicate the specific locations of the planning area that are vulnerable to the subject hazard. For some hazards, the entire planning area is at risk.

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

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

**Probability of Future Occurrence:** The frequency of recorded past events is used to estimate the likelihood of future occurrences. Probability was determined by dividing the number of recorded events by the number of years and multiplying by 100. This gives the percent chance of the event happening in any given year. For events occurring more than once annually, the probability will be reported

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100% in any given year, with a statement of the average number of events annually.

## **Vulnerability Assessments**

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

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

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

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

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

Following the hazard profile for each hazard will be the vulnerability assessment. The vulnerability assessment further defines and quantifies populations, buildings, critical facilities, and other community assets at risk to damages from natural hazards. The vulnerability assessments will be based on the best available county-level data, which is in the Missouri Hazard Mitigation Plan (2013). The county-level assessments in the State Plan were based on the following sources:

- Statewide GIS data sets compiled by state and federal agencies; and
- FEMA's HAZUS-MH loss estimation software.

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

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

In the Vulnerability Assessment section, the following sub-headings will be addressed:

### **Vulnerability Overview**

**Potential Losses to Existing Development:** Includes the types and numbers of buildings and critical facilities.

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**Previous and Future Development:** This section will include information on how changes in development have impacted the community's vulnerability to this hazard. It also includes a description of changes in development that occurred in known hazard prone areas since the previous plan have increased or decreased the community's vulnerability, and any anticipated future development in the county, and how that would impact hazard risk in Lawrence County.

**Hazard Summary by Jurisdiction:** For hazard risks that vary by jurisdiction, this section will provide an overview of the variation and the factual basis for that variation. For example, a community that has adopted more recent building codes and constructed safe rooms would be less vulnerable to the impact of tornados.

### **Problem Statements**

Each hazard analysis concludes with a brief summary of the problems created by the hazard Lawrence County, and possible ways to resolve those problems. Jurisdiction-specific information in those cases where the risk varies across the planning area is included.

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### 3.4.1 Dam Failure

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Some sources for this hazard are:

- Missouri Department of Natural Resources, Dam and Reservoir Safety, <http://dnr.mo.gov/env/wrc/dam-safety/statemap.htm>
- Stanford University's National Performance of Dams Program; <http://npdp.stanford.edu/>
- National Inventory of Dams
- MO DNR Dam & Reservoir Safety Program;
- National Resources Conservation Service <http://www.nrcs.usda.gov>
- DamSafetyAction.org, <http://www.damsafetyaction.org/MO/>

#### **Hazard Profile**

##### ***Hazard Description***

A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Dams are typically constructed of earth, rock, concrete, or mine tailings. Dam failure is the uncontrolled release of impounded water resulting in downstream flooding, affecting both life and property. Dam failure can be caused by any of the following:

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

According to the State Plan, Missouri had 5,423 recorded dams in 2013, the largest number of man-made dams of any state in the country. Missouri's topography allows lakes to be built easily and inexpensively, which accounts for the high number of dams. Despite the large number of dams, there are only 682 (about 13 percent) state regulated dams, with an additional 66 federally regulated dams. Federal dams in Missouri are primarily regulated by two federal agencies; the U.S. Army Corps of Engineers (USACE), and the U.S. Department of Agriculture Forest Service. The remaining 4,495 dams are unregulated.

Dams that fall under state regulation are non-federally regulated dams that are more than 35 feet in height. Most nonfederal dams are privately owned structures built either for agricultural, water supply or recreational use. The Department of Natural Resources (MDNR) Water Resources Center maintains the Dam and Reservoir Safety Program in Missouri. The program ensures that dams over 35 feet in height are safely constructed, operated, and maintained pursuant to Chapter 236 of Revised Statutes of Missouri.

The Department of Natural Resources provides information about regulated and unregulated dams in Missouri. The information includes details of the dam dimensions, date of construction, approximate reservoir volume, contributing drainage basin area and hazard classification. In addition, USACE maintains the National Inventory of Dams (NID). The information in the NID database matches the list

from the MDNR website with some additional details for dams in Lawrence County. Although both agencies provide a hazard classification for dams, the dam classification systems differ.

The Missouri Dam and Reservoir Safety Council Rules and Regulations uses three classes of downstream environmental zone used when considering permits. The downstream environment zone is the area below the dam that would become inundated should the dam fail. Inundation is defined as water two feet or more over the submerged ground outside of the stream channel. These classes are based on the number of structures and types of development contained within the inundation area as presented in **Table 3.15**. The downstream environment zone classification is also used to prescribe the frequency of inspection.

**Table 3.15. MDNR Dam Hazard Classification Definitions**

| Hazard Class | Definition   |
|--------------|--|
| Class I      | The area downstream from the dam that would be affected by inundation contains ten (10) or more permanent dwellings or any public building. Inspection of these dams must occur every two years  |
| Class II     | The area downstream from the dam that would be affected by inundation contains one to nine permanent dwelling, or one (1) or more campgrounds with permanent water, sewer and electrical services or one (1) or more industrial buildings. Inspection of these dams must occur once every three years. |
| Class III    | The area downstream from the dam that would be affected by inundation does not contain any of the structures identified for Class I or Class II dams. Inspection of these dams must occur once every five years  |

Source: Missouri Department of Natural Resources, [http://dnr.mo.gov/env/wrc/docs/rules\\_reg\\_94.pdf](http://dnr.mo.gov/env/wrc/docs/rules_reg_94.pdf)

Dams in the NID are classified according to hazard potential, an indicator of the consequences of dam failure. A dam’s hazard potential classification, presented in **Table 3.16**, does not indicate its condition. Dams assigned the high hazard potential classification are those where failure will potentially result in loss of human life. Significant hazard potential are those dams where failure results in no probable loss of human life but can cause economic loss. Dams assigned the low hazard potential classification are those where failure or results in no probable loss of human life and low economic or environmental losses. Losses are principally limited to the owner’s property

**Table 3.16. NID Dam Hazard Classification Definitions**

| Hazard Class       | Definition   |
|--------------------|--|
| Low Hazard         | Failure results in only minimal property damage.   |
| Significant Hazard | Failure could possibly result in the loss of life and appreciable property damage.       |
| High Hazard        | If the dam were to fail, lives would be lost and extensive property damage could result. |

Source: USACE, [National Inventory of Dams](#)

There is not a direct correlation between the State Hazard classification and the NID classifications. However, most dams that are in the State’s Classes I and II are considered NID High Hazard Dams.

### **Geographic Location**

#### Dams in Planning Area

There are total of seven (7) recorded dams in Lawrence County in both the MDNR and NID databases. All dams are considered Class III and Low Hazard under MDNR and NID guidelines, respectively. They have no significant threat of failing or damage to structures in the event of a failure.



All are privately-owned and unregulated due to not having a height of 35 feet or above.

Information about Low Hazard dams in Lawrence County is presented in **Table 3.17**. The table indicates if there is an Emergency Action Plan (EAP) in place, height, last inspection date, river, nearest city/township, “as the crow flies” distance to the nearest downstream city/township, and normal storage of water impounded by the dam in acre feet. An acre foot is defined as the volume of one acre of surface area to the depth of one foot.

**Table 3.17. Low Hazard Dams in the Lawrence County Planning Area**

| Dam Name                      | Emergency Action Plan (EAP)/AP | Dam Height (Ft) | Normal Storage (Lake Area) | Last Inspection Date | River                | Nearest Downstream City | Distance To Nearest City (Miles) | Owner                     |
|-------------------------------|--------------------------------|-----------------|----------------------------|----------------------|----------------------|-------------------------|----------------------------------|---------------------------|
| Faucetts Point Lake Dam       | Not Reported                   | 18.00           | 10.00                      | N/A                  | TR Honey Creek       | Hoberg                  | 4                                | Leon D Faucett            |
| Harlan Stump Dam              | Not Reported                   | 15.00           | 11.00                      | N/A                  | TR North Fork Spring | Golden City             | 0                                | Unknown                   |
| Mendenhall Lake Dam           | Not Reported                   | 20.00           | 8.00                       | N/A                  | TR Johnson Creek     | Pennsboro               | 0                                | Jack Mendenhall           |
| Poirot Farms Inc. Dam         | Not Reported                   | 10.00           | 15.00                      | N/A                  | Coon Creek           | Dudenville              | 0                                | Poirot Farm Inc           |
| Poirot Lake Dam/(Shallow)     | Not Reported                   | 12.00           | 30.00                      | N/A                  | Coon Creek           | Lamar                   | 28                               | Poirot Farm Inc           |
| Pyle Lake Dam                 | Not Reported                   | 15.00           | 12.00                      | N/A                  | TR Coon Creek        | Lamar                   | 30                               | Frank Pyle                |
| Southwest Research Center Dam | Not Reported                   | 21.00           | 6.00                       | N/A                  | TR Honey Creek       | Mt Vernon               | 1                                | Southwest Research Center |

Sources: Missouri Department of Natural Resources, <http://dnr.mo.gov/env/wrc/dam-safety/statemap.htm> and National Inventory of Dams, [http://nid.usace.army.mil/cm\\_apex/f?p=838:12](http://nid.usace.army.mil/cm_apex/f?p=838:12) By the end of 2015, the Missouri DNR anticipates having Emergency Action Plans, including inundation maps for all state-regulated Class 1 and Class 2 dams. Contact the DNR Dam and Reservoir Safety Program at 800-361-4827 to request the inundation maps for your county to show geographic locations at risk, extent of failure and to perform GIS analysis of those assets at risk to dam failure.

There are no high or significant hazard dams in the planning area.

#### Upstream Dams Outside the Planning Area

A few dams reside outside the county, but near the planning area; however, none have a significant threat to the county or jurisdictions in the event of a dam failure due to a low hazard designation and not located upstream.

#### **Severity/Magnitude/Extent**

The severity/magnitude of dam failure would be similar in some cases to the impacts associated with flood events (see the flood hazard vulnerability analysis and discussion). Based on the hazard class definitions, failure of any of the High Hazard/Class I dams could result in a serious threat of loss of human life, serious damage to residential, industrial or commercial areas, public utilities, public buildings, or major transportation facilities. Catastrophic failure of any high hazard dams has the potential to result in greater destruction due to the potential speed of onset and greater depth, extent, and velocity of flooding. Note that for this reason, dam failures could flood areas outside of mapped flood hazards.



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Dam failure in Lawrence County is extremely unlikely. All dams in the planning area are low hazard/Class I designation and reside in low populated areas of unincorporated parts of the county. In the event of a dam failure, little to no damage would occur to structures as no structures are in the vicinity of the inundation zones.

### ***Previous Occurrences***

There is no record of a dam failure within the county. For the 26-year period from 1975 to 2001 for which dam failure statistics are available, 17 dam failures were recorded in the state of Missouri. This does not include the Taum Sauk failure in 2005 or the Moon Valley Lake Dam failure in 2008 since the comprehensive data collected by Stanford University was not updated past 2001. According to this data, the annual probability calculates to a 65% ( $17/26 = 0.65$  or 65%) probability in any given year for at least one dam failure event somewhere in the State of Missouri. However, with over 5,000 dams in the State, this translates to an overall low probability per dam structure.

### ***Probability of Future Occurrence***

There are no records of dam failure in Lawrence County. Since there are zero recorded events in the planning area, a calculation of a probability percent is not possible. According to information from the 2013 State Plan, Missouri's percentage of high hazard dams in the DNR inventory puts the State at about the national average for that category. However, if development occurs downstream of dams the percentage of high hazard dams will increase. Additionally, the probability of dam failure increases as many of the smaller and privately owned dams continue to deteriorate without the benefit of further regulation or improvements. Regular inspection and maintenance schedules for dams greatly reduces the probability of dam failure. There are no records of inspections occurring at any dams in the planning area.

## **Vulnerability**

### ***Vulnerability Overview***

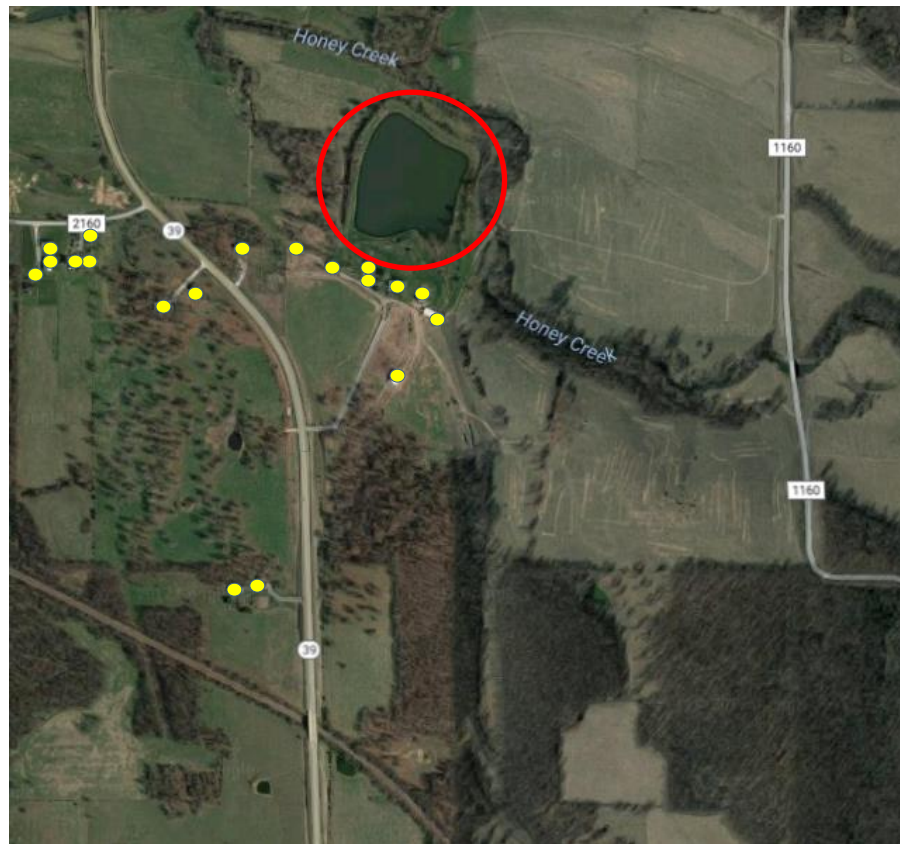
Vulnerability to dam failure in Lawrence County is limited to structures and critical infrastructure located in dam inundation zones. Due to dams not reaching the high requirements, all the counties dams are unregulated by the state and potentially have been uninspected for several years. All dams in the county are earthen-type dams and rated as low-hazard (NID). Earthen dams are prone to erosion and can be heavily damaged in flood events. Although all dams in the county are low-hazard, dam failure is still possible. In the event of a dam failure, some buildings may lie in the inundation area, but the number would be minimal as most are located in secluded parts of the county. Based on aerial photographs, three dams, Faucett Lake Dam, Southwest Research Center Dam, and Mendenhall lake dam, would cause the most damage in the event of a dam failure. See the section below to see aerial photos of these dams. All damages caused by the failure of an unregulated dam falls to the owner's responsibility.

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

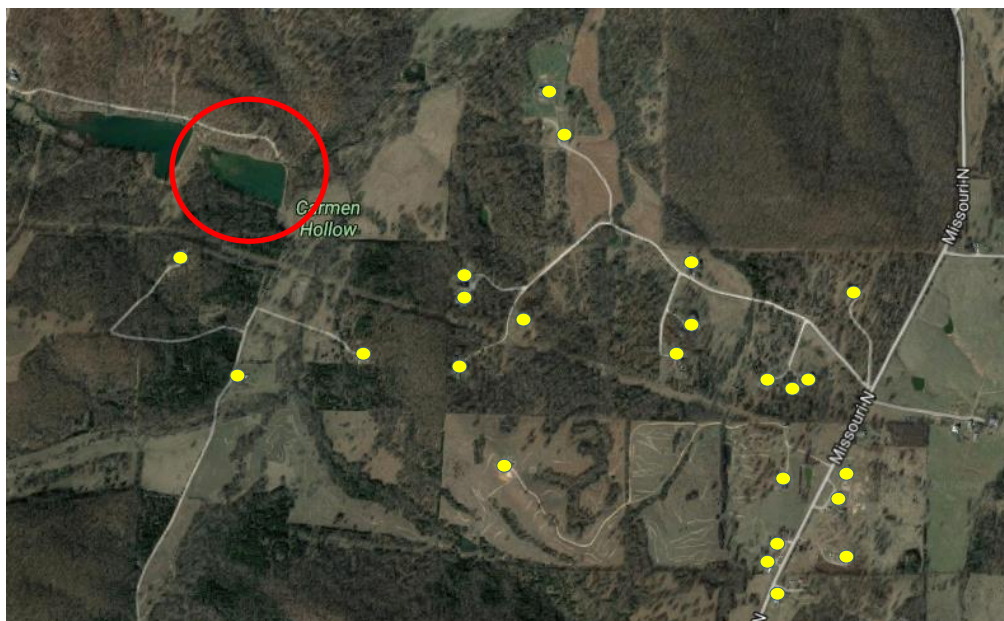
Losses to existing development would be minimal due to the location of dams in the county. Since all seven dams are rated as low-hazard, the potential magnitude of a dam failure event would be negligible. Usually, one or two buildings are located within the vicinity of a dam, followed by large fields; however, three dams in the planning area are in the vicinity of several buildings. The following aerial photos, show the dam location and buildings in the vicinity. Due to the lack of available inundation maps, aerial photos from Google Maps were utilized to evaluate potential damage to

structures in the vicinity of the dam. **Figures 3.9 through 3.11** shows buildings that may be affected in the event of a dam failure.

**Figure 3.9. Faucett Lake Dam**



**Figure 3.10. Mendenhall Lake Dam**



**Figure 3.11. Southwest Research Center Dam**



Other dams exist in planning area, however, due to low number of buildings in the vicinity, they are not shown. Table 3.18 shows total exposure to buildings in the vicinity of the three dams.

**Table 3.18. Dam Failure Exposure in Lawrence County**

| Dam Name             | Approximate # of buildings in vicinity | Exposure (\$)      | Contents (\$)    | Total Exposure (\$) |
|----------------------|--|--------------------|------------------|---------------------|
| Faucett Dam          | 19                                     | \$91,340           | \$45,670         | \$137,010           |
| Mendenhall Dam       | 24                                     | \$569,450          | \$284,725        | \$854,175           |
| SW Research Lake Dam | 58                                     | \$1,130,320        | \$565,160        | \$1,695,480         |
| <b>TOTALS</b>        | <b>101</b>                             | <b>\$1,791,110</b> | <b>\$895,555</b> | <b>\$2,686,665</b>  |

Source: Lawrence County Assessor GIS database; Content values are determined based on all structures being of residential use.

Since inundation maps are unavailable, the vulnerability of Lawrence County to dam failure is approximate. Although building counts are approximate, exposure and content costs are accurate.

***Impact of Previous and Future Development***

It is possible that future development will occur in the downstream environment of dams within the county; however, no major development is expected due to the slow growth of the unincorporated parts of Lawrence County.

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### ***Hazard Summary by Jurisdiction***

No jurisdictions or school districts would suffer damages in the event of a dam failure. All damages would occur in unincorporated parts of the county.

### **Problem Statement**

There are no dams in the county with a high hazard or significant hazard potential. There are a few dams in the vicinity of Lawrence County with a higher hazard rating, but all downstream. Inundation maps have not been created for any dams in the county, and since they are not state regulated, few have probably been checked in the last decade. Records do not indicate any inspections in recent years, even though it is required by law that low-hazard dams be inspected every five years. Due to the number of unregulated dams in Missouri and the lack of manpower, inspections of these dams is unlikely in the coming years. The probability of dam failure in the county is very low, the potential for damage remains.

All dams are earthen dams and are prone to erosion and damage from floods. To mitigate this problem, dam owners should be contacted to setup inspections to evaluate the state of dams. Any damages caused by unregulated dams becomes the responsibility of the dam owner.

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## 3.4.2 Drought

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Some sources for this hazard are:

- Maps of effects of drought, National Drought Mitigation Center (NDMC) located at the University of Nebraska in Lincoln; <http://www.drought.unl.edu/>.
- Historical drought impacts, National Drought Mitigation Center (NDMC) located at the University of Nebraska in Lincoln; at <http://droughtreporter.unl.edu/>.
- Recorded low precipitation, NOAA Regional Climate Center, (<http://www.hprcc.unl.edu>).
- Water shortages, Missouri's Drought Response Plan, Missouri Department of Natural Resources, <http://dnr.mo.gov/pubs/WR69.pdf>
- Populations served by groundwater by county, USGS-NWIS, <http://maps.waterdata.usgs.gov/mapper/index.html>
- Census of Agriculture, [https://www.agcensus.usda.gov/Publications/2012/Online\\_Resources/County\\_Profiles/Missouri/index.asp](https://www.agcensus.usda.gov/Publications/2012/Online_Resources/County_Profiles/Missouri/index.asp) and [http://www.agcensus.usda.gov/Publications/2012/Online\\_Resources/County\\_Profiles/Missouri/](http://www.agcensus.usda.gov/Publications/2012/Online_Resources/County_Profiles/Missouri/)
- USDA Risk Management Agency, Insurance Claims, <https://www.rma.usda.gov/data/cause>
- Natural Resources Defense Council, <http://www.nrdc.org/globalWarming/watersustainability/>

### **Hazard Profile**

#### ***Hazard Description***

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

- Meteorological drought is defined in terms of the basis of the degree of dryness (in comparison to some "normal" or average amount) and the duration of the dry period. A meteorological drought must be considered as region-specific since the atmospheric conditions that result in deficiencies of precipitation are highly variable from region to region.
- Hydrological drought is associated with the effects of periods of precipitation (including snowfall) shortfalls on surface or subsurface water supply (e.g., streamflow, reservoir and lake levels, ground water). The frequency and severity of hydrological drought is often defined on a watershed or river basin scale. Although all droughts originate with a deficiency of precipitation, hydrologists are more concerned with how this deficiency plays out through the hydrologic system. Hydrological droughts are usually out of phase with or lag the occurrence of meteorological and agricultural droughts. It takes longer for precipitation deficiencies to show up in components of the hydrological system such as soil moisture, streamflow, and ground water and reservoir levels. As a result, these impacts also are out of phase with impacts in other economic sectors.
- Agricultural drought focus is on soil moisture deficiencies, differences between actual and potential evaporation, reduced ground water or reservoir levels, etc. Plant demand for water depends on prevailing weather conditions, biological characteristics of the specific plant, its stage of growth, and the physical and biological properties of the soil.
- Socioeconomic drought refers to when physical water shortage begins to affect people.

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### ***Geographic Location***

Droughts are regional climatic events that can impact large areas and multiple counties. The entire county is at risk to the impacts of drought. However, drought most directly impacts the agricultural sector, so areas within the county where there is extensive agricultural land use can experience significant impacts. The slow development of Lawrence County allows it to retain its agricultural land. The major agricultural activity in the county is livestock which accounts for 98% of sales. Due to the density of livestock in the region, an extreme drought can have a devastating effect.

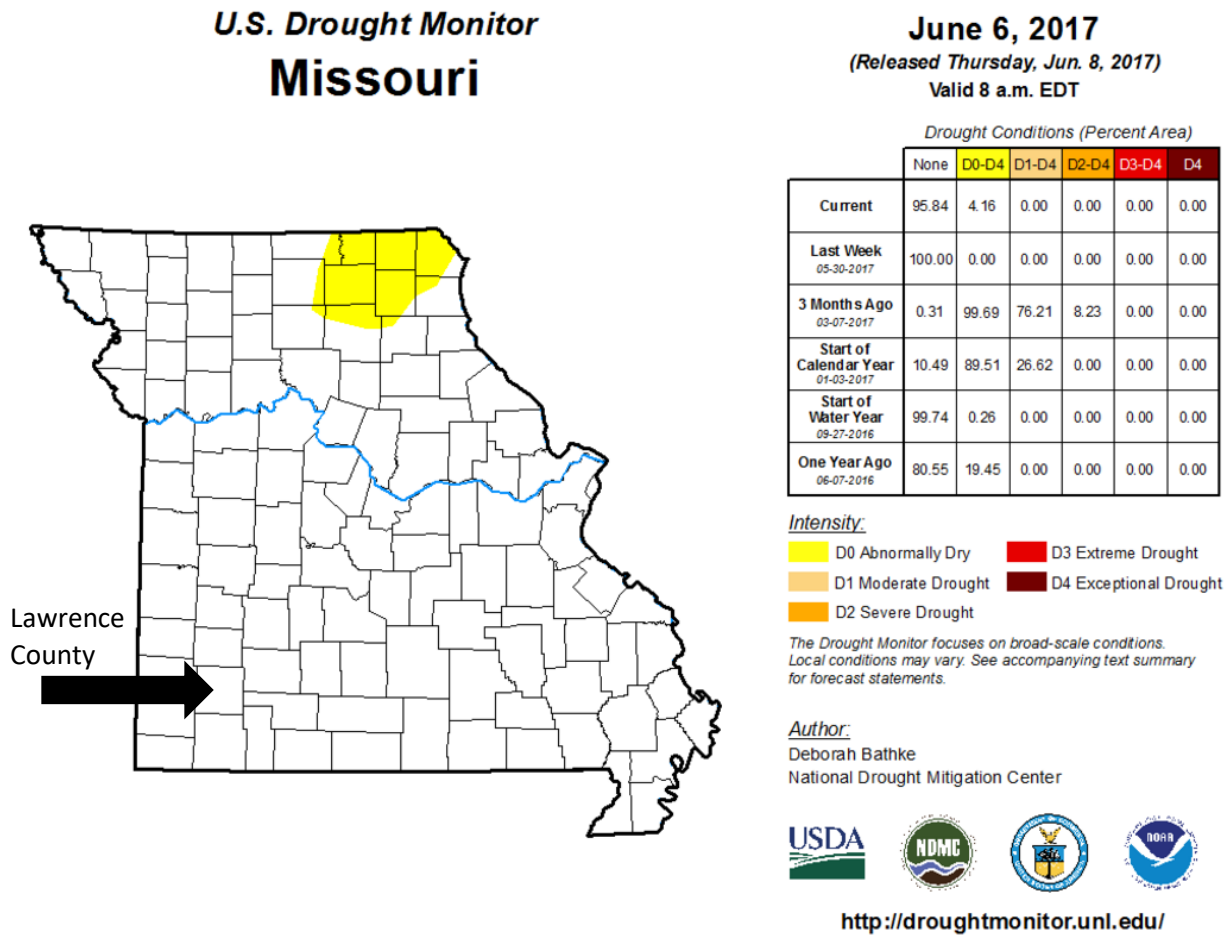
### ***Severity/Magnitude/Extent***

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

**Figure 3.12** is a recent map from the U.S. Drought Monitor and an example of the size of the geographic area that could be in drought at any given moment in time. The map is only a snapshot of conditions at a given time and indicates the severity of drought conditions.



Figure 3.12. U.S. Drought Monitor Map of Missouri on June 6<sup>th</sup>, 2017



Source: U.S. Drought Monitor, <http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?MO>

The most commonly used indicator of drought and drought severity is the Palmer Drought Severity Index (PDSI), jointly published by the NOAA and the United States Department of Agriculture. The Palmer Drought Indices measure dryness based on recent precipitation and temperature. The indices are based on a “supply-and-demand model” of soil moisture. Calculation of supply is relatively straightforward, using temperature and the amount of moisture in the soil. However demand is more complicated as it depends on a variety of factors, such as evapotranspiration and recharge rates. These rates are harder to calculate. Palmer tried to overcome these difficulties by developing an algorithm that approximated these rates, and based the algorithm on the most readily available data — precipitation and temperature.

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

According to the MDNR Missouri Drought Plan revised in 2002, Missouri’s Drought Response System is divided into four phases based on Palmer index values:

- **Phase I: Advisory Phase**—Requires a drought monitoring and assessment system to provide enough lead time for state and local planners to take appropriate action;

- **Phase II: Drought Alert**—When the PDSI reads -1.0 to -2.0, and stream flows, reservoir levels, and groundwater levels are below normal over a several month period, or when the Drought Assessment Committee (DAC) determines that Phase II conditions exist based on other drought determination methods;
- **Phase III: Conservation Phase**—When the PDSI reads -2.0 to -4.0, and stream flows, reservoir levels, and groundwater levels continue to decline, along with forecasts indicating an extended period of below-normal precipitation, or when the DAC determines that Phase III conditions exist based on other drought determination models;
- **Phase IV: Drought Emergency**— When the PDSI is lower than -4.0, or when the DAC determines that Phase IV conditions exist based on other drought determination methods.

Palmer also developed a formula for standardizing drought calculations for each individual location based on the variability of precipitation and temperature at that location. The Palmer index can therefore be applied to any site for which sufficient precipitation and temperature data is available.

It is important to note that all incorporated communities in Lawrence County rely on groundwater wells as the primary water supply. The impact of drought on deeper public wells would not be significant unless the drought was of such severity to reduce groundwater levels.

As it pertains to drought impact on agricultural lands, the USDA’s Risk Management Agency provides insured crop loss payments in the county as a result of drought from 1948 to the present. From 2006 through 2016, records indicate that there was \$13,686,530 in crop insurance payments during this time in Lawrence County. The annualized losses in that time were \$1,368,653.

**Previous Occurrences**

The NCDC storm events database includes 17 events occurring in Lawrence County from 1997 through 2017. Many of these were multiple reports from persistent drought events that lasted several months. The NCDC reports indicate that there were six distinct drought periods during the 20 year timeframe. **Table 3.19** provides a summary of these events.

**Table 3.19. Previous Drought Occurrences 1997 – 2017**

| Drought Year | Duration           | Property Damage | Crop Damage        |
|--------------|--------------------|-----------------|--------------------|
| 1999         | October            | \$0             | \$20,000           |
| 2000         | August - September | \$0             | \$0                |
| 2006         | January - April    | \$0             | \$0                |
| 2011         | July - November    | \$0             | \$10,000           |
| 2012-2013    | July - January     | \$1,950         | \$8,630,000        |
| <b>Total</b> |                    | <b>\$1,950</b>  | <b>\$8,660,000</b> |

Source: NCDC Storm Events Database

The impacts of these events are described in the NCDC storm event narratives:

- **1999** - Stock ponds in many areas dried up forcing farmers to either pump or transport water for livestock. A few shallower wells reportedly ran dry. Many ranchers sold cattle and other livestock due to the lack of an adequate water supply. Some farmers compared this drought to the last severe drought in the area which occurred in 1980.



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- **2000** - Drought conditions worsened across central, south central and southwest Missouri in early August, and maintained its intensity through the month. The very abnormally high temperatures by the end of the month, averaging 6 to 12 degrees above normal, also accelerated the already dry conditions over the area. Although short-term dryness, slower crop growth, fire risk above average, and phase 1 and 2 drought conditions were introduced by the Missouri drought assessment committee, no significant losses were noted.
  - **2006** – According to the U.S. Drought monitor, Lawrence County and several surrounding counties experienced extreme drought experiencing record breaking low precipitation levels in February and March. No significant losses were noted
  - **2011** - The southwestern district was especially hard hit during the month of July with as much as 80% of crops in very poor condition. Complete crop failures were also reported in portions of southwest Missouri. Burned up pastures forced livestock producers to feed hay as many were suffering from major grazing issues. Hay production was halted as grasses were dormant or burned from the lack of rainfall and heat. Less than an inch rainfall occurred during the month for much of the county. In general, some of the most exceptionally dry areas were found in parts of southwest Missouri where around 25 percent of the normal rainfall fell during the month. This drought began in July and was ongoing through the month of November. Through that time, precipitation remained extremely low.
  - **2012/2013** - A persistent upper level high pressure ridge over the central portions of the country caused more dry conditions for the area. Severe to exceptional drought remained in place across southwestern Missouri through the month. Some rainfall fell by the end of the month giving some areas relief. The COOP station near Miller reported 4.23 of rainfall for the month of October. Drought conditions ranged from extreme (D3) across central Missouri to exceptional (D4) over southwestern Missouri. For the counties of across the Missouri Ozarks and southwestern Missouri, between 50 and 75 percent of the combined corn, soybeans and hay acreage was reported as a loss due to the drought. Total losses in Lawrence County came to \$8.6 million. The losses and damages to harvested yield were from the start of the planting season through the end of August.

### ***Probability of Future Occurrence***

Over the 20-year record period, Lawrence County was in a drought for 17 months. There are a total of 240 months in the record period. The calculated risk percent from the number of months of drought and the total number of months in the record period equates to the annual average percentage of 7.08% probability of drought occurrence in the county. Although drought is not predictable, long-range outlooks and predicted impacts of climate change could indicate an increased chance of drought persistence and severity.

### **Vulnerability**

#### ***Vulnerability Overview***

The agriculture sector is particularly vulnerable to drought. Periods of dry weather can reduce stock ponds and force the early sale of livestock. Crop production can be disrupted and vegetative diseases can spread reducing yields. Cities that operate water wells can experience water shortages during persistent drought periods like the six month drought period in 2012/2013. Those that rely on private wells are likely to be impacted by reductions in the groundwater supply.

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### ***Potential Losses to Existing Development***

According to data from the USDA Risk Management Agency, there was \$13,686,530 in insured crop loss payments in the year 2006-2016. The total annualized loss in this timeframe is \$1,368,653 and is expected to be similar to this rate in the future. There are no anticipated structural losses, loss of life, or injuries associated with this hazard.

### ***Impact of Previous and Future Development***

Increases in acreage planted with crops would add to exposure to drought-related agricultural losses. In addition, increases in population would result in increased demand for treated water, adding additional strain on water supply systems.

### ***Impact of Climate Change***

A new analysis, performed for the Natural Resources Defense Council, examined the effects of climate change on water supply and demand in the contiguous United States. The study found that more than 1,100 counties will face higher risks of water shortages by mid-century as a result of climate change. Two of the principal reasons for the projected water constraints are shifts in precipitation and potential evapotranspiration (PET). Climate models project decreases in precipitation in many regions of the U.S., including areas that may currently be described as experiencing water shortages of some degree.

The Natural Resources Defense Council developed a new water supply sustainability index. The risk to water sustainability is based on the following criteria:

- Projected water demand as a share of available precipitation
- Groundwater use as a share of projected available precipitation
- Susceptibility to drought
- Projected increase in freshwater withdrawals
- Projected increase in summer water deficit

The risk to water sustainability for counties meeting two of the criteria are classified as “moderate,” while those meeting three of the criteria are classified as “high,” and those meeting four or more are classified as “extreme.” Counties meeting less than two criteria are considered to have low risk to water sustainability. According to the Natural Resources Defense Council, without climate change the water supply sustainability index for Lawrence County is low. With climate change, the water supply sustainability index increases to moderate (NRDC).

### ***Hazard Summary by Jurisdiction***

Although the probability of drought is the same for the entire county, farming and livestock enterprises in the unincorporated parts of the county would feel the greatest impact. These impacts are mitigated somewhat by the purchase of crop insurance. Monett has two source wells for potable water, while Aurora, Mt. Vernon, and Pierce City have one source. This comes to a total of four source wells in Lawrence County (one well in Monett is located in Barry County). Although, these communities are susceptible to water shortages due to groundwater reduction, other communities with no source are more at risk to extreme water shortages in the event of a drought. School and special districts would be the least impacted by drought; however, those districts in communities with single source wells or none at all may experience water shortages prior to those in larger communities. Larger communities also are more at risk due to higher building exposure. The expansion and retraction of soil can cause

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foundation damages to buildings in the event of a severe drought.

**Problem Statement**

Although drought most likely will not cause structural damage, the impact is greatest on the agriculture sector and if persistent enough, could cause reductions in groundwater and water shortages in communities that provide potable water services. Potential solutions to mitigate the impact of drought would be for communities to develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc. during extreme drought periods. School and special districts can also implement water conservation measures at all district facilities.

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### 3.4.3 Earthquakes

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Some specific sources for this hazard are:

- U.S. Seismic Hazard Map, United States Geological Survey, [http://earthquake.usgs.gov/hazards/products/conterminous/2014/HazardMap2014\\_lq.jpg](http://earthquake.usgs.gov/hazards/products/conterminous/2014/HazardMap2014_lq.jpg);
- 6.5 Richter Magnitude Earthquake Scenario, New Madrid Fault Zone map, <http://www.igsb.uiowa.edu/Browse/quakes/quakes.htm>;
- Probability of magnitude 5.0 or greater within 100 Years, United States Geological Survey, <https://geohazards.usgs.gov/eqprob/2009/index.php>

#### **Hazard Profile**

##### ***Hazard Description***

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

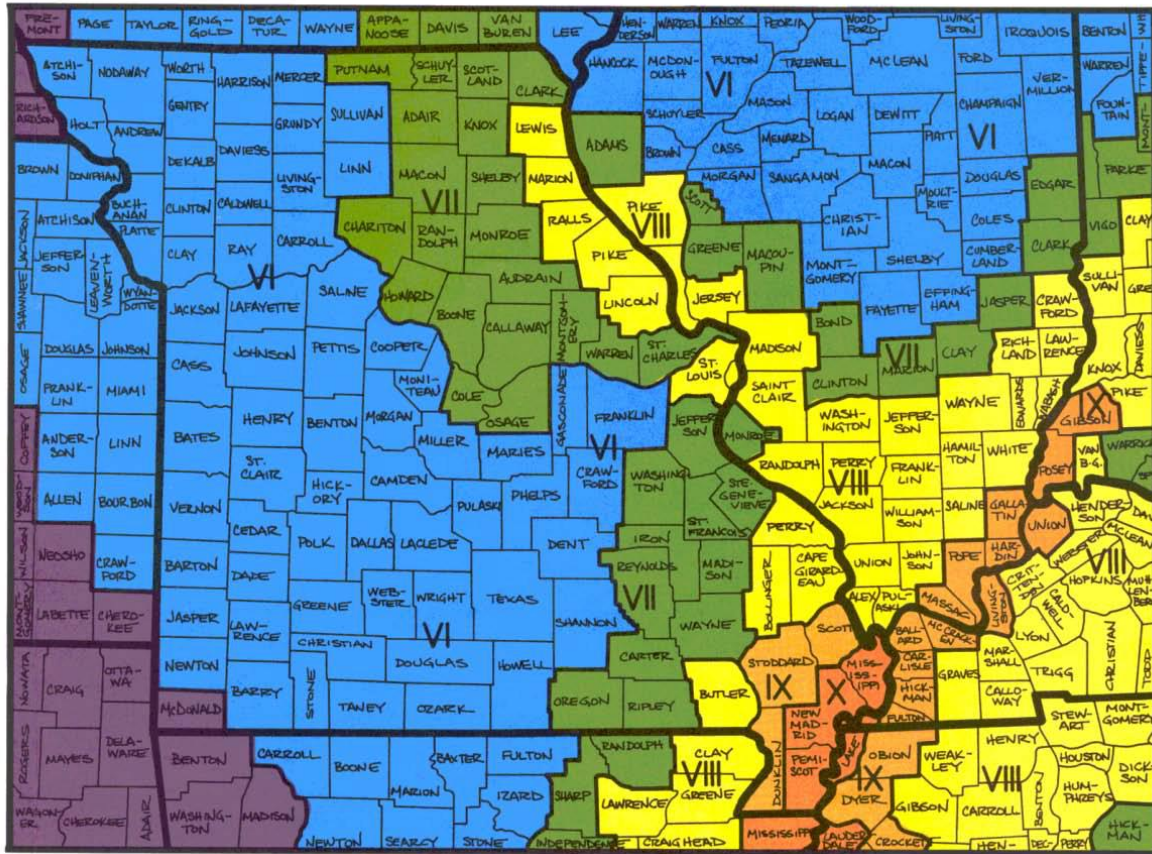
The subterranean faults were formed many millions of years ago on or near the surface of the earth. Subsequent to that time, these ancient faults subsided, while the areas adjacent were pushed up. As this fault zone (also known as a rift) lowered, sediments filled in the lower areas. Under pressure, the sediments hardened into limestones, sandstones, and shales – thus burying the rifts. The pressures on the North American plate and the movements along the San Andreas Fault by the Pacific plate have reactivated the buried rift(s) in the Mississippi embayment. This rift system is called the Reelfoot Rift and underlies the New Madrid Seismic Zone (Braile et al., 1986).

##### ***Geographic Location***

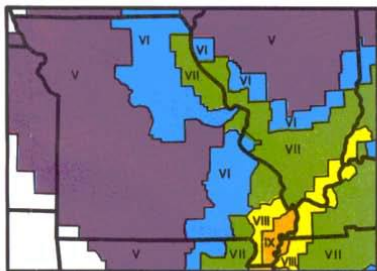
The greatest hazard from earthquakes in Lawrence County comes from the New Madrid Seismic Zone situated in the boot heel area of southeast Missouri. The potential of high magnitude earthquakes occurring along the New Madrid fault presents risk that does not vary across the planning area. The Nemaha uplift in central Kansas is also prone to seismic activity; however, the center of the Humboldt fault zone near the Nemaha Uplift is approximately 180 to 220 mile west of Lawrence County and produces lower magnitude seismic events.

**Figure 3.13** shows the highest projected Modified Mercalli intensities by county from a potential magnitude 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid Seismic Zone. The secondary maps in Figure 3.13 on show the same regional intensities for 6.7 and 8.6 earthquakes, respectively. Lawrence County is located in zone VI from a potential magnitude 7.6 earthquake along the New Madrid fault. Residents would feel movement, there could be minimal damage to structures, and dishes and glassware would likely be broken.

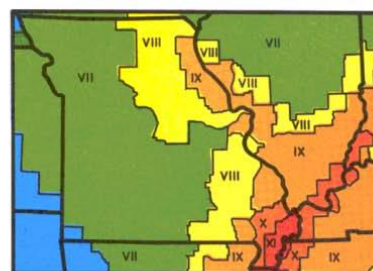
**Figure 3.13. Impact Zones for Earthquake Along the New Madrid Fault**



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



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



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

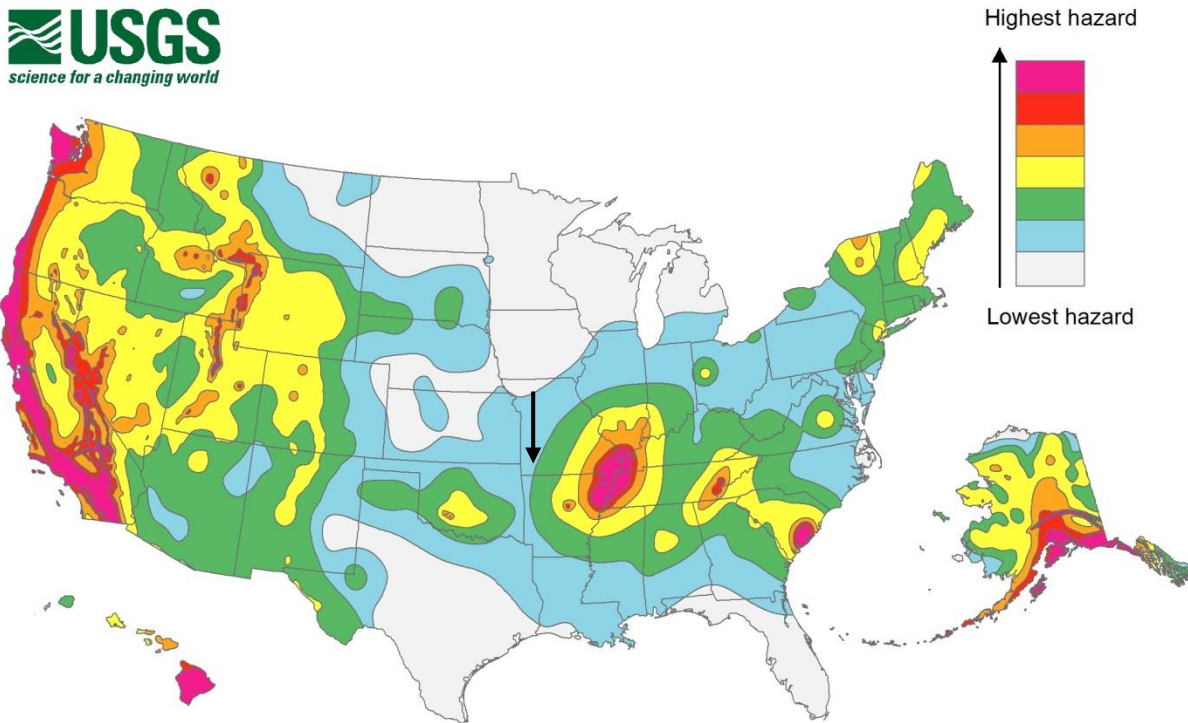
Source:

[http://sema.dps.mo.gov/docs/programs/Planning,%20Disaster%20&%20Recovery/State%20of%20Missouri%20Hazard%20Analysis/2012-State-Hazard-Analysis/Annex\\_F\\_Earthquakes.pdf](http://sema.dps.mo.gov/docs/programs/Planning,%20Disaster%20&%20Recovery/State%20of%20Missouri%20Hazard%20Analysis/2012-State-Hazard-Analysis/Annex_F_Earthquakes.pdf)



Figure 3.154 illustrates seismicity in the United States. A black arrow showing the location of Lawrence County has been inserted on the map.

Figure 3.14. United States Seismic Hazard Map



Source: United States Geological Survey at [http://earthquake.usgs.gov/hazards/products/conterminous/2014/HazardMap2014\\_lg.jpg](http://earthquake.usgs.gov/hazards/products/conterminous/2014/HazardMap2014_lg.jpg)

### **Severity/Magnitude/Extent**

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

#### **Richter Magnitude Scale**

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

## Modified Mercalli Intensity Scale

The intensity of an earthquake is measured by the effect of the earthquake on the earth's surface. The intensity scale is based on the responses to the quake, such as people awakening, movement of furniture, damage to chimneys, etc. The intensity scale currently used in the United States is the Modified Mercalli (MM) Intensity Scale. It was developed in 1931 and is composed of 12 increasing levels of intensity. They range from imperceptible shaking to catastrophic destruction, and each of the twelve levels is denoted by a Roman numeral. The scale does not have a mathematical basis, but is based on observed effects. Its use gives the laymen a more meaningful idea of the severity. **Table 3.20** provides the impact by levels of intensity on the Mercalli Scale.

**Table 3.20. Modified Mercalli Intensity Scale**

| Intensity Level | Description   |
|-----------------|---|
| I               | People do not feel any movement.  |
| II              | A few people might notice movement.   |
| III             | Many people indoors feel movement; Hanging objects swing.   |
| IV              | Most people indoors feel movement; Dishes, windows, and doors rattle; Walls, frames and structures creak; Liquids in open vessels are slightly disturbed; Parked cars rocked.   |
| V               | Almost everyone feels movement. Most people are awakened; Doors swing open or closed; Dishes are broken; Pictures on the wall move; Windows crack in some cases; Small objects move or are turned over; Liquids might spill out of open containers.   |
| VI              | Everyone feels movement; Poorly built buildings are damaged slightly; Considerable quantities of dishes, glassware and windows are broken; People have trouble walking; Pictures fall off walls; Objects fall from shelves; Plaster in walls might crack; Some furniture is overturned; Small bells in churches, chapels, and schools ring.   |
| VII             | People have difficulty standing; Considerable damage in poorly built or badly designed buildings, adobe houses, old walls, and spires; Damage is slight to moderate in well-built buildings; Numerous windows are broken; Weak chimneys break at rooflines; Cornices from towers and high buildings fall; Loose bricks fall from buildings; Heavy furniture is overturned and damaged; Some sand and gravel stream banks cave in. |
| VIII            | Drivers have trouble steering; Poorly built structures suffer severe damage; Ordinary substantial buildings partially collapse; Damage slight in structures especially built to withstand earthquakes; Tree branches break; Houses not bolted down may shift on foundations; Tall structures such as towers and might chimneys twist and fall; Temporary or permanent changes in springs and wells; Sand and mud is ejected.      |
| IX              | Most buildings suffer damage; Houses not bolted down move off their foundations; Some underground pipes are broken; The ground cracks conspicuously; Reservoirs suffer damage.  |
| X               | Well-built wooden structures destroyed; most masonry and frame structures destroyed, including foundations; Rails bent; Dams seriously damaged; Cracks open in pavement.  |
| XI              | Few, if any masonry structures remain standing; Large well-built bridges destroyed; Rails bent greatly; Buried pipelines are rendered completely useless. Water mixed with sand and mud ejected in large amounts.   |
| XII             | Damage total, nearly all works of construction damaged greatly or destroyed; Objects thrown into the air; Large amounts of rock may move; The ground moves in waves or ripples.   |

Source: [http://sema.dps.mo.gov/docs/EQ\\_Map.pdf](http://sema.dps.mo.gov/docs/EQ_Map.pdf)

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## **Previous Occurrences**

There is no historical record of an earthquake occurrence within Lawrence County, according to Homefacts. The southeastern portion of Missouri is most susceptible to earthquakes because it overlies the New Madrid Seismic Zone. Earthquake hazards in the western part of the State also exist because of the historical earthquakes in eastern Kansas and Nebraska. No area of Missouri is immune from the danger of earthquakes. Minor, but potentially damaging, earthquakes can occur anywhere in the state (SEMA, 2013).

## **Probability of Future Occurrence**

Without a historical record for earthquake events in Lawrence County, it is not possible to calculate a precise probability of earthquake occurrence. Homefacts, however, gives Lawrence County a 0.23% probability of a magnitude 5.0 earthquake to occur in the next 50 years.

## **Vulnerability**

### ***Vulnerability Overview***

Ground shaking is the most damaging effect from earthquakes. Ground shaking will impact all structures and critical infrastructure such as roads and electrical transmission systems. The greatest earthquake risk to Lawrence County is the New Madrid fault in the boot-heel region of Missouri. A 7.6 magnitude earthquake would result in poorly built buildings damaged slightly; considerable quantities of dishes, glassware and windows are broken; people having trouble walking; pictures falling off walls; objects falling from shelves; plaster in walls cracking; and furniture overturned. Damage to structures will occur but will vary on the quality of construction. In addition, some underground utilities may be damaged. Some injuries may occur but fatalities are unlikely.

### ***Potential Losses to Existing Development***

Potential losses to existing development include the total exposure for all communities listed in Tables 3.3 and 3.6 in the Assets at Risk section of this chapter. The total exposure of each jurisdiction was used to estimate losses due to a 7.6 earthquake along the New Madrid. A damage factor of 0.5% was applied to each jurisdiction's total building and contents based on the expected impact for Zone VI on the modified Mercalli scale. **Table 3.21** depicts the estimated losses in each jurisdiction based on total exposure and a 0.5% damage factor.

---

**Table 3.21. Estimated Potential Earthquake Losses**

| <b>Jurisdiction</b>            | <b>Potential Earthquake Losses</b> |
|--------------------------------|------------------------------------|
| Unincorporated Lawrence County | \$972,838                          |
| Aurora                         | \$274,792                          |
| Freistatt                      | \$5,469                            |
| Marionville                    | \$57,830                           |
| Miller                         | \$16,065                           |
| Monett                         | \$144,324                          |
| Mount Vernon                   | \$183,154                          |
| Peirce City                    | \$39,450                           |
| Verona                         | \$9,717                            |
| Marionville R-IX               | \$140,806                          |
| Miller R-II                    | \$89,710                           |
| Monett R-I                     | \$385,621                          |



|                  |           |
|------------------|-----------|
| Mt. Vernon R-V   | \$278,447 |
| Pierce City R-VI | \$118,915 |
| Verona R-VII     | \$60,420  |

**Impact of Previous and Future Development**

Previous development that may have been constructed without adherence to building codes may be at a greater risk of damage during an event. Future development is not expected to increase the risk other than contributing to the overall exposure of what could become damaged as a result of an event.

**Hazard Summary by Jurisdiction**

Earthquake intensity is not likely to vary greatly throughout the planning area; the risk of occurrence is the same throughout. However, damages will differ where there are variations in the planning area based on percentage of structures built prior to 1939. For example, if one community has a higher percentage of residences built prior to 1939 than the other jurisdictions, that community is likely to experience higher damages. **Table 3.22** with the number and percentage of housing units built in 1939 or earlier.

**Table 3.22. Percent of Housing Units Built in 1939 or Earlier**

| Jurisdiction    | Built 1939 or earlier # | Built 1939 or earlier % |
|-----------------|-------------------------|-------------------------|
| Lawrence County | 2,601                   | 15.7%                   |
| Aurora          | 523                     | 15.5%                   |
| Freistatt       | 21                      | 17.1%                   |
| Marionville     | 154                     | 16.1%                   |
| Miller          | 116                     | 29.1%                   |
| Monett          | 769                     | 21.1%                   |
| Mount Vernon    | 231                     | 11.5%                   |
| Peirce City     | 172                     | 27.1%                   |
| Verona          | 55                      | 22.9%                   |

Source: U.S. Census; 2011-2015 ACS

It should also be noted that school districts with facilities constructed prior to 1939 could suffer more damages than newer facilities.

**Problem Statement**

Based on likely damage from a 7.6 magnitude earthquake along the New Madrid fault, older poorly built structures will suffer slight damage. Miller and Pierce City have the highest percentages of houses built before 1939 and would likely experience the most damage to structures. Potential damages to future development can be mitigated by adopting and enforcing at least IBC 2012 building codes. Most communities in Lawrence County do not have up-to-date building codes. Updating and enforcing building codes throughout Lawrence County would mitigate the impact on future development from an earthquake event.

### 3.4.4 Extreme Heat

#### Hazard Profile

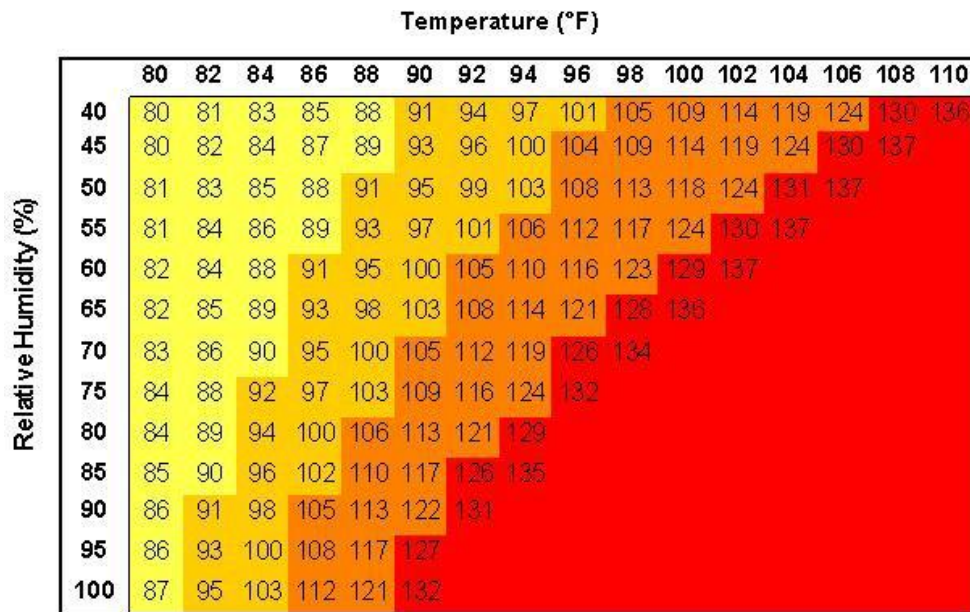
Some sources for this hazard are:

- National Climatic Data Center, Storm Events Database, <http://www.ncdc.noaa.gov/stormevents/>
- Heat Index Chart & typical health impacts from heat, National Weather Service; National Weather Service Heat Index Program, [www.weather.gov/os/heat/index.shtml](http://www.weather.gov/os/heat/index.shtml) ;
- Daily temperatures averages and extremes, High Plains Regional Climate Summary, <http://climod.unl.edu/> ;
- Hyperthermia mortality, Missouri; Missouri Department of Health and Senior Service, <http://health.mo.gov/living/healthcondiseases/hyperthermia/pdf/hyper1.pdf>;
- Hyperthermia mortality by Geographic area, Missouri Department of Health and Senior Services, <http://health.mo.gov/living/healthcondiseases/hyperthermia/pdf/hyper2.pdf>

#### Hazard Description

Extreme temperature events, both hot and cold, can impact human health and mortality, natural ecosystems, agriculture and other economic sectors. The remainder of this section profiles extreme heat. Extreme cold events are profiled in combination with Winter Storm in **Section 3.4.10**. According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Ambient air temperature is one component of heat conditions, with relative humidity being the other. The relationship of these factors creates what is known as the apparent temperature. The Heat Index chart shown in **Figure 3.155** uses both of these factors to produce a guide for the apparent temperature or relative intensity of heat conditions.

**Figure 3.15. Heat Index (HI) Chart**



**Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity**

Caution
  Extreme Caution
  Danger
  Extreme Danger

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

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## **Geographic Location**

Extreme heat is an area-wide hazard event, and the risk of extreme heat does not vary across Lawrence County.

## **Severity/Magnitude/Extent**

Extreme heat can cause stress to crops and animals. According to USDA Risk Management Agency, losses to insurable crops during the 10-year time period from 2006 to 2016 were \$106,787 due to extreme heat in Lawrence County. Extreme heat can also strain electricity delivery infrastructure overloaded during peak use of air conditioning during extreme heat events. Another type of infrastructure damage from extreme heat is road damage. When asphalt is exposed to prolonged extreme heat, it can cause buckling of asphalt-paved roads, driveways, and parking lots.

From 1988-2016, there were 3,902 fatalities in the U.S. attributed to summer heat. This translates to an annual national average of 139 deaths. During the same period, 1 death was recorded in Lawrence County, according to NCDC data. The National Weather Service stated that among natural hazards, no other natural disaster—not lightning, hurricanes, tornadoes, floods, or earthquakes—causes more deaths.

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

**Table 3.23** lists typical symptoms and health impacts due to exposure to extreme heat.

---

**Table 3.23. Typical Health Impacts of Extreme Heat**

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

Source: National Weather Service Heat Index Program, [www.weather.gov/os/heat/index.shtml](http://www.weather.gov/os/heat/index.shtml)

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

## **Previous Occurrences**

There are ten (10) recorded heat or excessive heat events in the National Climatic Data Center (NCDC) database from 1997 to 2017 for Lawrence County. There was one death and \$30,000 of property associated with these events. The event narratives describe fatalities that occurred during regional multi-county heat events for other nearby counties. During excessive heat in July 2011, several heads of cattle were killed owned by one farmer near Verona which resulted in \$30,000 in property damage. One

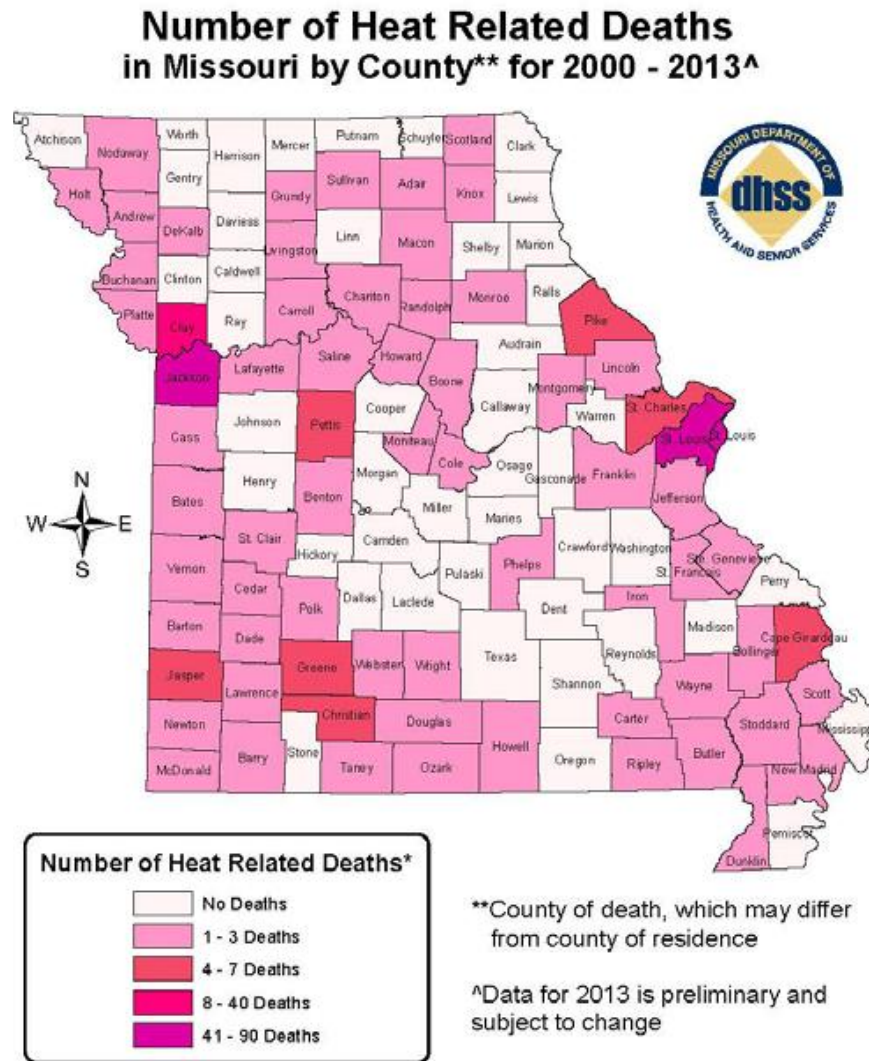
death occurred during the August and September heatwave in 2000. Heat was blamed when an elderly man was found dead in his car. That same heatwave saw 29 others hospitalized for heat-related illnesses. **Table 3.24** shows extreme heat event periods in Lawrence County.

**Table 3.24. Extreme Heat Event periods in Lawrence County, 1997-2017**

| Begin Date   | End Date   | Recorded Temperature | Injuries | Deaths   | Property Damage |
|--------------|------------|----------------------|----------|----------|-----------------|
| 07/23/1999   | 08/08/1999 | 105-115 degrees      | 0        | 0        | \$0             |
| 08/27/2000   | 09/04/2000 | 100-110 degrees      | 0        | 1        | \$0             |
| 07/17/2001   | 08/09/2001 | 100-110 degrees      | 0        | 0        | \$0             |
| 07/31/2011   | 07/31/2011 | 100+ degrees         | 0        | 0        | \$30,000        |
| 06/01/2012   | 08/31/2012 | 95-100+ degrees      | 0        | 0        | \$0             |
| <b>Total</b> |            |                      | <b>0</b> | <b>1</b> | <b>\$30,000</b> |

**Figure 3.16** is a map created by The Missouri Department of Health and Senior Services (DHSS) for heat related fatalities by county. The map indicates that there have been between one (1) and three (3) heat related fatalities in Lawrence County from 2000 to 2013.

Figure 3.16. Heat Related Deaths in Missouri 2000 - 2013



\*Source: Bureau of Environmental Epidemiology

Date: 6/5/2014

### Probability of Future Occurrence

If a 20 year time period is used, then the probability that an extreme heat event will occur in Lawrence County in any given year is 25% or once every four years. This equates to dividing five (5) years with an event period by the total number of years in the record period from 1997 to 2017 (20) and multiplying by 100.

The events recorded in the NCDL database describe prolonged periods where temperatures rose above at least 90° for at least 12 consecutive days. Heat advisories and warnings are issued for shorter periods of extreme heat nearly every year and may not meet the threshold for consecutive days in the NCDL database. It is possible that the heat related fatalities reported by DHSS (as shown in Figure 3.2.4) occurred during a shorter period of extreme heat and would not be recorded in the NCDL database. This data limitation indicates that extreme heat events could be underreported in the NCDL.

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## **Vulnerability**

### ***Vulnerability Overview***

High humidity, which often accompanies heat in Missouri, can make the effects of heat even more harmful. While heat-related illness and death can occur from exposure to intense heat in just one afternoon, heat stress on the body has a cumulative effect. Consequently, the persistence of a heat wave increases the threat to public health. The people most at risk are children under five years of age and adults over the age of 65 as well as people who work outdoors. The agriculture sector can also suffer crop loss during periods of extreme heat. Extreme heat may also cause buckling of roads.

### ***Potential Losses to Existing Development***

Based on information in the 2013 Plan and DHSS, one to three heat related deaths may occur within Lawrence County over the next 13 years.

### ***Impact of Previous and Future Development***

Population growth can result in increases in the age-groups that are most vulnerable to extreme heat. Population growth also increases the strain on electricity infrastructure, as more electricity is needed to accommodate the growing population. Aurora, Monett and Mount Vernon have the largest populations under 5 years of age and over 65. Lawrence County, as a whole, has not experienced a high rate of population growth in the last 15 years and is not expected to increase at a significant rate.

### ***Hazard Summary by Jurisdiction***

Those at greatest risk for heat-related illness and deaths include children up to five years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. To determine jurisdictions within the planning area with populations more vulnerable to extreme heat, demographic data was obtained from the 2015 American Community Survey on population percentages in each jurisdiction comprised of those under age 5 and over age 65. Data was not available for overweight individuals and those on medications vulnerable to extreme heat.

**Table 3.25** below summarizes vulnerable populations in the participating jurisdictions. Note that school and special districts are not included in the table because students and those working for the special districts are not customarily in these age groups.

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**Table 3.25. County Percentage and Count of Population Under Age 5 and Over Age 65, 2011-2015 ACS Census Data**

| <b>Jurisdiction</b> | <b>Population Under 5 yrs</b> | <b>Population 65 yrs and over</b> |
|---------------------|-------------------------------|-----------------------------------|
| Lawrence County     | 2,489 (6.5%)                  | 6,501 (17%)                       |
| Aurora              | 493 (6.6%)                    | 1,203 (16.1%)                     |
| Freistatt           | 9 (6.9%)                      | 43 (32.8%)                        |
| Marionville         | 140 (6.5%)                    | 476 (22.1%)                       |
| Monett              | 708 (7.9%)                    | 1,344 (15%)                       |
| Miller              | 52 (7.1%)                     | 118 (16.1%)                       |
| Mt. Vernon          | 344 (7.6%)                    | 1,051 (23.2%)                     |
| Pierce City         | 101 (8%)                      | 219 (17.4%)                       |
| Verona              | 50 (8.5%)                     | 55 (9.3%)                         |

Source: U.S. Census Bureau, ACS 2011-2015 Five-Year Estimates

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All schools in the planning area have proper air-conditioning and follow proper procedures in the event of extreme heat. However, daycare and eldercare facilities may be at risk of heat related injuries if facilities are not properly cooled.

**Problem Statement**

Older and younger segments of the population are more vulnerable to the impact of extreme heat. In addition people living below the poverty level may be more vulnerable during periods of extreme heat due to a lack of air conditioning or utilities in their homes. Institutionalized populations, such as those living in nursing homes, become more vulnerable to extreme heat due to power outages.

To help reduce the risk of death, heating and cooling centers should be identified and promoted to the public, especially to those who have young children or are over the age of 65. Partnering with local community organizations to continue to donate fans and offer weatherization programs would mitigate the impact on vulnerable populations in the county.

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### 3.4.5 Wildfire

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The specific sources for this hazard are:

- Missouri Department of Conservation Wildfire Data Search at <http://mdc4.mdc.mo.gov/applications/FireReporting/Report.aspx>
- Statistics, Missouri Division of Fire Safety;
- National Statistics, US Fire Administration;
- Fire/Rescue Mutual Aid Regions in Missouri;
- Forestry Division of the Missouri Dept of Conservation;
- University of Wisconsin Slivis Lab, [http://silvis.forest.wisc.edu/maps/wui\\_main](http://silvis.forest.wisc.edu/maps/wui_main)

#### **Hazard Profile**

##### ***Hazard Description***

The fire incident types for wildfires include: 1) natural vegetation fire, 2) outside rubbish fire, 3) special outside fire, and 4) cultivated vegetation, crop fire.

The Missouri Division of Fire Safety (MDFS) indicates that approximately 80 percent of the fire departments in Missouri are staffed with volunteers. Whether paid or volunteer, these departments are often limited by lack of resources and financial assistance.

The Forestry Division of the Missouri Department of Conservation (MDC) is responsible for protecting privately owned and state-owned forests and grasslands from wildfires. To accomplish this task, eight forestry regions have been established in Missouri for fire suppression. The Forestry Division works closely with volunteer fire departments and federal partners to assist with fire suppression activities. Currently, more than 900 rural fire departments in Missouri have mutual aid agreements with the Forestry Division to obtain assistance in wildfire protection if needed.

Most of Missouri fires occur during the spring season between February and May. The length and severity of both structural and wildland fires depend largely on weather conditions. Spring in Missouri is usually characterized by low humidity and high winds. These conditions result in higher fire danger. In addition, due to the recent lack of moisture throughout many areas of the state, conditions are likely to increase the risk of wildfires. Drought conditions can also hamper firefighting efforts, as decreasing water supplies may not prove adequate for firefighting. It is common for rural residents burn their garden spots, brush piles, and other areas in the spring. Some landowners also believe it is necessary to burn their forests in the spring to promote grass growth, kill ticks, and reduce brush. Therefore, spring months are the most dangerous for wildfires. The second most critical period of the year is fall. Depending on the weather conditions, a sizeable number of fires may occur between mid-October and late November.

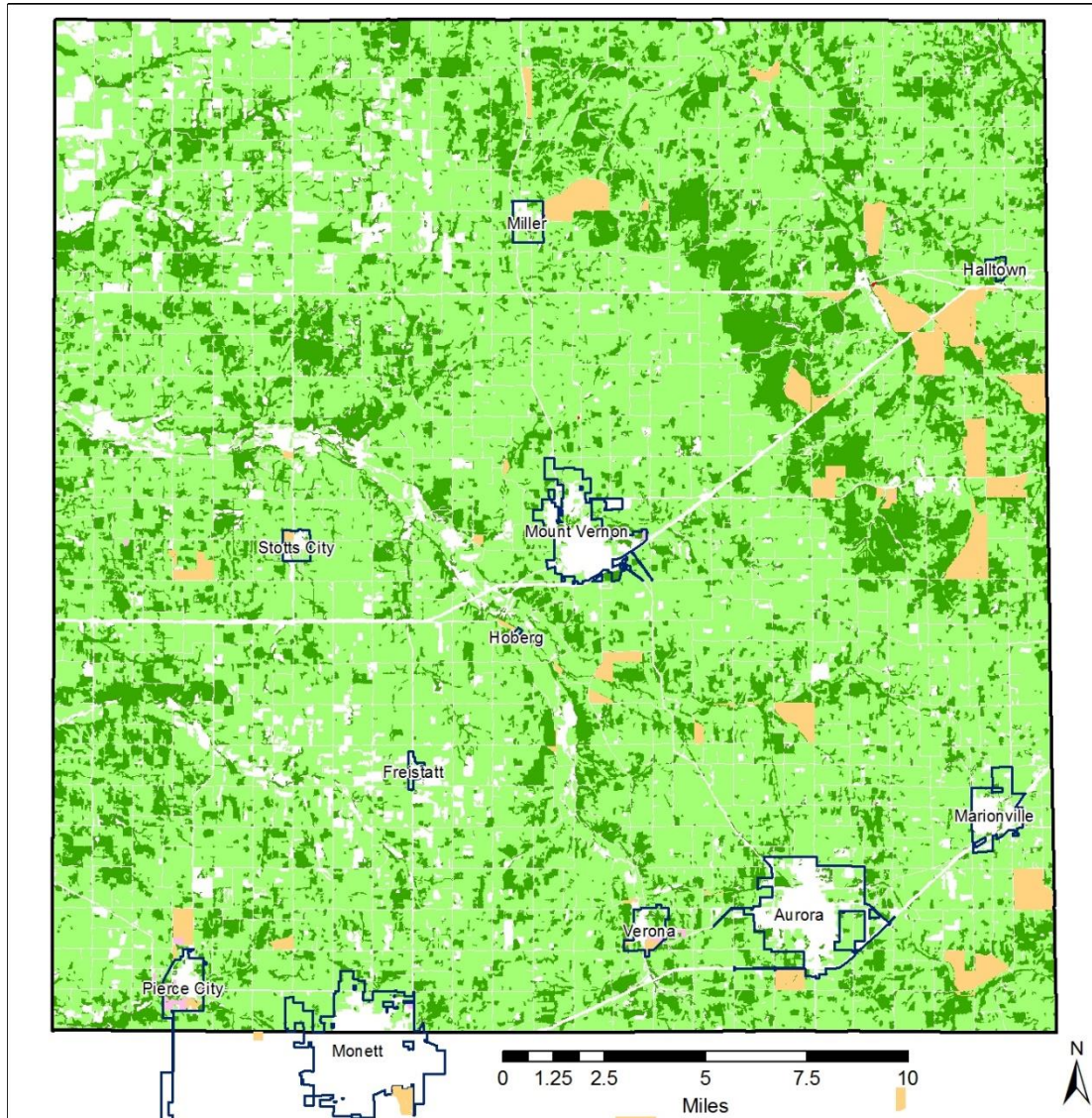
##### ***Geographic Location***

Damages due to wildfires would be higher in communities with more wildland–urban interface (WUI) areas. The term refers to the zone of transition between unoccupied land and human development and needs to be defined in the plan. Within the WUI, there are two specific areas identified: 1) Interface and 2) Intermix. The interface areas are those areas that abut wildland vegetation and the Intermix areas are those areas that intermingle with wildland areas. **Figure 3.17** shows WUI areas in Lawrence County. Areas of medium interface/intermix are present near the



City of Verona, while areas of low interface/intermix are present near Aurora, Miller, and Pierce City. Most of the WUI areas in the unincorporated part of the county are considered low intermix; however, there are smaller areas that are medium and high.

**Figure 3.17. Lawrence County Wildland Intermix and Wildfire Prone Areas**



| Wildfire Prone Area   |        | Land Cover  |                   |
|---|--------|---|-------------------|
| <span style="display:inline-block; width:15px; height:15px; background-color:red; border:1px solid black;"></span>        | High   | <span style="display:inline-block; width:15px; height:15px; background-color:darkgreen; border:1px solid black;"></span>  | Forest            |
| <span style="display:inline-block; width:15px; height:15px; background-color:lightcoral; border:1px solid black;"></span> | Medium | <span style="display:inline-block; width:15px; height:15px; background-color:lightgreen; border:1px solid black;"></span> | Grassland/Pasture |
| <span style="display:inline-block; width:15px; height:15px; background-color:orange; border:1px solid black;"></span>     | Low    |   |                   |



Map Prepared: 6/30/2017  
 Data source: Silvis Labs; University of Wisconsin-Madison

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### **Severity/Magnitude/Extent**

Wildfires damage the environment, killing some plants and occasionally animals. Firefighters have been injured or killed, and structures can be damaged or destroyed. The loss of plants can heighten the risk of soil erosion and landslides. Although Missouri wildfires are not the size and intensity of those in the Western United States, they could impact recreation and tourism in and near the fires.

Wildland fires in Missouri have been mostly a result of human activity rather than lightning or some other natural event. Wildfires in Missouri are usually surface fires, burning the dead leaves on the ground or dried grasses. They do sometimes “torch” or “crown” out in certain dense evergreen stands like eastern red cedar and shortleaf pine. However, Missouri does not have the extensive stands of evergreens found in the western US that fuel the large fire storms seen on television news stories.

While very unusual, crown fires can and do occur in Missouri native hardwood forests during prolonged periods of drought combined with extreme heat, low relative humidity, and high wind. Tornadoes, high winds, wet snow and ice storms in recent years have placed a large amount of woody material on the forest floor that causes wildfires to burn hotter and longer. These conditions also make it more difficult for fire fighters suppress fires safely.

Often wildfires in Missouri go unnoticed by the general public because the sensational fire behavior that captures the attention of television viewers is rare in the state. Yet, from the standpoint of destroying homes and other property, Missouri wildfires can be quite destructive.

There is no information about the severity of damages from notable wildland fires in the planning area.

### **Previous Occurrences**

According to MDC Wildfire Data, there have been 660 wildfires reported in Lawrence County from 2007 to May 2017. A total of 8,921 acres were burned as a result of these reported wildfires. In addition, eighteen buildings were destroyed which include residential, commercial, and outbuildings. 37 buildings were damaged and 283 were threatened by wildfires. **Table 3.26** contains MDC wildfire statistics by year.

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**Table 3.26. Lawrence County Wildfires 2007-2017**

| <b>Year</b>  | <b>Number of Wildfires</b> | <b>Buildings Destroyed</b> | <b>Buildings Damaged</b> | <b>Buildings Threatened</b> | <b>Acres Burned</b> |
|--------------|----------------------------|----------------------------|--------------------------|-----------------------------|---------------------|
| 2007         | 18                         | 0                          | 0                        | 1                           | 67                  |
| 2008         | 34                         | 1                          | 0                        | 9                           | 287.5               |
| 2009         | 59                         | 0                          | 0                        | 9                           | 544                 |
| 2010         | 58                         | 0                          | 4                        | 29                          | 153.47              |
| 2011         | 68                         | 4                          | 5                        | 38                          | 326.7               |
| 2012         | 78                         | 0                          | 3                        | 57                          | 4,942               |
| 2013         | 35                         | 0                          | 0                        | 2                           | 304                 |
| 2014         | 77                         | 0                          | 0                        | 23                          | 434                 |
| 2015         | 78                         | 2                          | 1                        | 7                           | 337                 |
| 2016         | 106                        | 2                          | 2                        | 31                          | 797.2               |
| 2017         | 49                         | 9                          | 22                       | 77                          | 728.6               |
| <b>Total</b> | <b>660</b>                 | <b>18</b>                  | <b>37</b>                | <b>283</b>                  | <b>8,921.47</b>     |

Source: Missouri Department of Conservation, <http://mdc4.mdc.mo.gov/applications/FireReporting/Report.aspx> \* = Through July 14<sup>th</sup>, 2016

There are no records from school districts and special districts about previous wildfire events and the damages resulting from them

***Probability of Future Occurrence***

Based on the last eleven years of fire reporting statistics from the MDC in **Table 3.26**, there were a total of 660 reported wildfires from 2007 to 2017. This equates to an average of 60 wildfire events annually and a 100% probability of occurrence in any given year.

**Vulnerability**

***Vulnerability Overview***

Wildfires occur throughout wooded and open vegetation areas of Missouri They can occur any time of the year, but mostly occur during long, dry hot spells. Any small fire, if not quickly detected and suppressed, can get out of control. Most wildfires are caused by human carelessness or negligence. However, some are precipitated by lightning strikes and in rare instances, spontaneous combustion. Structures and people in WUI areas in the county and cities are more vulnerable to the impact of wildfires due to the level of fuel mixed with structures.

***Potential Losses to Existing Development***

On average, 1.6 buildings are destroyed or damaged annually by wildfires in Lawrence County. 25.7 structures are threatened per year and about 811 acres of land are burned on average, annually.

***Impact of Previous and Future Development***

It is anticipated that there will be some future development in WUI areas throughout unincorporated areas of the county. Future growth in WUI areas of the county will increase the risk and exposure to wildfires. It is expected that WUI development in cities will be mitigated by development regulations reducing the risk to wildfire hazard.

***Hazard Summary by Jurisdiction***

**Table 3.27** summarizes the structure exposure for Lawrence County and cities. The structure counts and values were derived by overlaying Lawrence County Assessor parcels with the WUI census block data. The exposure amount indicates the dollar amount of assets at risk and the variability of vulnerability from place to place. It should be noted that Aurora, Freistatt, and Marionville have no identified wildfire prone areas within jurisdictional boundaries, thus resulting in a \$0 exposure value.

**Table 3.27. Wildfire Structure Exposure by Jurisdiction**

| Jurisdiction    | Residential | Commercial | Agriculture | Exposure (\$) |
|-----------------|-------------|------------|-------------|---------------|
| Lawrence County | \$3,686,170 | \$208,630  | \$2,990,630 | \$6,885,430   |
| Aurora          | \$0         | \$0        | \$0         | \$0           |
| Freistatt       | \$0         | \$0        | \$0         | \$0           |
| Marionville     | \$0         | \$0        | \$0         | \$0           |
| Miller          | \$35,930    | \$0        | \$0         | \$35,930      |
| Monett          | \$405,460   | \$0        | \$5,310     | \$410,770     |
| Mt. Vernon      | \$29,720    | \$0        | \$123,500   | \$153,220     |

|             |           |          |         |           |
|-------------|-----------|----------|---------|-----------|
| Pierce City | \$553,730 | \$0      | \$9,360 | \$563,090 |
| Verona      | \$135,930 | \$36,260 | \$0     | \$172,190 |

Source: Lawrence County Assessor

No school facilities or special district facilities in the county reside in any WUI areas.

**Problem Statement**

Wildfire occurrences are very frequent within Lawrence County. These events can destroy, damage, and threaten structures in hazard prone areas. Populations and structures in WUI areas of the county have an increased risk to wildfires due to the level of fuel mixed with structures. **Table 3.27** indicates that of the participating jurisdictions of Lawrence County, Miller, Monett, Pierce City, Mt. Vernon, and Verona are in the vicinity of wildfire prone areas. Pierce City and Verona have a heightened risk to wildfire due to being in the vicinity of medium wildfire prone areas. Cities that have adopted landscape ordinances can include fire safe landscape design requirements in these areas.

The unincorporated part of the county has the highest risk and exposure to wildfires. County officials and the fire department can promote fire resistant construction materials and landscape design techniques to mitigate the risk to wildfire in future development. Information about these materials and techniques are included in the MDC publication, Living with Wildfire. Including this information in education and awareness programs for the public may potentially mitigate wildfire damage in the county.

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## 3.4.6 Flooding (Flash and River)

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### **Profile**

#### ***Hazard Description***

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

Flooding caused by dam and levee failure is discussed in Section 3.4.1. It will not be addressed in this section.

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

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

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

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

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

Although flash floods are somewhat unpredictable, there are factors that can point to the likelihood of

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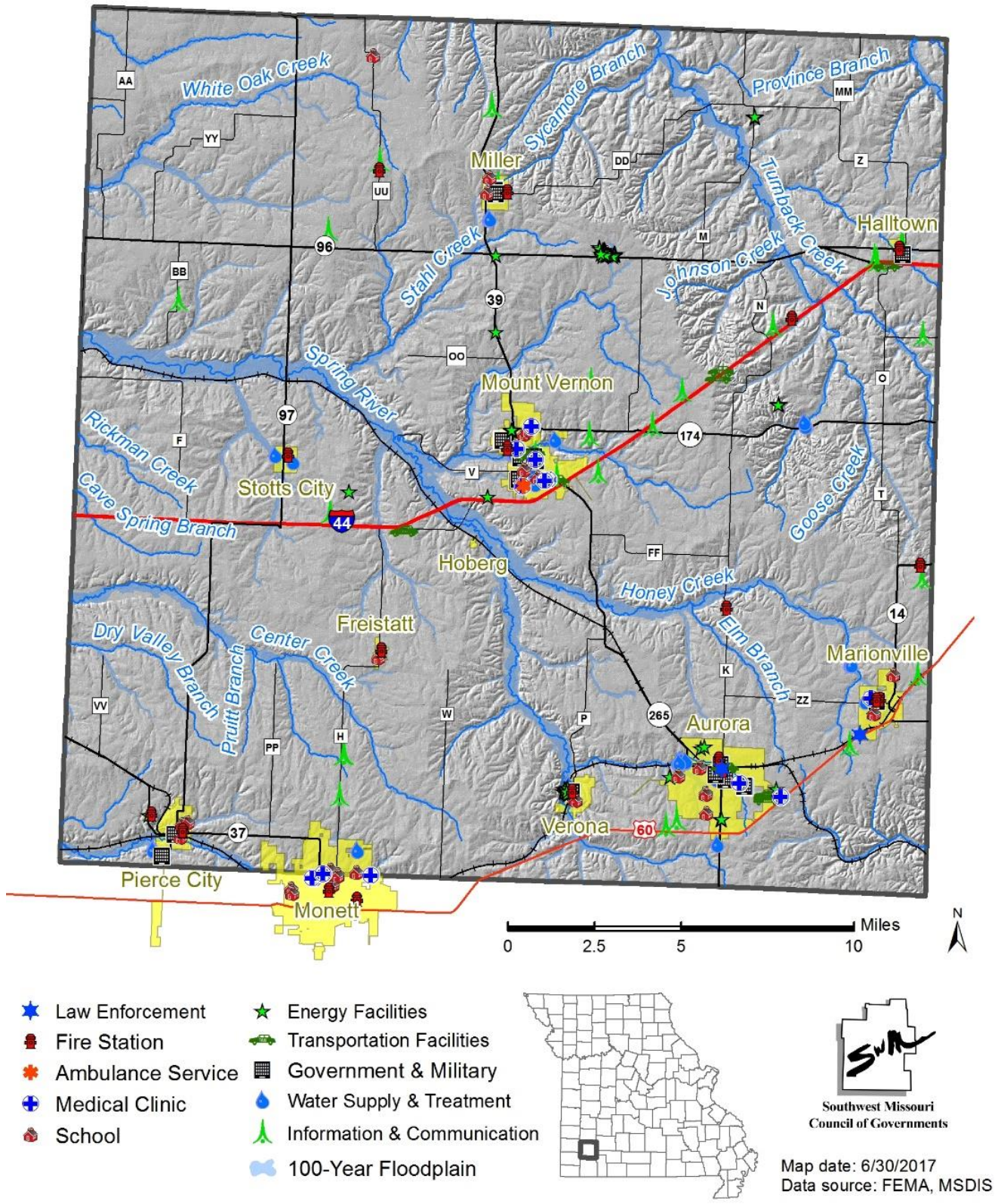
flash floods occurring. Weather surveillance radar is being used to improve monitoring capabilities of intense rainfall. This, along with knowledge of the watershed characteristics, modeling techniques, monitoring, and advanced warning systems has increased the warning time for flash floods.

### ***Geographic Location***

Riverine flooding is most likely to occur in Special Flood Hazard Areas (SFHAs) where the 100-year floodplain has been mapped. Areas along the Spring River, especially in Mt. Vernon, which experiences the greatest impact to riverine floods and flash floods. Clear Creek also causes significant flooding in and around Pierce City. According to the NCDC storm event data from 1997 through February 28th, 2017, there were 20 floods and 68 flash flood events recorded in the county. These events are typically regional in nature; however flash floods are can be contained to one specific area specifically portions of highways or roads. **Figures 3.18** through **3.26** are mapped SFHAs for communities and unincorporated areas in Lawrence County.

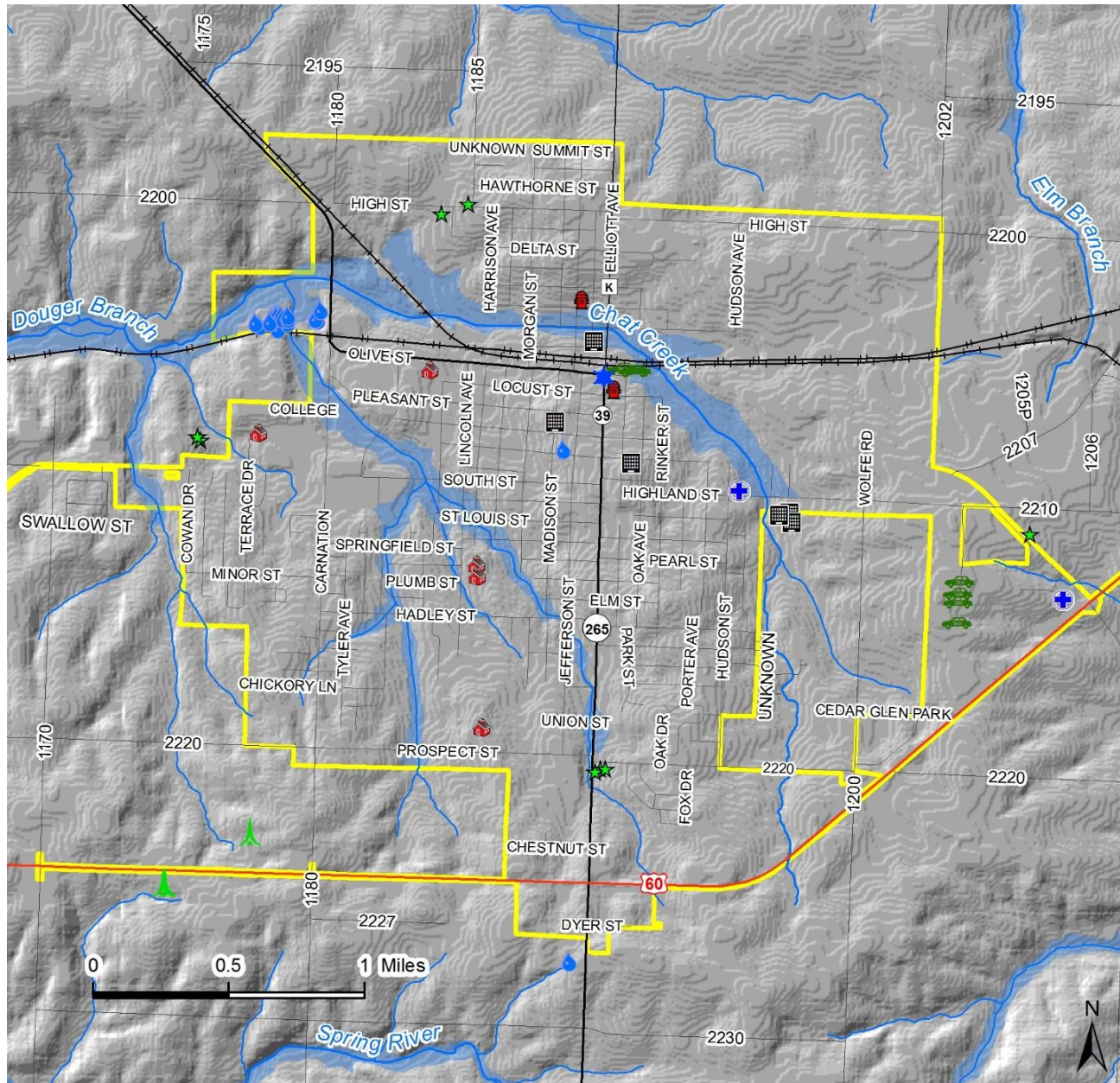


**Figure 3.18. Lawrence County SFHAs with Critical Facilities**

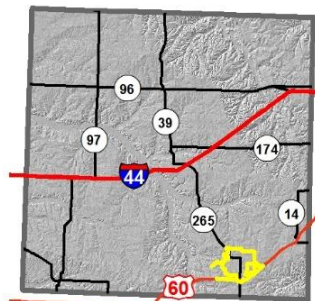




**Figure 3.19. City of Aurora SFHAs with Critical Facilities**



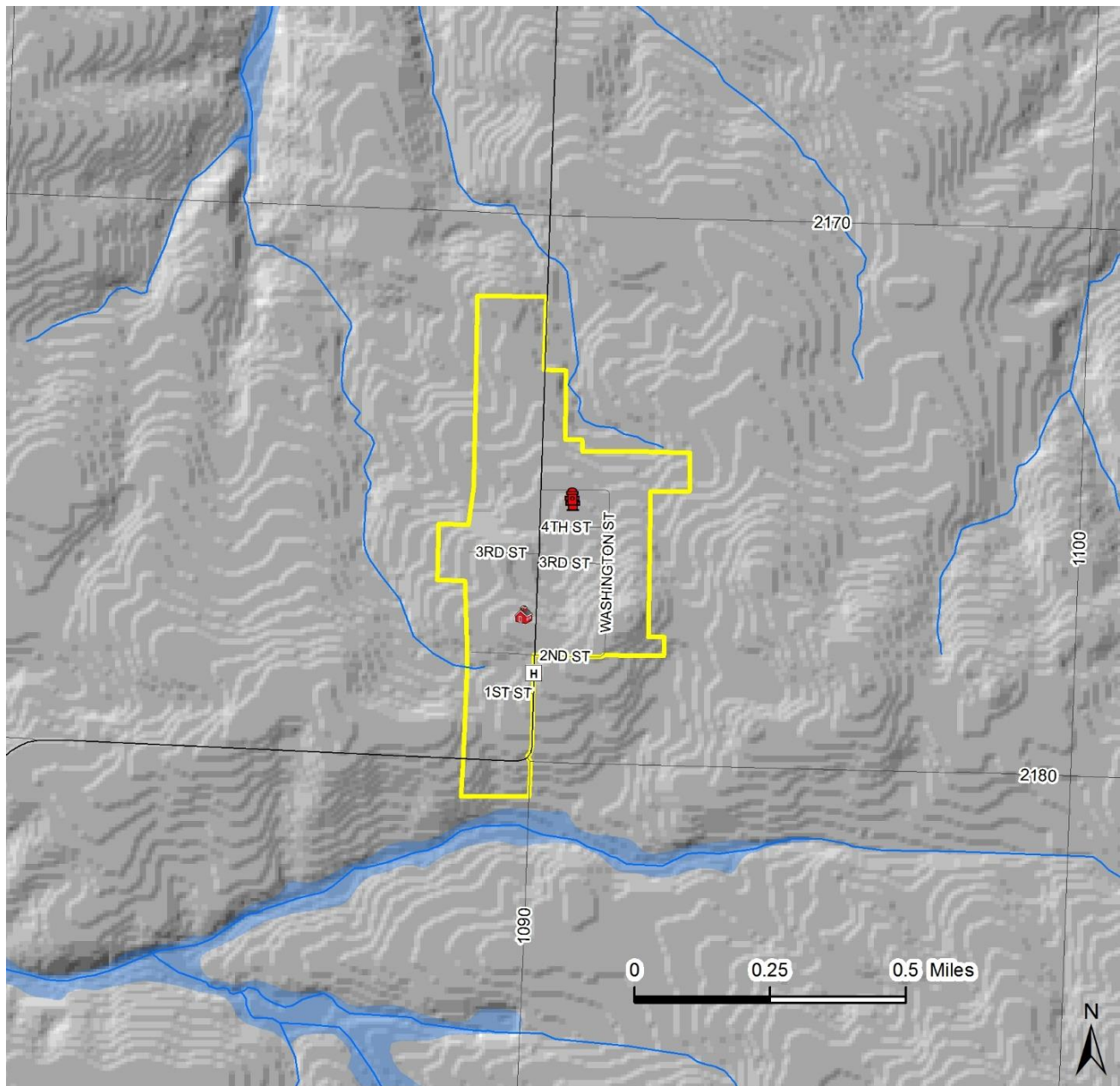
- ★ Law Enforcement
- ★ Energy Facilities
- 🚒 Fire Station
- 🚗 Transportation Facilities
- 🏥 Medical Clinic
- 🏢 Government & Military
- 🎓 School
- 💧 Water Supply & Treatment
- 🏠 Aurora
- 📡 Information & Communication
- 🌊 100-Year Floodplain



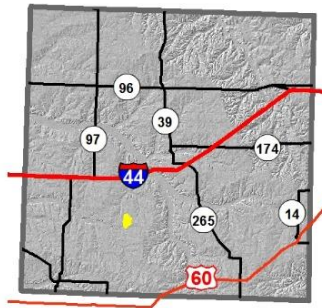
Map date: 6/30/2017  
Data source: FEMA, MSDIS



**Figure 3.20. Village of Freistatt SFHAs with Critical Facilities**



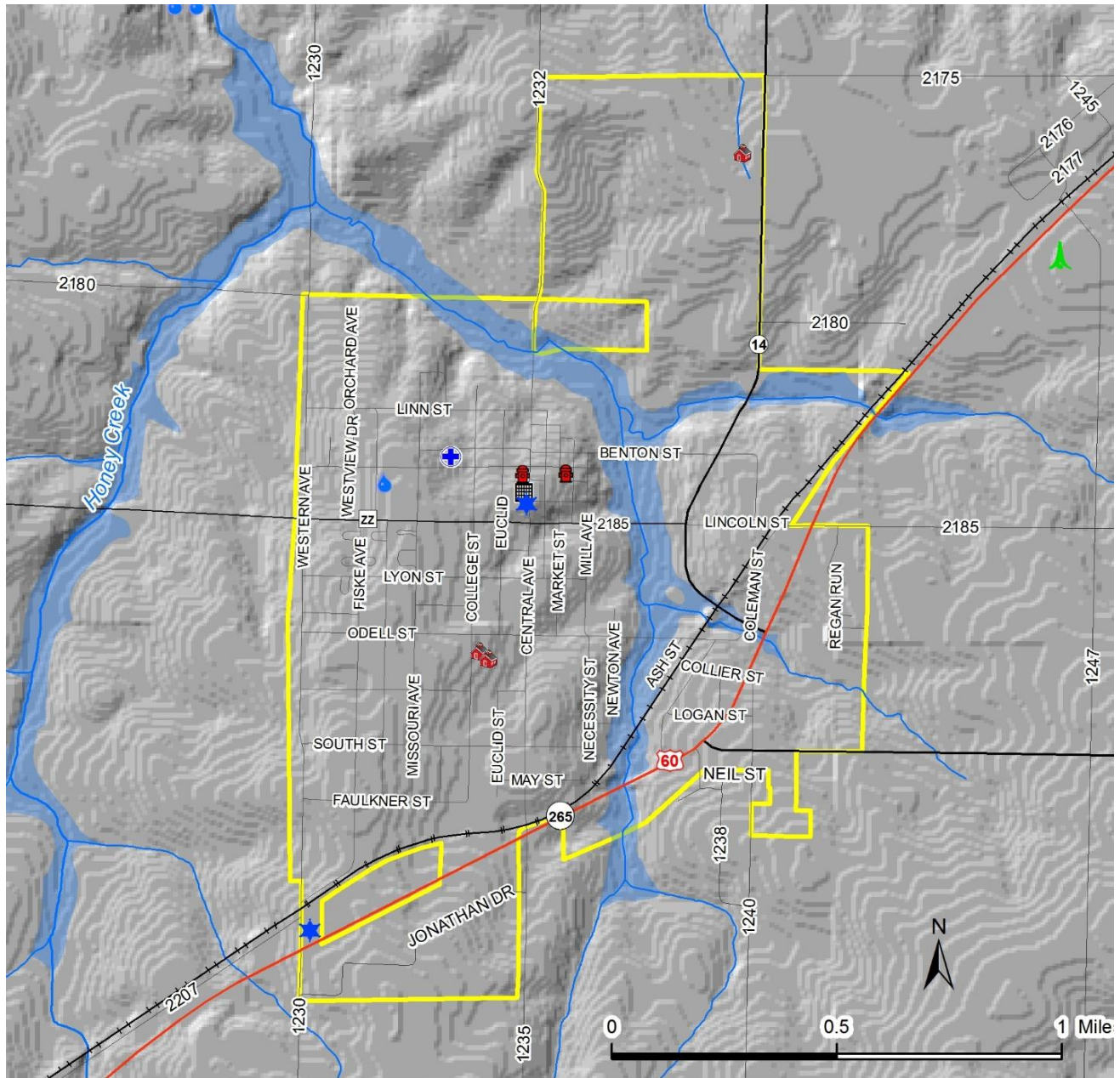
-  Fire Station
-  School
-  Freistatt
-  100-Year Floodplain



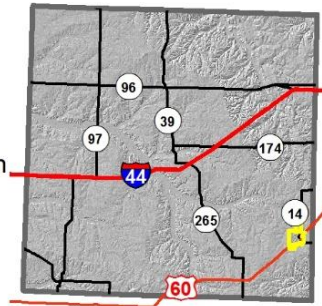
Southwest Missouri  
Council of Governments

Map date: 6/30/2017  
Data source: FEMA, MSDIS

**Figure 3.21. City of Marionville SFHAs with Critical Facilities**



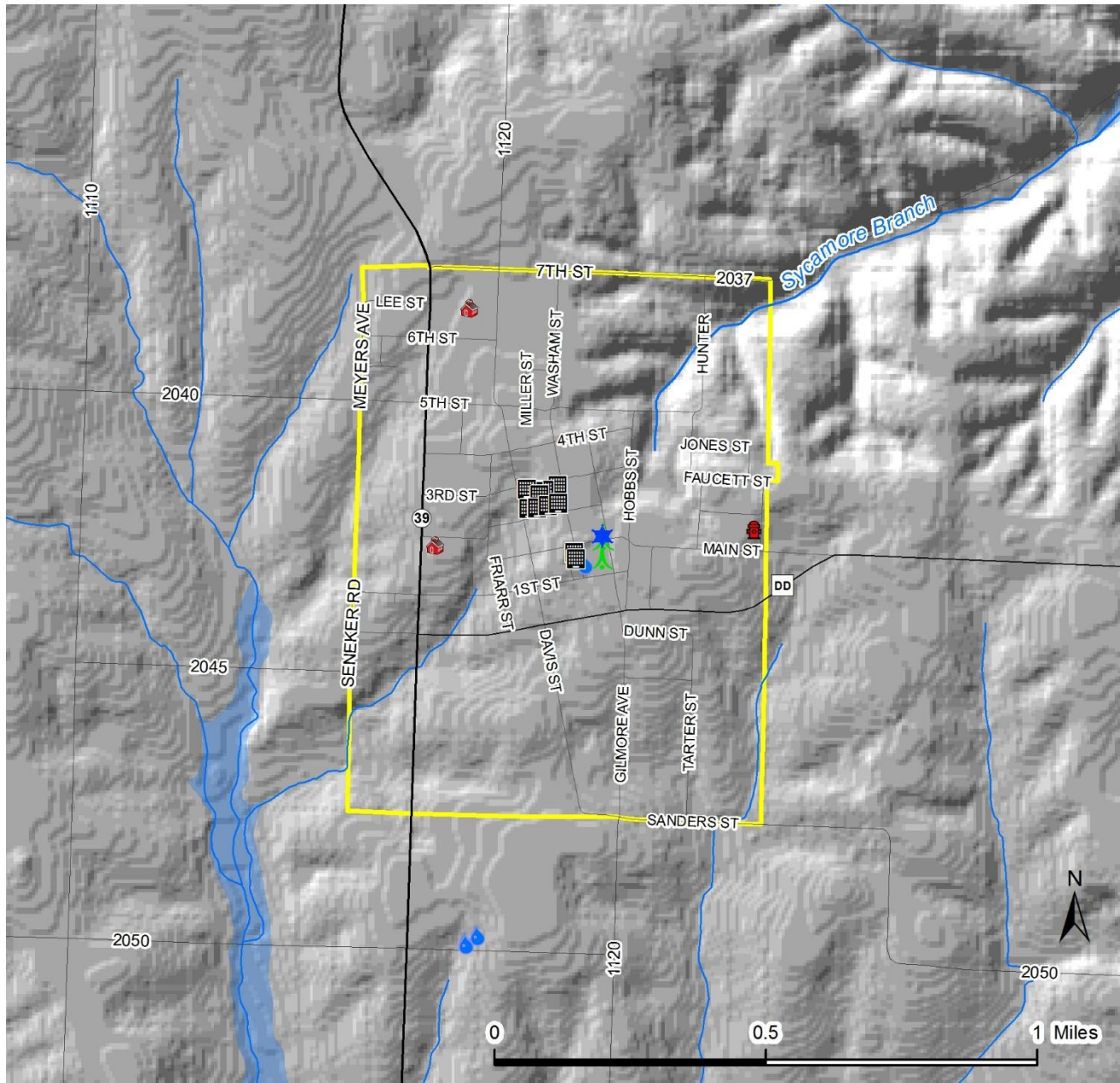
- |                   |                             |
|-------------------|-----------------------------|
| Law Enforcement   | Government & Military       |
| Fire Station      | Water Supply & Treatment    |
| Ambulance Service | Information & Communication |
| Medical Clinic    | 100-Year Floodplain         |
| School            | Marionville                 |



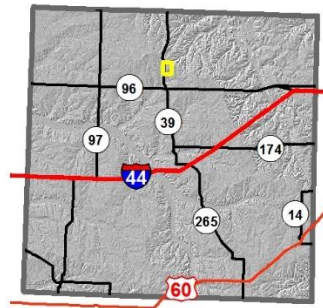
Map date: 6/30/2017  
Data source: FEMA, MSDIS



**Figure 3.22. City of Miller SFHAs with Critical Facilities**



- |   |   |
|---|---|
|  Law Enforcement |  Government & Military       |
|  Fire Station    |  Water Supply & Treatment    |
|  School          |  Information & Communication |
|  Miller          |  100-Year Floodplain         |

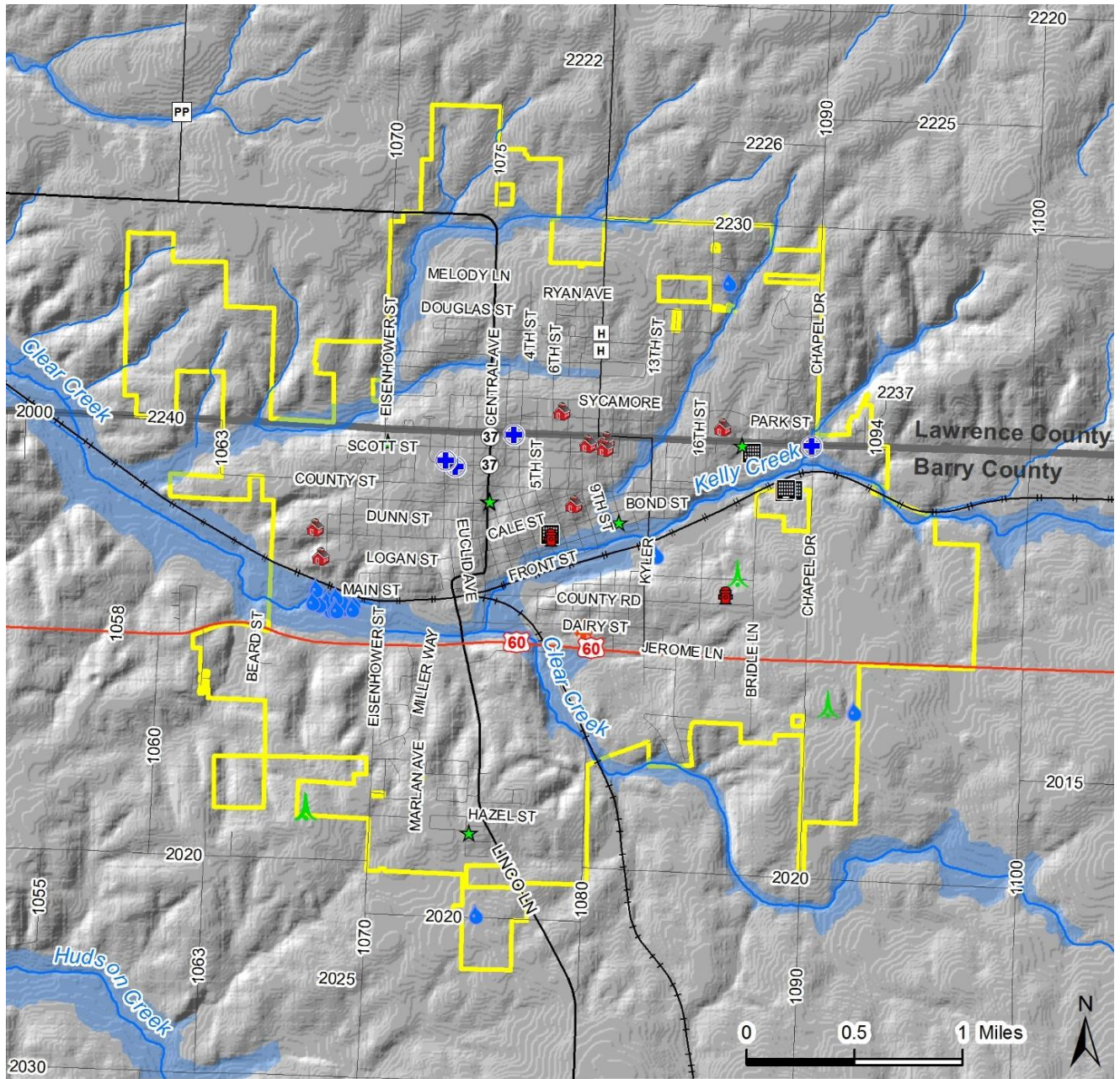


  
**Southwest Missouri  
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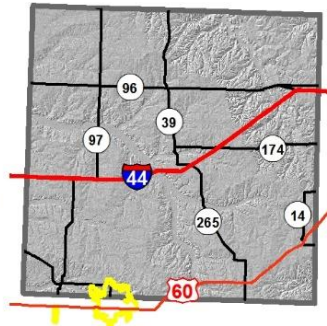
Map date: 6/30/2017  
 Data source: FEMA, MSDIS



**Figure 3.23. City of Monett SFHAs with Critical Facilities**



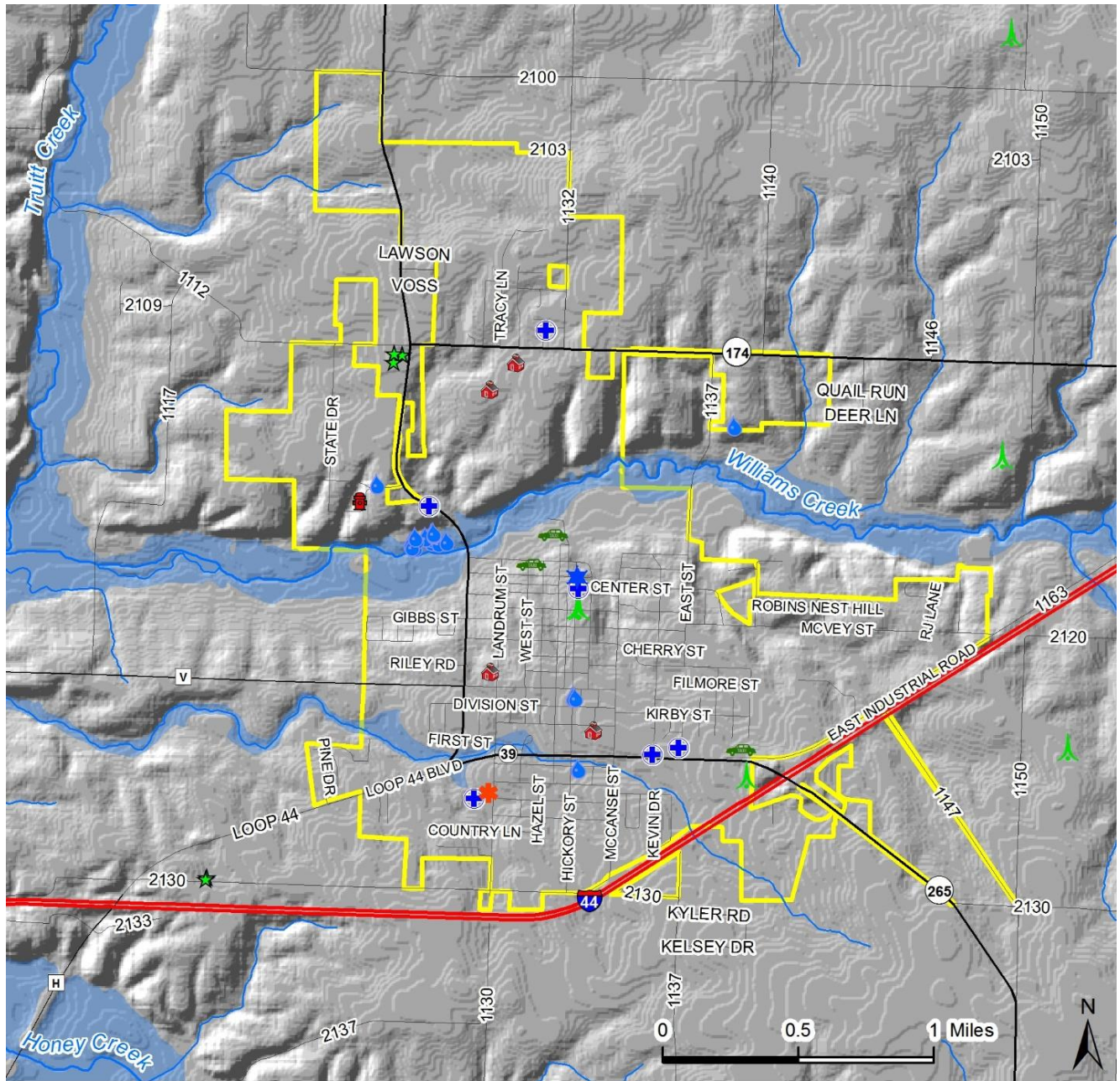
- Fire Station
- Ambulance Service
- Medical Clinic
- School
- Monett
- Energy Facilities
- Government & Military
- Water Supply & Treatment
- Information & Communication
- 100-Year Floodplain



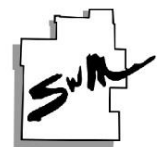
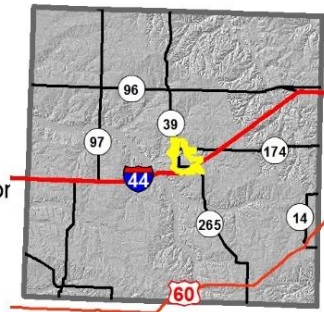
Map date: 6/30/2017  
Data source: FEMA, MSDIS



**Figure 3.24. City of Mt. Vernon SFHAs with Critical Facilities**



- ★ Law Enforcement
- ★ Energy Facilities
- 🚒 Fire Station
- 🚗 Transportation Facilities
- 🚑 Ambulance Service
- 💧 Water Supply & Treatment
- 🏥 Medical Clinic
- 🌱 Information & Communication
- 🎓 School
- 🌊 100-Year Floodplain
- 🏡 Mount Vernon

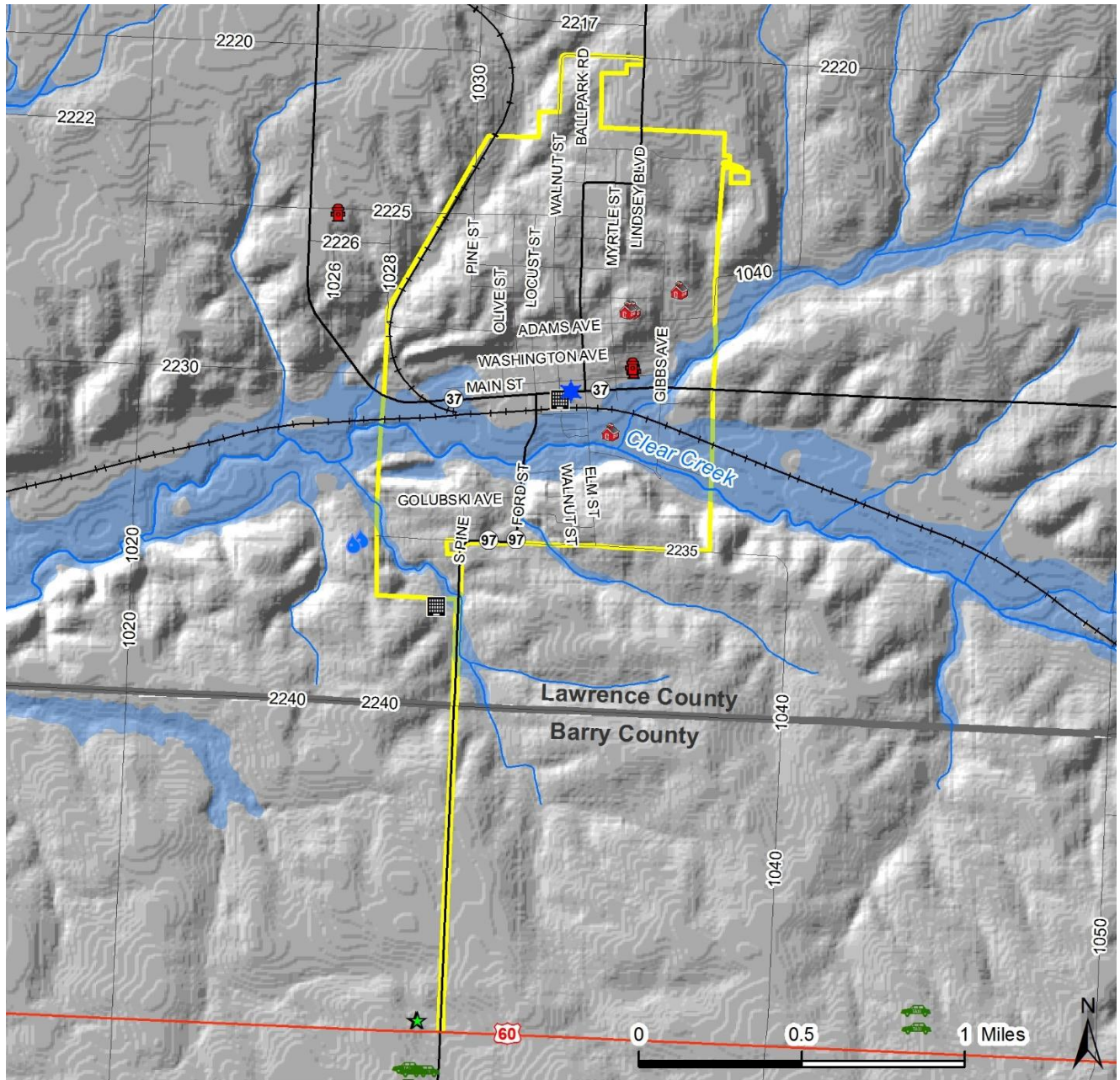


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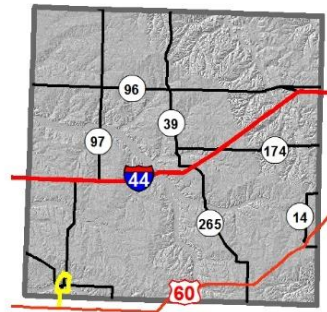
Map date: 6/30/2017  
Data source: FEMA, MSDIS



**Figure 3.25. City of Pierce City SFHAs with Critical Facilities**



- ★ Law Enforcement
- 🚒 Fire Station
- 🎓 School
- 🏡 Pierce City
- ★ Energy Facilities
- 🚌 Transportation Facilities
- 🏢 Government & Military
- 💧 Water Supply & Treatment
- 🌊 100-Year Floodplain

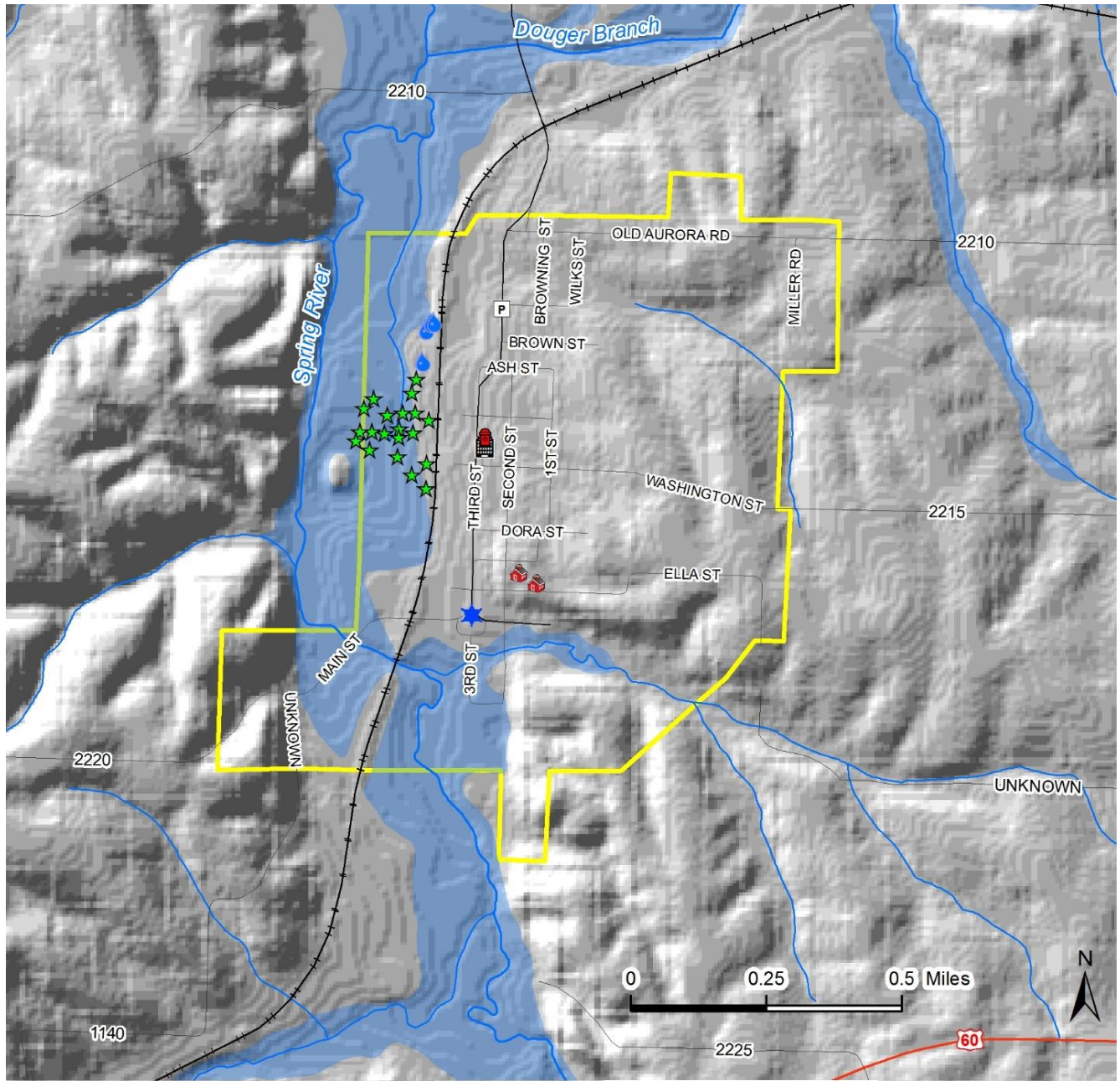


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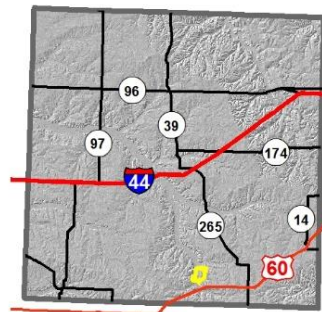
Map date: 6/30/2017  
Data source: FEMA, MSDIS



**Figure 3.26. City of Verona SFHAs with Critical Facilities**



- ★ Law Enforcement
- 🚒 Fire Station
- 🎓 School
- ★ Energy Facilities
- 👉 Verona
- 🏢 Government & Military
- 💧 Water Supply & Treatment
- 🌊 100-Year Floodplain



Map date: 6/30/2017  
Data source: FEMA, MSDIS

Flash flooding events pose the most pervasive hazard of the two flood types in the county due to permeability of soils, slopes, increasing urban development and extensive network of streams and rivers. Sustained rainfall or downpours at the rate of one inch per hour have caused street flooding in incorporated areas and made a significant number of low water crossings impassible. In the instances of low water crossings, flash flooding occurs in the floodplain while low-lying areas in all jurisdictions are susceptible to flash floods outside the 100-year floodplain. They also occur in areas without adequate drainage to carry away the amount of water that falls during intense rainfall events. A review of the NCDC storm event database determined which jurisdictions are most prone to flooding and flash flooding from 1997 through February 2017 are listed in **Table 3.28** and **Table 3.29**.

**Table 3.28. Lawrence County NCDC Flood Events by Location, 1997-2017**

| Location   | # of events |
|--|-------------|
| <b>Unincorporated Lawrence County</b>  | <b>7</b>    |
| -Several flooded rivers, creeks, and tributaries (02/24/2001)  |             |
| -Several flooded rivers, creeks, and tributaries (05/08/2002)  |             |
| -Several flooded rivers, creeks, and tributaries (05/12/2002)  |             |
| -Widespread flooding (05/17/2002)  |             |
| -County Road 2220 west of Verona, Highway 97 north of Stotts City, several road sections near Spring River, Highway DD near Highway M intersection, Highway 99 & 37 intersection (01/04/2005) (01/05/2005) |             |
| -County Roads 2130 & 1090 intersection west of Mt. Vernon (01/12/2005)   |             |
| -Highway 97 north of Stotts City near Spring River (03/03/2008)  |             |
| -Numerous roadways and lowlands (03/19/2008)   |             |
| -Route AA north of Route C (07/30/3013)  |             |
| -Highway 97 north of Stotts City near Spring River (11/17/2015)  |             |
| -Route AA near Coon Creek (05/17/2016)   |             |
| <b>Monett</b>  | <b>1</b>    |
| Numerous flooded roadways and low water crossings (3/22/2008)  |             |
| <b>Mt. Vernon</b>  | <b>3</b>    |
| -Flooded sections of County Roads 1090 and 2110 near Spring River (05/21/2010)   |             |
| -Low water bridge on County Road 2110 flooded (05/31/2013)   |             |
| -Minor Street Flooding on Landrum Street (05/29/2015)  |             |
| <b>Pierce City</b>   | <b>1</b>    |
| -Impassible section of Highway 97 north by Turnback Creek (06/02/2007)   |             |
| <b>Stotts City</b>   | <b>9</b>    |
| -Highway 97 north of Road 2110 flooded near Spring River (03/25/2010)  |             |
| -Highway 97 by Spring River (05/20/2010)   |             |
| -Highway 96 flooded and closed by Spring River (05/31/2013)  |             |
| -Highway 97 at Spring River (06/01/2013)   |             |
| -Highway 97 along Spring River (07/30/2013)  |             |
| -Highway 97 by Spring River (04/03/2015)   |             |
| -Highway 97 by Spring River (05/29/2015)   |             |
| -Highway 97 by Spring River (08/10/2015)   |             |
| -Highway 97 by Spring River (11/27/2015)   |             |
| <b>Total</b>   | <b>21</b>   |

Source: National Climatic Data Center; database only has data up to 02/28/2017.

Flash flooding occurs in SFHAs and those locations in the planning area that are low-lying. They also occur in areas without adequate drainage to carry away the amount of water that falls during intense rainfall events. The NCDC storm event data lists flash flood events according to the nearest community or place. Most of these events cover larger areas than the smaller geographic areas reported in the data. Some specific locations are listed within the narratives for flash flood events. Where specific roads and locations are listed they are provided in the table. Although some events may not be inside the corporate limits of the community identified in the narrative, they are in such



proximity that the community named would be the most affected by impassible roads. It is safe to assume that numerous low water crossings would be impacted by heavy rains that exacerbate flash flooding across the county. In addition, multiple records are related to the same event and vice versa.

**Table 3.29. Lawrence NCDC Flash Flood Events by Location, 1997-2017**

| Location   | # of Events |
|--|-------------|
| <b>Unincorporated Lawrence County</b>  | <b>28</b>   |
| -Numerous low water crossings; farm roads near Aurora and Verona closed (03/19/1998)   |             |
| -Highway 97; Several other roads flooded (08/13/1998) (06/11/2007)   |             |
| -Unspecified/Countywide (10/05/1998), (04/25/1994), (05/04/1999), (06/20/2000) (03/19/2008)  |             |
| -Northern portion; low water bridge & county road flooded (07/01/2000) (07/22/2000)  |             |
| -Numerous low water crossings (02/24/2001) (06/05/2014)  |             |
| -Widespread; Spring River; Pierce City & Stotts City (10/10/2001)  |             |
| -Highway 96 (06/13/2004) (09/06/2007)  |             |
| -Highway 97 (07/03/2004)   |             |
| -County Road 2220 west of Verona, Highway 97, Spring River, Stotts City, Highway DD near Highway M, Highway 99 at Highway 37 intersection (01/05/2005) |             |
| -Highway 96 & 97 (09/08/2007)  |             |
| -Several locations; Farm Roads 2170, 1200 & 2165 (01/07/2008)  |             |
| -Highway 37 north of Stotts City by Spring River (05/08/2008)  |             |
| -Farm Road 2110 northwest of Mount Vernon and Intersections of Highway NN and Highway 97 (06/13/2008)  |             |
| -Low water crossing on County Road 39 (09/01/2010)   |             |
| -Route DD; several other locations (04/25/2011)  |             |
| -Lawrence Avenue and Country Road 4 (04/17/2013)   |             |
| -Route AA (07/30/2013), (08/03/2013)   |             |
| -Intersection of County Road 1010 & County Road 2160 (04/03/2015)  |             |
| -Numerous roads and bridges; began near Rescue (4/30/2017)   |             |
| <b>Aurora</b>  | <b>1</b>    |
| -Church Street near Jefferson Street Intersection (05/109/2006)  |             |
| <b>Freistatt</b>   | <b>6</b>    |
| -Several roads in Freistatt Area (08/28/2004) (09/19/2009)   |             |
| -County Road 1010 (06/29/2007)   |             |
| -State Highway H (09/20/2009)  |             |
| -Farm Road 1090 (05/16/2010) (05/11/2017)  |             |
| <b>Marionville</b>   | <b>2</b>    |
| -Highway 14 & T Intersection (09/19/2009)  |             |
| -Farm Road 2170 at Honey Creek, northwest of Marionville (07/25/2016)  |             |
| <b>Miller</b>  | <b>3</b>    |
| -Low water crossing at Farm Road 2037 (09/17/2006)   |             |
| -Several roads and low water crossings (08/20/2007)  |             |
| -Highway 39 near Miller (08/04/2013)   |             |
| <b>Monett</b>  | <b>23</b>   |
| -Several Farm roads in vicinity (5/6/1998)   |             |
| -County Road 2057 (5/9/1998)   |             |
| -Highway H near airport (4/23/2004)  |             |
| -Numerous Street flooding (8/28/2004), (11/1/2004), (4/24/2006), (5/9/2006), (6/11/2007) (10/8/2009), (5/1/2011), (5/30/2013), (7/9/2015)              |             |
| -Kelly Creek vicinity (3/19/2008) (8/20/2009), (7/9/2015)  |             |
| -Hwy 60 near Kyler road intersection (9/19/2009) (11/24/2010), (4/25/2011)   |             |
| -Marshall Mobile Home Park (9/19/2009)   |             |
| -Hwy 60 flooded and closed (11/24/2010) (12/26/2015)   |             |
| -Hwy 97 closed (4/25/2011)   |             |

|   |           |
|---|-----------|
| -Water over County Road 1020 (6/18/2015)  |           |
| <b>Mount Vernon</b>   | <b>14</b> |
| -Farm Road 2150 south of Route 60 (04/23/2004)  |           |
| -Several farm roads and low water crossings (04/24/2004) (04/25/2011) (07/30/2013)            |           |
| -Several streets and low lying areas (05/23/2004) (06/17/2004) (11/01/2004) (05/30/2015)      |           |
| -County Roads 2130 & 1090; several low lying areas (01/12/2005)                               |           |
| -Highway D near Opossum Hollow Road (06/30/2007)  |           |
| -Highway 97; White Oak Creek (09/08/2007)   |           |
| -Landrum Street; others (05/29/2015)  |           |
| -County Road 2170 (11/17/2015)  |           |
| -Numerous County and State roads (04/26/2017)   |           |
| <b>Pierce City</b>  | <b>8</b>  |
| -Highway H (05/09/2006)   |           |
| -Several locations in city limits (05/22/2006) (05/30/2013)                                   |           |
| -Several streets; Low water crossing flooded by Clear Creek, east of Pierce City (03/20/2007) |           |
| -Highway 97 between Front Street and Newman Avenue (11/25/2010)                               |           |
| -Highway 97, north of Highway 60 (06/18/2015)   |           |
| -County Road 1050 between Highway 37 & 60 (07/09/2015)  |           |
| -County Road 2210 two miles northwest of Pierce City (04/21/2017)                             |           |
| <b>Verona</b>   | <b>2</b>  |
| -County road 2220 west of Verona (01/04/2005)   |           |
| -Numerous low water crossings (12/26/2015)  |           |
| <b>Total</b>  | <b>83</b> |

Source: National Climatic Data Center; database only has data up to 06/01/2017.

### **Severity/Magnitude/Extent**

Missouri has a long and active history of flooding over the past century, according to the 2010 State Hazard Mitigation Plan. Flooding along Missouri's major rivers generally results in slow-moving disasters. River crest levels are forecast several days in advance, allowing communities' downstream sufficient time to take protective measures, such as sandbagging and evacuations. Nevertheless, floods exact a heavy toll in terms of human suffering and losses to public and private property. By contrast, flash flood events in recent years have caused a higher number of deaths and major property damage in many areas of Missouri.

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

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

When roads and bridges are inundated by water, damage can occur as the water scours materials around bridge abutments and gravel roads. Floodwaters can also cause erosion undermining road beds. In some instances, steep slopes that are saturated with water may cause mud or rock slides onto roadways. These damages can cause costly repairs for state, county, and city road and bridge maintenance departments, see **Figure 3.1** for bridges in planning area. When sewer back-up occurs, this can result in costly clean-up for home and business owners as well as present a health hazard.

### **National Flood Insurance Program (NFIP) Participation**

**Table 3.30** provides details on NFIP participation for the communities in the planning area. **Table 3.31**

contains the number of policies in force, amount of insurance in force, number of closed losses, and total payments for each jurisdiction, where applicable. The time period represented by the data for closed losses is from January 1<sup>st</sup>, 1978 through March 31<sup>st</sup>, 2017.

**Table 3.30. NFIP Participation in Lawrence County**

| Community ID # | Community Name  | NFIP Participant (Y/N) | Current Effective Map Date | Regular-Emergency Program Entry Date |
|----------------|-----------------|------------------------|----------------------------|--------------------------------------|
| 290198#        | Lawrence County | Y                      | 08/02/12                   | 09/26/12                             |
| 290199#        | Aurora          | Y                      | 08/02/12                   | 09/15/78                             |
| 290200#        | Marionville     | Y                      | 08/02/12(M)                | 09/18/85                             |
| 290023#        | Monett          | Y                      | 08/16/06                   | 04/15/81                             |
| 290202#        | Mt. Vernon      | Y                      | 08/02/12                   | 02/04/81                             |
| 290203#        | Pierce City     | Y                      | 08/02/12                   | 12/28/93                             |
| 290645#        | Verona          | Y                      | 08/02/12(M)                | 08/02/12                             |

Source: NFIP Community Status Book, 9/26/2013; BureauNet, <http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book>; M= No elevation determined – all Zone A, C, and X: NSFHA = No Special Flood Hazard Area; E=Emergency Program

**Table 3.31. NFIP Policy and Claim Statistics as of 03/31/2017**

| Community Name  | Policies in Force | Insurance in Force | Closed Losses | Total Payments |
|-----------------|-------------------|--------------------|---------------|----------------|
| Lawrence County | 12                | \$1,964,800        | 1             | \$40,000.00    |
| Aurora          | 37                | \$4,794,900        | 1             | \$25,090.85    |
| Marionville     | 1                 | \$100,500          | N/A           | N/A            |
| Mt. Vernon      | 6                 | \$1,444,000        | 5             | \$62,054.42    |
| Monett*         | 45                | \$7,071,900        | 43            | \$2,022,708.65 |
| Pierce City     | 8                 | \$564,800          | 3             | \$102,483.03   |
| Verona          | 4                 | \$136,600          | N/A           | N/A            |

Source: NFIP Community Status Book, 03/31/2017; BureauNet, <http://bsa.nfipstat.fema.gov/reports/reports.html>; Closed Losses are those flood insurance claims that resulted in payment. Loss statistics are for the period from 01/01/1978 to 03/31/3017. \*Monett considered part of Barry County in Community Status Book.

The communities with the most insurance payments are Monett and Pierce City. Monett has 43 total losses amounting to \$2,022,708.65 and Pierce City has three closed losses amounting to \$102,483.03.

**Repetitive Loss/Severe Repetitive Loss Properties**

Repetitive Loss Properties are those properties with at least two flood insurance payments of \$5,000 or more in a 10-year period. According to the Flood Insurance Administration, the only repetitive loss property is located in the City of Mt. Vernon.

**Table 3.32. Repetitive Loss Properties in Lawrence County**

| Jurisdiction       | # of Properties | Building Payments | Content Payments | Total Payments | Average Payment | # of Losses |
|--------------------|-----------------|-------------------|------------------|----------------|-----------------|-------------|
| City of Mt. Vernon | 1               | \$0               | \$48,238.52      | \$48,238.52    | \$24,119.26     | 2           |

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

amounts of such claims payments exceeding \$20,000; or (2) for which at least two separate claims payments have been made with the cumulative amount of such claims exceeding the reported value of the property. There are no severe repetitive loss properties in the planning.

There are no severe repetitive loss properties in the planning area.

**Previous Occurrences**

According to the NCDC storm event data, there have been 103 riverine flood and flash flood events recorded in Lawrence County from 1997 to 2017. Nine of these events resulted in property damage. The most damaging event occurred in August of 2007 when the remnants of Tropical Storm Erin produced heavy rainfall and resulted in widespread flash flooding in Lawrence County and neighboring counties. Damages amounted to \$2.5 million after several roads and low water crossings were damaged. This event was declared a presidential disaster. All ten presidential disaster declarations in Lawrence County have included flooding. **Table 3.33** summarizes flash flood events by year from 1997 through November 2017 in Lawrence County.

**Table 3.33. NCDC Lawrence County Flash Flood Events Summary, 1997-2017**

| Year         | # of Events | # of Deaths | # of Injuries | Property Damages   | Crop Damages |
|--------------|-------------|-------------|---------------|--------------------|--------------|
| 1998         | 5           | 0           | 0             | \$5,000            | \$0          |
| 1999         | 1           | 0           | 0             | \$0                | \$0          |
| 2000         | 3           | 0           | 0             | \$0                | \$0          |
| 2001         | 2           | 0           | 0             | \$4,000            | \$0          |
| 2002         | 1           | 0           | 0             | \$0                | \$0          |
| 2004         | 13          | 0           | 0             | \$0                | \$0          |
| 2005         | 3           | 0           | 0             | \$0                | \$0          |
| 2006         | 4           | 0           | 0             | \$0                | \$0          |
| 2007         | 10          | 0           | 0             | \$2,507,000        | \$0          |
| 2008         | 4           | 1           | 0             | \$600,000          | \$0          |
| 2009         | 3           | 0           | 0             | \$40,000           | \$0          |
| 2010         | 3           | 0           | 0             | \$0                | \$0          |
| 2011         | 3           | 0           | 0             | \$250,000          | \$0          |
| 2013         | 9           | 0           | 0             | \$0                | \$0          |
| 2014         | 2           | 0           | 0             | \$0                | \$0          |
| 2015         | 7           | 1           | 0             | \$1,700,000        | \$0          |
| 2016         | 1           | 0           | 0             | \$0                | \$0          |
| 2017         | 5           | 0           | 0             | \$810,000          | \$0          |
| <b>Total</b> | <b>77</b>   | <b>2</b>    | <b>0</b>      | <b>\$5,916,000</b> | <b>\$0</b>   |

Source: NCDC, data accessed 11/13/2017

**Table 3.33** summarizes riverine flood events listed in the NCDC data for Lawrence County by year. The NCDC storm event data contains 26 recorded events for riverine flooding in Lawrence County from 1997 to 2017. Only one event was recorded to cause damage at \$150,000. It is unclear where said property damage occurred due to the lack of information in event narrative.

**Table 3.34. NCDC Lawrence County Riverine Flood Events Summary, 1997-2017**

| Year | # of Events | # of Deaths | # of Injuries | Property Damages | Crop Damages |
|------|-------------|-------------|---------------|------------------|--------------|
| 2001 | 1           | 0           | 0             | \$0              | \$0          |
| 2002 | 3           | 0           | 0             | \$150,000        | \$0          |
| 2005 | 3           | 1           | 0             | \$0              | \$0          |
| 2007 | 1           | 0           | 0             | \$0              | \$0          |
| 2008 | 3           | 0           | 0             | \$0              | \$0          |
| 2010 | 3           | 0           | 0             | \$0              | \$0          |

|              |           |          |          |                  |            |
|--------------|-----------|----------|----------|------------------|------------|
| 2013         | 5         | 1        | 0        | \$0              | \$0        |
| 2015         | 6         | 0        | 0        | \$0              | \$0        |
| 2016         | 1         | 0        | 0        | \$0              | \$0        |
| <b>Total</b> | <b>26</b> | <b>2</b> | <b>0</b> | <b>\$150,000</b> | <b>\$0</b> |

Source: NCDC, data accessed 11/13/2017

### ***Probability of Future Occurrence***

There have been a total of 103 reported flood events in Lawrence County from 1997 to November 2017 in the NCDC storm event database. Of those, 77 were flash floods. Using a 20 year period of record this equates to 3.85 flash flood events per year and 100% probability of occurrence in the county in any given year. During the same time period there have been 26 riverine floods reported in the county. This equates to 1.3 riverine flood event every year and a 100% probability of occurrence in any given year. Thirteen flood and flash flood events caused a total of \$6,066,000 in property damage in the same time period. This equates to a 65% chance of a damaging event to occur in any given year and annualized losses of \$303,300.

### **Vulnerability**

#### ***Vulnerability Overview***

Flooding has been included in all ten presidential disaster declarations that have included Lawrence County. Periods of heavy rain falling at the rate of one inch per hour floods low water crossings throughout the county making many roads impassable. This creates a severe threat to motorists that attempt to drive through flood waters over the roadway. Riverine flooding occurs less frequently than flash flooding; however, property damage is still likely to occur. Areas in low lying portions outside of the floodplain are frequently flooded. Flooding of streets has been reported in several of the communities and many highways are frequently being flooded. Highway 97 has experienced the most flooding and flash flooding. Other susceptible roads include Highway 65, Route AA and County Roads 1090, 2110, and 2220. Spring River is the most frequently flooded body of water. There are no schools or special district facilities in SFHAs in Lawrence County. Increases in development add to surface runoff and can exacerbate flash flooding in areas that previously have not experience flooding.

#### ***Potential Losses to Existing Development***

Flood loss estimates were developed by selecting all parcels situated within 100 feet of the 100 year floodplain to compile building counts by type for each participating municipality, and the unincorporated balance of Lawrence County. It is important to note that this method created building counts for areas outside the 100 year floodplain, but in an effort to depict potential losses from flash flooding, those parcels were included. The summed improved valuations for all parcels within 100 feet of the 100 year floodplain would be more prone to flash flooding due to the proximity to natural drainage features in the area.

Potential flood losses by building type by jurisdiction are presented in **Table 3.35**.

**Table 3.35. Potential Flood Losses for Building Types by Jurisdiction**

| <b>Jurisdiction</b> | <b>Residential</b> | <b>Commercial</b> | <b>Agriculture</b> | <b>Total Building Count</b> |
|---------------------|--------------------|-------------------|--------------------|-----------------------------|
| Aurora              | 115                | 30                | 5                  | 150                         |
| Freistatt           | 0                  | 0                 | 0                  | 0                           |
| Marionville         | 11                 | 2                 | 1                  | 14                          |
| Miller              | 0                  | 0                 | 0                  | 0                           |

|                                   |            |           |           |            |
|-----------------------------------|------------|-----------|-----------|------------|
| Monett*                           | 1          | 0         | 0         | 1          |
| Mt. Vernon                        | 10         | 6         | 0         | 16         |
| Pierce City                       | 22         | 2         | 2         | 26         |
| Verona                            | 6          | 0         | 1         | 7          |
| Unincorporated<br>Lawrence County | 14         | 1         | 89        | 104        |
| <b>Total</b>                      | <b>179</b> | <b>41</b> | <b>98</b> | <b>318</b> |

\* = Only includes parts of Monett within Lawrence County

**Table 3.36** provides the total exposure for structures and contents by building type and jurisdictions. Losses were estimated by applying a 5% damage factor to total exposure.

**Table 3.36. Total Flood Exposure and Estimated Losses by Jurisdiction**

| Jurisdiction                      | Residential        | Commercial       | Agriculture        | Estimated Exposure | Estimated Loss   |
|-----------------------------------|--------------------|------------------|--------------------|--------------------|------------------|
| Aurora                            | \$1,058,860        | \$545,200        | \$5,280            | \$1,609,340        | \$80,467         |
| Freistatt                         | \$0                | \$0              | \$0                | \$0                | \$0              |
| Marionville                       | \$106,670          | \$46,400         | \$120              | \$153,190          | \$7,660          |
| Miller                            | \$0                | \$0              | \$0                | \$0                | \$0              |
| Monett*                           | \$32,050           | \$0              | \$0                | \$32,050           | \$1,603          |
| Mt. Vernon                        | \$181,640          | \$87,420         | \$0                | \$269,060          | \$13,453         |
| Pierce City                       | \$95,240           | \$6,910          | \$7,270            | \$109,420          | \$5,471          |
| Verona                            | \$33,480           | \$0              | \$0                | \$33,480           | \$1,674          |
| Unincorporated<br>Lawrence County | \$664,210          | \$13,680         | \$1,894,040        | \$2,571,930        | \$128,597        |
| <b>Total</b>                      | <b>\$2,172,150</b> | <b>\$699,610</b> | <b>\$1,906,710</b> | <b>\$4,778,470</b> | <b>\$238,924</b> |

\* = Only includes parts of Monett within Lawrence County

The following critical facilities are located in the 100-year floodplain.

Lawrence County

- 2 water treatment facilities

Aurora

- Railroad facilities
- Water Treatment Facility

Monett

- Water Treatment Facilities

Mt. Vernon

- Mt. Vernon Public Works
- MODOT Facility
- Water Treatment Facilities

Pierce City

- St. Mary's Private School

Verona

- Energy Facilities

Aurora Benefit Special Road District

- Operations Facility

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### ***Impact of Previous and Future Development***

Future development could impact flash and riverine flooding in the planning area. Development in low-lying areas near rivers and streams or where interior drainage systems are not adequate to provide drainage during heavy rainfall events will be at risk to flash flooding. Future development would also increase impervious surfaces causing additional water run-off and drainage problems during heavy rainfall events. Jurisdictions that participate in the NFIP include: Lawrence County, Aurora, Marionville, Monett, Mt. Vernon, Pierce City, and Verona.

### ***Hazard Summary by Jurisdiction***

All local governments in the county are at risk to flood hazards; however, as demonstrated in **Table 3.36** exposure of assets near SFHAs varies among jurisdictions. It should be noted that all of these communities can be impacted by flooding of major roads and low water crossings in the areas proximate to their corporate limits. Several incorporated areas in the county are susceptible to street flooding during periods of heavy rain as evidenced by the previous occurrences by location in **Table 3.28** and **3.29**. The greatest impact of flooding is in the unincorporated part of the county. Lawrence County is part of the NFIP program so it is able to regulate development in the floodplains. Due to the topography and many streams in the county, numerous low water crossings are damaged and create a significant hazard to public safety during flood events.

### **Problem Statement**

Floods are frequent events and have been listed in all ten presidential disaster declarations that have included Lawrence County. Lawrence County is a participant in the NFIP along with the jurisdictions of Aurora, Marionville, Monett, Mt. Vernon, Pierce City, and Verona. These communities have passed floodplain management ordinances and have the ability to substantially regulate development in the floodplain. Participation in the NFIP enables residents to purchase flood insurance. Street flooding in incorporated areas can be addressed through storm water management projects and enforce storm water management regulations.

Several million dollars in property damage has resulted in the numerous flood events in the past two decades. They have also resulted in the deaths of three individuals. To reduce the damage of floods to infrastructure and human life, several strategies can be implemented, such as Hazard awareness programs and maintaining low water crossings. Signage of flood prone areas should also be maintained and made visible to everyone. Projects involving the improvements to river/stream embankments can also reduce flooding to surrounding areas.



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### 3.4.7 Land Subsidence/Sinkholes

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Some sources for this hazard are:

- <http://www.dnr.mo.gov/geology/geosrv/envgeo/sinkholes.htm>
- <http://strangesounds.org/2013/07/us-sinkhole-map-these-maps-show-that-around-40-of-the-u-s-lies-in-areas-prone-to-sinkholes.html>
- <http://www.businessinsider.com/where-youll-be-swallowed-by-a-sinkhole-2013-3>
- <http://water.usgs.gov/edu/sinkholes.html>
- <http://pubs.usgs.gov/fs/2007/3060/>

#### **Hazard Profile**

##### ***Hazard Description***

Sinkholes are common where the rock below the land surface is limestone, carbonate rock, salt beds, or rocks that naturally can be dissolved by ground water circulating through them. As the rock dissolves, spaces and caverns develop underground. The sudden collapse of the land surface above them can be dramatic and range in size from broad, regional lowering of the land surface to localized collapse. However, the primary causes of most subsidence are human activities: underground mining of coal, groundwater or petroleum withdrawal, and drainage of organic soils. In addition, sinkholes can develop as a result of subsurface void spaces created over time due to the erosion of subsurface limestone (karst).

Land subsidence occurs slowly and continuously over time, as a general rule. On occasion, it can occur abruptly, as in the sudden formation of sinkholes. Sinkhole formation can be aggravated by flooding.

In the case of sinkholes, the rock below the surface is rock that has been dissolving by circulating groundwater. As the rock dissolves, spaces and caverns form, and ultimately the land above the spaces collapse. In Missouri, sinkhole problems are usually a result of surface materials above openings into bedrock caves eroding and collapsing into the cave opening. These collapses are called “cover collapses” and geologic information can be applied to predict the general regions where collapse will occur. Sinkholes range in size from several square yards to hundreds of acres and may be quite shallow or hundreds of feet deep.

According to the U.S. Geological Survey (USGS), the most damage from sinkholes tends to occur in Florida, Texas, Alabama, Missouri, Kentucky, Tennessee, and Pennsylvania. Fifty-nine percent of Missouri is underlain by thick, carbonate rock that makes Missouri vulnerable to sinkholes. Sinkholes occur in Missouri on a fairly frequent basis. Most of Missouri’s sinkholes occur naturally in the State’s karst regions (areas with soluble bedrock). They are a common geologic hazard in southern Missouri, but also occur in the central and northeastern parts of the State. Missouri sinkholes have varied from a few feet to hundreds of acres and from less than one to more than 100 feet deep. The largest known sinkhole in Missouri encompasses about 700 acres in western Boone County southeast of where Interstate 70 crosses the Missouri River. Sinkholes can also vary in shape like shallow bowls or saucers whereas others have vertical walls. Some hold water and form natural ponds.

The Missouri Department of Natural Resources, Inventory of Mines, Occurrences, and Prospects database, lists 1197 mines in Lawrence County. Seventy-three percent are past producers and no longer in use. Zinc and lead have historically been the most common commodity mined; however, the two mines currently producing are limestone and sand & gravel. 130 mines are surface, while the

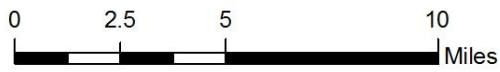
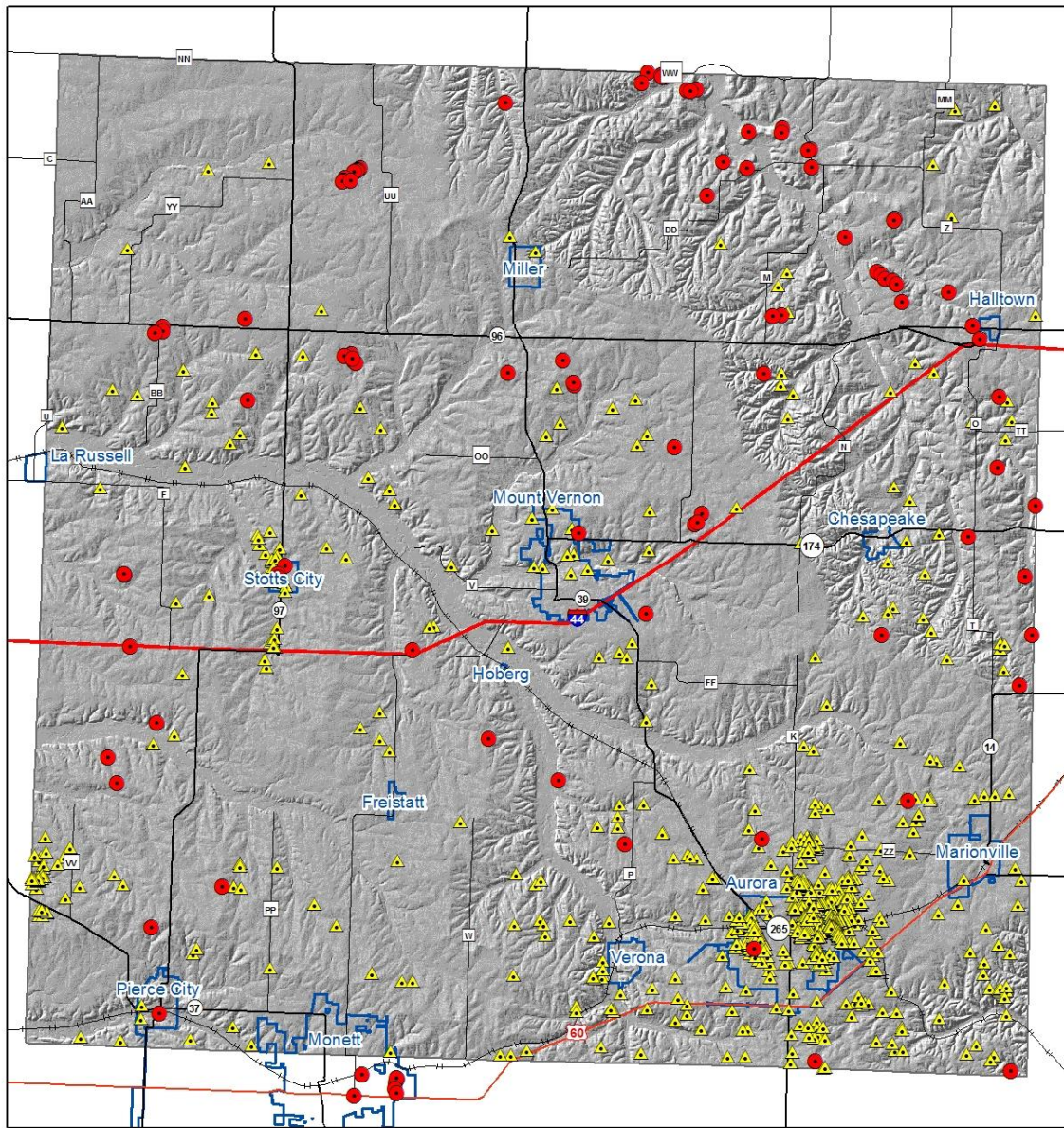
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majority, about 922, are underground.

***Geographic Location***

According to spatial data from Missouri Geological Survey, 92 sinkhole formations have been identified in Lawrence County. Seven sinkholes are located in Monett, but on the Barry County side. The largest concentrations of sinkholes lie in the northern portion of the county. Most sinkholes in the county are located in the unincorporated area and few sinkholes are within city limits. The cities of Aurora and Pierce City have one sinkhole while Stotts City has three sinkholes in its city limits. Mt. Vernon does not have any sinkholes in city limits, but is within a ½ mile of a sinkhole. **Figure 3.27** depicts the location of sinkholes and mines, occurrences, and prospects within Lawrence County.

**Figure 3.27. Sinkholes and Underground Mines in Lawrence County**



- Sinkholes
- ▲ Mines, Occurrences and Prospects
- ⊕ Place



Map Prepared: 6/23/2017  
 Data source: Missouri Department of Natural Resources

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### ***Severity/Magnitude/Extent***

Sinkholes vary in size and location, and these variances will determine the impact of the hazard. A sinkhole could result in the loss of a personal vehicle, a building collapse, or damage to infrastructure such as roads, water, or sewer lines. Groundwater contamination is also possible from a sinkhole. Because of the relationship of sinkholes to groundwater, pollutants captured or dumped in sinkholes could affect a community's groundwater system. Sinkhole collapse could be triggered by large earthquakes. Sinkholes located in floodplains can absorb floodwaters but make detailed flood hazard studies difficult to model.

The 2013 State Plan included only seven documented sinkhole "notable events". The plan stated that sinkholes are common to Missouri and the probability is high that they will occur in the future. To date, Missouri sinkholes have historically not had major impacts on development nor have they caused serious damage. Thus, the severity of future events is likely to be low.

<http://www.foundation-repair-guide.com/expansive-soil.html>

[http://www.ehow.com/list\\_6880295\\_properties-expansive-soils.html](http://www.ehow.com/list_6880295_properties-expansive-soils.html)

### ***Previous Occurrences***

Sinkholes are a regular occurrence in Missouri, but rarely are events of any significance. Despite the regular occurrences, there have been no major recent documented occurrences of sinkholes opened in Lawrence County.

### ***Probability of Future Occurrence***

Calculating the probability of future occurrences based on previous is impossible due to no known sinkhole events occurring in the recent past. However, due to the known number of mines and sinkholes in Lawrence County, it is likely that there will be an occurrence at some point in the future.

## **Vulnerability**

### ***Vulnerability Overview***

Sinkholes in Missouri are a common feature where limestone and dolomite outcrop. Dolomite is a rock similar to limestone with magnesium as an additional element along with the calcium normally present in the minerals that form the rocks. While some sinkholes may be considered a slow changing nuisance; other more sudden, catastrophic collapses can destroy property, delay construction projects, contaminate ground water resources, and damage underground utilities. The entire county is underlain with limestone and dolomite bedrock.

### ***Potential Losses to Existing Development***

Sinkhole loss estimates were established using GIS processes and appraised valuations. A sinkhole point shapefile acquired from MDNR was used to generate a half-mile buffer around each feature. The buffer layer was designated as the hazard prone areas for sinkholes. The map layer of the sinkhole hazard prone areas was used as an overlay on the parcel data to generate the loss estimates from this hazard by jurisdiction. **Table 3.37** provides the building count by type and by jurisdiction based on the results of the sinkhole analysis. **Table 3.38** provides a dollar amount for total exposure by jurisdiction and estimated losses. To calculate the losses a damage factor of 0.5% was applied to the total exposure.

**Table 3.37. Sinkhole Exposure by Building Type by Jurisdiction**

| Jurisdiction                   | Residential | Commercial | Agriculture | Building Count |
|--------------------------------|-------------|------------|-------------|----------------|
| Aurora                         | 606         | 13         | 0           | 619            |
| Mt. Vernon                     | 113         | 5          | 9           | 127            |
| Monett                         | 362         | 173        | 2           | 537            |
| Pierce City                    | 255         | 21         | 3           | 283            |
| Unincorporated Lawrence County | 378         | 13         | 931         | 1322           |
| <b>Total</b>                   | <b>1714</b> | <b>225</b> | <b>945</b>  | <b>2888</b>    |

**Table 3.38. Total Sinkhole Exposure and Estimated Losses by Jurisdiction**

| Jurisdiction                   | Residential         | Commercial          | Agriculture        | Estimated Exposure   | Estimated Loss   |
|--------------------------------|---------------------|---------------------|--------------------|----------------------|------------------|
| Aurora                         | \$7,841,350         | \$342,670           | \$550              | \$8,184,570          | \$40,923         |
| Mt. Vernon                     | \$1,888,700         | \$197,500           | \$160              | \$2,086,360          | \$10,432         |
| Monett                         | \$24,474,442        | \$65,473,158        | \$2,303,600        | \$92,251,200         | \$461,256        |
| Pierce City                    | \$2,142,670         | \$694,120           | \$490              | \$2,837,280          | \$14,186         |
| Unincorporated Lawrence County | \$2,843,740         | \$237,700           | \$7,301,850        | \$10,383,290         | \$51,916         |
| <b>Total</b>                   | <b>\$39,190,902</b> | <b>\$66,945,148</b> | <b>\$9,606,650</b> | <b>\$115,742,700</b> | <b>\$578,713</b> |

Aurora, Mt. Vernon, and Pierce City school district facilities are located in sinkhole prone areas. The following are facilities within a half mile radius of an existing sinkhole.

Aurora R-VIII

- Robinson Elementary
- Pate Early Childhood Center

Mt. Vernon R-V

- Mt. Vernon Intermediate

Pierce City R-VI

- Pierce City High School
- Pierce City Middle School

The St. Mary's private school in Pierce City is also located within a half mile of a sinkhole.

***Impact of Previous and Future Development***

Future development over abandoned mines and in areas of known risk to sinkhole formation in the planning area will increase vulnerability to this hazard. Population and development in these areas, especially in the cities of Aurora, Mt. Vernon, Monett, Pierce City, and unincorporated areas will increase exposure to sinkhole occurrence. There are currently no regulations prohibiting construction over or near known sinkholes. Future development may also change storm runoff patterns and cause expansion or formation of sinkholes.

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### ***Hazard Summary by Jurisdiction***

The risk of sinkhole damage for individual communities and school districts is limited to the amount of exposure of buildings and infrastructure. Some parts of the county are more at risk for potential sinkhole formations such as the north & northeast portions of the county. The cities of Aurora, Mt. Vernon, Monett, and Pierce City are the only jurisdictions with existing structures at risk of sinkholes; however, much of the unincorporated county is at risk. It is unlikely that school and special districts will be affected by sinkholes due to the localized nature of their exposure; however, Aurora, Mt. Vernon, and Pierce City school districts are at an elevated risk due to the location of school facilities within hazard prone areas.

### **Problem Statement**

It is likely that more sinkholes will occur as development occurs within the county. Sinkholes can be remediated with fill material. Once a sinkhole has been remediated, buildings should be prohibited at the site. Existing sinkholes can expand if surface runoff erodes the edges of the sinkhole. Storm water runoff should be diverted away from known sinkholes. The county and jurisdictions should adopt regulations prohibiting construction at least 30 feet from known sinkholes. Information about identifying potential sinkhole formation and promoting Missouri FAIR plan sinkhole insurance can be included in public outreach and hazard awareness programs. Undeveloped land that is in a sinkhole risk area can be used for park space or other recreational purposes.



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### 3.4.8 Thunderstorm/High Winds/Lightning/Hail

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Some Specific Sources for this hazard are:

- FEMA 320, Taking Shelter from the Storm, 3rd edition, [http://www.weather.gov/media/bis/FEMA\\_SafeRoom.pdf](http://www.weather.gov/media/bis/FEMA_SafeRoom.pdf)
- Lightning Map, National Weather Service, <http://www.vaisala.com/en/products/thunderstormandlightningdetectionsystems/Pages/NLDN.aspx>
- Death and injury statistics from lightning strikes, National Weather Service.
- Wind Zones in the U.S. map, FEMA, [https://www.fema.gov/pdf/library/ism2\\_s1.pdf](https://www.fema.gov/pdf/library/ism2_s1.pdf) ;
- Annual Windstorm Probability (65+knots) map U.S. 1980-1994, NSSL, [http://www.nssl.noaa.gov/users/brooks/public\\_html/bigwind.gif](http://www.nssl.noaa.gov/users/brooks/public_html/bigwind.gif)
- Hailstorm intensity scale, The Tornado and Storm Research Organization (TORRO), <http://www.torro.org.uk/site/hyscale.php>;
- NCDC data;
- USDA Risk Management Agency, Insurance Claims, <https://www.rma.usda.gov/data/cause>
- National Severe Storms Laboratory – hail map, [http://www.nssl.noaa.gov/users/brooks/public\\_html/bighail.gif](http://www.nssl.noaa.gov/users/brooks/public_html/bighail.gif)

#### **Hazard Profile**

##### ***Hazard Description***

##### ***Thunderstorms***

A thunderstorm is defined as a storm that contains lightning and thunder which is caused by unstable atmospheric conditions. When cold upper air sinks and warm moist air rises, storm clouds or 'thunderheads' develop resulting in thunderstorms. This can occur singularly, as well as in clusters or lines. The National Weather Service defines a thunderstorm as "severe" if it includes hail that is one inch or more, or wind gusts that are at 58 miles per hour or higher. At any given moment across the world, there are about 1,800 thunderstorms occurring. Severe thunderstorms most often occur in Missouri in the spring and summer, during the afternoon and evenings, but can occur at any time. Other hazards associated with thunderstorms are heavy rains resulting in flooding (discussed separately in Section 3.4.6) and tornadoes (discussed separately in Section 3.4.9).

##### ***High Winds***

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



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## ***Lightning***

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

## ***Hail***

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

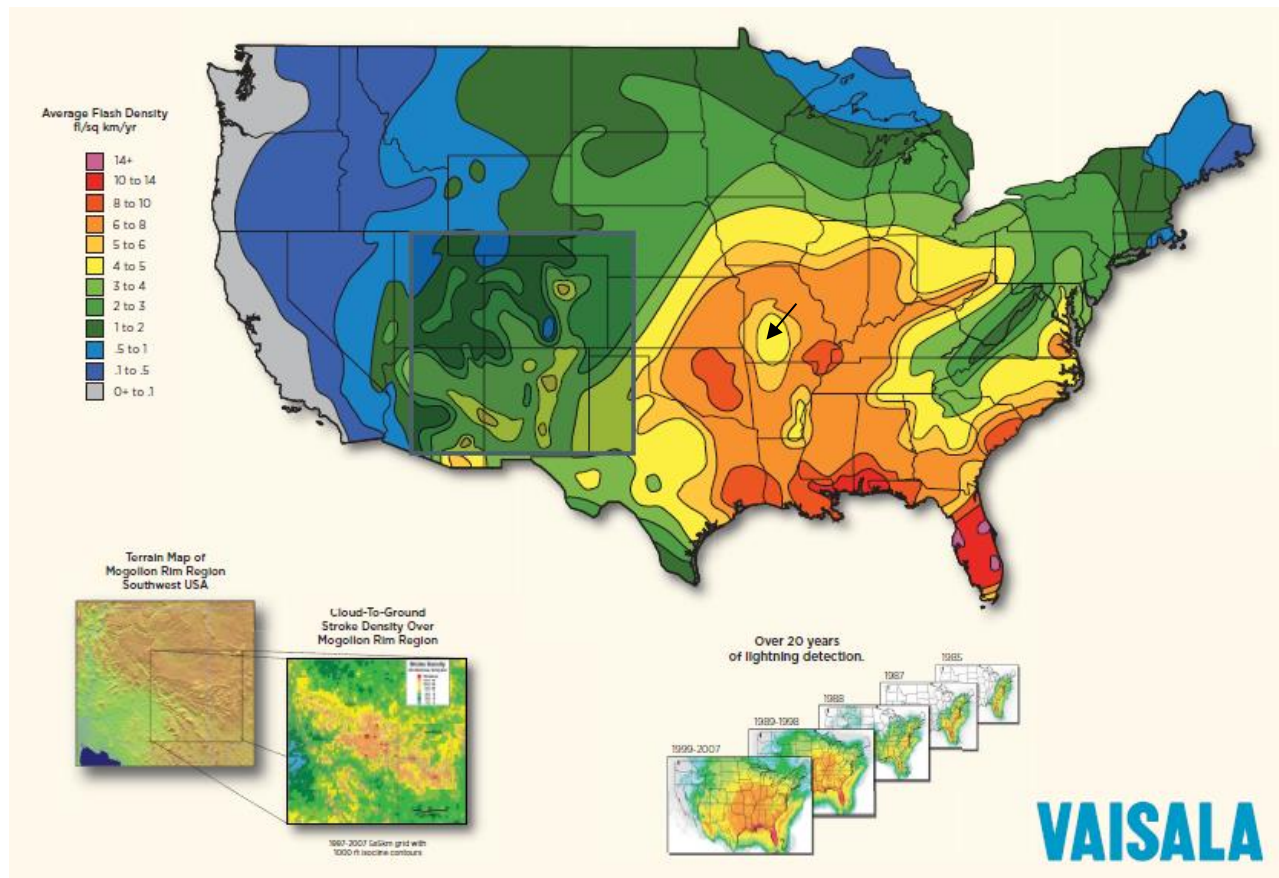
At the time when the updraft can no longer support the hailstone, it will fall down to the earth. For example, a 1/4" diameter or pea sized hail requires updrafts of 24 miles per hour, while a 2 3/4" diameter or baseball sized hail requires an updraft of 81 miles per hour. According to the NOAA, the largest hailstone in diameter recorded in the United States was found in Vivian, South Dakota on July 23, 2010. It was eight inches in diameter, almost the size of a soccer ball. Soccer-ball-sized hail is the exception, but even small pea-sized hail can do damage.

## ***Geographic Location***

Thunderstorms/high winds/hail/lightning events are an area-wide hazard that can happen anywhere in the county. Although these events occur similarly throughout Lawrence County, they are more frequently reported in more urbanized areas. In addition, damages are more likely to occur in more densely developed urban areas, such as Aurora, Mt. Vernon, and Monett.

**Figure 3.28** shows lightning frequency in the state. Lawrence County lies in the 4 to 5 and 5 to 6 flash density zones on the map.

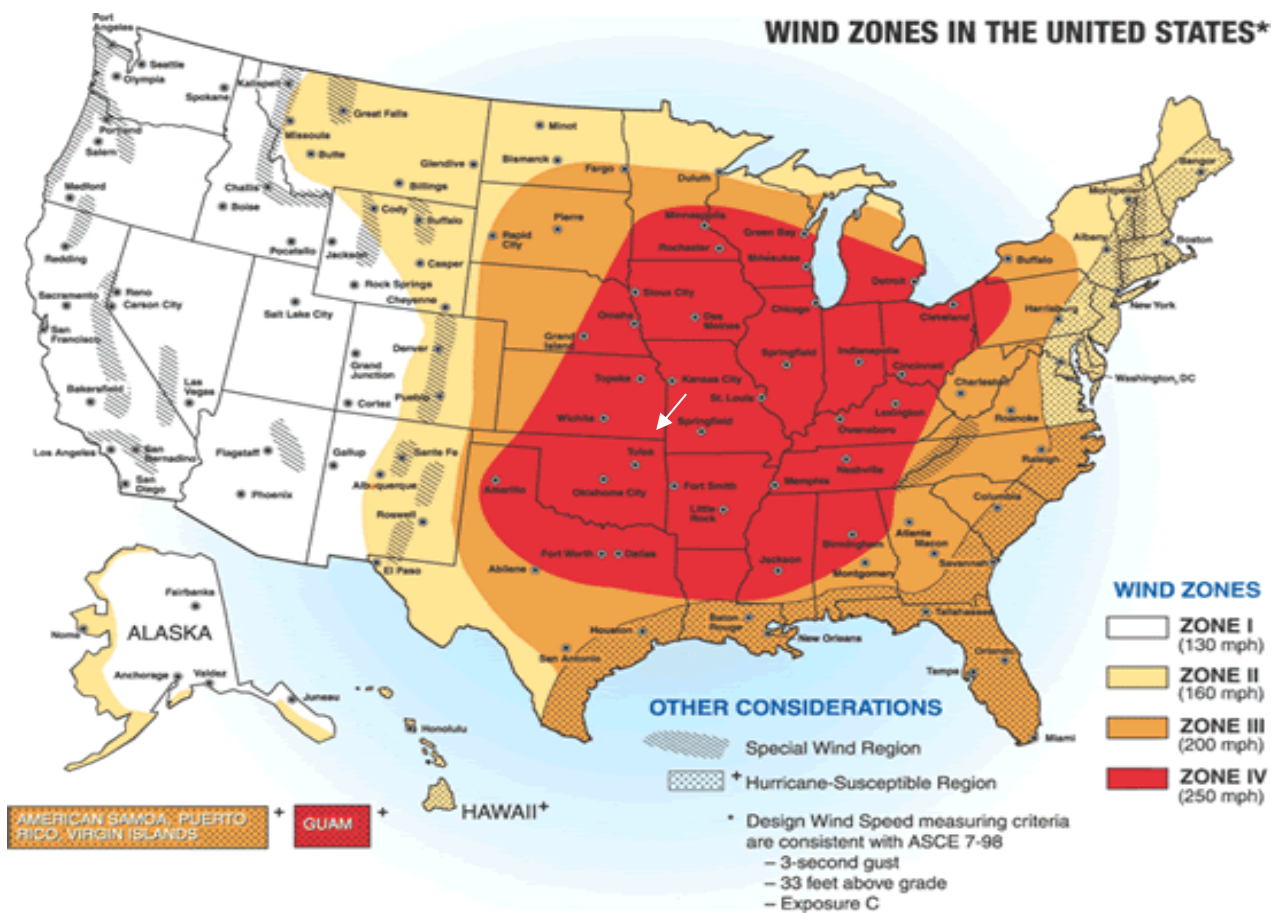
**Figure 3.28. Location and Frequency of Lightning in Missouri**



Source: National Weather Service,  
[http://www.lightningsafety.noaa.gov/stats/08\\_Vaisala\\_NLDN\\_Poster.pdf](http://www.lightningsafety.noaa.gov/stats/08_Vaisala_NLDN_Poster.pdf). Note: indicate location of planning area with a colored square or arrow.

**Figure 3.29** shows wind zones in the United States. Lawrence County is located in Zone IV which can experience wind speeds of up to 250 mph.

**Figure 3.29. Wind Zones in the United State**



Source: FEMA 320, Taking Shelter from the Storm, 3rd edition, [http://www.weather.gov/media/bis/FEMA\\_SafeRoom.pdf](http://www.weather.gov/media/bis/FEMA_SafeRoom.pdf)

**Severity/Magnitude/Extent**

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

In general, assets in Lawrence County are vulnerable to thunderstorms with lightning, high winds, and hail include people, crops, vehicles, and built structures. Although this hazard results in high annual losses, private property insurance and crop insurance usually cover the majority of losses. Considering insurance coverage as a recovery capability, the overall impact on jurisdictions is reduced.

Most lightning damages occur to electronic equipment located inside buildings. But structural damage can also occur when a lightning strike causes a building fire. In addition, lightning strikes can cause damages to crops if fields or forested lands are set on fire. Communications equipment and warning

transmitters and receivers can also be knocked out by lightning strikes.

Based on information provided by the Tornado and Storm Research Organization (TORRO), **Table 3.399** below describes typical damage impacts of the various sizes of hail.

**Table 3.39. Tornado and Storm Research Organization Hailstorm Intensity Scale**

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

Source: Tornado and Storm Research Organization (TORRO), Department of Geography, Oxford Brookes University

Notes: In addition to hail diameter, factors including number and density of hailstones, hail fall speed and surface wind speeds affect severity. <http://www.torro.org.uk/site/hyscale.php>

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

The tables below (**Tables 3.40** through **Table 3.42**) summarize past crop damages as indicated by crop insurance claims between the years of 2006 and 2016. The tables illustrate the magnitude of the impact on the planning area's agricultural economy. There were no recorded crop insurance claims caused by lightning in the same time period.

**Table 3.40. Crop Insurance Claims Paid in Lawrence County from Thunderstorms, 2006-2016**

| Crop Year    | Crop Name                             | Cause of Loss Description   | Insurance Paid        |
|--------------|---------------------------------------|-----------------------------|-----------------------|
| 2016         | Corn/Soybeans/Wheat                   | Excess Moisture/Precip/Rain | \$75,079.72           |
| 2012         | Corn/Grain Sorghum/Soybeans/All other | Excess Moisture/Precip/Rain | \$1,061,395.00        |
| 2011         | Corn/Soybeans/Wheat/All other         | Excess Moisture/Precip/Rain | \$5,697,886.00        |
| 2010         | Corn/Soybeans/Wheat/All other         | Excess Moisture/Precip/Rain | \$917,262.00          |
| 2009         | Corn/Soybeans/Wheat                   | Excess Moisture/Precip/Rain | \$222,237.00          |
| <b>Total</b> |                                       |                             | <b>\$7,973,859.72</b> |

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

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**Table 3.41. Crop Insurance Claims Paid in Lawrence County from High Winds, 2006-2016**

| Crop Year    | Crop Name | Cause of Loss Description | Insurance Paid    |
|--------------|-----------|---------------------------|-------------------|
| 2006         | Soybeans  | Wind/Excess Wind          | \$2,750.00        |
| <b>Total</b> |           |                           | <b>\$2,750.00</b> |

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

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**Table 3.42. Crop Insurance Claims Paid in Lawrence County from Hail, 2006-2016**

| Crop Year    | Crop Name  | Cause of Loss Description | Insurance Paid      |
|--------------|------------|---------------------------|---------------------|
| 2007         | Wheat/Corn | Hail                      | \$124,865.00        |
| <b>Total</b> |            |                           | <b>\$124,865.00</b> |

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

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

### ***Previous Occurrences***

#### Thunderstorm Wind

There are 111 thunderstorm wind events reported to the NCDC from 1997 – 2017 in Lawrence County, including portions of Monett in Barry County. There were 45 events with reported damages. The total damages from these events was \$8,822,000 in property damages, with average loss per damaging event totaling \$196,044. No injuries or deaths resulted from thunderstorm wind events.

The most damaging event in Lawrence County occurred on May 8th, 2009 which resulted in \$3 million in property damage. Reports consisted of 60-85 mph winds that damages several trees, power poles, structures, and business signs in several jurisdictions in Lawrence County. For example, one home in Miller was completely destroyed by 85 mph winds. Pierce City experienced power loss throughout the entire city.

A separate storm event in May 2009 was the costliest storm to occur in which \$4 million in property damage was sustained in Monett. An intense squall line impacted extreme southeast Kansas and the Missouri Ozarks with mainly damaging winds. This event impacted the whole of Barry County. Monett received the bulk of the damages where hundreds of structures sustained roof damage, as well as several structures to the west being completely destroyed near Highway 60.

On April 20th, 2000 Lawrence County sustained \$900,000 in property damage from thunderstorm winds. Areas most affected by the event included Mt. Vernon and the surrounding area. Winds reached a speed of 75 mph and damaged several business signs. A brick wall of a car wash was completely destroyed and winds blew apart an overhead door in the old industrial park area. Several trees and polls were also uprooted or knocked down with falling on a parked pick-up truck.

**Table 3.43** provides information about damaging thunderstorm wind events in the county.

**Table 3.43. NCDL Reported Events with Damages from Thunderstorm Winds, 1997-2017**

| Location        | # of Events | Deaths   | Injuries | Property Damage       | Crop Damage |
|-----------------|-------------|----------|----------|-----------------------|-------------|
| Lawrence County | 7           | 0        | 0        | \$3,907,000.00        | \$0         |
| Aurora          | 20          | 0        | 0        | \$106,500.00          | \$0         |
| Freistatt       | 3           | 0        | 0        | \$25,000.00           | \$0         |
| Marionville     | 8           | 0        | 0        | \$104,000.00          | \$0         |
| Miller          | 6           | 0        | 0        | \$50,000.00           | \$0         |
| Monett          | 14          | 0        | 0        | \$4,555,000           | \$0         |
| Mt. Vernon      | 19          | 0        | 0        | \$32,000.00           | \$0         |
| Pierce City     | 18          | 0        | 0        | \$26,000.00           | \$0         |
| Verona          | 3           | 0        | 0        | \$11,000.00           | \$0         |
| <b>Total</b>    | <b>98</b>   | <b>0</b> | <b>0</b> | <b>\$8,816,500.00</b> | <b>\$0</b>  |

Source: NCDL Storm Data 03/31/2017

### Hail

There are 162 hail events reported to the NCDL from 1997 – 2017 in Lawrence County, including portions of Monett in Barry County. One event recorded the highest magnitude where hailstones reached a diameter of 5 inches. There were thirteen (13) events with reported damages. The most significant and costliest event occurred in November 2003 when hail caused \$6,000,000 in property damage. Several structures sustained minor damage and lost windows. Two car lots were significantly affected along with several home sustaining roof damage. Hailstones reached a magnitude of 2.75 inches and reported to be the size of baseballs.

**Table 3.44** provides information about damaging hail events in the county.

**Table 3.44. NCDL Reported Events with Damages from Hail, 1997-2017**

| Date         | Location    | Magnitude | Deaths   | Injuries | Property Damage    | Crop Damage |
|--------------|-------------|-----------|----------|----------|--------------------|-------------|
| 6/8/1998     | Mt. Vernon  | 1.75      | 0        | 0        | \$5,000            | \$0         |
| 4/30/2002    | Chesapeake  | 1.75      | 0        | 0        | \$25,000           | \$0         |
| 11/18/2003   | Aurora      | 2.75      | 0        | 0        | \$6,000,000        | \$0         |
| 10/01/2009   | Mt. Vernon  | 1         | 0        | 0        | \$15,000           | \$0         |
| 5/25/2010    | Mt. Vernon  | 1.75      | 0        | 0        | \$20,000           | \$0         |
| 8/20/2011    | Aurora      | 1.75      | 0        | 0        | \$10,000           | \$0         |
| 8/20/2011    | Aurora      | 2.75      | 0        | 0        | \$25,000           | \$0         |
| 8/20/2011    | Freistatt   | 1.75      | 0        | 0        | \$10,000           | \$0         |
| 8/16/2012    | Pierce City | 2         | 0        | 0        | \$50,000           | \$0         |
| 8/16/2012    | Monett      | 1.75      | 0        | 0        | \$25,000           | \$0         |
| 4/3/2015     | Monett      | 1.75      | 0        | 0        | \$750,000          | \$0         |
| 4/3/2015     | Monett      | 1.75      | 0        | 0        | \$50,000           | \$0         |
| <b>Total</b> |             |           | <b>0</b> | <b>0</b> | <b>\$7,010,000</b> | <b>\$0</b>  |

Source: NCDL Storm Data

### High Winds

There are three high wind events reported in Lawrence County to the NCDL from 1997 – 2017. All events recorded no damages to property or crops, as well as, no deaths or injuries. The magnitude of all three events were around 60 mph.

Table 3.45 provides information about damaging high winds events in the county.

**Table 3.45. NCDC Reported Events and Damages from High Wind Events, 1997-2017**

| Location        | Date       | Magnitude | Deaths   | Injuries | Property Damage | Crop Damage |
|-----------------|------------|-----------|----------|----------|-----------------|-------------|
| Lawrence County | 5/13/2003  | 60 mph    | 0        | 0        | \$0             | \$0         |
| Lawrence County | 11/27/2005 | 60 mph    | 0        | 0        | \$0             | \$0         |
| Lawrence County | 5/8/2009   | 61 mph    | 0        | 0        | \$0             | \$0         |
| <b>Total</b>    |            |           | <b>0</b> | <b>0</b> | <b>\$0</b>      | <b>\$0</b>  |

Source: NCDC Storm Data

### Lightning

Limitations to the use of NCDC reported lightning events include the fact that only lightning events that result in fatality, injury and/or property and crop damages are in the NCDC. In the span of 1997 – 2017 there were no lightning events recorded for Lawrence County.

### ***Probability of Future Occurrence***

#### Thunderstorm

There are 111 Thunderstorm events over a 20 year period reported to the NCDC from 1997 – 2017. This equates to about 5 (5.55) thunderstorm wind occurrences in any given year with a 100% probability rate. There were 45 events that resulted in \$8,822,000 in property damage. This equates to 2 (2.25) damaging events per year with \$441,100 of annualized losses.

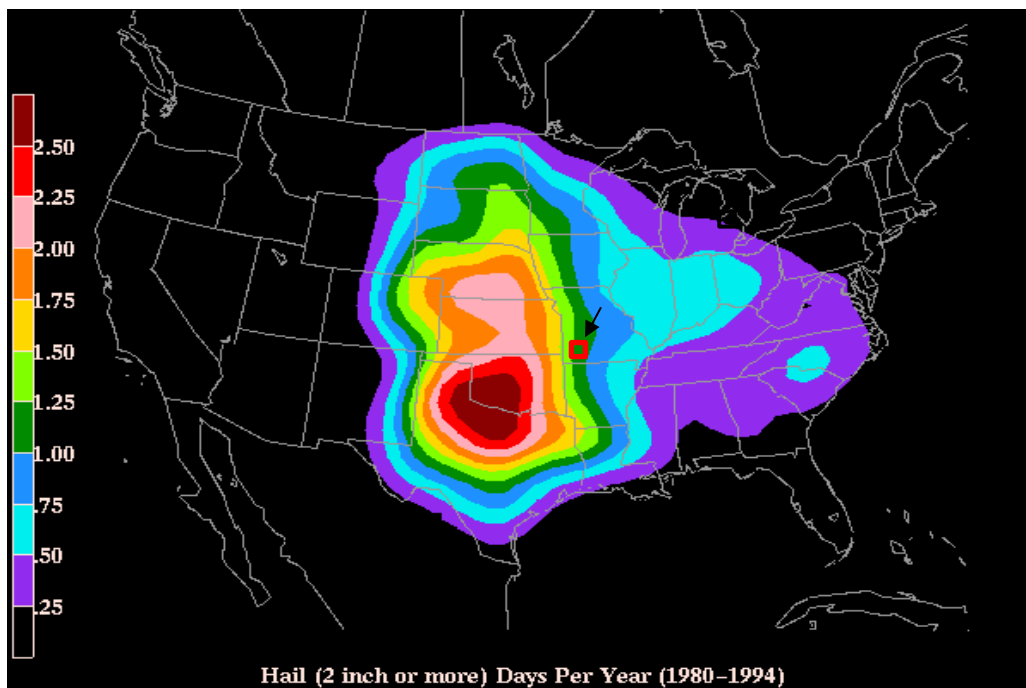
#### Hail

There have been 162 recorded hail events over a 20 year period from 1997 – 2017. This equates to about 8 hail events in any given year with a 100% probability rate. There were ten (10) events that resulted in \$6,185,000 in property damage. This equates to two damaging event every three years with annualized losses of \$309,250.

**Figure 3.30** is a map based on hailstorm data from 1980-1994. It shows the probability of hailstorm occurrence (2” diameter or larger) based on number of days per year. Lawrence County is bisected by the green and blue zones on the map meaning that the county will experience hail greater than 2” in diameter one to 1.25 days per year.



**Figure 3.30. Annual Hailstorm Probability (2" diameter or larger), U.S. 1980-1994**



Source: NSSL, <http://www.nssl.noaa.gov/users/brooks/public.html/bighail.gif>

### High Winds

There are three high wind events over a 20 year period reported to the NCDC from 1997 – 2017. This equates to a 15% probability of a high wind event in any given year. Due to events not reporting damages, calculating the probability of damages and annualized losses is not possible. It should be noted that due to the geographic location of Lawrence County in the United States, damages caused by high winds is possible in the future.

### Lightning

There were no lightning events recorded in the NCDC Storm Database due to no recorded deaths, injuries or property damage. Calculating the probability of future occurrences with is not possible; however, it could be expected to happen in the future.

## **Vulnerability**

### ***Vulnerability Overview***

Thunderstorms, high wind, hail, and lightning pose varying risk for jurisdictions in Lawrence County. Downbursts resulting from thunderstorms can be just as damaging as an EF-1 tornado. Thunderstorm winds have resulted in zero injuries or deaths in Lawrence County along with \$4,267,000 in property damage. Poorly built structures, barns, outbuildings are more vulnerable to the impact of high winds during thunderstorms. Both high winds and hail can damage roofs. Hail can also damage crops and dent cars and trucks. Total hail damage recorded in the NCDC database from 1997 – 2016 has been \$6,185,000 for an annualized total of \$309,250. One hail event accounted for \$6 million in damages. Lightning can cause wildfires and structural fires, damage electrical utilities causing power outages,

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and sometimes fatalities.

### ***Potential Losses to Existing Development***

The average annual loss determined from historical losses for thunderstorms, high wind, hail and lightning are indicators of the potential losses to existing development. Thunderstorm wind events in the county have damaged critical facilities, schools, local governments, and private property. Potential annual losses throughout the county are: thunderstorm - \$441,100, hail - \$209,250. Potential annual losses from high winds and lightning are not applicable, but should be expected to occur and cause damages in the future.

### ***Previous and Future Development***

Growth in Lawrence County is occurring at a moderate rate, with Monett, Mt. Vernon, and Aurora currently seeing the most growth in terms of population and housing built. Additional development in these areas results in the exposure of more households and businesses vulnerable to damages from high winds, hail, and lightning.

### ***Hazard Summary by Jurisdiction***

Although thunderstorms/high winds/lightning/hail events are area-wide, communities with a greater percentage of structures built prior to 1939 are considered to be more vulnerable to the impact of high wind and hail damage. Seven (7) out of the eleven (11) incorporated jurisdictions in Lawrence County have over 20% of their homes built in 1939 or earlier. Out of the seven, two communities, Miller and Pierce City, have over 25% of their homes built in 1939 or earlier. The most damage to property from thunderstorm high winds and hail has occurred in Aurora due to its high exposure. New construction and population growth in increasing the exposure and risk to this hazard; however, the risk to new development in Monett is somewhat mitigated by IRC 2006 building codes.

School district facilities are at risk to the damages of thunderstorms, high wind, hail and lightning. Ancillary buildings at all school districts such as storage facilities will continue to be at risk; however, risk to student populations has been mitigated by the construction of safe rooms at Monett R-1 and Pierce City R-VI. Marionville R-IX school district is planning to construct FEMA safe room in the next three to five years along with other improvements to school facilities.

### **Problem Statement**

Poorly built structures, barns, and outbuildings are more vulnerable to the impact of high winds during thunderstorms. High winds can topple utility poles and lead to power outages. Both high winds and hail can damage roofs. Hail can also damage crops and dent cars and trucks. People are also at risk to injury and death during high wind events. Crop insurance mitigates the risk to farmers and the agriculture sector within the county. Lightning events have caused structural fires and can strike electrical utilities leading to power outages.

The risk of property damage, injury, and death in the county can be mitigated by identifying safe refuge areas in public buildings, nursing homes and other facilities that house vulnerable populations that do not have a safe room. Additional warnings and alerts will also provide the public and schools more time to take cover during high wind events. Education and hazard awareness programs in public schools would also increase public safety in the event of severe thunderstorm events.

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### 3.4.9 Tornado

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Some sources for this hazard are:

- Enhanced F Scale for Tornado Damage, NWS, [www.spc.noaa.gov/faq/tornado/ef-scale.html](http://www.spc.noaa.gov/faq/tornado/ef-scale.html);
- Enhanced Fujita Scale's damage indicators and degrees of damage table, NOAA Storm Prediction Center, [www.spc.noaa.gov/efscale/ef-scale.html](http://www.spc.noaa.gov/efscale/ef-scale.html);
- Tornado Activity in the U.S. map (1950-2006), FEMA 320, Taking Shelter from the Storm, 3rd edition;
- Tornado Alley in the U.S. map, <http://www.tornadochaser.net/tornalley.html>
- Enhanced Fujita Scale, [www.spc.noaa.gov/efscale/ef-scale.html](http://www.spc.noaa.gov/efscale/ef-scale.html)
- National Climatic Data Center, <http://www.ncdc.noaa.gov/stormevents/>
- Tornado History Project, map of tornado events, <http://www.tornadohistoryproject.com/tornado/Missouri>

#### **Hazard Profile**

##### ***Hazard Description***

The NWS defines a tornado as “a violently rotating column of air extending from a thunderstorm to the ground.” It is usually spawned by a thunderstorm and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. Often, vortices remain suspended in the atmosphere as funnel clouds. When the lower tip of a vortex touches the ground, it becomes a tornado.

High winds not associated with tornadoes are profiled separately in this document in **Section 3.4.8**, Thunderstorm/High Wind/Hail/Lightning.

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

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

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

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

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## Geographic Location

There are no specific likely locations for future occurrences as the threat from this hazard is county-wide.

## Severity/Magnitude/Extent

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

Tornado magnitude is classified according to the EF- Scale (or the Enhanced Fujita Scale, based on the original Fujita Scale developed by Dr. Theodore Fujita, a renowned severe storm researcher). The EF- Scale (see **Table 3.466**) attempts to rank tornadoes according to wind speed based on the damage caused. This update to the original F Scale was implemented in the U.S. on February 1, 2007.

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**Table 3.46. Enhanced F Scale for Tornado Damage**

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

Source: The National Weather Service, [www.spc.noaa.gov/faq/tornado/ef-scale.html](http://www.spc.noaa.gov/faq/tornado/ef-scale.html)

The wind speeds for the EF scale and damage descriptions are based on information on the NOAA Storm Prediction Center as listed in **Table 3.477**. The damage descriptions are summaries. For the actual EF scale it is necessary to look up the damage indicator (type of structure damaged) and refer to the degrees of damage associated with that indicator. Information on the Enhanced Fujita Scale's damage indicators and degrees of damage is located online at [www.spc.noaa.gov/efscale/ef-scale.html](http://www.spc.noaa.gov/efscale/ef-scale.html).

**Table 3.47. Enhanced Fujita Scale with Potential Damage**

| Enhanced Fujita Scale |                  |                    |  |
|-----------------------|------------------|--------------------|--|
| Scale                 | Wind Speed (mph) | Relative Frequency | Potential Damage   |
| EF0                   | 65-85            | 53.5%              | Light. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported damage (i.e. those that remain in open fields) are always rated EF0).   |
| EF1                   | 86-110           | 31.6%              | Moderate. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.   |
| EF2                   | 111-135          | 10.7%              | Considerable. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes complete destroyed; large trees snapped or uprooted; light object missiles generated; cars lifted off ground.   |
| EF3                   | 136-165          | 3.4%               | Severe. Entire stores of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.                              |
| EF4                   | 166-200          | 0.7%               | Devastating. Well-constructed houses and whole frame houses completely levelled; cars thrown and small missiles generated.   |
| EF5                   | >200             | <0.1%              | Explosive. Strong frame houses levelled off foundations and swept away; automobile-sized missiles fly through the air in excess of 300 ft.; steel reinforced concrete structure badly damaged; high rise buildings have significant structural deformation; incredible phenomena will occur. |

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

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

### **Previous Occurrences**

During the 24 year period from 1993 to present, there have been 11 tornadoes recorded in Lawrence County with EF/F Scale ratings ranging from EF0 to EF3 in magnitude. The data is shown in **Table 3.48**. The most frequent EF/F scale magnitude of the 11 recorded tornadoes from the NCDC/NOAA storm events database have been F0 and F1 magnitude, numbering four and three, respectively. They collectively account for \$600,000 in property damage. EF3/F3 tornadoes have occurred twice and have caused 90% of the property damage caused by tornadoes.

The most destructive tornado to occur in Lawrence County occurred in May of 2003 when a category-3 tornado ripped through the Pierce City community. Around 229 homes businesses, and outbuildings were destroyed with the 100-year old historic downtown district completely destroyed. Total property damage came to \$27,500,000 in Lawrence County. Five people were killed by the tornado and 33 people were injured. Three out of five of the deceased were residing in a mobile home when the tornado struck.

Another F3 tornado struck Lawrence County in March of 2006 and caused considerable damage. The tornado followed a path north of Aurora, Marionville, and Verona, but did not enter the city limits; however, 21 structures were destroyed with 46 damaged. The tornado caused \$5,000,000 in total property damage. An elderly man was also struck by flying debris and killed during this event after the

tornado struck his home north of Marionville. One person was also injured.

In November of 2005, an F1 tornado struck in proximity of Mount Vernon causing \$750,000 in property damage. The tornado moved east about five miles creating a 75 yard wide path of destruction. Several homes experienced moderate to significant damage mostly being roof damage. Several trees were also uprooted. No one was killed in this event, but one person was injured in their home.

A category-2 tornado occurred in December of 2002 causing seventeen people to be injured and two deaths. The Tornado touched down south of Mt. Vernon and traveled four miles northeast towards Chesapeake. Thirty-four homes were damaged or destroyed in the event. One modular home was struck and killed one person when she was flung from her home. A trailer park was directly hit by the tornado which led to many people fleeing their mobile homes and taking shelter into nearby ditches and open fields. One person was struck by a downed tree and was killed. Total property damage amounted to \$500,000.

There are limitations to the use of NCDC tornado data that must be noted. For example, one tornado may contain multiple segments as it moves geographically. A tornado that crosses a county line or state line is considered a separate segment for the purposes of reporting to the NCDC. Also, a tornado that lifts off the ground for less than 5 minutes or 2.5 miles is considered a separate segment. If the tornado lifts off the ground for greater than 5 minutes or 2.5 miles, it is considered a separate tornado. Tornadoes reported in Storm Data and the Storm Events Database are in segments. **Table 3.488** that includes NCDC reported tornado events and damages since 1993 in the planning area

**Table 3.48. Recorded Tornadoes in Lawrence County, 1993 – 2017**

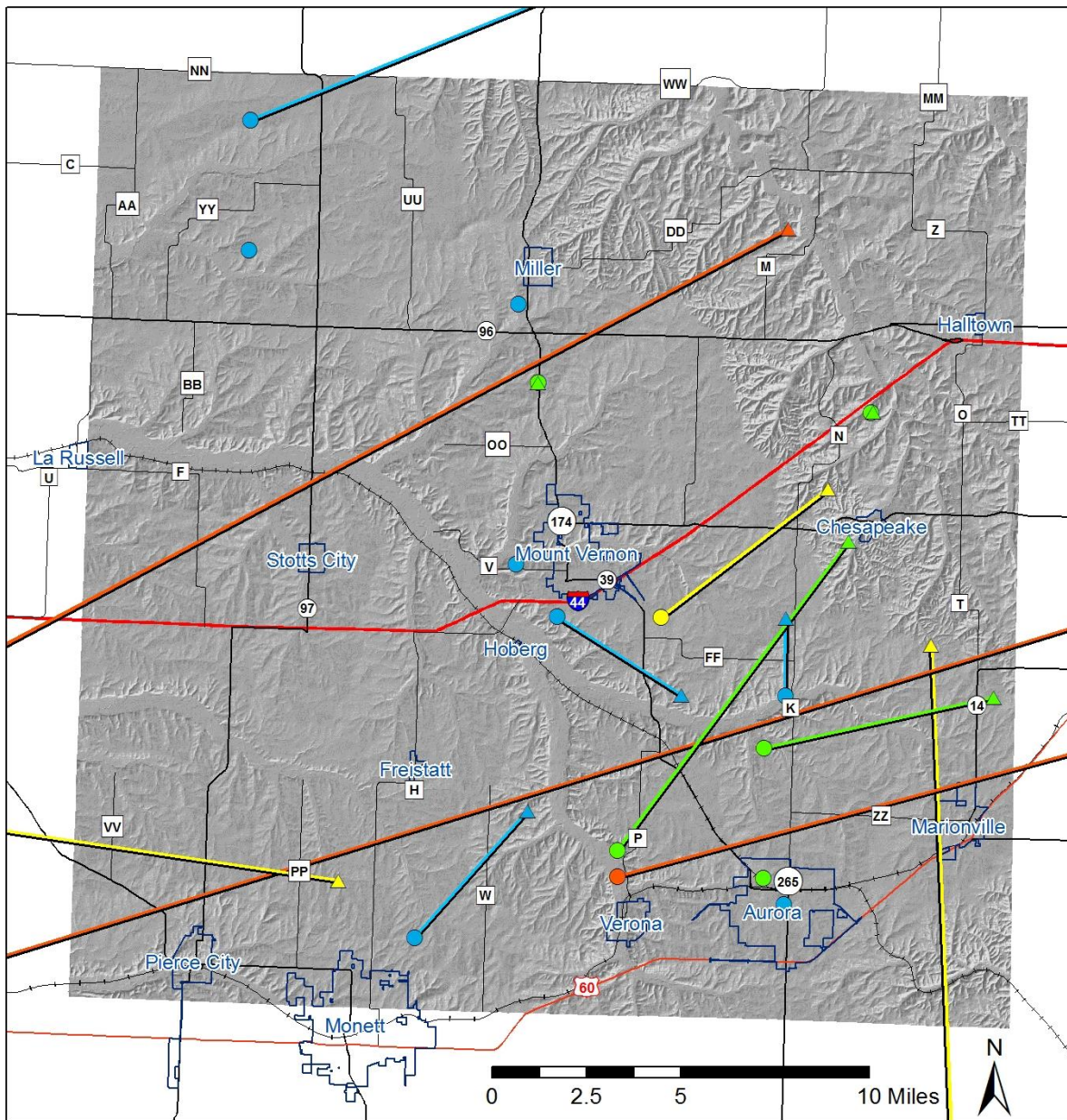
| Date         | Beginning Location | Ending Location | Length (miles) | Width (yards) | F/EF Rating | Death | Injury | Property Damage | Crop Damages |
|--------------|--------------------|-----------------|----------------|---------------|-------------|-------|--------|-----------------|--------------|
| 11/23/2001   | Aurora             | Aurora          | 2              | 200           | F1          | 0     | 0      | \$750,000       | \$250,000    |
| 12/17/2002   | Mt Vernon          | Chesapeake      | 4              | 100           | F2          | 2     | 17     | \$500,000       | \$0          |
| 05/04/2003   | Pierce City        | Marionville     | 25             | 880           | F3          | 5     | 33     | \$27,500,000    | \$0          |
| 11/12/2005   | Mt Vernon          | Mt. Vernon      | 5              | 75            | F1          | 0     | 1      | \$750,000       | \$0          |
| 03/12/2006   | Verona             | Marionville     | 10             | 200           | F3          | 1     | 1      | \$5,000,000     | \$0          |
| 10/17/2007   | Verona             | Chesapeake      | 10.11          | 150           | EF0         | 0     | 0      | \$500,000       | \$0          |
| 01/07/2008   | Aurora             | McKinley        | 6.39           | 50            | EF0         | 0     | 0      | \$75,000        | \$0          |
| 03/31/2008   | Albatross          | Albatross       | 0.45           | 40            | EF0         | 0     | 0      | \$20,000        | \$0          |
| 05/22/2011   | Pierce City        | Freistatt       | 7.07           | 800           | EF2         | 0     | 0      | \$300,000       | \$0          |
| 10/13/2014   | Spence             | Spence          | 0.07           | 50            | EF0         | 0     | 0      | \$5,000         | \$0          |
| 05/17/2015   | Freistatt          | Opal            | 4.53           | 100           | EF1         | 0     | 0      | \$100,000       | \$0          |
| <b>Total</b> |                    |                 |                |               |             | 8     | 52     | \$35,500,000    | \$250,000    |

Source: National Climatic Data Center, <http://www.ncdc.noaa.gov/stormevents/>

**Figure 3.31** shows historic tornado paths in the Lawrence County



**Figure 3.31. Lawrence County Map of Historic Tornado Events**



**Tornado (F-Scale)**

| Lift-Off | Touchdown | Path |
|----------|-----------|------|
| ▲ 0      | ● 0       | — 0  |
| ▲ 1      | ● 1       | — 1  |
| ▲ 2      | ● 2       | — 2  |
| ▲ 3      | ● 3       | — 3  |



Southwest Missouri Council of Governments  
 Map Prepared: 7/5/2017  
 Data source: Tornado History Project

Source: Missouri Tornado History Project, <http://www.tornadohistoryproject.com/tornado/Missouri>



There has been no recorded data in the USDA Risk Management Agency Database that refers to crop damages as a result of tornadoes in the past 10 years.

### ***Probability of Future Occurrence***

According to the NCDC storm event records there have been 11 tornado events from 1993 to March 2017. Based on the past occurrence of tornadoes in Lawrence County, there is a 46% probability that the county will experience a tornado in any given year as of 2017.

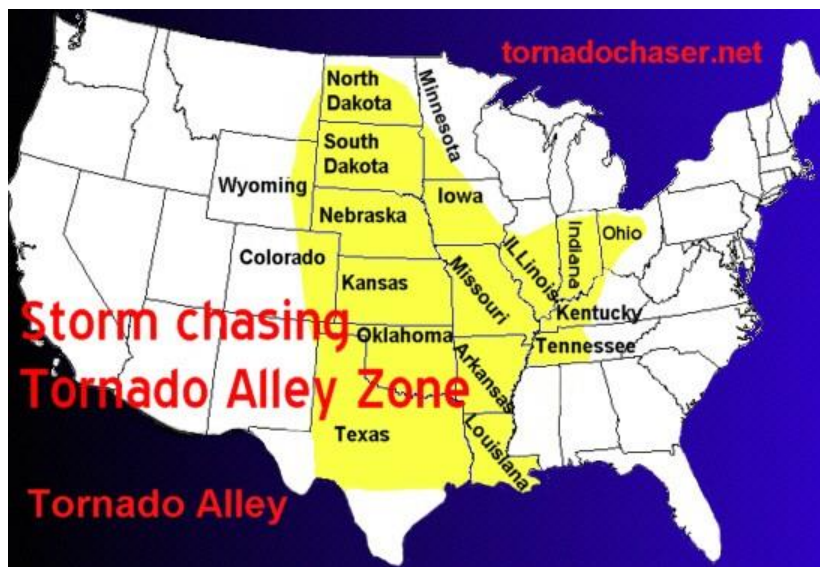
The potential severity of effects from tornadoes will continue to be high. Lawrence County will continue to experience deaths, injuries, and property damages from tornadoes. However, technological advances will facilitate earlier warnings than previously available. This, combined with a vigorous public education program and improved construction techniques, provides the potential for significant reductions in the number of deaths and injuries, as well as reduced property damage.

## **Vulnerability**

### ***Vulnerability Overview***

Lawrence County is located in a region of the U.S. with high frequency of dangerous and destructive tornadoes referred to as “Tornado Alley” as is the entire state. **Figure 3.32** illustrates areas where dangerous tornadoes historically have occurred.

**Figure 3.32. Tornado Alley in the U.S.**



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

The 2013 State Plan used a methodology to the vulnerability of each county in the state to determine each county’s vulnerability to tornadoes. While this approach attempts to prioritize tornado vulnerable counties, it does not identify any particular geographic patterns to tornado risk. The state’s analysis combined annualized losses and frequency of occurrence to determine the greatest likelihood of being impacted by a tornado. The state’s vulnerability rating ranged from very high, high, and moderate. The vulnerability rating for Lawrence County was rated at high risk.

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### **Potential Losses to Existing Development**

During the 24 year period from 1993 to March 2017, a total of \$35,750,000 in property and crop losses equates to \$1,489,583 in average annual losses. The most common tornado events recorded in the county are F0 and F1 magnitude events. Four of the 11 tornado events on record have been F0 magnitude. Three have been F1 and two tornadoes have been F2 and F3. Potential losses for each jurisdiction were estimated based on the total exposure with applied damage factor of 1%. **Table 3.49** provides estimates for total losses by jurisdiction.

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**Table 3.49. Estimated Potential Tornado Losses by Jurisdiction**

| <b>Jurisdiction</b>            | <b>Potential Tornado Losses</b> |
|--------------------------------|---------------------------------|
| Unincorporated Lawrence County | \$549,584.80                    |
| City of Aurora                 | \$10,937.75                     |
| Village of Freistatt           | \$115,660.20                    |
| City of Marionville            | \$32,129.60                     |
| City of Miller                 | \$288,648.40                    |
| City of Monett                 | \$366,307.05                    |
| City of Pierce City            | \$78,900.95                     |
| City of Verona                 | \$19,433.95                     |
| Marionville R-IX               | \$281,611.87                    |
| Miller R-II                    | \$179,420.00                    |
| Monett R-I                     | \$771,241.03                    |
| Mount Vernon R-V               | \$556,894.31                    |
| Pierce City R-VI               | \$237,829.24                    |
| Verona R-VII                   | \$120,840.93                    |

### **Previous and Future Development**

During the 24 year period from 1993 to 2017, a total of \$35,500,000 in property and crop losses equates to \$1,489,583 in average annual losses countywide. This value indicates that potential future losses in the county will remain significant. Future development and any increase in population will increase exposure to damage; however not much is expected in the near future.

### **Hazard Summary by Jurisdiction**

Although tornado events are area-wide hazard, communities with a greater percentage of structures built prior to 1939 are considered to be more vulnerable to the impact of high wind and hail damage. There are several jurisdictions in Lawrence County of which are comprised of more than 10% of houses built in 1939 or earlier Miller, Monett, Pierce City, and Verona are composed of more than 20% of houses built prior to 1939. These cities are most at risk for increased exposure and risk to tornadoes.

School and special district facilities are at risk to the damages of tornadoes. Risk to student populations has been mitigated by construction of safe rooms on the Monett R-I and Pierce City R-VI school facilities. Marionville R-IX school district is planning to construct FEMA safe room in the next three to five years along with other improvements to school facilities.

### **Problem Statement**

Tornadoes are the most violent of all atmospheric storms and are capable of tremendous destruction. Wind speeds can exceed 250 miles per hour and damage paths can be more than one mile wide and

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50 miles long. Significant tornado events in Lawrence County have resulted in eight deaths, 52 injuries, and \$35,500,000 in property damage over the last 23 years. Information in the 2013 State Plan indicates that Lawrence County has a high vulnerability to tornados based on frequency of occurrence and previous damages.

The risk of property damage, injury, and death in the county can be mitigated by Constructing FEMA saferooms in facilities that house vulnerable populations such as nursing homes government buildings, and schools. Additionally, identifying safe refuge areas in public buildings, nursing homes and other facilities that house vulnerable populations that do not have a safe room. Retrofitting school district facilities with protective filming of windows and installation of blast proof doors will provide more protection for students and staff at school facilities. Additional warnings and alerts will also provide the public and schools more time to take cover during tornado. Cities can adopt or update and enforce IBC 2012 building codes that include construction techniques such as roof tie down straps to mitigate damage to future development.

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### 3.4.10 Winter Weather/Snow/Ice/Severe Cold

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Some sources for this hazard are:

- Wind chill chart, National Weather Service, [http://www.nws.noaa.gov/om/cold/wind\\_chill.shtml](http://www.nws.noaa.gov/om/cold/wind_chill.shtml);
- Average Number of House per year with Freezing Rain, American Meteorological Society. "Freezing Rain Events in the United States." <http://ams.confex.com/ams/pdfpapers/71872.pdf>;
- USDA Risk Management Agency, Insurance Claims, <https://www.rma.usda.gov/data/cause>
- Any local Road Department data on the cost of winter storm response efforts.  
National Climatic Data Center, Storm Events Database, <http://www.ncdc.noaa.gov/stormevents/>

#### **Hazard Profile**

##### ***Hazard Description***

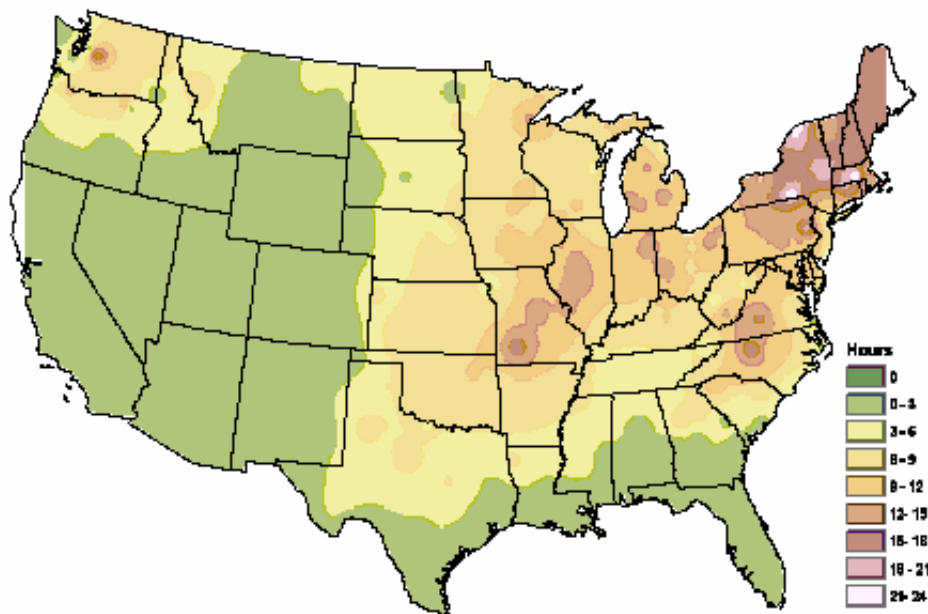
A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall, and cold temperatures. The National Weather Service describes different types of winter storm events as follows.

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

##### ***Geographic Location***

The entire county is vulnerable to heavy snow, ice, extreme cold temperatures and freezing rain. **Figure 3.33** depicts the average number of hours per year with freezing rain. Lawrence County is located in a zone that can expect 18 – 21 hours of freezing rain per year.

**Figure 3.33. NWS Statewide Average Number of Hours per Year with Freezing Rain**



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

### **Severity/Magnitude/Extent**

Severe winter storms include extreme cold, heavy snowfall, ice, and strong winds which can push the wind chill well below zero degrees in the planning area. Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse utility lines and communication towers, as well as make transportation difficult and hazardous. Ice can also become a problem on roadways if the air temperature is high enough that precipitation falls as freezing rain rather than snow.

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

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

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

Buildings with overhanging tree limbs are more vulnerable to damage during winter storms when limbs

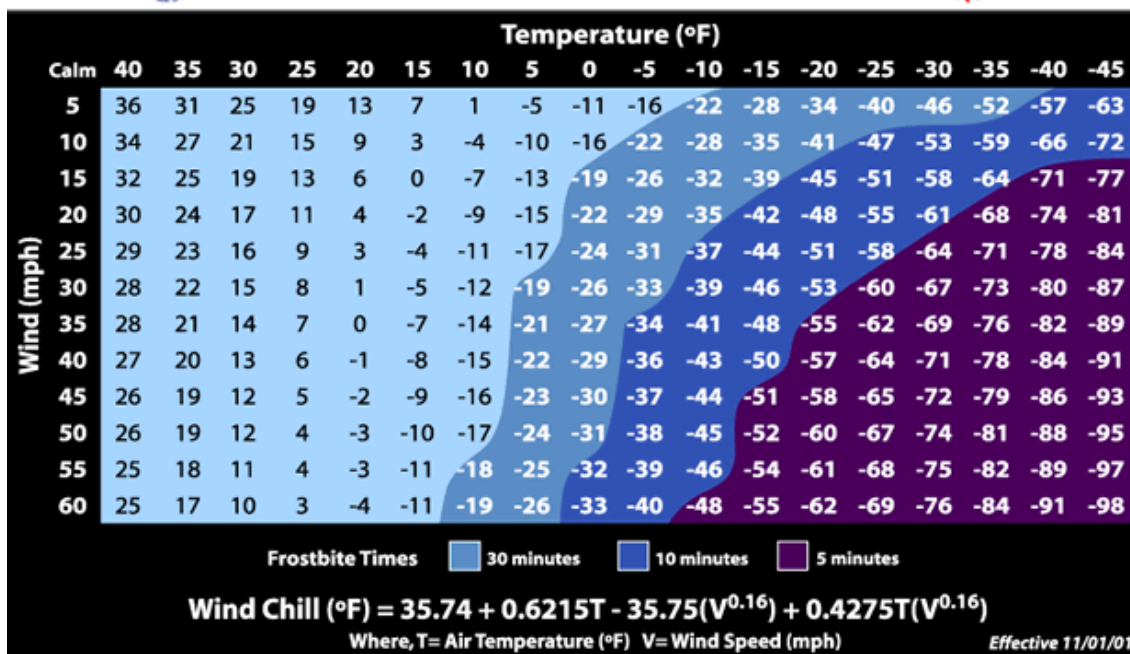
fall. Businesses experience loss of income as a result of closure during power outages. In general heavy winter storms increase wear and tear on roadways though the cost of such damages is difficult to determine. Businesses can experience loss of income as a result of closure during winter storms.

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

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

Wind can greatly amplify the impact of cold ambient air temperatures. Provided by the National Weather Service, **Figure 3.34** below shows the relationship of wind speed to apparent temperature and typical time periods for the onset of frostbite.

**Figure 3.34. Wind Chill Chart**



Source: National Weather Service, <http://www.nws.noaa.gov/om/winter/windchill.shtml>

Winter storms, cold, frost and freeze take a toll on crop production in the planning area. **Table 3.50** shows the USDA’s Risk Management Agency payments for insured crop losses in the planning area as a result of cold conditions and snow from 2006 to 2016.

**Table 3.50. Crop Insurance Claims Paid in Lawrence County as a Result of Cold Conditions and Snow, 2016-2006**

| Crop Year    | Crop Name      | Cause of Loss Description | Insurance Paid   |
|--------------|----------------|---------------------------|------------------|
| 2016         | Corn           | Cold Wet Weather          | \$4,292          |
| 2008         | Corn, Soybeans | Freeze, Frost             | \$312,201        |
| 2007         | Wheat          | Frost                     | \$5,934          |
| <b>Total</b> |                |                           | <b>\$322,427</b> |

Source: USDA Risk Management Agency, <http://www.rma.usda.gov/data/cause.htm>

**Previous Occurrences**

There are 20 recorded events in the NCDC database for Blizzard, Extreme Cold/Wind Chill, Frost/Freeze, Heavy Snow, Ice Storm, Sleet, and Winter Storm in Lawrence County from 1997 - 2017. **Table 3.51** includes the number of occurrences of these Winter Weather events. **Table 3.52** includes the seven weather events that caused damage, with event narratives listed following the table. It should be noted that crop damage listed in the NDCD database does not necessarily equate to the amount of crop insurance paid.

**Table 3.51. NCDC Lawrence County Winter Weather Events Summary, 2007-2017**

| Type of Event | Number of Occurrences | # of Deaths | # of Injuries | Property Damages   | Crop Damages       |
|---------------|-----------------------|-------------|---------------|--------------------|--------------------|
| Blizzard      | 1                     | 0           | 0             | \$15,000           | \$0                |
| Frost/Freeze  | 1                     | 0           | 0             | \$0                | \$1,850,000        |
| Ice Storm     | 6                     | 0           | 0             | \$5,050,000        | \$0                |
| Winter Storm  | 12                    | 0           | 0             | \$0                | \$0                |
| <b>TOTAL</b>  | <b>20</b>             | <b>0</b>    | <b>0</b>      | <b>\$5,065,000</b> | <b>\$1,850,000</b> |

Source: NCDC, data accessed 06/21/2017

**Table 3.52. NCDC Lawrence County Winter Weather Events Summary, 1997-2017**

| Type of Event | Date       | # of Deaths | # of Injuries | Property Damages   | Crop Damages       |
|---------------|------------|-------------|---------------|--------------------|--------------------|
| Ice Storm     | 01/12/2007 | 0           | 0             | \$5,000,000        | \$0                |
| Frost/Freeze  | 04/07/2007 | 0           | 0             | \$0                | \$1,850,000        |
| Ice Storm     | 12/09/2007 | 0           | 0             | \$50,000           | \$0                |
| Blizzard      | 02/01/2011 | 0           | 0             | \$15,000           | \$0                |
| <b>Total</b>  |            | <b>0</b>    | <b>0</b>      | <b>\$5,065,000</b> | <b>\$1,850,000</b> |

Source: NCDC, data accessed 06/21/2017

**January 2007 Ice Storm**

A devastating ice storm impacted Southwest Missouri. Several areas experience three weeks without power. Power outages from exposed power lines and tree damage was widespread in Lawrence County causing some residents to be without power for 15 days. Ice accumulation was measured at 2 inches in the county. Total damage inflicted amounted to \$5 million in property damage.



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### April 2007 Frost/Freeze

Temperatures reached below freezing on the nights of the 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> causing widespread damage to matured crops in the Missouri Ozarks. Due to unusually warm condition in March, crops grew early in the season which resulted in more exposure during the cold April temperatures. 90% of wheat crops suffered damage along with several hay crops sustaining major damage. Total crop damage in Lawrence County amounted to \$1,850,000.

### December 2007 Ice Storm

A major ice storm developed over northeast Oklahoma and traveled across Missouri in the early hours of December 9<sup>th</sup>. Areas near Lamar and Stockton, MO experienced the most ice accumulation up to one and a half inches on exposed surfaces. Additional ice coating came the following day from light freezing rain during the morning. Lawrence County was recorded to have experienced one quarter inch to three quarters of ice accumulations. Minor tree and power line damage occurred in the northwest portion of the county. Total damages in the county amounted to \$50,000.

### February 2011 Blizzard

A major winter storm swept across the Midwest bringing heavy snow and blizzard conditions to Lawrence County. Snow accumulation of 10 to 18 inches was observed with winds reaching upwards of 40 mph. This resulted in drifts of a few feet and reduced visibility. A school classroom roof collapse during the event causing \$15,000 in damage.

### ***Probability of Future Occurrence***

The probability for all of the different types of winter weather are included as one probability, since one storm generally includes multiple types of events. There were 21 severe winter weather events in Lawrence County from 1997 to March 2017. This equates to a 100% probability of occurrence in any given year in the planning area.

### **Vulnerability**

#### ***Vulnerability Overview***

Severe winter storms include extreme cold, heavy snowfall, ice, and strong winds which can push the wind chill well below zero degrees in the planning area. Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse utility lines and communication towers, as well as make transportation difficult and hazardous. People over 65 and those living in poverty have an increased risk of hypothermia and frostbite due to extreme cold and wind chill.

In the 2013 State Plan, seven factors were considered in determining overall severe winter storm vulnerability as follows: housing density, likelihood of occurrence, building exposure, crop exposure, average annual property loss ratio, average annual crop insurance claims and social vulnerability. The state ranked each of these criteria using a scale from one to five, one being lowest and five being the highest, to rank each county's vulnerability to severe winter weather. Lawrence County received a vulnerability rating of Medium-Low with Crop loss ratio and social vulnerability index of three.

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### **Potential Losses to Existing Development**

During the 20 year period from 1997 to March 2017, a total of \$5,065,000 in property loss equates to \$253,250 in average annual losses countywide.

### **Previous and Future Development**

Increased development and any resulting increase in population will increase exposure to damage from severe winter weather; however not much growth is expected. Future commercial development can expect functional downtime and decreased revenues during periods of severe winter weather. Road construction in the county will increase the need for snow removal and salt to keep transportation lifelines open during periods of severe winter weather.

### **Hazard Summary by Jurisdiction**

Severe winter weather can cause power outages and put structures at risk to fires when individuals in homes resort to fuel heaters. The risk of extreme cold deaths and frostbite varies among segments of the populations. People over 65 and those living below the poverty level have an increased vulnerability to severe winter weather. **Table 3.53** includes information on populations over 65 and the percent living below the poverty level by jurisdiction.

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**Table 3.53. Population over 65 and Percent Living Below the Poverty Level by Jurisdiction**

| <b>Jurisdiction</b> | <b>% of Families Living Below Poverty Level</b> | <b>Population over 65</b> |
|---------------------|---|---------------------------|
| Lawrence County     | 14.5%   | 17%                       |
| Aurora              | 14.6%   | 16.1%                     |
| Freistatt           | 5.6%  | 32.8%                     |
| Marionville         | 18.5%   | 22.1%                     |
| Miller              | 13.3%   | 16.1%                     |
| Monett              | 23.2%   | 15%                       |
| Mt. Vernon          | 9.9%  | 23.2%                     |
| Pierce City         | 16.8%   | 17.4%                     |
| Verona              | 22.2%   | 9.3%                      |

Source: Census.gov; 2011-2015 ACS 5-year Estimates

### **Problem Statement**

Heavy snow can bring a community to a standstill by inhibiting transportation (in whiteout conditions), weighing down utility lines, and by causing structural collapse in buildings not designed to withstand the weight of the snow. Repair and snow removal costs can be significant. Ice buildup can collapse utility lines and communication towers, as well as make transportation difficult and hazardous. People over 65 and those living in poverty have an increased risk of hypothermia and frostbite due to extreme cold and wind chill.

Providing heating and cooling centers in the county would be beneficial to the population as a moderate percentage live in poverty. These facilities, which could be advertised online or through the news, would provide individuals who are at risk refuge from periods of extreme cold. Public works departments and road districts can develop snow removal plans and maintain adequate snow removal equipment and salt to quickly open roads after periods of heavy snow and freezing rain. The County and cities can

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work with local electric providers to develop vegetation management programs in rights of way to minimize damages to falling tree limbs laden with ice resulting from ice storms to minimize power outages throughout the county.

## 4 MITIGATION STRATEGY

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|          |   |            |
|----------|---|------------|
| <b>4</b> | <b>MITIGATION STRATEGY .....</b>                              | <b>4.1</b> |
| 4.1      | <i>Goals.....</i>   | 4.1        |
| 4.2      | <i>Identification and Analysis of Mitigation Actions.....</i> | 4.2        |
| 4.3      | <i>Implementation of Mitigation Actions .....</i>             | 4.5        |

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

This section presents the mitigation strategy updated by the Mitigation Planning Committee (MPC) based on the 2017 risk assessment. The mitigation strategy was developed through a collaborative group process. The process included review of 2013 general goal statements to guide the jurisdictions in lessening disaster impacts as well as specific mitigation actions to directly reduce vulnerability to hazards and losses. The following definitions are taken from FEMA’s *Local Hazard Mitigation Review Guide (October 1, 2012)*.

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

### 4.1 Goals

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

This planning effort is an update to Lawrence County’s existing hazard mitigation plan approved by FEMA on March 27, 2013. Therefore, the goals from the 2017 Lawrence County Hazard Mitigation Plan were reviewed to see if they were still valid, feasible, practical, and applicable to the defined hazard impacts. The MPC conducted a discussion session during their third meeting to review and update the plan goals. To ensure that the goals developed for this update were comprehensive and supported State goals, the 2013 State Hazard Mitigation Plan goals were reviewed. The MPC also reviewed the goals from current surrounding county plans.

**Goal 1 – Protect lives and property from the effects of natural hazards.**

- **Objective 1.1: Promote public awareness of natural hazards and safety measures**
- **Objective 1.2: Provide adequate warning systems to alert the public of hazard events**

- **Objective 1.3: Provide adequate shelter for the population to reduce death and injury from hazard events**
- **Objective 1.4: Utilize prevention measures to reduce potential future loss from hazardous events**

**Goal 2 - Ensure the continued operation of government and emergency services.**

- **Objective 2.1 - Strengthen multi-jurisdictional cooperation & communication among local governments, emergency services agencies, and entities responsible for critical and vulnerable facilities**
- **Objective 2.2 - Increase and maintain appropriate emergency equipment and facilities**

**Goal 3 - Ensure the functional operation of critical infrastructures serving the public and the local economy.**

- **Objective 3.1 - Utilize engineered structural modifications to natural systems and public infrastructures to reduce damaging impacts of hazards**

## **4.2 Identification and Analysis of Mitigation Actions**

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

During the second MPC meeting, an overview of the risk assessment was provided to the MPC members for review and the key issues were identified for specific hazards. The second meeting concluded with a brief discussion of previous mitigation actions. Each jurisdiction was asked to review previous mitigation actions and come prepared to discuss new actions at the next mitigation meeting.

Problem statements summarize the risk to the planning area presented by each hazard, and include possible methods to reduce that risk. Problem statements are new to this plan and were not included in the previous plan. Use of problem statements allowed the recognition of new and innovative strategies for mitigate risks in the planning area.

The focus of Meeting #3 was discussion of goals, strategies and actions. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during Meeting #3:

- A list of actions proposed in the previous mitigation plan and discussing each one, determining their relevance.
- Discussion of new mitigation strategies.
- Public input during meetings, responses to Data Collection Questionnaires, and other efforts to involve the public in the plan development process.

For Meeting #4, individual jurisdictions, including school and special districts, were encouraged to review the details of the risk assessment vulnerability analysis specific to their jurisdiction. The MPC

reviewed the actions from the previously approved plan for progress made since the plan had been adopted, using worksheets included in Appendix B of this plan. Each jurisdiction was instructed to provide information regarding the “Action Status” with one of the following status choices:

- Completed, with a description of the progress,
- Not Started/Continue in Plan Update, with a discussion of the reasons for lack of progress,
- In Progress/Continue in Plan Update, with a description of the progress made to date or
- Deleted, with a discussion of the reasons for deletion.

Based on the status updates, there were 6 completed actions and 22 deleted actions.

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

**Table 4.1. Action Status Summary**

| Jurisdiction                | Completed Actions | Deleted Actions  | Continuing Actions   |
|-----------------------------|-------------------|--|--|
| <b>Lawrence County</b>      |                   | 1.3.4  | 1.1.3, 1.1.4, 1.1.5, 1.2.2, 1.3.1, 1.3.2, 1.3.3, 1.3.5, 1.4.1, 1.4.2, 1.4.4, 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.6, 2.2.1, 3.1.2  |
| <b>City of Aurora</b>       | 2.21              | 1.4.1  | 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.2.1, 1.2.2, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 1.4.1, 1.4.2, 1.4.3, 1.4.4, 2.1.2, 2.1.3, 2.1.4, 2.1.6, 3.1.1, 3.1.2, 3.1.3, 3.1.5, 3.1.6  |
| <b>City of Marionville</b>  |                   | 1.3.4  | 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.2.1, 1.2.2, 1.3.1, 1.3.2, 1.3.3, 1.3.5, 1.4.1, 1.4.2, 1.4.3, 1.4.4, 2.1.2, 2.1.3, 2.1.4, 2.1.6, 3.1.3, 3.1.5, 3.1.6  |
| <b>City of Miller</b>       | 1.2.2             | 1.1.2, 1.3.2, 1.3.4, 1.4.2, 1.4.3, 1.4.4, 2.1.4, 2.2.1, 2.1.6, 3.1.5 | 1.1.1, 1.1.3, 1.1.4, 1.2.1, 1.3.1, 1.3.3, 2.1.2, 2.1.3, 3.1.1, 3.1.2, 3.1.3, 3.1.6   |
| <b>City of Monett</b>       |                   |  | 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.2.1, 1.2.2, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 1.4.1, 1.4.2, 1.4.3, 1.4.4, 1.4.5, 2.1.2, 2.1.3, 2.1.4, 2.1.6, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.2.6, 2.2.7, 2.2.8, 3.1.1, 3.1.2, 3.1.3, 3.1.5, 3.1.6, 3.1.7, 3.1.8 |
| <b>City of Mount Vernon</b> |                   | 1.2.1  | 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.2.2, 1.3.1, 1.3.2, 1.3.3, 1.3.4   |
| <b>City of Pierce City</b>  |                   | 2.2.1  | 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.2.1, 1.2.2, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 1.4.1, 1.4.2, 1.4.3, 1.4.4, 2.1.2, 2.1.3, 2.1.4, 2.1.6, 3.1.1, 3.1.2, 3.1.3, 3.1.5, 3.1.6   |
| <b>City of Verona</b>       | 3.1.3, 3.1.5      |  | 1.1.1, 1.1.2, 1.1.3, 1.2.2, 1.3.1, 1.3.3, 2.1.3, 2.1.6, 3.1.5, 3.1.6   |
| <b>Village of Freistatt</b> |                   | 1.3.4  | 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.2.1, 1.2.2, 1.3.1, 1.3.2, 1.3.3, 1.4.2, 1.4.3, 1.4.4, 2.1.2, 2.1.3, 2.1.4, 2.1.6, 2.2.1, 3.1.1, 3.1.2, 3.1.3, 3.1.5, 3.1.1   |
| <b>Marionville R-IX</b>     |                   | 2.1.3, 2.1.4   | 1.1.1, 1.1.2, 1.2.2, 1.3.1, 2.1.6, 3.1.2   |

|                         |       |       |  |
|-------------------------|-------|-------|--|
| <b>Miller R-II</b>      |       | 2.1.4 | 1.1.1, 1.1.2, 1.2.2, 1.3.1, 2.1.3, 2.1.6, 3.1.2        |
| <b>Monett R-I</b>       | 1.3.1 | 2.1.4 | 1.1.1, 1.1.2, 1.2.2, 2.1.3, 2.1.6, 3.1.2               |
| <b>Mount Vernon R-V</b> |       |       | 1.1.1, 1.1.2, 1.2.2, 1.3.1, 2.1.3, 2.1.4, 2.1.6, 3.1.2 |
| <b>Pierce City R-VI</b> | 1.3.1 | 2.1.4 | 1.1.1, 1.1.2, 1.2.2, 2.1.3, 2.1.6, 3.1.2               |
| <b>Verona R-VI</b>      |       | 2.1.4 | 1.1.1, 1.1.2, 1.2.2, 1.3.1, 2.1.3, 2.1.6, 3.1.2        |

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

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

| <b>Completed Actions</b>  | <b>Completion Details (date, amount, funding source)</b>   |
|---|--|
| Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities.   | City of Miller   |
| Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration.  | Mt. Vernon R-V School District, Pierce City R-VI School District   |
| Construct additional fire stations in communities and rural fire districts or fire protection associations to improve accessibility to areas impacted by natural or manmade barriers during hazard events.                                    | City of Aurora   |
| <b>Deleted Actions</b>  | <b>Reason for Deletion</b>   |
| Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. | City of Miller – not applicable  |
| Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public.   | City of Verona – not applicable  |
| Maintain a sufficient number of warning sirens in all incorporated communities while also maintaining current infrastructure.   | City of Mount Vernon – not applicable<br>City of Verona – not applicable   |
| Retrofit existing critical public buildings & infrastructures where possible to provide shelter from natural hazards.   | City of Miller – not applicable  |
| Amend or update zoning ordinances to include requirement for best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in all new manufactured home parks.  | Lawrence County – not applicable due to no zoning<br>City of Miller – not applicable<br>City of Verona – not applicable<br>Village of Freistatt.- not applicable |
| Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events.  | City of Verona – not applicable  |



|   |  |
|---|--|
| Encourage the county and municipalities to maintain participation in the NFIP.  | City of Aurora – not applicable  |
| Community organizations should continue programs to provide fans, air conditioners & winter weatherization for those at risk (the elderly, low-income, younger, and handicapped).   | City of Miller – not applicable due to lack of funding   |
| Amend or update codes to include storm ready standards, such as hurricane straps.   | City of Miller – not applicable  |
| Establish and maintain participation in citizen preparedness activities such as: CERT, COAD, Neighborhood Watch, Amateur Radio, etc.  | City of Miller – not applicable  |
| Establish and maintain a database on available mitigation resources and programs that can be shared with local governments, response and preparedness agencies, social service organizations, and emergency care providers. | City of Verona – not applicable  |
| Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network.                                      | Marionville R-IX – not applicable  |
| Continue to increase countywide frequency repeater network, including new wireless units.   | City of Miller – not applicable<br>Marionville R-IX – not applicable<br>Miller R-I – not applicable<br>Mt. Vernon R-V – not applicable<br>Pierce City R-VI – not applicable<br>Verona R-VII – not applicable |
| Construct additional fire stations in communities and rural fire districts or fire protection associations to improve accessibility to areas impacted by natural or manmade barriers during hazard events.                  | City of Miller – not applicable<br>City of Pierce City – not applicable<br>City of Verona – not applicable   |
| Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events.  | City of Miller – not applicable  |

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

## 4.3 Implementation of Mitigation Actions

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

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

further refinement to be supplied as project development occurs.

The plan must indicate if the prioritization process and/or methodology have changed since the previous plan's adoption. If the process has changed, describe how it changed and why it changed. If the prioritization process and methodology have not changed, state this here in the plan with a description. Sample text if FEMA's suggested STAPLEE methodology is used follows: FEMA's STAPLEE methodology was used to assess the costs and benefits, overall feasibility of mitigation actions, and other issues impacting project. During the prioritization process, the MPC used worksheets to assign scores. The worksheets posed questions based on the STAPLEE elements as well as the potential mitigation effectiveness of each action. Scores were based on the responses to the questions as follows:

Definitely yes = 3 points

Maybe yes = 2 points

Probably no = 1

Definitely no = 0

The following questions were asked for each proposed action.

S: Is the action socially acceptable?

T: Is the action technically feasible and potentially successful?

A: Does the jurisdiction have the administrative capability to successfully implement this action?

P: Is the action politically acceptable?

L: Does the jurisdiction have the legal authority to implement the action?

E: Is the action economically beneficial?

E: Will the project have an environmental impact that is either beneficial or neutral? (score "3" if positive and "2" if neutral)

Will the implemented action result in lives saved?

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

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

Figure 4.1. Blank STAPLEE Worksheet

**XXXXXX COUNTY  
MULTI-JURISDICTIONAL  
LOCAL HAZARD MITIGATION PLAN**

| <b>Action Title:</b>   |  | <b>Jurisdiction:</b> |  |
|--|--|----------------------|--|
| <b>Action ID:</b>  |  |                      |  |
| STAPLEE Criteria   | Evaluation Rating<br>Definitely YES = 3<br>Maybe YES = 2<br>Probably NO = 1<br>Definitely NO = 0 | Score                |  |
| S: Is it Socially acceptable?  |  |                      |  |
| T: Is it Technically feasible and potentially successful?  |  |                      |  |
| A: Does the jurisdiction have the administrative capacity to execute this action?  |  |                      |  |
| P: Is it Politically acceptable?   |  |                      |  |
| L: Is there Legal authority to implement?  |  |                      |  |
| E: Is it Economically beneficial?  |  |                      |  |
| E: Will the project have either a neutral or positive impact on the natural environment? (score a 3 if positive impact, 2 if neutral impact) |  |                      |  |
| Will historic structures be saved or protected?  |  |                      |  |
| Could it be implemented quickly?   |  |                      |  |
| <b>STAPLEE Score</b>   |  |                      |  |

| Mitigation Effectiveness Criteria                                      | Evaluation Rating  | Score |
|--|--|-------|
| Will the implemented action result in lives saved?                     | Assign from 5-10 points based on the likelihood that lives would be saved.   |       |
| Will the implemented action result in a reduction of disaster damages? | Assign from 5-10 points based on the relative reduction of disaster damages. |       |
| <b>Mitigation Effectiveness Score</b>                                  |  |       |

Total Score (STAPLEE Score + Mitigation Effectiveness Score): \_\_\_\_\_

Priority Level:    High (30+ points)       Medium (25-29 points)       Low (less than 25 points)

Completed by (name/title/phone #): \_\_\_\_\_

In addition to the STAPLEE cost benefit review prioritization at Meeting #4, implementation plans for actions were discussed. An action worksheet was used to develop the implementation plan. The action worksheet format is presented in Table 4.3.

**Table 4.3.**

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

**Goal 1: Protect lives and property from the effects of natural hazards.**

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | Lawrence County  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Educating developers on effective construction techniques that reduce the effects of natural hazards.  |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Lawrence County 1.1.3  |
| <b>Name of Action or Project:</b>                                      | Resilient Construction Techniques  |
| <b>Action or Project Description:</b>                                  | Develop an educational campaign on construction techniques for new buildings to reduce risk of severe storm damage and distribute to mortgage institutions, home builders, realtors and other entities involved in the housing industry. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.  |
| <b>Estimated Cost:</b>   | \$500 - \$1,000  |
| <b>Benefits:</b>   | Residential, commercial, and industrial developments may become more resilient to natural hazards due to developers being aware of construction techniques that mitigate property damage from natural hazards.                           |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | 5-10 years   |
| <b>Potential Fund Sources:</b>   | HMGP, General Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing not started   |
| <b>Report of Progress</b>  | No action to date.   |

| <b>Action Worksheet</b>         |   |
|---------------------------------|---|
| <b>Name of Jurisdiction:</b>    | Lawrence County   |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Educating the public on the location of refuge areas and safe rooms in the community. |
| <b>Hazard(s) Addressed:</b>     | All Hazards   |

| <b>Action or Project</b>   |   |
|--|---|
| <b>Action/Project Number:</b>  | Lawrence County 1.1.4   |
| <b>Name of Action or Project:</b>                                      | Refuge Areas and Safe Room Location Education   |
| <b>Action or Project Description:</b>                                  | Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$0   |
| <b>Benefits:</b>   | The public will be better informed on the location of refuge areas and safe rooms in the event of a natural hazard, mitigating the potential loss of life.                        |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High  |
| <b>Timeline for Completion:</b>  | 1-3 months  |
| <b>Potential Fund Sources:</b>   | HMGP, General & Municipalities Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in progress  |
| <b>Report of Progress</b>  | Funding & time.   |

| <b>Action Worksheet</b>                     |  |
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| <b>Name of Jurisdiction:</b>                | Lawrence County  |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Public awareness to homeowners and businesses to sinkhole loss policies.   |
| <b>Hazard(s) Addressed:</b>                 | Sinkholes  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | Lawrence County 1.1.5  |
| <b>Name of Action or Project:</b>           | Sinkhole Awareness Program   |
| <b>Action or Project Description:</b>       | Educate homeowners and business about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | \$0  |
| <b>Benefits:</b>                            | Increased financial protection to homeowners and businesses.   |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | County Admin; Local jurisdictions  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 24 Priority: Low  |
| <b>Timeline for Completion:</b>             | 1-3 years  |
| <b>Potential Fund Sources:</b>              | Local Funding  |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                    |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | N/A                    |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Lawrence County   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.2.2   |
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | EMD   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium  |
| <b>Timeline for Completion:</b>  | On going  |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Awareness Programs  |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing In Progress  |
| <b>Report of Progress</b>  | Continuing outreach to facilities.  |

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | Lawrence County  |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Provide awareness of tornado warnings to travelers along the I-44 corridor.  |
| <b>Hazard(s) Addressed:</b>           | Tornado  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | 1.2.4  |
| <b>Name of Action or Project:</b>     | Roadside Tornado Warning Messages  |
| <b>Action or Project Description:</b> | Coordinate with Missouri Department of Transportation to incorporate tornado warning messages on the electronic roadside signs along I-44 to provide situational awareness to travelers on I-44. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | N/A  |
| <b>Benefits:</b>                      | Save lives by alerting travelers along major travel ways.  |



| <b>Plan for Implementation</b>   |                                  |
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| <b>Responsible Organization/Department:</b>                            | EMD, 911                         |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High |
| <b>Timeline for Completion:</b>  | 1-3 months                       |
| <b>Potential Fund Sources:</b>   | Grants                           |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                              |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | New                              |
| <b>Report of Progress</b>  | N/A                              |

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | Lawrence County  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.1  |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | 1 Million +  |
| <b>Benefits:</b>   | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local jurisdictions, citizens  |
| <b>Action/Project Priority:</b>  | I STAPLEE score: 29 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 5+ years   |
| <b>Potential Fund Sources:</b>   | Grants, match funding sources.   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>               |   |
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| <b>Name of Jurisdiction:</b>          | Lawrence County   |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Loss of Life  |
| <b>Hazard(s) Addressed:</b>           | Tornado, Severe Storms  |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 1.3.2   |
| <b>Name of Action or Project:</b>     | Safe Room Construction  |
| <b>Action or Project Description:</b> | Retrofit existing critical public buildings & infrastructures where possible to provide shelter from natural hazards. |

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| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards |
| <b>Estimated Cost:</b>   | \$100 Million +  |
| <b>Benefits:</b>   | Lives and structures saved.                                    |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local public entities.   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium                             |
| <b>Timeline for Completion:</b>  | 5+ years   |
| <b>Potential Fund Sources:</b>   | General funds of municipalities                                |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Lawrence County  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Loss of Life   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.3  |
| <b>Name of Action or Project:</b>                                      | Safe Refuge Area Plan  |
| <b>Action or Project Description:</b>                                  | Encourage that all new public buildings have a best identified available refuge area (these do not comply with FEMA Publication 361 for safe rooms) or safe room, equipped with radios and emergency local communications. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$5,000  |
| <b>Benefits:</b>   | Protect lives and minimize injuries.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | EMA  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-3 years  |
| <b>Potential Fund Sources:</b>   | General funds, manpower  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>         |   |
| <b>Name of Jurisdiction:</b>    | Lawrence County                                   |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Public refuge areas for vulnerable populations.   |
| <b>Hazard(s) Addressed:</b>     | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold |

| <b>Action or Project</b>   |  |
|--|--|
| <b>Action/Project Number:</b>  | 1.3.5  |
| <b>Name of Action or Project:</b>                                      | Community Extreme Temperature Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$2,000  |
| <b>Benefits:</b>   | Vulnerable populations such as the elderly and disabled will have a place to go in the event of extreme temperatures.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local jurisdictions, EMA,  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 year.  |
| <b>Potential Fund Sources:</b>   | Local funds for sirens.  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | Lawrence County  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Reduction of damage to property from flooding.                                 |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.4.1  |
| <b>Name of Action or Project:</b>                                      | NFIP Participation   |
| <b>Action or Project Description:</b>                                  | Encourage the county and municipalities to maintain participation in the NFIP. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                 |
| <b>Estimated Cost:</b>   | Cost of Floodplain Admin. & policies   |
| <b>Benefits:</b>   | Reduction in damages due to flooding.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | County Commission, Local & County EMA, Floodplain Administrator                |
| <b>Action/Project Priority:</b>  | STAPLEE score: 25 Priority: Medium   |
| <b>Timeline for Completion:</b>  | On going   |
| <b>Potential Fund Sources:</b>   | Hourly wages, educational materials  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Encourage participation on joining.  |

| <b>Action Worksheet</b>  |   |
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| <b>Name of Jurisdiction:</b>   | Lawrence County   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Lack of items to deal with extreme weather for those at risk.   |
| <b>Hazard(s) Addressed:</b>  | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.4.2   |
| <b>Name of Action or Project:</b>                                      | Community Involvement Projects  |
| <b>Action or Project Description:</b>                                  | Community organizations should continue programs to provide fans, air conditioners & winter weatherization for those at risk (the elderly, low-income, younger, and handicapped). |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | No cost to county   |
| <b>Benefits:</b>   | Save lives and property   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Local community organizations.  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 20 Priority: Low   |
| <b>Timeline for Completion:</b>  | 6-12 months   |
| <b>Potential Fund Sources:</b>   | Organization funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | Maintain current program  |

| <b>Action Worksheet</b>                     |  |
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| <b>Name of Jurisdiction:</b>                | Lawrence County  |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Increased public participation and response efficiency to the mitigation of natural hazards.   |
| <b>Hazard(s) Addressed:</b>                 | Tornado, Sever Thunderstorm, Flood, Winter Weather, Drought, Extreme Heat, Earthquake, Dam Failure, Wildfire                         |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | 1.4.4  |
| <b>Name of Action or Project:</b>           | Citizen Preparedness   |
| <b>Action or Project Description:</b>       | Establish and maintain participation in citizen preparedness activities such as: CERT, COAD, Neighborhood Watch, Amateur Radio, etc. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | Provide an estimate of the cost to implement this action. This can be accomplished with a range of estimated costs.                  |
| <b>Benefits:</b>                            | Preparedness = lives & property saved.   |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | EMA, 911, LE   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 23 Priority: Low  |
| <b>Timeline for Completion:</b>             | 1-3 years  |
| <b>Potential Fund Sources:</b>              | EMA funds, Local jurisdictions   |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                           |
| <b>Progress Report</b>   |                               |
| <b>Action Status</b>   | Continuing in Progress        |
| <b>Report of Progress</b>  | Varied level of participation |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Lawrence County   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Loss of Life  |
| <b>Hazard(s) Addressed:</b>  | All Hazards.  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 2.1.1   |
| <b>Name of Action or Project:</b>                                      | Continuation of emergency operations & satellite EOCs                             |
| <b>Action or Project Description:</b>                                  | Continue to equip the county emergency operations center & satellite EOCs.        |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>   | \$2,000   |
| <b>Benefits:</b>   | Assists in preparedness, response & resource allocation to save lives & property. |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | EMA, 911  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 41 Priority: High  |
| <b>Timeline for Completion:</b>  | On going  |
| <b>Potential Fund Sources:</b>   | County EMA funds, local EMA funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | Ongoing and continually updating  |

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| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | Lawrence County   |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Access to information on mitigation resources.  |
| <b>Hazard(s) Addressed:</b>           | All Hazards   |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 2.1.2   |
| <b>Name of Action or Project:</b>     | Database Mitigation Resources   |
| <b>Action or Project Description:</b> | Establish and maintain a database on available mitigation resources and programs that can be shared with local governments, response and preparedness agencies, social service organizations, and emergency care providers. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                | \$500-1,000   |

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| <b>Benefits:</b>   | Save lives and property.         |
| <b>Plan for Implementation</b>   |                                  |
| <b>Responsible Organization/Department:</b>                            | Local and county EMA, 911        |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High |
| <b>Timeline for Completion:</b>  | Ongoing                          |
| <b>Potential Fund Sources:</b>   | EMA (local & county), 911        |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                              |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | Continuing in Progress           |
| <b>Report of Progress</b>  | Ongoing, fluid information       |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Lawrence County  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.3  |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$600,000-800,000  |
| <b>Benefits:</b>   | Communication essential for coordinating response & safety   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local & county 911, LE, FIRE   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High   |
| <b>Timeline for Completion:</b>  | 5 years  |
| <b>Potential Fund Sources:</b>   | Need a new tax for communication network   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>           |                                       |
| <b>Name of Jurisdiction:</b>      | Lawrence County                       |
| <b>Risk / Vulnerability</b>       |                                       |
| <b>Problem being Mitigated:</b>   | Countywide frequency repeater network |
| <b>Hazard(s) Addressed:</b>       | All Hazards                           |
| <b>Action or Project</b>          |                                       |
| <b>Action/Project Number:</b>     | 2.1.4                                 |
| <b>Name of Action or Project:</b> | Countywide Network Increase           |

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| <b>Action or Project Description:</b>                                  | Continue to increase countywide frequency repeater network, including new wireless units |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                           |
| <b>Estimated Cost:</b>   | \$600,000-800,000  |
| <b>Benefits:</b>   | Communication is essential for coordinating response and safety.                         |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | 911, EMA, LE, FIRE   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 40 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | Need new funding source  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Lawrence County   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Efficiency to examine plans from schools and medical facilities.  |
| <b>Hazard(s) Addressed:</b>  | All Hazards.  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 2.1.5   |
| <b>Name of Action or Project:</b>                                      | Community Plan Coordination   |
| <b>Action or Project Description:</b>                                  | Collect & coordinate plans from schools and medical facilities, such as emergency operations plans, floor plans, and others that may apply. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$1,000-2,000   |
| <b>Benefits:</b>   | Save lives & property   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | 911, EMA, Schools, Hospitals  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>  | 6 months – 1 year   |
| <b>Potential Fund Sources:</b>   | New Funding Needed  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | Fluid Documents   |

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| <b>Action Worksheet</b>         |   |
| <b>Name of Jurisdiction:</b>    | Lawrence County   |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Efficiency of public officials to respond to natural hazard events. |
| <b>Hazard(s) Addressed:</b>     | All natural hazards   |
| <b>Action or Project</b>        |   |



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| <b>Action/Project Number:</b>  | 2.1.6  |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | Time & \$1,000   |
| <b>Benefits:</b>   | Resource, situational awareness and communication that would save lives and property.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | EMA, Mayors, Commissioners   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | 6 months – 1 years   |
| <b>Potential Fund Sources:</b>   | EMA, department funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Staff changes make this difficult  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Lawrence County  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Accessibility of fire stations to areas.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.2.1  |
| <b>Name of Action or Project:</b>                                      | Construction of Fire Stations  |
| <b>Action or Project Description:</b>                                  | Construct additional fire stations in communities and rural fire districts or fire protection associations to improve accessibility to areas impacted by natural or manmade barriers during hazard events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | No cost to county  |
| <b>Benefits:</b>   | Lives and property saved due to better response time.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local fire jurisdictions   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | 5 years  |
| <b>Potential Fund Sources:</b>   | Tax funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | Lawrence County  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.2  |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$180,000 per site   |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | County and local EMA & Administration  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 year   |
| <b>Potential Fund Sources:</b>   | N/A  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>                     |  |
|---|--|
| <b>Name of Jurisdiction:</b>                | Lawrence County  |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Buildup of debris in flooded areas.                                  |
| <b>Hazard(s) Addressed:</b>                 | Flooding   |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | 3.1.5  |
| <b>Name of Action or Project:</b>           | Debris & Overgrowth Cleanup  |
| <b>Action or Project Description:</b>       | Clean up debris & overgrowth from drainage channels & under bridges. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards       |
| <b>Estimated Cost:</b>                      | \$50,000-75,000  |
| <b>Benefits:</b>                            | Mitigate future damage.  |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Local road districts   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 29 Priority: Medium                                   |
| <b>Timeline for Completion:</b>             | Ongoing  |
| <b>Potential Fund Sources:</b>              | Local budget funds   |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                    |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing in Progress |
| <b>Report of Progress</b>  | N/A                    |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Lawrence County  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Wildfires caused by fires not properly controlled.   |
| <b>Hazard(s) Addressed:</b>  | Wildfires  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.6  |
| <b>Name of Action or Project:</b>                                      | Burn Bans  |
| <b>Action or Project Description:</b>                                  | Implement burn restrictions during time of weather conditions conducive to the spread of wildfire. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.                                    |
| <b>Estimated Cost:</b>   | \$0  |
| <b>Benefits:</b>   | Save lives and property from fires and during high risk.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | EMA, FIRE, LE, 911   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-3 months   |
| <b>Potential Fund Sources:</b>   | Not needed   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 1: Protect lives and property from the effects of natural hazards.**

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| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | City of Aurora  |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>           | All Hazards   |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | City of Aurora 1.1.1  |
| <b>Name of Action or Project:</b>     | Hazard Awareness Education  |
| <b>Action or Project Description:</b> | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards.   |

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| <b>Estimated Cost:</b>   | \$0 - \$2,500  |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage, medical costs and loss of life. |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 39 Priority: High   |
| <b>Timeline for Completion:</b>  | 3 years  |
| <b>Potential Fund Sources:</b>   | HMGP, Insurance companies  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in progress   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Aurora  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Aurora 1.1.2  |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$1,000 - \$14,000  |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, fire police code. School district administrator   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 42 Priority: High  |
| <b>Timeline for Completion:</b>  | 3-4 years   |
| <b>Potential Fund Sources:</b>   | HMGP, insurance companies, local government   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |

| <b>Progress Report</b>    |                        |
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| <b>Action Status</b>      | Continuing in progress |
| <b>Report of Progress</b> | N/A                    |

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | City of Aurora   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Educating developers on effective construction techniques that reduce the effects of natural hazards.  |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Aurora 1.1.3   |
| <b>Name of Action or Project:</b>                                      | Resilient Construction Techniques  |
| <b>Action or Project Description:</b>                                  | Develop an educational campaign on construction techniques for new buildings to reduce risk of severe storm damage and distribute to mortgage institutions, home builders, realtors and other entities involved in the housing industry. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.  |
| <b>Estimated Cost:</b>   | \$0-\$15,000   |
| <b>Benefits:</b>   | Residential, commercial, and industrial developments may become more resilient to natural hazards due to developers being aware of construction techniques that mitigate property damage from natural hazards.                           |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, City Council, Fire, Police   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High   |
| <b>Timeline for Completion:</b>  | 2-3 years  |
| <b>Potential Fund Sources:</b>   | HMGP, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in progress   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>         |   |
|---------------------------------|---|
| <b>Name of Jurisdiction:</b>    | City of Aurora  |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Educating the public on the location of refuge areas and safe rooms in the community. |

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| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Aurora 1.1.4  |
| <b>Name of Action or Project:</b>                                      | Refuge Areas and Safe Room Location Education   |
| <b>Action or Project Description:</b>                                  | Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-\$6,000   |
| <b>Benefits:</b>   | The public will be better informed on the location of refuge areas and safe rooms in the event of a natural hazard, mitigating the potential loss of life.                        |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Police, Fire, ERM management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High  |
| <b>Timeline for Completion:</b>  | 2 years   |
| <b>Potential Fund Sources:</b>   | Local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>                     |  |
| <b>Name of Jurisdiction:</b>                | City of Aurora   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Public awareness to homeowners and businesses to sinkhole loss policies.   |
| <b>Hazard(s) Addressed:</b>                 | Sinkholes  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | City of Aurora 1.1.5   |
| <b>Name of Action or Project:</b>           | Sinkhole Awareness Program   |
| <b>Action or Project Description:</b>       | Educate homeowners and business about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | N/A  |
| <b>Benefits:</b>                            | Increased financial protection to homeowners and businesses.   |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Police code, Fire, ERM   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 37 Priority: High   |
| <b>Timeline for Completion:</b>             | 2 years  |
| <b>Potential Fund Sources:</b>              | Local Funding  |

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| Local Planning Mechanisms to be Used in Implementation, if any: | N/A                    |
| <b>Progress Report</b>  |                        |
| Action Status   | Continuing Not Started |
| Report of Progress  | N/A                    |

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| <b>Action Worksheet</b>   |   |
| Name of Jurisdiction:   | City of Aurora  |
| <b>Risk / Vulnerability</b>                                     |   |
| Problem being Mitigated:  | Warning the public in the event of a natural hazard.  |
| Hazard(s) Addressed:  | Tornado   |
| <b>Action or Project</b>  |   |
| Action/Project Number:  | 1.2.1   |
| Name of Action or Project:                                      | Warning Siren Upkeep  |
| Action or Project Description:                                  | Maintain a sufficient number of warning sirens in all incorporated communities while also maintaining current infrastructure. |
| Applicable Goal Statement:                                      | Protect lives and property from the effects of natural hazards  |
| Estimated Cost:   | \$1,000   |
| Benefits:   | Increased public awareness that prevents loss of life.  |
| <b>Plan for Implementation</b>                                  |   |
| Responsible Organization/Department:                            | Fire  |
| Action/Project Priority:  | STAPLEE score: 47 Priority: High  |
| Timeline for Completion:  | 0 years   |
| Potential Fund Sources:   | Grants, General Fund  |
| Local Planning Mechanisms to be Used in Implementation, if any: | N/A   |
| <b>Progress Report</b>  |   |
| Action Status   | Continuing, Not Started   |
| Report of Progress  | N/A   |

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| <b>Action Worksheet</b>        |   |
| Name of Jurisdiction:          | City of Aurora  |
| <b>Risk / Vulnerability</b>    |   |
| Problem being Mitigated:       | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| Hazard(s) Addressed:           | All Hazards   |
| <b>Action or Project</b>       |   |
| Action/Project Number:         | 1.2.2   |
| Name of Action or Project:     | NOAA Radio Implementations  |
| Action or Project Description: | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| Applicable Goal Statement:     | Protect lives and property from the effects of natural hazards  |
| Estimated Cost:                | \$1,000   |
| Benefits:                      | Reduction in loss of lives.   |
| <b>Plan for Implementation</b> |   |



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| <b>Responsible Organization/Department:</b>                            | Fire, EMA                        |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High |
| <b>Timeline for Completion:</b>  | 1 year                           |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds              |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                              |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | Continuing Not Started           |
| <b>Report of Progress</b>  | N/A                              |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Aurora   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.1  |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$500  |
| <b>Benefits:</b>   | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Fire, ERM Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-3 years  |
| <b>Potential Fund Sources:</b>   | Grants   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | City of Aurora  |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Loss of Life  |
| <b>Hazard(s) Addressed:</b>           | Tornado, Severe Storms  |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 1.3.2   |
| <b>Name of Action or Project:</b>     | Safe Room Construction  |
| <b>Action or Project Description:</b> | Retrofit existing critical public buildings & infrastructures where possible to provide shelter from natural hazards. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards  |

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| <b>Estimated Cost:</b>   | \$250,000                                 |
| <b>Benefits:</b>   | Reduction in loss of life and structures. |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Code, ERM management, Fire                |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High          |
| <b>Timeline for Completion:</b>  | 5 years                                   |
| <b>Potential Fund Sources:</b>   | Grants                                    |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                                       |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started                    |
| <b>Report of Progress</b>  | N/A                                       |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Aurora   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Loss of Life   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.3  |
| <b>Name of Action or Project:</b>                                      | Safe Refuge Area Plan  |
| <b>Action or Project Description:</b>                                  | Encourage that all new public buildings have a best identified available refuge area (these do not comply with FEMA Publication 361 for safe rooms) or safe room, equipped with radios and emergency local communications. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$20,000   |
| <b>Benefits:</b>   | Protect lives and minimize injuries.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Code, ERM management, Fire   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | 5 years  |
| <b>Potential Fund Sources:</b>   | N/A  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>         |                               |
| <b>Name of Jurisdiction:</b>    | City of Aurora                |
| <b>Risk / Vulnerability</b>     |                               |
| <b>Problem being Mitigated:</b> | Loss of Life                  |
| <b>Hazard(s) Addressed:</b>     | Tornado, Severe Thunderstorms |
| <b>Action or Project</b>        |                               |
| <b>Action/Project Number:</b>   | 1.3.4                         |

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| <b>Name of Action or Project:</b>                                      | Use Zoning Ordinance to Require Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Amend or update zoning ordinances to include requirement for best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in all new manufactured home parks. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$5,000  |
| <b>Benefits:</b>   | Reduction in loss of lives.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Code Enforcement   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | 3 years  |
| <b>Potential Fund Sources:</b>   | N/A  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Zoning Ordinance   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Aurora   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Public refuge areas for vulnerable populations.  |
| <b>Hazard(s) Addressed:</b>  | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.5  |
| <b>Name of Action or Project:</b>                                      | Community Extreme Temperature Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0  |
| <b>Benefits:</b>   | Vulnerable populations such as the elderly and disabled will have a place to go in the event of extreme temperatures.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | ER management, Police, Fire  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 40 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 year   |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Aurora   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Reduction of damage to property from flooding.                                 |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.4.1  |
| <b>Name of Action or Project:</b>                                      | NFIP Participation   |
| <b>Action or Project Description:</b>                                  | Encourage the county and municipalities to maintain participation in the NFIP. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                 |
| <b>Estimated Cost:</b>   | \$3,000  |
| <b>Benefits:</b>   | Reduction in damages due to flooding.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 42 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 year   |
| <b>Potential Fund Sources:</b>   | Local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Ongoing  |

| <b>Action Worksheet</b>                     |   |
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| <b>Name of Jurisdiction:</b>                | City of Aurora  |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Lack of items to deal with extreme weather for those at risk.   |
| <b>Hazard(s) Addressed:</b>                 | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold   |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | 1.4.2   |
| <b>Name of Action or Project:</b>           | Community Involvement Projects  |
| <b>Action or Project Description:</b>       | Community organizations should continue programs to provide fans, air conditioners & winter weatherization for those at risk (the elderly, low-income, younger, and handicapped). |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                      | N/A   |
| <b>Benefits:</b>                            | Save lives.   |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | City Council, Administration  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 37 Priority: High  |
| <b>Timeline for Completion:</b>             | 2 years   |
| <b>Potential Fund Sources:</b>              | Local funds, grants   |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                  |
| <b>Progress Report</b>   |                      |
| <b>Action Status</b>   | Continue Not Started |
| <b>Report of Progress</b>  | N/A                  |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Aurora  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Lack of storm ready standards.  |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorm, Tornado  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.4.3   |
| <b>Name of Action or Project:</b>                                      | Code Updates for Storm Ready Standards  |
| <b>Action or Project Description:</b>                                  | Amend or update codes to include storm ready standards, such as hurricane straps. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | Decreased building and medical loss.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | City Council  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High  |
| <b>Timeline for Completion:</b>  | 2 years   |
| <b>Potential Fund Sources:</b>   | Grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Aurora   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Increased public participation and response efficiency to the mitigation of natural hazards.   |
| <b>Hazard(s) Addressed:</b>           | Tornado, Sever Thunderstorm, Flood, Winter Weather, Drought, Extreme Heat, Earthquake, Dam Failure, Wildfire                         |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | 1.4.4  |
| <b>Name of Action or Project:</b>     | Citizen Preparedness   |
| <b>Action or Project Description:</b> | Establish and maintain participation in citizen preparedness activities such as: CERT, COAD, Neighborhood Watch, Amateur Radio, etc. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | \$7,000  |
| <b>Benefits:</b>                      | Decreased medical loss.  |
| <b>Plan for Implementation</b>        |  |

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| <b>Responsible Organization/Department:</b>                            | ER management, Fire, Police      |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High |
| <b>Timeline for Completion:</b>  | 3 years                          |
| <b>Potential Fund Sources:</b>   | N/A                              |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                              |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | Continuing Not Started           |
| <b>Report of Progress</b>  | N/A                              |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Aurora  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Access to information on mitigation resources.  |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 2.1.2   |
| <b>Name of Action or Project:</b>                                      | Database Mitigation Resources   |
| <b>Action or Project Description:</b>                                  | Establish and maintain a database on available mitigation resources and programs that can be shared with local governments, response and preparedness agencies, social service organizations, and emergency care providers. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | Quick access to valuable information allows for quick implementation during hazardous events.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | ER management, Code   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High  |
| <b>Timeline for Completion:</b>  | 5 years   |
| <b>Potential Fund Sources:</b>   | General Fund, Grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>         |                        |
| <b>Name of Jurisdiction:</b>    | City of Aurora         |
| <b>Risk / Vulnerability</b>     |                        |
| <b>Problem being Mitigated:</b> | County-wide awareness. |

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| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.3  |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$20,000   |
| <b>Benefits:</b>   | Medical  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Police, Fire, ERM management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | 3 years  |
| <b>Potential Fund Sources:</b>   | Grants, budget   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Aurora   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Countywide frequency repeater network  |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.4  |
| <b>Name of Action or Project:</b>                                      | Countywide Network Increase  |
| <b>Action or Project Description:</b>                                  | Continue to increase countywide frequency repeater network, including new wireless units |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                           |
| <b>Estimated Cost:</b>   | \$20,000   |
| <b>Benefits:</b>   | Communication is essential for coordinating response and safety.                         |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Police, Fire, ER management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High   |
| <b>Timeline for Completion:</b>  | 4 years  |
| <b>Potential Fund Sources:</b>   | N/A  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |



| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | City of Aurora   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.6  |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$2,000  |
| <b>Benefits:</b>   | N/A  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | All departments  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High   |
| <b>Timeline for Completion:</b>  | 2 years  |
| <b>Potential Fund Sources:</b>   | N/A  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

| <b>Action Worksheet</b>                     |  |
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| <b>Name of Jurisdiction:</b>                | City of Aurora   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Hazards impacting wastewater treatment facilities.   |
| <b>Hazard(s) Addressed:</b>                 | Flooding, Earthquakes, Tornados  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | 3.1.1  |
| <b>Name of Action or Project:</b>           | Wastewater Treatment   |
| <b>Action or Project Description:</b>       | Maintain appropriate operations of wastewater treatment facilities and reduce &/or eliminate hazard risks. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | N/A  |
| <b>Benefits:</b>                            | Reduce impact of hazards.  |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | City, Sewage Department  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>             | N/A  |

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| <b>Potential Fund Sources:</b>   | Grants                 |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                    |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | N/A                    |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Aurora   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.2  |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$100,000  |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Code, ER Management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High   |
| <b>Timeline for Completion:</b>  | 5 years  |
| <b>Potential Fund Sources:</b>   | City Council   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | City of Aurora  |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Public access to water in case of natural hazard.                                 |
| <b>Hazard(s) Addressed:</b>           | Earthquakes, Tornado, Winter Weather  |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 3.1.3   |
| <b>Name of Action or Project:</b>     | Backup Power Generators   |
| <b>Action or Project Description:</b> | Provide backup generators for all water towers & wastewater treatment facilities. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>                | \$0-\$50,000  |
| <b>Benefits:</b>                      | Decreased medical loss.   |
| <b>Plan for Implementation</b>        |   |

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| <b>Responsible Organization/Department:</b>                            | Code, ER management              |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High |
| <b>Timeline for Completion:</b>  | 1-5 years                        |
| <b>Potential Fund Sources:</b>   | HMGP                             |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                              |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | Continuing Not Started           |
| <b>Report of Progress</b>  | N/A                              |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Aurora   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Buildup of debris in flooded areas.                                  |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.5  |
| <b>Name of Action or Project:</b>                                      | Debris & Overgrowth Cleanup  |
| <b>Action or Project Description:</b>                                  | Clean up debris & overgrowth from drainage channels & under bridges. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards       |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Mitigate future damage.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Public works   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High                                     |
| <b>Timeline for Completion:</b>  | 2 years  |
| <b>Potential Fund Sources:</b>   | N/A  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Aurora   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Wildfires caused by fires not properly controlled.   |
| <b>Hazard(s) Addressed:</b>           | Wildfires  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | 3.1.6  |
| <b>Name of Action or Project:</b>     | Burn Bans  |
| <b>Action or Project Description:</b> | Implement burn restrictions during time of weather conditions conducive to the spread of wildfire. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards.                                    |
| <b>Estimated Cost:</b>                | \$0  |

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| <b>Benefits:</b>   | Decreased structure loss.        |
| <b>Plan for Implementation</b>   |                                  |
| <b>Responsible Organization/Department:</b>                            | Fire                             |
| <b>Action/Project Priority:</b>  | STAPLEE score: 43 Priority: High |
| <b>Timeline for Completion:</b>  | 0 years                          |
| <b>Potential Fund Sources:</b>   | Local Funding                    |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                              |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | New                              |
| <b>Report of Progress</b>  | N/A                              |

**Goal 1: Protect lives and property from the effects of natural hazards.**

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Marionville   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Marionville 1.1.1   |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$100-400   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, County EMA, Public Education  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 39 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 year  |
| <b>Potential Fund Sources:</b>   | HMGP, private donations, educational institutions   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | New EMD   |

| <b>Action Worksheet</b>  |   |
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| <b>Name of Jurisdiction:</b>   | City of Marionville   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Marionville 1.1.2   |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$1,000 - \$1,500   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 21 Priority: Low   |
| <b>Timeline for Completion:</b>  | 8 months  |
| <b>Potential Fund Sources:</b>   | HMGP, private donations   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | Marionville does not have a big population of non-English speaking residents.   |

| <b>Action Worksheet</b>         |   |
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| <b>Name of Jurisdiction:</b>    | City of Marionville   |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Educating developers on effective construction techniques that reduce the effects of natural hazards. |
| <b>Hazard(s) Addressed:</b>     | All Hazards   |
| <b>Action or Project</b>        |   |
| <b>Action/Project Number:</b>   | City of Marionville 1.1.3   |

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| <b>Name of Action or Project:</b>                                      | Resilient Construction Techniques  |
| <b>Action or Project Description:</b>                                  | Develop an educational campaign on construction techniques for new buildings to reduce risk of severe storm damage and distribute to mortgage institutions, home builders, realtors and other entities involved in the housing industry. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.  |
| <b>Estimated Cost:</b>   | \$500 - \$1,000  |
| <b>Benefits:</b>   | Residential, commercial, and industrial developments may become more resilient to natural hazards due to developers being aware of construction techniques that mitigate property damage from natural hazards.                           |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, Local Building Official  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High   |
| <b>Timeline for Completion:</b>  | 2 years  |
| <b>Potential Fund Sources:</b>   | HMGP, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in progress   |
| <b>Report of Progress</b>  | Implemented building codes.  |

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| <b>Action Worksheet</b>                     |   |
| <b>Name of Jurisdiction:</b>                | City of Marionville   |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Educating the public on the location of refuge areas and safe rooms in the community.   |
| <b>Hazard(s) Addressed:</b>                 | All Hazards   |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | City of Marionville 1.1.4   |
| <b>Name of Action or Project:</b>           | Refuge Areas and Safe Room Location Education   |
| <b>Action or Project Description:</b>       | Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                      | \$0   |
| <b>Benefits:</b>                            | The public will be better informed on the location of refuge areas and safe rooms in the event of a natural hazard, mitigating the potential loss of life.                        |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | Local EMD, Public Education   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 34 Priority: High  |
| <b>Timeline for Completion:</b>             | On-going  |

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| <b>Potential Fund Sources:</b>   | Local Governments  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Social Media   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress                                       |
| <b>Report of Progress</b>  | Keeping a list of places who open their doors during storms. |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Marionville   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Warning the public in the event of a natural hazard.  |
| <b>Hazard(s) Addressed:</b>  | Tornado   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.2.1   |
| <b>Name of Action or Project:</b>                                      | Warning Siren Upkeep  |
| <b>Action or Project Description:</b>                                  | Maintain a sufficient number of warning sirens in all incorporated communities while also maintaining current infrastructure. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$600-15000   |
| <b>Benefits:</b>   | Loss of life will decrease through this strategy.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Local Government  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High  |
| <b>Timeline for Completion:</b>  | Completed – on-going  |
| <b>Potential Fund Sources:</b>   | Local Government  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | 5 sirens in City limits – monthly testing and maintenance   |

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| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | City of Marionville   |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>           | All Hazards   |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 1.2.2   |
| <b>Name of Action or Project:</b>     | NOAA Radio Implementations  |
| <b>Action or Project Description:</b> | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                | N/A   |
| <b>Benefits:</b>                      | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>        |   |

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| <b>Responsible Organization/Department:</b>                            | Public Safety Administrator, Local EMD        |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High              |
| <b>Timeline for Completion:</b>  | 2 years                                       |
| <b>Potential Fund Sources:</b>   | Local Government, Private Donations           |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress                        |
| <b>Report of Progress</b>  | Tax alerts available from news media and IRS. |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Marionville  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.1  |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$10,000-30,000  |
| <b>Benefits:</b>   | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Building inspector, Planning & Zoning, Local Institutions  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 28 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 2-3 years  |
| <b>Potential Fund Sources:</b>   | Federal/State Grants, Local Government   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Public buildings, especially new, will have storm shelters.  |

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| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | City of Marionville   |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Loss of Life  |
| <b>Hazard(s) Addressed:</b>           | Tornado, Severe Storms  |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 1.3.2   |
| <b>Name of Action or Project:</b>     | Safe Room Construction  |
| <b>Action or Project Description:</b> | Retrofit existing critical public buildings & infrastructures where possible to provide shelter from natural hazards. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards  |



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| <b>Estimated Cost:</b>   | N/A                                 |
| <b>Benefits:</b>   | Reduction in loss of life.          |
| <b>Plan for Implementation</b>   |                                     |
| <b>Responsible Organization/Department:</b>                            | Local EMD, Building Official        |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 3-4 years                           |
| <b>Potential Fund Sources:</b>   | Federal/State Grants, Program Funds |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                                 |
| <b>Progress Report</b>   |                                     |
| <b>Action Status</b>   | Continuing in Progress              |
| <b>Report of Progress</b>  | Trying to find funding.             |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Marionville  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Loss of Life   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.3  |
| <b>Name of Action or Project:</b>                                      | Safe Refuge Area Plan  |
| <b>Action or Project Description:</b>                                  | Encourage that all new public buildings have a best identified available refuge area (these do not comply with FEMA Publication 361 for safe rooms) or safe room, equipped with radios and emergency local communications. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$10,000-30,000  |
| <b>Benefits:</b>   | Increased safety for lives.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local EMD, Building Official   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 28 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 2-3 years  |
| <b>Potential Fund Sources:</b>   | Private, Federal/State Grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Very little new construction in town.  |

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| <b>Action Worksheet</b>         |   |
| <b>Name of Jurisdiction:</b>    | City of Marionville                               |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Public refuge areas for vulnerable populations.   |
| <b>Hazard(s) Addressed:</b>     | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold |
| <b>Action or Project</b>        |   |

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| <b>Action/Project Number:</b>  | 1.3.5  |
| <b>Name of Action or Project:</b>                                      | Community Extreme Temperature Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$100-600  |
| <b>Benefits:</b>   | Vulnerable populations such as the elderly and disabled will have a place to go in the event of extreme temperatures.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Public Safety Administrator, EMD   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-2 years  |
| <b>Potential Fund Sources:</b>   | Private funds, grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Social media, word of mouth.   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Churches and fire stations have opened up during extreme temperatures.   |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Marionville  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Reduction of damage to property from flooding.                                 |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.4.1  |
| <b>Name of Action or Project:</b>                                      | NFIP Participation   |
| <b>Action or Project Description:</b>                                  | Encourage the county and municipalities to maintain participation in the NFIP. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                 |
| <b>Estimated Cost:</b>   | \$0-3,000  |
| <b>Benefits:</b>   | Reduction in damages due to flooding.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | EMD, Building Inspectors, City Clerk   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High   |
| <b>Timeline for Completion:</b>  | Already a member   |
| <b>Potential Fund Sources:</b>   | Local Governments  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |
| <b>Report of Progress</b>  | Members in NFIP  |

| <b>Action Worksheet</b>  |   |
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| <b>Name of Jurisdiction:</b>   | City of Marionville   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Lack of items to deal with extreme weather for those at risk.   |
| <b>Hazard(s) Addressed:</b>  | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.4.2   |
| <b>Name of Action or Project:</b>                                      | Community Involvement Projects  |
| <b>Action or Project Description:</b>                                  | Community organizations should continue programs to provide fans, air conditioners & winter weatherization for those at risk (the elderly, low-income, younger, and handicapped). |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$100-1,000   |
| <b>Benefits:</b>   | Reduce illness or death from extreme temperatures.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Public Safety Administrator, Local EMD.   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High  |
| <b>Timeline for Completion:</b>  | On-going  |
| <b>Potential Fund Sources:</b>   | Private donations, grants   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | Donations by local churches and groups.   |

| <b>Action Worksheet</b>                     |   |
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| <b>Name of Jurisdiction:</b>                | City of Marionville   |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Lack of storm ready standards.  |
| <b>Hazard(s) Addressed:</b>                 | Earthquakes, Thunderstorm, Tornado  |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | 1.4.3   |
| <b>Name of Action or Project:</b>           | Code Updates for Storm Ready Standards  |
| <b>Action or Project Description:</b>       | Amend or update codes to include storm ready standards, such as hurricane straps. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>                      | Updated Currently   |
| <b>Benefits:</b>                            | Prevent loss of property.   |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | Building Inspector  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 34 Priority: High  |
| <b>Timeline for Completion:</b>             | 1-3 years   |
| <b>Potential Fund Sources:</b>              | General fund, Grants  |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                    |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing in Progress |
| <b>Report of Progress</b>  | Building Codes Amended |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Marionville  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Increased public participation and response efficiency to the mitigation of natural hazards.   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Sever Thunderstorm, Flood, Winter Weather, Drought, Extreme Heat, Earthquake, Dam Failure, Wildfire                         |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.4.4  |
| <b>Name of Action or Project:</b>                                      | Citizen Preparedness   |
| <b>Action or Project Description:</b>                                  | Establish and maintain participation in citizen preparedness activities such as: CERT, COAD, Neighborhood Watch, Amateur Radio, etc. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Increased awareness and reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Public Safety Administrator, Local EMD   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High   |
| <b>Timeline for Completion:</b>  | On-going   |
| <b>Potential Fund Sources:</b>   | Private donations, grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | City of Marionville   |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Access to information on mitigation resources.  |
| <b>Hazard(s) Addressed:</b>           | All Hazards   |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 2.1.2   |
| <b>Name of Action or Project:</b>     | Database Mitigation Resources   |
| <b>Action or Project Description:</b> | Establish and maintain a database on available mitigation resources and programs that can be shared with local governments, response and preparedness agencies, social service organizations, and emergency care providers. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards  |

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| <b>Estimated Cost:</b>   | \$1,000-5,000  |
| <b>Benefits:</b>   |  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | EMD and County   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High                       |
| <b>Timeline for Completion:</b>  | 2 years  |
| <b>Potential Fund Sources:</b>   | Local governments, donations, educational institutions |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress                                 |
| <b>Report of Progress</b>  | Data base maintained.                                  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Marionville  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.3  |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$500-1,000  |
| <b>Benefits:</b>   | Limits loss of life and property damage.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | N/A  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 25 Priority: Medium   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Local government, grants   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Emergency personnel have been provided with radios.  |

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| <b>Action Worksheet</b>           |                                       |
| <b>Name of Jurisdiction:</b>      | City of Marionville                   |
| <b>Risk / Vulnerability</b>       |                                       |
| <b>Problem being Mitigated:</b>   | Countywide frequency repeater network |
| <b>Hazard(s) Addressed:</b>       | All Hazards                           |
| <b>Action or Project</b>          |                                       |
| <b>Action/Project Number:</b>     | 2.1.4                                 |
| <b>Name of Action or Project:</b> | Countywide Network Increase           |

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| <b>Action or Project Description:</b>                                  | Continue to increase countywide frequency repeater network, including new wireless units |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                           |
| <b>Estimated Cost:</b>   | \$8,000-20,000   |
| <b>Benefits:</b>   | Increased awareness for emergency personnel, which allows for a faster response.         |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local EMD, Public Safety Administrator   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grants   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Local Government, Public Entities  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Established and maintained   |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Marionville  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.6  |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$200-500  |
| <b>Benefits:</b>   | Reduction in loss of lives and property with increased training.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local EMD, Mayor   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-2 years  |
| <b>Potential Fund Sources:</b>   | Local Government   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | City of Marionville  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Accessibility of fire stations to areas.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.2.1  |
| <b>Name of Action or Project:</b>                                      | Construction of Fire Stations  |
| <b>Action or Project Description:</b>                                  | Construct additional fire stations in communities and rural fire districts or fire protection associations to improve accessibility to areas impacted by natural or manmade barriers during hazard events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$400,000  |
| <b>Benefits:</b>   | Lives and property saved due to better response time.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Fire department, Board of Aldermen   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 23 Priority: Low  |
| <b>Timeline for Completion:</b>  | 5+ years   |
| <b>Potential Fund Sources:</b>   | Grants, Loans  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Fire Stations are already constructed, not cost feasible.  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

| <b>Action Worksheet</b>                     |  |
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| <b>Name of Jurisdiction:</b>                | City of Marionville  |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Hazards impacting wastewater treatment facilities.   |
| <b>Hazard(s) Addressed:</b>                 | Flooding, Earthquakes, Tornados  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | 3.1.1  |
| <b>Name of Action or Project:</b>           | Wastewater Treatment   |
| <b>Action or Project Description:</b>       | Maintain appropriate operations of wastewater treatment facilities and reduce &/or eliminate hazard risks. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | \$5,000-10,000   |
| <b>Benefits:</b>                            | Reduce impact of hazards.  |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Board of Aldermen, Sewer Department  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>             | On-going   |
| <b>Potential Fund Sources:</b>              | Local government, Loans, Grants  |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress                       |
| <b>Report of Progress</b>  | Facilities maintained and upgraded as needed |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Marionville  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.2  |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$1,000-3,000  |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local EMD, Public Safety Administrator   |
| <b>Action/Project Priority:</b>  | STAPLEE score:32 Priority: High  |
| <b>Timeline for Completion:</b>  | 1-2 years  |
| <b>Potential Fund Sources:</b>   | Private donations, local Government  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Fire department has one, but it can be moved.  |

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| <b>Action Worksheet</b>                     |   |
| <b>Name of Jurisdiction:</b>                | City of Marionville   |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Public access to water in case of natural hazard.                                 |
| <b>Hazard(s) Addressed:</b>                 | Earthquakes, Tornado, Winter Weather  |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | 3.1.3   |
| <b>Name of Action or Project:</b>           | Backup Power Generators   |
| <b>Action or Project Description:</b>       | Provide backup generators for all water towers & wastewater treatment facilities. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>                      | N/A   |
| <b>Benefits:</b>                            | Protect loss of property.   |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | Board of Aldermen   |



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| <b>Action/Project Priority:</b>  | STAPLEE score:32 Priority: High        |
| <b>Timeline for Completion:</b>  | N/A                                    |
| <b>Potential Fund Sources:</b>   | Local Government                       |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                                    |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress                 |
| <b>Report of Progress</b>  | Treatment Plan has a backup generator. |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Marionville  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Buildup of debris in flooded areas.                                  |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.5  |
| <b>Name of Action or Project:</b>                                      | Debris & Overgrowth Cleanup  |
| <b>Action or Project Description:</b>                                  | Clean up debris & overgrowth from drainage channels & under bridges. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards       |
| <b>Estimated Cost:</b>   | \$200-500  |
| <b>Benefits:</b>   | Mitigate future damage.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Street department.   |
| <b>Action/Project Priority:</b>  | STAPLEE score:32 Priority: High                                      |
| <b>Timeline for Completion:</b>  | On-going   |
| <b>Potential Fund Sources:</b>   | Local government   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |
| <b>Report of Progress</b>  | N/A  |

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|---------------------------------------|--|
| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Marionville  |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Wildfires caused by fires not properly controlled.   |
| <b>Hazard(s) Addressed:</b>           | Wildfires  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | 3.1.6  |
| <b>Name of Action or Project:</b>     | Burn Bans  |
| <b>Action or Project Description:</b> | Implement burn restrictions during time of weather conditions conducive to the spread of wildfire. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards.                                    |
| <b>Estimated Cost:</b>                | \$0  |
| <b>Benefits:</b>                      | Reduction of avoidable wildfires caused by human error will reduce damage to properties.           |

| <b>Plan for Implementation</b>   |   |
|--|---|
| <b>Responsible Organization/Department:</b>                            | Fire Department, Fire Chief, EMD's      |
| <b>Action/Project Priority:</b>  | STAPLEE score: 45 Priority: High        |
| <b>Timeline for Completion:</b>  | As needed                               |
| <b>Potential Fund Sources:</b>   | N/A                                     |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Social Media                            |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress                  |
| <b>Report of Progress</b>  | Keep informed of weather and conditions |

**Goal 1: Protect lives and property from the effects of natural hazards.**

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | City of Miller  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Miller 1.1.1  |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$750-1200  |
| <b>Benefits:</b>   | Reduction in loss of lives and property.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, Fire department, ACAC   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High  |
| <b>Timeline for Completion:</b>  | 18 months   |
| <b>Potential Fund Sources:</b>   | HMGP, Private Grants, Donations   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Library, schools, MSCS  |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Miller   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Educating developers on effective construction techniques that reduce the effects of natural hazards.  |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Miller 1.1.3   |
| <b>Name of Action or Project:</b>                                      | Resilient Construction Techniques  |
| <b>Action or Project Description:</b>                                  | Develop an educational campaign on construction techniques for new buildings to reduce risk of severe storm damage and distribute to mortgage institutions, home builders, realtors and other entities involved in the housing industry. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.  |
| <b>Estimated Cost:</b>   | \$500 - \$1,000  |
| <b>Benefits:</b>   | Residential, commercial, and industrial developments may become more resilient to natural hazards due to developers being aware of construction techniques that mitigate property damage from natural hazards.                           |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High   |
| <b>Timeline for Completion:</b>  | 6 months   |
| <b>Potential Fund Sources:</b>   | HMGP, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in progress   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>               |   |
|---------------------------------------|---|
| <b>Name of Jurisdiction:</b>          | City of Miller  |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Educating the public on the location of refuge areas and safe rooms in the community.   |
| <b>Hazard(s) Addressed:</b>           | All Hazards   |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 1.1.4   |
| <b>Name of Action or Project:</b>     | Refuge Areas and Safe Room Location Education   |
| <b>Action or Project Description:</b> | Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public. |

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| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | The public will be better informed on the location of refuge areas and safe rooms in the event of a natural hazard, mitigating the potential loss of life. |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | P.D., Fire department  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 25 Priority: Medium   |
| <b>Timeline for Completion:</b>  | Ongoing  |
| <b>Potential Fund Sources:</b>   | N/A  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | F.D, P.D   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Miller  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Warning the public in the event of a natural hazard.  |
| <b>Hazard(s) Addressed:</b>  | Tornado   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.2.1   |
| <b>Name of Action or Project:</b>                                      | Warning Siren Upkeep  |
| <b>Action or Project Description:</b>                                  | Maintain a sufficient number of warning sirens in all incorporated communities while also maintaining current infrastructure. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$12,000  |
| <b>Benefits:</b>   | Loss of life will decrease through this strategy.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Fire department, police department  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High  |
| <b>Timeline for Completion:</b>  | 2 years   |
| <b>Potential Fund Sources:</b>   | Grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

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|---------------------------------|-------------------------------|
| <b>Action Worksheet</b>         |                               |
| <b>Name of Jurisdiction:</b>    | City of Miller                |
| <b>Risk / Vulnerability</b>     |                               |
| <b>Problem being Mitigated:</b> | Lack of tornado safe rooms    |
| <b>Hazard(s) Addressed:</b>     | Tornado, Severe Thunderstorms |

| <b>Action or Project</b>   |  |
|--|--|
| <b>Action/Project Number:</b>  | 1.3.1  |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$350  |
| <b>Benefits:</b>   | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Fire department, police department   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 12 months  |
| <b>Potential Fund Sources:</b>   | N/A  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Library, school  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Miller   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Loss of Life   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.3  |
| <b>Name of Action or Project:</b>                                      | Safe Refuge Area Plan  |
| <b>Action or Project Description:</b>                                  | Encourage that all new public buildings have a best identified available refuge area (these do not comply with FEMA Publication 361 for safe rooms) or safe room, equipped with radios and emergency local communications. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$5,000  |
| <b>Benefits:</b>   | Protect lives and minimize injuries.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local EMD, Building Codes  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 27 Priority: Medium   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Miller   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Public refuge areas for vulnerable populations.  |
| <b>Hazard(s) Addressed:</b>  | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.5  |
| <b>Name of Action or Project:</b>                                      | Community Extreme Temperature Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$500  |
| <b>Benefits:</b>   | Vulnerable populations such as the elderly and disabled will have a place to go in the event of extreme temperatures.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Fire and police departments  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 24 Priority: High   |
| <b>Timeline for Completion:</b>  | Available now  |
| <b>Potential Fund Sources:</b>   | Donations  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Senior Center  |

**Goal 2: Ensure the continued operation of government and emergency services.**

| <b>Action Worksheet</b>                     |   |
|---|---|
| <b>Name of Jurisdiction:</b>                | City of Miller  |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Access to information on mitigation resources.  |
| <b>Hazard(s) Addressed:</b>                 | All Hazards   |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | 2.1.2   |
| <b>Name of Action or Project:</b>           | Database Mitigation Resources   |
| <b>Action or Project Description:</b>       | Establish and maintain a database on available mitigation resources and programs that can be shared with local governments, response and preparedness agencies, social service organizations, and emergency care providers. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                      | \$100   |
| <b>Benefits:</b>                            | Quick access to valuable information for quick implementation during hazardous events.  |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | City Council  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 25 Priority: Medium  |

|  |              |
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| <b>Timeline for Completion:</b>  | 6 months     |
| <b>Potential Fund Sources:</b>   | N/A          |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | City Council |
| <b>Progress Report</b>   |              |
| <b>Action Status</b>   | New          |
| <b>Report of Progress</b>  | Council      |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Miller   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.3  |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$5,000-6,000  |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Police and fire department   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 27 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 5 years  |
| <b>Potential Fund Sources:</b>   | Grants   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | No money.  |

| <b>Action Worksheet</b>               |  |
|---------------------------------------|--|
| <b>Name of Jurisdiction:</b>          | City of Miller   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>           | All natural hazards  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | 2.1.6  |
| <b>Name of Action or Project:</b>     | NIMS Training  |
| <b>Action or Project Description:</b> | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | N/A  |

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| <b>Benefits:</b>   | Reduction in loss of lives and property with increased training. |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local EMD  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 21 Priority: Low                                  |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Local funds, Grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Miller   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Hazards impacting wastewater treatment facilities.   |
| <b>Hazard(s) Addressed:</b>  | Flooding, Earthquakes, Tornados  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.1  |
| <b>Name of Action or Project:</b>                                      | Wastewater Treatment   |
| <b>Action or Project Description:</b>                                  | Maintain appropriate operations of wastewater treatment facilities and reduce &/or eliminate hazard risks. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$1.5 million  |
| <b>Benefits:</b>   | Reduce impact of hazards.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Water & sewer departments  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 5 years  |
| <b>Potential Fund Sources:</b>   | Grants   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Council & engineers  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |
| <b>Report of Progress</b>  | Slow progress  |

|                                 |  |
|---------------------------------|--|
| <b>Action Worksheet</b>         |  |
| <b>Name of Jurisdiction:</b>    | City of Miller   |
| <b>Risk / Vulnerability</b>     |  |
| <b>Problem being Mitigated:</b> | Access to backup power generators in public buildings. |
| <b>Hazard(s) Addressed:</b>     | Earthquakes, Thunderstorms, Tornado, Winter Weather    |
| <b>Action or Project</b>        |  |



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| <b>Action/Project Number:</b>  | 3.1.2  |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$100  |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Fire department  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 20 Priority: Low  |
| <b>Timeline for Completion:</b>  | 6-12 months  |
| <b>Potential Fund Sources:</b>   | Donations  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Miller  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Public access to water in case of natural hazard.                                 |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Tornado, Winter Weather  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 3.1.3   |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators   |
| <b>Action or Project Description:</b>                                  | Provide backup generators for all water towers & wastewater treatment facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | Protect Resources   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | City Council  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 28 Priority: Medium  |
| <b>Timeline for Completion:</b>  | N/A   |
| <b>Potential Fund Sources:</b>   | Grants, Local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>      |                |
| <b>Name of Jurisdiction:</b> | City of Miller |
| <b>Risk / Vulnerability</b>  |                |

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| <b>Problem being Mitigated:</b>  | Wildfires caused by fires not properly controlled.   |
| <b>Hazard(s) Addressed:</b>  | Wildfires  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.6  |
| <b>Name of Action or Project:</b>                                      | Burn Bans  |
| <b>Action or Project Description:</b>                                  | Implement burn restrictions during time of weather conditions conducive to the spread of wildfire. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.                                    |
| <b>Estimated Cost:</b>   | \$0  |
| <b>Benefits:</b>   | Reduction in loss of lives and property due to wildfires.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Fire department  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High   |
| <b>Timeline for Completion:</b>  | 3 years  |
| <b>Potential Fund Sources:</b>   | Local Funding  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 1: Protect lives and property from the effects of natural hazards.**

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| <b>Action Worksheet</b>                     |   |
| <b>Name of Jurisdiction:</b>                | City of Monett  |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>                 | All Hazards   |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | City of Monett 1.1.1  |
| <b>Name of Action or Project:</b>           | Hazard Awareness Education  |
| <b>Action or Project Description:</b>       | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>                      | \$0   |
| <b>Benefits:</b>                            | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | Emergency Management  |

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| <b>Action/Project Priority:</b>  | STAPLEE score: 27 Priority: Medium            |
| <b>Timeline for Completion:</b>  | 1-6 months                                    |
| <b>Potential Fund Sources:</b>   | HMGP, General funds, free materials available |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started                        |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Monett  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Monett 1.1.2  |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$0   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, Schools   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 27 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 1-6 months  |
| <b>Potential Fund Sources:</b>   | HMGP, general funds, free state resources   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>      |                |
| <b>Name of Jurisdiction:</b> | City of Monett |

| <b>Risk / Vulnerability</b>  |  |
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| <b>Problem being Mitigated:</b>  | Educating developers on effective construction techniques that reduce the effects of natural hazards.  |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Monett 1.1.3   |
| <b>Name of Action or Project:</b>                                      | Resilient Construction Techniques  |
| <b>Action or Project Description:</b>                                  | Develop an educational campaign on construction techniques for new buildings to reduce risk of severe storm damage and distribute to mortgage institutions, home builders, realtors and other entities involved in the housing industry. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.  |
| <b>Estimated Cost:</b>   | \$500 - \$1,000  |
| <b>Benefits:</b>   | Residential, commercial, and industrial developments may become more resilient to natural hazards due to developers being aware of construction techniques that mitigate property damage from natural hazards.                           |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, Municipality   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | 5+ years   |
| <b>Potential Fund Sources:</b>   | HMGP, General funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Building Code  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>               |   |
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| <b>Name of Jurisdiction:</b>          | City of Monett  |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Educating the public on the location of refuge areas and safe rooms in the community.   |
| <b>Hazard(s) Addressed:</b>           | All Hazards   |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | City of Monett 1.1.4  |
| <b>Name of Action or Project:</b>     | Refuge Areas and Safe Room Location Education   |
| <b>Action or Project Description:</b> | Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                | \$500 or less   |

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| <b>Benefits:</b>   | The public will be better informed on the location of refuge areas and safe rooms in the event of a natural hazard, mitigating the potential loss of life. |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 37 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-3 months   |
| <b>Potential Fund Sources:</b>   | General Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Some areas marked.   |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Public awareness to homeowners and businesses to sinkhole loss policies.   |
| <b>Hazard(s) Addressed:</b>  | Sinkholes  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Monett 1.1.5   |
| <b>Name of Action or Project:</b>                                      | Sinkhole Awareness Program   |
| <b>Action or Project Description:</b>                                  | Educate homeowners and business about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$500  |
| <b>Benefits:</b>   | Increased financial protection to homeowners and businesses.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration; Emergency Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 24 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | General Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>         |  |
| <b>Name of Jurisdiction:</b>    | City of Monett                                       |
| <b>Risk / Vulnerability</b>     |  |
| <b>Problem being Mitigated:</b> | Warning the public in the event of a natural hazard. |
| <b>Hazard(s) Addressed:</b>     | Tornado  |

| <b>Action or Project</b>   |  |
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| <b>Action/Project Number:</b>  | 1.2.1  |
| <b>Name of Action or Project:</b>                                      | Warning Siren Upkeep   |
| <b>Action or Project Description:</b>                                  | Maintain a sufficient number of warning sirens in all incorporated communities while also maintaining current infrastructure.                    |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$8,000/year   |
| <b>Benefits:</b>   | Loss of life will decrease through this strategy.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Which organization will be responsible for tracking this action? Be specific to include the specific department or position within a department. |
| <b>Action/Project Priority:</b>  | STAPLEE score: 37 Priority: High   |
| <b>Timeline for Completion:</b>  | 0 years  |
| <b>Potential Fund Sources:</b>   | General Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | All are current and functioning.   |

| <b>Action Worksheet</b>  |   |
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| <b>Name of Jurisdiction:</b>   | City of Monett  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.2.2   |
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Municipality  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High  |
| <b>Timeline for Completion:</b>  | 1-2 months  |
| <b>Potential Fund Sources:</b>   | Free to educate   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | Already educate on usage.   |

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.1  |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Municipality/Private   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 37 Priority: High   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | General funds, Private funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Local shelter/refuge areas in place.   |

| <b>Action Worksheet</b>                     |   |
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| <b>Name of Jurisdiction:</b>                | City of Monett  |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Loss of Life  |
| <b>Hazard(s) Addressed:</b>                 | Tornado, Severe Storms  |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | 1.3.2   |
| <b>Name of Action or Project:</b>           | Safe Room Construction  |
| <b>Action or Project Description:</b>       | Retrofit existing critical public buildings & infrastructures where possible to provide shelter from natural hazards. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                      | N/A   |
| <b>Benefits:</b>                            | Reduction in loss of lives and structures.  |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | Local government  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 29 Priority: Medium  |
| <b>Timeline for Completion:</b>             | 1-3 years   |
| <b>Potential Fund Sources:</b>              | Local & private funding   |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Ordinances             |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | N/A                    |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Loss of Life   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.3  |
| <b>Name of Action or Project:</b>                                      | Safe Refuge Area Plan  |
| <b>Action or Project Description:</b>                                  | Encourage that all new public buildings have a best identified available refuge area (these do not comply with FEMA Publication 361 for safe rooms) or safe room, equipped with radios and emergency local communications. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0  |
| <b>Benefits:</b>   | Protect lives and minimize injuries.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Which organization will be responsible for tracking this action? Be specific to include the specific department or position within a department.   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-3 years (on-going)   |
| <b>Potential Fund Sources:</b>   | N/A  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Monett   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Loss of Life   |
| <b>Hazard(s) Addressed:</b>           | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | 1.3.4  |
| <b>Name of Action or Project:</b>     | Use Zoning Ordinance to Require Refuge Areas   |
| <b>Action or Project Description:</b> | Amend or update zoning ordinances to include requirement for best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in all new manufactured home parks. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | N/A  |
| <b>Benefits:</b>                      | Reduction in loss of lives.  |



| <b>Plan for Implementation</b>   |                                    |
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| <b>Responsible Organization/Department:</b>                            | Local government                   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 26 Priority: Medium |
| <b>Timeline for Completion:</b>  | 5+ years                           |
| <b>Potential Fund Sources:</b>   | Local funding                      |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Zoning Ordinance                   |
| <b>Progress Report</b>   |                                    |
| <b>Action Status</b>   | Continuing Not Started             |
| <b>Report of Progress</b>  | No political will.                 |

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Public refuge areas for vulnerable populations.  |
| <b>Hazard(s) Addressed:</b>  | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.5  |
| <b>Name of Action or Project:</b>                                      | Community Extreme Temperature Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$2,000-3,000  |
| <b>Benefits:</b>   | Maintain citizen's well-being within community.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local government   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 year   |
| <b>Potential Fund Sources:</b>   | General Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>               |  |
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| <b>Name of Jurisdiction:</b>          | City of Monett   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Reduction of damage to property from flooding.                                 |
| <b>Hazard(s) Addressed:</b>           | Flooding   |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | 1.4.1  |
| <b>Name of Action or Project:</b>     | NFIP Participation   |
| <b>Action or Project Description:</b> | Encourage the county and municipalities to maintain participation in the NFIP. |

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| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Reduction in damages due to flooding.                          |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local government   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High                               |
| <b>Timeline for Completion:</b>  | 0 (happening now)  |
| <b>Potential Fund Sources:</b>   | General funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | On-going   |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Monett  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Lack of items to deal with extreme weather for those at risk.   |
| <b>Hazard(s) Addressed:</b>  | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.4.2   |
| <b>Name of Action or Project:</b>                                      | Community Involvement Projects  |
| <b>Action or Project Description:</b>                                  | Community organizations should continue programs to provide fans, air conditioners & winter weatherization for those at risk (the elderly, low-income, younger, and handicapped). |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$3,000-5,000   |
| <b>Benefits:</b>   | Reduce illness or death from extreme temperatures.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Municipality  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>  | On-going  |
| <b>Potential Fund Sources:</b>   | Local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing In Progress  |
| <b>Report of Progress</b>  | Currently provide cooling/warming centers.  |

|                                 |                                    |
|---------------------------------|------------------------------------|
| <b>Action Worksheet</b>         |                                    |
| <b>Name of Jurisdiction:</b>    | City of Monett                     |
| <b>Risk / Vulnerability</b>     |                                    |
| <b>Problem being Mitigated:</b> | Lack of storm ready standards.     |
| <b>Hazard(s) Addressed:</b>     | Earthquakes, Thunderstorm, Tornado |
| <b>Action or Project</b>        |                                    |

|  |   |
|--|---|
| <b>Action/Project Number:</b>  | 1.4.3   |
| <b>Name of Action or Project:</b>                                      | Code Updates for Storm Ready Standards  |
| <b>Action or Project Description:</b>                                  | Amend or update codes to include storm ready standards, such as hurricane straps. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | Reduction in loss of lives and structures.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Local Government.   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 28 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 5+ years  |
| <b>Potential Fund Sources:</b>   | Local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing In Progress  |
| <b>Report of Progress</b>  | Lack of political will.   |

|  |  |
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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Increased public participation and response efficiency to the mitigation of natural hazards.   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Sever Thunderstorm, Flood, Winter Weather, Drought, Extreme Heat, Earthquake, Dam Failure, Wildfire                         |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.4.4  |
| <b>Name of Action or Project:</b>                                      | Citizen Preparedness   |
| <b>Action or Project Description:</b>                                  | Establish and maintain participation in citizen preparedness activities such as: CERT, COAD, Neighborhood Watch, Amateur Radio, etc. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Reduction in loss of lives and property.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local government.  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-2 years  |
| <b>Potential Fund Sources:</b>   | Local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Involved in COAD locally. Have local amateur radio.  |

|                              |                |
|------------------------------|----------------|
| <b>Action Worksheet</b>      |                |
| <b>Name of Jurisdiction:</b> | City of Monett |

| <b>Risk / Vulnerability</b>  |  |
|--|--|
| <b>Problem being Mitigated:</b>  | Increased public participation and response efficiency to the mitigation of natural hazards. |
| <b>Hazard(s) Addressed:</b>  | Wildfire   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.4.5  |
| <b>Name of Action or Project:</b>                                      | Citizen Preparedness   |
| <b>Action or Project Description:</b>                                  | Participate in the Firewise Community USA Recognition Program                                |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                               |
| <b>Estimated Cost:</b>   | \$0-600  |
| <b>Benefits:</b>   | Identifies wildfire prone areas and provides solutions to mitigate the loss of life.         |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | County Emergency Management, local governments, local fire departments.                      |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | Annually   |
| <b>Potential Fund Sources:</b>   | Local funding  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 2: Ensure the continued operation of government and emergency services.**

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | City of Monett  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Access to information on mitigation resources.  |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 2.1.2   |
| <b>Name of Action or Project:</b>                                      | Database Mitigation Resources   |
| <b>Action or Project Description:</b>                                  | Establish and maintain a database on available mitigation resources and programs that can be shared with local governments, response and preparedness agencies, social service organizations, and emergency care providers. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$500-1,000   |
| <b>Benefits:</b>   | Reduction in loss of life and property.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Local government.   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High  |
| <b>Timeline for Completion:</b>  | 0 years (on-going)  |
| <b>Potential Fund Sources:</b>   | Local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |

| <b>Progress Report</b>    |                                    |
|---------------------------|------------------------------------|
| <b>Action Status</b>      | Continuing in Progress             |
| <b>Report of Progress</b> | Constantly maintain/updating files |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.3  |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$200,000  |
| <b>Benefits:</b>   | Reduction in loss of lives and property.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local government.  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High   |
| <b>Timeline for Completion:</b>  | On-going   |
| <b>Potential Fund Sources:</b>   | Local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Combination old/need new. Having problems with county-wide communications.   |

| <b>Action Worksheet</b>                     |  |
|---|--|
| <b>Name of Jurisdiction:</b>                | City of Monett   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Countywide frequency repeater network  |
| <b>Hazard(s) Addressed:</b>                 | All Hazards  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | 2.1.4  |
| <b>Name of Action or Project:</b>           | Countywide Network Increase  |
| <b>Action or Project Description:</b>       | Continue to increase countywide frequency repeater network, including new wireless units |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards                           |
| <b>Estimated Cost:</b>                      | \$300,000  |
| <b>Benefits:</b>                            | Reduction in loss of lives and property. Officer safety.                                 |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Local/County government  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 38 Priority: High   |
| <b>Timeline for Completion:</b>             | 5+ years   |

|  |                        |
|--|------------------------|
| <b>Potential Fund Sources:</b>   | Grants                 |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                    |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | Funding barrier        |

|  |  |
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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.6  |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$100-5000   |
| <b>Benefits:</b>   | Reduction in loss of life and property.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | N/A  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | On-going   |
| <b>Potential Fund Sources:</b>   | General Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Getting everyone to participate is a barrier.  |

|                                       |  |
|---------------------------------------|--|
| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Monett   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Accessibility of fire stations to areas.   |
| <b>Hazard(s) Addressed:</b>           | All Hazards  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | 2.2.1  |
| <b>Name of Action or Project:</b>     | Construction of Fire Stations  |
| <b>Action or Project Description:</b> | Construct additional fire stations in communities and rural fire districts or fire protection associations to improve accessibility to areas impacted by natural or manmade barriers during hazard events. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | \$1,000,000  |
| <b>Benefits:</b>                      | Lives and property saved due to better response time.  |

| <b>Plan for Implementation</b>   |                                  |
|--|----------------------------------|
| <b>Responsible Organization/Department:</b>                            | Local Government                 |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High |
| <b>Timeline for Completion:</b>  | 5+ years                         |
| <b>Potential Fund Sources:</b>   | Local funding/Tax                |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                              |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | Continuing Not Started           |
| <b>Report of Progress</b>  | Financial barrier                |

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | City of Monett  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Damage to property and infrastructure in flood hazard areas.  |
| <b>Hazard(s) Addressed:</b>  | Flooding  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 2.2.2   |
| <b>Name of Action or Project:</b>                                      | Hazard area property protection   |
| <b>Action or Project Description:</b>                                  | Acquire, elevate or flood-proof properties and critical infrastructure within flood hazard areas.   |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$10,000-150,000  |
| <b>Benefits:</b>   | Less damage to properties existing in flood hazard zones or removing properties completely from hazard zones to reduce overall damage. Future loss avoided. |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Commissions and councils, city administrators, planning and development staff, building officials.  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High  |
| <b>Timeline for Completion:</b>  | 3-5 years   |
| <b>Potential Fund Sources:</b>   | Local Funding, Local "no cash" funding, HMGP, FMA, CDBG   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Comprehensive plans, land use plans, floodplain ordinance   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>         |  |
|---------------------------------|--|
| <b>Name of Jurisdiction:</b>    | City of Monett   |
| <b>Risk / Vulnerability</b>     |  |
| <b>Problem being Mitigated:</b> | Property protection, excess flood water to areas prone to flooding and storm water runoff. |
| <b>Hazard(s) Addressed:</b>     | Flooding, Drought  |
| <b>Action or Project</b>        |  |
| <b>Action/Project Number:</b>   | 2.2.3  |

|  |   |
|--|---|
| <b>Name of Action or Project:</b>                                      | Green Infrastructure  |
| <b>Action or Project Description:</b>                                  | Implement green infrastructure ideas to flood hazard zones to safely capture excess water for it to seep back into the ground or slow its progress into storm drains. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$10,000-150,000  |
| <b>Benefits:</b>   | Flood Diversion and storage will allow critical infrastructure to be less prone to flood damage and allow storm drains to not be overused.                            |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | EMD, planning and development staff, building officials   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 37 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 – 3 years   |
| <b>Potential Fund Sources:</b>   | Local “no cash” funding”, HMGP, FMA, CDBG, Pre-Disaster Funding   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Bonds   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Improving and maintain the quality of stream ecosystems by alleviating flooding and erosion.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.2.4  |
| <b>Name of Action or Project:</b>                                      | Stream and river improvements  |
| <b>Action or Project Description:</b>                                  | Increase the amount of vegetation near river banks and flood prone areas to improve soil health, aesthetic value, and overall health of the river ecosystem. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$15,000-100,000   |
| <b>Benefits:</b>   | Improved aesthetics, less erosion, channel shading, and decreased impact of flooding.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | EMD, local commissions and councils, public works departments  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 – 2 years  |
| <b>Potential Fund Sources:</b>   | Local “no cash” Funding, HMGP, FMA, CDBG, Pre-Disaster Funding, Bonds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |



| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Reducing flood damage of future development  |
| <b>Hazard(s) Addressed:</b>  | Floods   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.2.5  |
| <b>Name of Action or Project:</b>                                      | Stream buffer ordinance  |
| <b>Action or Project Description:</b>                                  | Adopt ordinance to create buffer zones along streams to protect water resources and limit flood impacts to potential future development. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$1,000-10,000   |
| <b>Benefits:</b>   | Less damage from potential flooding near streams.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local planning organization  |
| <b>Action/Project Priority:</b>  | STAPLEE SCORE: 23 Priority: Low  |
| <b>Timeline for Completion:</b>  | 1 -2 years   |
| <b>Potential Fund Sources:</b>   | Local Funding  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Local code and ordinance   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>                     |  |
|---|--|
| <b>Name of Jurisdiction:</b>                | City of Monett   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Reduction of damage to property from flooding  |
| <b>Hazard(s) Addressed:</b>                 | Flooding   |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | 2.2.6  |
| <b>Name of Action or Project:</b>           | NFIP Participation   |
| <b>Action or Project Description:</b>       | The NFIP community of Monett will enforce floodplain management requirements, including regulation all new and substantially improved construction in the Special Flood Hazard Areas (SPFAs), floodplain identification and mapping, including local requests for map updates. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | \$0  |
| <b>Benefits:</b>                            | Beneficial to the future development of Monett.  |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Planning and development staff, building officials, floodplain administrators.   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>             | Ongoing  |
| <b>Potential Fund Sources:</b>              | N/A  |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Floodplain management ordinance. |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | New                              |
| <b>Report of Progress</b>  | N/A                              |

|  |   |
|--|---|
| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Monett  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Out of date or nonexistent building codes   |
| <b>Hazard(s) Addressed:</b>  | Earthquake, Flooding, Tornado, Severe Thunderstorm  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 2.2.7   |
| <b>Name of Action or Project:</b>                                      | Building codes  |
| <b>Action or Project Description:</b>                                  | Adopt and/or update appropriate building codes  |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-100   |
| <b>Benefits:</b>   | Updating or implementing building codes will better protect properties from natural hazards, reducing damage costs. |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Commissions and councils, building officials  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High  |
| <b>Timeline for Completion:</b>  | 6 months – 1 year   |
| <b>Potential Fund Sources:</b>   | N/A   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Building code, local ordinances   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

|                                       |   |
|---------------------------------------|---|
| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | City of Monett  |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Excess water run-off  |
| <b>Hazard(s) Addressed:</b>           | Flooding  |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 2.2.8   |
| <b>Name of Action or Project:</b>     | Open space plan   |
| <b>Action or Project Description:</b> | Develop an open space acquisition, reuse, and preservation plan targeting hazard areas.                                 |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                | \$5,000-10,000  |
| <b>Benefits:</b>                      | This action will help establish more green space. This will benefit the aesthetics and help reduce storm water run-off. |
| <b>Plan for Implementation</b>        |   |

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| <b>Responsible Organization/Department:</b>                            | Local commissions and councils, planning and development staff. |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High                                |
| <b>Timeline for Completion:</b>  | 6 months – 1 year   |
| <b>Potential Fund Sources:</b>   | Local Funding, Local “no cash” Funding, HMGP, FMA, CDBG         |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Comprehensive plan, land use plan, code of ordinances           |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Hazards impacting wastewater treatment facilities.   |
| <b>Hazard(s) Addressed:</b>  | Flooding, Earthquakes, Tornados  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.1  |
| <b>Name of Action or Project:</b>                                      | Wastewater Treatment   |
| <b>Action or Project Description:</b>                                  | Maintain appropriate operations of wastewater treatment facilities and reduce &/or eliminate hazard risks. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Reduce impact of hazards.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local Government   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High   |
| <b>Timeline for Completion:</b>  | 0 years  |
| <b>Potential Fund Sources:</b>   | Local funding  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | New WWT in place.  |

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| <b>Action Worksheet</b>           |  |
| <b>Name of Jurisdiction:</b>      | City of Monett   |
| <b>Risk / Vulnerability</b>       |  |
| <b>Problem being Mitigated:</b>   | Access to backup power generators in public buildings. |
| <b>Hazard(s) Addressed:</b>       | Earthquakes, Thunderstorms, Tornado, Winter Weather    |
| <b>Action or Project</b>          |  |
| <b>Action/Project Number:</b>     | 3.1.2  |
| <b>Name of Action or Project:</b> | Backup Power Generators                                |

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| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$100,000 per site   |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | EOC, FIRE  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High   |
| <b>Timeline for Completion:</b>  | 1.5 years  |
| <b>Potential Fund Sources:</b>   | General Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Some buildings currently have backup generators.   |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Monett  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Public access to water in case of natural hazard.                                 |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Tornado, Winter Weather  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 3.1.3   |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators   |
| <b>Action or Project Description:</b>                                  | Provide backup generators for all water towers & wastewater treatment facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>   | \$500,000+  |
| <b>Benefits:</b>   | Water Resources   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Local Government  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High  |
| <b>Timeline for Completion:</b>  | 0 years (in progress)   |
| <b>Potential Fund Sources:</b>   | Local funding   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | Generators currently in place.  |

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| <b>Action Worksheet</b>         |                                     |
| <b>Name of Jurisdiction:</b>    | City of Monett                      |
| <b>Risk / Vulnerability</b>     |                                     |
| <b>Problem being Mitigated:</b> | Buildup of debris in flooded areas. |
| <b>Hazard(s) Addressed:</b>     | Flooding                            |

| <b>Action or Project</b>   |  |
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| <b>Action/Project Number:</b>  | 3.1.5  |
| <b>Name of Action or Project:</b>                                      | Debris & Overgrowth Cleanup  |
| <b>Action or Project Description:</b>                                  | Clean up debris & overgrowth from drainage channels & under bridges. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards       |
| <b>Estimated Cost:</b>   | \$3,000  |
| <b>Benefits:</b>   | Mitigate future damage.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Streets, Public works  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 41 Priority: High                                     |
| <b>Timeline for Completion:</b>  | On-going   |
| <b>Potential Fund Sources:</b>   | General funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Continual  |

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | City of Monett   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Wildfires caused by fires not properly controlled.   |
| <b>Hazard(s) Addressed:</b>  | Wildfires  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.6  |
| <b>Name of Action or Project:</b>                                      | Burn Bans  |
| <b>Action or Project Description:</b>                                  | Implement burn restrictions during time of weather conditions conducive to the spread of wildfire. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.                                    |
| <b>Estimated Cost:</b>   | \$0  |
| <b>Benefits:</b>   | Reduction in loss of lives and property.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local fire, local government   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High   |
| <b>Timeline for Completion:</b>  | 0 years  |
| <b>Potential Fund Sources:</b>   | Local Funding  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>      |                |
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| <b>Name of Jurisdiction:</b> | City of Monett |
| <b>Risk / Vulnerability</b>  |                |

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| <b>Problem being Mitigated:</b>  | Encroachment of vegetation  |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms, Severe Winter Weather  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Monett 3.1.7  |
| <b>Name of Action or Project:</b>                                      | Vegetation maintenance  |
| <b>Action or Project Description:</b>                                  | Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$100-500   |
| <b>Benefits:</b>   | Roads will not be as easily blocked and decreased utility loss in the event of a severe storm.                                |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration, public works staff, utility providers   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High  |
| <b>Timeline for Completion:</b>  | 6-18 months   |
| <b>Potential Fund Sources:</b>   | Local funding, local "no cash" funding  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Tree Trimming Ordinance   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Monett  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Shortages of water due to excess use of water during drought  |
| <b>Hazard(s) Addressed:</b>  | Drought   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Monett 3.1.8  |
| <b>Name of Action or Project:</b>                                      | Water Conservation  |
| <b>Action or Project Description:</b>                                  | Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$0-\$500   |
| <b>Benefits:</b>   | Potential loss of life due to water shortage; community resilience.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration, public works department, water and sewer department   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 21 Priority: Low   |
| <b>Timeline for Completion:</b>  | 6 – 18 months   |
| <b>Potential Fund Sources:</b>   | Local "no cash" funding   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Public safety ordinances  |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

**Goal 1: Protect lives and property from the effects of natural hazards.**

| <b>Action Worksheet</b>  |   |
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| <b>Name of Jurisdiction:</b>   | City of Mount Vernon  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Mount Vernon 1.1.1  |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$500 - \$1,000   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, City, School district, City Administrator   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High  |
| <b>Timeline for Completion:</b>  | 24 months   |
| <b>Potential Fund Sources:</b>   | HMGP, General Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Develop education materials or obtain from other sources (FEMA). Distribute through school district.  |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>           |   |
|-----------------------------------|---|
| <b>Name of Jurisdiction:</b>      | City of Mount Vernon  |
| <b>Risk / Vulnerability</b>       |   |
| <b>Problem being Mitigated:</b>   | Educating the non-English speaking public on what to do in the event of a natural hazard. |
| <b>Hazard(s) Addressed:</b>       | All Hazards   |
| <b>Action or Project</b>          |   |
| <b>Action/Project Number:</b>     | City of Mount Vernon 1.1.2  |
| <b>Name of Action or Project:</b> | Multilingual Hazard Awareness Education   |

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| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$1,000 - \$1,500   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, City, School District   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 28 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 12-24 months  |
| <b>Potential Fund Sources:</b>   | HMGP, local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Distribute through school district and Chamber office.  |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>                     |  |
| <b>Name of Jurisdiction:</b>                | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Educating developers on effective construction techniques that reduce the effects of natural hazards.  |
| <b>Hazard(s) Addressed:</b>                 | All Hazards  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | City of Mount Vernon 1.1.3   |
| <b>Name of Action or Project:</b>           | Resilient Construction Techniques  |
| <b>Action or Project Description:</b>       | Develop an educational campaign on construction techniques for new buildings to reduce risk of severe storm damage and distribute to mortgage institutions, home builders, realtors and other entities involved in the housing industry. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards.  |
| <b>Estimated Cost:</b>                      | \$500 - \$1,000  |
| <b>Benefits:</b>                            | Residential, commercial, and industrial developments may become more resilient to natural hazards due to developers being aware of construction techniques that mitigate property damage from natural hazards.                           |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Emergency Management; Building Department  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 30 Priority: High   |
| <b>Timeline for Completion:</b>             | 6 months   |



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| <b>Potential Fund Sources:</b>   | HMGP   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Workshop technology<br>Utilize Newspaper articles within community.<br>Building Code |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on the location of refuge areas and safe rooms in the community.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Mount Vernon 1.1.4  |
| <b>Name of Action or Project:</b>                                      | Refuge Areas and Safe Room Location Education   |
| <b>Action or Project Description:</b>                                  | Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | Undetermined  |
| <b>Benefits:</b>   | The public will be better informed on the location of refuge areas and safe rooms in the event of a natural hazard, mitigating the potential loss of life.                        |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration, Emergency Management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 1-3 years   |
| <b>Potential Fund Sources:</b>   | Grant Funding, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Public awareness to homeowners and businesses to sinkhole loss policies.   |
| <b>Hazard(s) Addressed:</b>           | Sinkholes  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | City of Mount Vernon 1.1.5   |
| <b>Name of Action or Project:</b>     | Sinkhole Awareness Program   |
| <b>Action or Project Description:</b> | Educate homeowners and business about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas. |

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| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards |
| <b>Estimated Cost:</b>   | \$0-\$500  |
| <b>Benefits:</b>   | Increased financial protection to homeowners and businesses.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | City Code Enforcement  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium                             |
| <b>Timeline for Completion:</b>  | 1-3 years  |
| <b>Potential Fund Sources:</b>   | City budget  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.2.2   |
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | City, fire department, police department  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High  |
| <b>Timeline for Completion:</b>  | 6 months  |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>         |                               |
| <b>Name of Jurisdiction:</b>    | City of Mount Vernon          |
| <b>Risk / Vulnerability</b>     |                               |
| <b>Problem being Mitigated:</b> | Lack of tornado safe rooms    |
| <b>Hazard(s) Addressed:</b>     | Tornado, Severe Thunderstorms |
| <b>Action or Project</b>        |                               |

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| <b>Action/Project Number:</b>  | 1.3.1  |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Code Enforcement Officer, Emergency Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 28 Priority: Medium   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grants, Local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Educational materials  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Loss of Life  |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Storms  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.3.2   |
| <b>Name of Action or Project:</b>                                      | Safe Room Construction  |
| <b>Action or Project Description:</b>                                  | Retrofit existing critical public buildings & infrastructures where possible to provide shelter from natural hazards. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | Reduction in loss of life and structures.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 28 Priority: Medium  |
| <b>Timeline for Completion:</b>  | N/A   |
| <b>Potential Fund Sources:</b>   | City budget, grants   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Capital budget  |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>      |                      |
| <b>Name of Jurisdiction:</b> | City of Mount Vernon |
| <b>Risk / Vulnerability</b>  |                      |

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| <b>Problem being Mitigated:</b>  | Loss of Life   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.3  |
| <b>Name of Action or Project:</b>                                      | Safe Refuge Area Plan  |
| <b>Action or Project Description:</b>                                  | Encourage that all new public buildings have a best identified available refuge area (these do not comply with FEMA Publication 361 for safe rooms) or safe room, equipped with radios and emergency local communications. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Protect lives and minimize injuries.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | City Administrator   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 25 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 5 years (current buildings completed)  |
| <b>Potential Fund Sources:</b>   | City budget  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Loss of Life   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.4  |
| <b>Name of Action or Project:</b>                                      | Use Zoning Ordinance to Require Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Amend or update zoning ordinances to include requirement for best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in all new manufactured home parks. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Planning and Zoning  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 25 Priority: Low  |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | City budget  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Zoning Ordinance   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Public refuge areas for vulnerable populations.  |
| <b>Hazard(s) Addressed:</b>  | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.3.5  |
| <b>Name of Action or Project:</b>                                      | Community Extreme Temperature Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Prevent loss of life due to extreme temperatures.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | 6-12 months  |
| <b>Potential Fund Sources:</b>   | City Budget  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Reduction of damage to property from flooding.                                 |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.4.1  |
| <b>Name of Action or Project:</b>                                      | NFIP Participation   |
| <b>Action or Project Description:</b>                                  | Encourage the county and municipalities to maintain participation in the NFIP. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                 |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Reduction in damages due to flooding.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | N/A  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 23 Priority: Medium   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |

|                           |                                      |
|---------------------------|--------------------------------------|
| <b>Action Status</b>      | Continuing In Progress               |
| <b>Report of Progress</b> | City has a floodplain administrator. |

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Lack of items to deal with extreme weather for those at risk.   |
| <b>Hazard(s) Addressed:</b>  | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | 1.4.2   |
| <b>Name of Action or Project:</b>                                      | Community Involvement Projects  |
| <b>Action or Project Description:</b>                                  | Community organizations should continue programs to provide fans, air conditioners & winter weatherization for those at risk (the elderly, low-income, younger, and handicapped). |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | Reduce illness or death from extreme temperatures.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High  |
| <b>Timeline for Completion:</b>  | Donations, Not for profit groups, Churches  |
| <b>Potential Fund Sources:</b>   | N/A   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing In Progress  |
| <b>Report of Progress</b>  | Continuing  |

| <b>Action Worksheet</b>                     |   |
|---|---|
| <b>Name of Jurisdiction:</b>                | City of Mount Vernon  |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Lack of storm ready standards.  |
| <b>Hazard(s) Addressed:</b>                 | Earthquakes, Thunderstorm, Tornado  |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | 1.4.3   |
| <b>Name of Action or Project:</b>           | Code Updates for Storm Ready Standards  |
| <b>Action or Project Description:</b>       | Amend or update codes to include storm ready standards, such as hurricane straps. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>                      | N/A   |
| <b>Benefits:</b>                            | Protect structures from damages.  |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | Code enforcement, Planning & Zoning   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 25 Priority: Medium  |
| <b>Timeline for Completion:</b>             | 3-5 years   |
| <b>Potential Fund Sources:</b>              | Increase cost of construction for new structures.                                 |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                    |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | N/A                    |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Increased public participation and response efficiency to the mitigation of natural hazards.   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Sever Thunderstorm, Flood, Winter Weather, Drought, Extreme Heat, Earthquake, Dam Failure, Wildfire                         |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 1.4.4  |
| <b>Name of Action or Project:</b>                                      | Citizen Preparedness   |
| <b>Action or Project Description:</b>                                  | Establish and maintain participation in citizen preparedness activities such as: CERT, COAD, Neighborhood Watch, Amateur Radio, etc. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Benefit in recovery actions and prevention.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | County Emergency Management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grants, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |
| <b>Report of Progress</b>  | County has a CERT and COAD program. There is also a local amateur radio.   |

**Goal 2: Ensure the continued operation of government and emergency services.**

|                                       |   |
|---------------------------------------|---|
| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | City of Mount Vernon  |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Access to information on mitigation resources.  |
| <b>Hazard(s) Addressed:</b>           | All Hazards   |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | 2.1.2   |
| <b>Name of Action or Project:</b>     | Database Mitigation Resources   |
| <b>Action or Project Description:</b> | Establish and maintain a database on available mitigation resources and programs that can be shared with local governments, response and preparedness agencies, social service organizations, and emergency care providers. |

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| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                         |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Quick access to valuable information for quick implementation during hazardous events. |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | County Emergency Management, City Emergency Management                                 |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grants, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.3  |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Loss of time in responding to needs.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | City Council   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Independent agencies: Grant or local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Emergency Management   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

|                                 |                                       |
|---------------------------------|---------------------------------------|
| <b>Action Worksheet</b>         |                                       |
| <b>Name of Jurisdiction:</b>    | City of Mount Vernon                  |
| <b>Risk / Vulnerability</b>     |                                       |
| <b>Problem being Mitigated:</b> | Countywide frequency repeater network |
| <b>Hazard(s) Addressed:</b>     | All Hazards                           |
| <b>Action or Project</b>        |                                       |



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| <b>Action/Project Number:</b>  | 2.1.4  |
| <b>Name of Action or Project:</b>                                      | Countywide Network Increase  |
| <b>Action or Project Description:</b>                                  | Continue to increase countywide frequency repeater network, including new wireless units |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                           |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Increased awareness for emergency personnel, which allows for a faster response.         |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration, Emergency Manager  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 6 months – 2 years   |
| <b>Potential Fund Sources:</b>   | General fund, grants   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.1.6  |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Reduction in loss of life and property.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | City Council   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 28 Priority: Medium   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | City Budget  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |
| <b>Report of Progress</b>  | N/A  |

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|------------------------------|----------------------|
| <b>Action Worksheet</b>      |                      |
| <b>Name of Jurisdiction:</b> | City of Mount Vernon |

| <b>Risk / Vulnerability</b>  |  |
|--|--|
| <b>Problem being Mitigated:</b>  | Accessibility of fire stations to areas.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 2.2.1  |
| <b>Name of Action or Project:</b>                                      | Construction of Fire Stations  |
| <b>Action or Project Description:</b>                                  | Construct additional fire stations in communities and rural fire districts or fire protection associations to improve accessibility to areas impacted by natural or manmade barriers during hazard events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Lives and property saved due to better response time.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | City Fire District, Rural Fire Board   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grant, entities budget   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Hazards impacting wastewater treatment facilities.   |
| <b>Hazard(s) Addressed:</b>  | Flooding, Earthquakes, Tornados  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.1  |
| <b>Name of Action or Project:</b>                                      | Wastewater Treatment   |
| <b>Action or Project Description:</b>                                  | Maintain appropriate operations of wastewater treatment facilities and reduce &/or eliminate hazard risks. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Reduce impact of hazards.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | City Budget – “Sewer Fees”   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |

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|---------------------------|---------------------------|
| <b>Report of Progress</b> | Working on I&I in system. |
|---------------------------|---------------------------|

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.2  |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Save lives during power outages.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | City Council   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | City, County, School District, Budget  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>                     |   |
|---|---|
| <b>Name of Jurisdiction:</b>                | City of Mount Vernon  |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Public access to water in case of natural hazard.                                 |
| <b>Hazard(s) Addressed:</b>                 | Earthquakes, Tornado, Winter Weather  |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | 3.1.3   |
| <b>Name of Action or Project:</b>           | Backup Power Generators   |
| <b>Action or Project Description:</b>       | Provide backup generators for all water towers & wastewater treatment facilities. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>                      | \$100,000+  |
| <b>Benefits:</b>                            | Protect water resources.  |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | City Council  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 30 Priority: High  |
| <b>Timeline for Completion:</b>             | N/A   |
| <b>Potential Fund Sources:</b>              | City Budget   |

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|--|---------------------|
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | City budget process |
| <b>Progress Report</b>   |                     |
| <b>Action Status</b>   | New                 |
| <b>Report of Progress</b>  | N/A                 |

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|--|--|
| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Buildup of debris in flooded areas.                                  |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | 3.1.5  |
| <b>Name of Action or Project:</b>                                      | Debris & Overgrowth Cleanup  |
| <b>Action or Project Description:</b>                                  | Clean up debris & overgrowth from drainage channels & under bridges. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards       |
| <b>Estimated Cost:</b>   | N/A  |
| <b>Benefits:</b>   | Mitigate future damage.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Jurisdiction   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High                                     |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | General Budget   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>                     |  |
| <b>Name of Jurisdiction:</b>                | City of Mount Vernon   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Wildfires caused by fires not properly controlled.   |
| <b>Hazard(s) Addressed:</b>                 | Wildfires  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | 3.1.6  |
| <b>Name of Action or Project:</b>           | Burn Bans  |
| <b>Action or Project Description:</b>       | Implement burn restrictions during time of weather conditions conducive to the spread of wildfire. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards.                                    |
| <b>Estimated Cost:</b>                      | \$0  |
| <b>Benefits:</b>                            | Reduce probability of wildfires  |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Fire departments, Fire Districts<br>, Rural Fire Boards  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 38 Priority: High   |

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| <b>Timeline for Completion:</b>  | 1-2 years              |
| <b>Potential Fund Sources:</b>   | Entities budget        |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Budget process         |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | N/A                    |

**Goal 1: Protect lives and property from the effects of natural hazards.**

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | City of Pierce City   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Pierce City 1.1.1   |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$500 - \$1,000   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, City, School district, City Administrator   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 1 – 6 months  |
| <b>Potential Fund Sources:</b>   | HMGP, Organizations general fund  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Develop education materials. Distribute through school district.  |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>      |                     |
|------------------------------|---------------------|
| <b>Name of Jurisdiction:</b> | City of Pierce City |
| <b>Risk / Vulnerability</b>  |                     |

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| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Pierce City 1.1.2   |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$0   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 1-6 months  |
| <b>Potential Fund Sources:</b>   | HMGP, general fund  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Pierce City  |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Educating developers on effective construction techniques that reduce the effects of natural hazards.  |
| <b>Hazard(s) Addressed:</b>           | All Hazards  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | City of Pierce City 1.1.3  |
| <b>Name of Action or Project:</b>     | Resilient Construction Techniques  |
| <b>Action or Project Description:</b> | Develop an educational campaign on construction techniques for new buildings to reduce risk of severe storm damage and distribute to mortgage institutions, home builders, realtors and other entities involved in the housing industry. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards.  |
| <b>Estimated Cost:</b>                | \$500 - \$1,000  |

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| <b>Benefits:</b>   | Residential, commercial, and industrial developments may become more resilient to natural hazards due to developers being aware of construction techniques that mitigate property damage from natural hazards. |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, municipality   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | 5+ years   |
| <b>Potential Fund Sources:</b>   | HMGP   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Building Code  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | No action to date.   |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Pierce City   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on the location of refuge areas and safe rooms in the community.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Pierce City 1.1.4   |
| <b>Name of Action or Project:</b>                                      | Refuge Areas and Safe Room Location Education   |
| <b>Action or Project Description:</b>                                  | Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$100 or less   |
| <b>Benefits:</b>   | The public will be better informed on the location of refuge areas and safe rooms in the event of a natural hazard, mitigating the potential loss of life.                        |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High  |
| <b>Timeline for Completion:</b>  | 1-3 months  |
| <b>Potential Fund Sources:</b>   | General Fund  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | City of Pierce City  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Public awareness to homeowners and businesses to sinkhole loss policies.   |
| <b>Hazard(s) Addressed:</b>  | Sinkholes  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Pierce City 1.1.5  |
| <b>Name of Action or Project:</b>                                      | Sinkhole Awareness Program   |
| <b>Action or Project Description:</b>                                  | Educate homeowners and business about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$500  |
| <b>Benefits:</b>   | Increased financial protection to homeowners and businesses.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration; Building Department  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High   |
| <b>Timeline for Completion:</b>  | 6 months – 1 year  |
| <b>Potential Fund Sources:</b>   | Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Local Governments  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>  |   |
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| <b>Name of Jurisdiction:</b>   | City of Pierce City   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Warning the public in the event of a natural hazard.  |
| <b>Hazard(s) Addressed:</b>  | Tornado   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Pierce City 1.2.1   |
| <b>Name of Action or Project:</b>                                      | Warning Siren Upkeep  |
| <b>Action or Project Description:</b>                                  | Maintain a sufficient number of warning sirens in all incorporated communities while also maintaining current infrastructure. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-\$5,000   |
| <b>Benefits:</b>   | Loss of life will decrease through this strategy.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Local government  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 year  |
| <b>Potential Fund Sources:</b>   | Local Government  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Local Government  |



| <b>Progress Report</b>    |                        |
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| <b>Action Status</b>      | Continuing in Progress |
| <b>Report of Progress</b> | N/A                    |

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | City of Pierce City   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Pierce City 1.2.2   |
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-100   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | City Government   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High  |
| <b>Timeline for Completion:</b>  | 6 months  |
| <b>Potential Fund Sources:</b>   | Local Fund  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Local Government  |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>                     |  |
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| <b>Name of Jurisdiction:</b>                | City of Pierce City  |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>                 | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | City of Pierce City 1.3.1  |
| <b>Name of Action or Project:</b>           | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>       | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | \$1,000-\$10,000   |
| <b>Benefits:</b>                            | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Building Department  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 29 Priority: Medium   |

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| <b>Timeline for Completion:</b>  | 6 months – 1 year         |
| <b>Potential Fund Sources:</b>   | HMGP; Private Individuals |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                       |
| <b>Progress Report</b>   |                           |
| <b>Action Status</b>   | New                       |
| <b>Report of Progress</b>  | N/A                       |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Pierce City   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Loss of Life  |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Storms  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Pierce City 1.3.2   |
| <b>Name of Action or Project:</b>                                      | Safe Room Construction  |
| <b>Action or Project Description:</b>                                  | Retrofit existing critical public buildings & infrastructures where possible to provide shelter from natural hazards. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$10,000-\$100,000  |
| <b>Benefits:</b>   | Reduction in loss of life and structures.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration, Building/Facilities   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High  |
| <b>Timeline for Completion:</b>  | 1-5 years   |
| <b>Potential Fund Sources:</b>   | HMGP, PDM, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Pierce City  |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Loss of Life   |
| <b>Hazard(s) Addressed:</b>           | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | City of Pierce City 1.3.3  |
| <b>Name of Action or Project:</b>     | Safe Refuge Area Plan  |
| <b>Action or Project Description:</b> | Encourage that all new public buildings have a best identified available refuge area (these do not comply with FEMA Publication 361 for safe rooms) or safe room, equipped with radios and emergency local communications. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | \$0-\$1,000  |

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| <b>Benefits:</b>   | Protect lives and minimize injury. |
| <b>Plan for Implementation</b>   |                                    |
| <b>Responsible Organization/Department:</b>                            | City administrator, local EMD      |
| <b>Action/Project Priority:</b>  | STAPLEE score: 22 Priority: Low    |
| <b>Timeline for Completion:</b>  | 1-5 years                          |
| <b>Potential Fund Sources:</b>   | HMGP, local funds                  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                                |
| <b>Progress Report</b>   |                                    |
| <b>Action Status</b>   | Continuing Not Started             |
| <b>Report of Progress</b>  | N/A                                |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Pierce City  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Loss of Life   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Pierce City 1.3.4  |
| <b>Name of Action or Project:</b>                                      | Use Zoning Ordinance to Require Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Amend or update zoning ordinances to include requirement for best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in all new manufactured home parks. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$100  |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration, Building Department, City Clerk  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 26 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 1 – 3 years  |
| <b>Potential Fund Sources:</b>   | Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Zoning Ordinance: If the code is changed, the city could enforce this.   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>           |   |
| <b>Name of Jurisdiction:</b>      | City of Pierce City                               |
| <b>Risk / Vulnerability</b>       |   |
| <b>Problem being Mitigated:</b>   | Public refuge areas for vulnerable populations.   |
| <b>Hazard(s) Addressed:</b>       | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold |
| <b>Action or Project</b>          |   |
| <b>Action/Project Number:</b>     | City of Pierce City 1.3.5                         |
| <b>Name of Action or Project:</b> | Community Extreme Temperature Refuge Areas        |

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| <b>Action or Project Description:</b>                                  | Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$500  |
| <b>Benefits:</b>   | Prevent loss of life due to extreme temperatures.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local EMD, Public Works Official   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 24 Priority: Low  |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | Local funds, grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Pierce City  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Reduction of damage to property from flooding.                                 |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Pierce City 1.4.1  |
| <b>Name of Action or Project:</b>                                      | NFIP Participation   |
| <b>Action or Project Description:</b>                                  | Encourage the county and municipalities to maintain participation in the NFIP. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                 |
| <b>Estimated Cost:</b>   | \$0  |
| <b>Benefits:</b>   | Reduction in damages due to flooding.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Board of Aldermen, NFIP Floodplain Administrator                               |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium   |
| <b>Timeline for Completion:</b>  | On-going   |
| <b>Potential Fund Sources:</b>   | General fund   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Floodplain Ordinance: City currently enforces                                  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | City has an ordinance in place and are members of the NFIP.                    |

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| <b>Action Worksheet</b>         |   |
| <b>Name of Jurisdiction:</b>    | City of Pierce City   |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Lack of items to deal with extreme weather for those at risk. |
| <b>Hazard(s) Addressed:</b>     | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold             |

| <b>Action or Project</b>   |   |
|--|---|
| <b>Action/Project Number:</b>  | City of Pierce City 1.4.2   |
| <b>Name of Action or Project:</b>                                      | Community Involvement Projects  |
| <b>Action or Project Description:</b>                                  | Community organizations should continue programs to provide fans, air conditioners & winter weatherization for those at risk (the elderly, low-income, younger, and handicapped). |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-\$10,000  |
| <b>Benefits:</b>   | Reduce illness or death from extreme temperatures.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Local EMD, Administration, Community Organizations  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 27 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 6 – 12 months   |
| <b>Potential Fund Sources:</b>   | Private sources, grants, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | City of Pierce City   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Lack of storm ready standards.  |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorm, Tornado  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Pierce City 1.4.3   |
| <b>Name of Action or Project:</b>                                      | Code Updates for Storm Ready Standards  |
| <b>Action or Project Description:</b>                                  | Amend or update codes to include storm ready standards, such as hurricane straps. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | Reduction in loss of lives and structures.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Board of Aldermen, City Clerk, Building Department                                |
| <b>Action/Project Priority:</b>  | STAPLEE score: 26 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 1 – 3 years   |
| <b>Potential Fund Sources:</b>   | Local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Building Code   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>      |                     |
|------------------------------|---------------------|
| <b>Name of Jurisdiction:</b> | City of Pierce City |

| <b>Risk / Vulnerability</b>  |  |
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| <b>Problem being Mitigated:</b>  | Increased public participation and response efficiency to the mitigation of natural hazards.   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Sever Thunderstorm, Flood, Winter Weather, Drought, Extreme Heat, Earthquake, Dam Failure, Wildfire                         |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Pierce City 1.4.4  |
| <b>Name of Action or Project:</b>                                      | Citizen Preparedness   |
| <b>Action or Project Description:</b>                                  | Establish and maintain participation in citizen preparedness activities such as: CERT, COAD, Neighborhood Watch, Amateur Radio, etc. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-100  |
| <b>Benefits:</b>   | Reduce losses.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Local EMD, local government  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 – 3 years  |
| <b>Potential Fund Sources:</b>   | Local donations  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | City Government  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 2: Ensure the continued operation of government and emergency services.**

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | City of Pierce City   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Access to information on mitigation resources.  |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Pierce City 2.1.2   |
| <b>Name of Action or Project:</b>                                      | Database Mitigation Resources   |
| <b>Action or Project Description:</b>                                  | Establish and maintain a database on available mitigation resources and programs that can be shared with local governments, response and preparedness agencies, social service organizations, and emergency care providers. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$500-1,000   |
| <b>Benefits:</b>   | Reduction in loss of lives and property.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 26 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 6 - 12 months   |
| <b>Potential Fund Sources:</b>   | Local government funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |

|                           |                        |
|---------------------------|------------------------|
| <b>Action Status</b>      | Continuing Not Started |
| <b>Report of Progress</b> | N/A                    |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Pierce City  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Pierce City 2.1.3  |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$3,000  |
| <b>Benefits:</b>   | Allows for better communication.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 – 2 years  |
| <b>Potential Fund Sources:</b>   | General funds, grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>                     |  |
|---|--|
| <b>Name of Jurisdiction:</b>                | City of Pierce City  |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Countywide frequency repeater network  |
| <b>Hazard(s) Addressed:</b>                 | All Hazards  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | City of Pierce City 2.1.4  |
| <b>Name of Action or Project:</b>           | Countywide Network Increase  |
| <b>Action or Project Description:</b>       | Continue to increase countywide frequency repeater network, including new wireless units |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards                           |
| <b>Estimated Cost:</b>                      | \$0-\$50,000   |
| <b>Benefits:</b>                            | All agencies working together.   |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | County-wide  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 33 Priority: High   |
| <b>Timeline for Completion:</b>             | 1 – 3 years  |
| <b>Potential Fund Sources:</b>              | Grants   |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                    |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | N/A                    |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Pierce City  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Pierce City 2.1.6  |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$500  |
| <b>Benefits:</b>   | Reduction in loss of life and property.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Board of Aldermen, City Clerk  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 23 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 1 – 3 years  |
| <b>Potential Fund Sources:</b>   | Local funds; free online classes.  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Local government   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing In Progress   |
| <b>Report of Progress</b>  | People are currently taking classes.   |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

|                                       |  |
|---------------------------------------|--|
| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Pierce City  |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Hazards impacting wastewater treatment facilities.   |
| <b>Hazard(s) Addressed:</b>           | Flooding, Earthquakes, Tornados  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | City of Pierce City 3.1.1  |
| <b>Name of Action or Project:</b>     | Wastewater Treatment   |
| <b>Action or Project Description:</b> | Maintain appropriate operations of wastewater treatment facilities and reduce &/or eliminate hazard risks. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | \$10,000-\$500,000   |
| <b>Benefits:</b>                      | Reduce impact of hazards.  |



| <b>Plan for Implementation</b>   |  |
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| <b>Responsible Organization/Department:</b>                            | City, Public Works Official                                |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High                           |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grants- HMGP, USDA, DNR, EDA, loans, owner of sewer system |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | City government  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started                                     |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Pierce City  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Pierce City 3.1.2  |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$100-\$10,000   |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Board of Aldermen, Building Inspector, Private Property Owners   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 – 3 years  |
| <b>Potential Fund Sources:</b>   | Grants, loans, general fund  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Location owner   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>               |   |
|---------------------------------------|---|
| <b>Name of Jurisdiction:</b>          | City of Pierce City   |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Public access to water in case of natural hazard.                                 |
| <b>Hazard(s) Addressed:</b>           | Earthquakes, Tornado, Winter Weather  |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | City of Pierce City 3.1.3   |
| <b>Name of Action or Project:</b>     | Backup Power Generators   |
| <b>Action or Project Description:</b> | Provide backup generators for all water towers & wastewater treatment facilities. |

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| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards |
| <b>Estimated Cost:</b>   | \$0-\$1,000  |
| <b>Benefits:</b>   | Protect water resources.                                       |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Public Works Official  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High                               |
| <b>Timeline for Completion:</b>  | 1 – 2 years  |
| <b>Potential Fund Sources:</b>   | Grants, loans, general fund                                    |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Owner of the water & sewer system                              |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Currently have generators. Will continue maintenance.          |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Pierce City  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Buildup of debris in flooded areas.                                  |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Pierce City 3.1.5  |
| <b>Name of Action or Project:</b>                                      | Debris & Overgrowth Cleanup  |
| <b>Action or Project Description:</b>                                  | Clean up debris & overgrowth from drainage channels & under bridges. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards       |
| <b>Estimated Cost:</b>   | \$0-\$20,000   |
| <b>Benefits:</b>   | Mitigate flooding damage.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Public Works   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High                                     |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | HMGP, PDM, General fund  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>           |  |
| <b>Name of Jurisdiction:</b>      | City of Pierce City                                |
| <b>Risk / Vulnerability</b>       |  |
| <b>Problem being Mitigated:</b>   | Wildfires caused by fires not properly controlled. |
| <b>Hazard(s) Addressed:</b>       | Wildfires  |
| <b>Action or Project</b>          |  |
| <b>Action/Project Number:</b>     | City of Pierce City 3.1.6                          |
| <b>Name of Action or Project:</b> | Burn Bans  |

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| <b>Action or Project Description:</b>                                  | Implement burn restrictions during time of weather conditions conducive to the spread of wildfire. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.                                    |
| <b>Estimated Cost:</b>   | \$0  |
| <b>Benefits:</b>   | Reduction of avoidable wildfires caused by human error will reduce damage to properties.           |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 37 Priority: High   |
| <b>Timeline for Completion:</b>  | 6-18 months  |
| <b>Potential Fund Sources:</b>   | Local Funding  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | City government  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

**Goal 1: Protect lives and property from the effects of natural hazards.**

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Verona  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Verona 1.1.1  |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$100   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, Local Government  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 month   |
| <b>Potential Fund Sources:</b>   | HMGP  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |

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| <b>Action Status</b>      | New |
| <b>Report of Progress</b> | N/A |

| <b>Action Worksheet</b>  |   |
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| <b>Name of Jurisdiction:</b>   | City of Verona  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Verona 1.1.2  |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$100   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, Administration  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 month   |
| <b>Potential Fund Sources:</b>   | HMGP, local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>         |   |
|---------------------------------|---|
| <b>Name of Jurisdiction:</b>    | City of Verona  |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Educating developers on effective construction techniques that reduce the effects of natural hazards. |
| <b>Hazard(s) Addressed:</b>     | All Hazards   |
| <b>Action or Project</b>        |   |
| <b>Action/Project Number:</b>   | City of Verona 1.1.3  |

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| <b>Name of Action or Project:</b>                                      | Resilient Construction Techniques  |
| <b>Action or Project Description:</b>                                  | Develop an educational campaign on construction techniques for new buildings to reduce risk of severe storm damage and distribute to mortgage institutions, home builders, realtors and other entities involved in the housing industry. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.  |
| <b>Estimated Cost:</b>   | \$500 - \$1,000  |
| <b>Benefits:</b>   | Residential, commercial, and industrial developments may become more resilient to natural hazards due to developers being aware of construction techniques that mitigate property damage from natural hazards.                           |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management; municipality   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 month  |
| <b>Potential Fund Sources:</b>   | HMGP   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Building Code  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | City of Verona  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | City of Verona 1.2.2  |
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-\$100   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Local Government  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>  | 5 months  |
| <b>Potential Fund Sources:</b>   | HMGP, Local Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |

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| Report of Progress | N/A |
|--------------------|-----|

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | City of Verona   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Verona 1.3.1   |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$1,000-\$10,000   |
| <b>Benefits:</b>   | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Building Department  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 18 Priority: Low  |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | HMGP   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

| <b>Action Worksheet</b>                     |  |
|---|--|
| <b>Name of Jurisdiction:</b>                | City of Verona   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Loss of Life   |
| <b>Hazard(s) Addressed:</b>                 | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | City of Verona 1.3.3   |
| <b>Name of Action or Project:</b>           | Safe Refuge Area Plan  |
| <b>Action or Project Description:</b>       | Encourage that all new public buildings have a best identified available refuge area (these do not comply with FEMA Publication 361 for safe rooms) or safe room, equipped with radios and emergency local communications. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | \$0-\$1,000  |
| <b>Benefits:</b>                            | Protect lives and minimize injuries.   |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Administration, Building inspectors  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 25 Priority: Medium   |
| <b>Timeline for Completion:</b>             | 5 years  |
| <b>Potential Fund Sources:</b>              | HMGP, Local Funds  |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Capital Improvement Plan |
| <b>Progress Report</b>   |                          |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A                      |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Verona   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Verona 2.1.3   |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$1,000  |
| <b>Benefits:</b>   | Allows for better communication.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration, Emergency Management Coordinator   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | 3 years  |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | City of Verona   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>           | All natural hazards  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | City of Verona 2.1.6   |
| <b>Name of Action or Project:</b>     | NIMS Training  |
| <b>Action or Project Description:</b> | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | \$0-\$100  |

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| <b>Benefits:</b>   | Reduction in loss of life and property.          |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration, Emergency Management Coordinator |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium               |
| <b>Timeline for Completion:</b>  | 2 years  |
| <b>Potential Fund Sources:</b>   | Local funds                                      |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Online and provide classes at City Hall.         |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | City of Verona   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Hazards impacting wastewater treatment facilities.   |
| <b>Hazard(s) Addressed:</b>  | Flooding, Earthquakes, Tornados  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | City of Verona 3.1.1   |
| <b>Name of Action or Project:</b>                                      | Wastewater Treatment   |
| <b>Action or Project Description:</b>                                  | Maintain appropriate operations of wastewater treatment facilities and reduce &/or eliminate hazard risks. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$10,000-\$500,000   |
| <b>Benefits:</b>   | Reduce impact of hazards.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Public Works Official, Sanitation Department   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grants- HMGP, USDA, DNR, EDA, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

|                                 |  |
|---------------------------------|--|
| <b>Action Worksheet</b>         |  |
| <b>Name of Jurisdiction:</b>    | City of Verona                                     |
| <b>Risk / Vulnerability</b>     |  |
| <b>Problem being Mitigated:</b> | Wildfires caused by fires not properly controlled. |
| <b>Hazard(s) Addressed:</b>     | Wildfires  |
| <b>Action or Project</b>        |  |
| <b>Action/Project Number:</b>   | City of Verona 3.1.6                               |



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| <b>Name of Action or Project:</b>                                      | Burn Bans  |
| <b>Action or Project Description:</b>                                  | Implement burn restrictions during time of weather conditions conducive to the spread of wildfire. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.                                    |
| <b>Estimated Cost:</b>   | \$0  |
| <b>Benefits:</b>   | Reduction of avoidable wildfires caused by human error will reduce damage to properties.           |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Administration, Emergency Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High   |
| <b>Timeline for Completion:</b>  | 6-18 months  |
| <b>Potential Fund Sources:</b>   | Local funding  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

**Goal 1: Protect lives and property from the effects of natural hazards.**

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Village of Freistatt  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Village of Freistatt 1.1.1  |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$0-\$500   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Emergency Management  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 24 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 1-6 months  |
| <b>Potential Fund Sources:</b>   | HMGP, local organizations, state funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |

| <b>Progress Report</b>    |                        |
|---------------------------|------------------------|
| <b>Action Status</b>      | Continuing in progress |
| <b>Report of Progress</b> | N/A                    |

## Action Worksheet

|                              |                      |
|------------------------------|----------------------|
| <b>Name of Jurisdiction:</b> | Village of Freistatt |
|------------------------------|----------------------|

### Risk / Vulnerability

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|---------------------------------|---|
| <b>Problem being Mitigated:</b> | Educating the non-English speaking public on what to do in the event of a natural hazard. |
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| <b>Hazard(s) Addressed:</b> | All Hazards |
|-----------------------------|-------------|

### Action or Project

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| <b>Action/Project Number:</b> | Village of Freistatt 1.1.2 |
|-------------------------------|----------------------------|

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| <b>Name of Action or Project:</b> | Multilingual Hazard Awareness Education |
|-----------------------------------|---|

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|---------------------------------------|---|
| <b>Action or Project Description:</b> | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
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| <b>Applicable Goal Statement:</b> | Protect lives and property from the effects of natural hazards. |
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|------------------------|-----------|
| <b>Estimated Cost:</b> | \$0-\$500 |
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| <b>Benefits:</b> | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life. |
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### Plan for Implementation

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| <b>Responsible Organization/Department:</b> | Emergency Management |
|---|----------------------|

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|---------------------------------|------------------------------------|
| <b>Action/Project Priority:</b> | STAPLEE score: 27 Priority: Medium |
|---------------------------------|------------------------------------|

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| <b>Timeline for Completion:</b> | 1-6 months |
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|--------------------------------|----------------------------|
| <b>Potential Fund Sources:</b> | HMGP, local or state funds |
|--------------------------------|----------------------------|

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A |
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### Progress Report

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|----------------------|-----------------------|
| <b>Action Status</b> | Continuing No Started |
|----------------------|-----------------------|

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|---------------------------|-----|
| <b>Report of Progress</b> | N/A |
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## Action Worksheet

|                              |                      |
|------------------------------|----------------------|
| <b>Name of Jurisdiction:</b> | Village of Freistatt |
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### Risk / Vulnerability

|                                 |   |
|---------------------------------|---|
| <b>Problem being Mitigated:</b> | Educating developers on effective construction techniques that reduce the effects of natural hazards. |
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|-----------------------------|-------------|
| <b>Hazard(s) Addressed:</b> | All Hazards |
|-----------------------------|-------------|

### Action or Project

|  |  |
|--|--|
| <b>Action/Project Number:</b>  | Village of Freistatt 1.1.3   |
| <b>Name of Action or Project:</b>                                      | Resilient Construction Techniques  |
| <b>Action or Project Description:</b>                                  | Develop an educational campaign on construction techniques for new buildings to reduce risk of severe storm damage and distribute to mortgage institutions, home builders, realtors and other entities involved in the housing industry. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.  |
| <b>Estimated Cost:</b>   | \$500 - \$1,000  |
| <b>Benefits:</b>   | Residential, commercial, and industrial developments may become more resilient to natural hazards due to developers being aware of construction techniques that mitigate property damage from natural hazards.                           |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Emergency Management, local municipalities   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High   |
| <b>Timeline for Completion:</b>  | 5 years  |
| <b>Potential Fund Sources:</b>   | HMGP, general funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing not started   |
| <b>Report of Progress</b>  | No action to date.   |

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| <b>Action Worksheet</b>                     |   |
| <b>Name of Jurisdiction:</b>                | Village of Freistatt  |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Educating the public on the location of refuge areas and safe rooms in the community.   |
| <b>Hazard(s) Addressed:</b>                 | All Hazards   |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | Village of Freistatt 1.1.4  |
| <b>Name of Action or Project:</b>           | Refuge Areas and Safe Room Location Education   |
| <b>Action or Project Description:</b>       | Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                      | \$100   |
| <b>Benefits:</b>                            | The public will be better informed on the location of refuge areas and safe rooms in the event of a natural hazard, mitigating the potential loss of life.                        |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | Administration, Board of Aldermen   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>             | 1-3 months  |
| <b>Potential Fund Sources:</b>              | General funds   |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                    |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing in Progress |
| <b>Report of Progress</b>  | Funding                |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Village of Freistatt  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Village of Freistatt 1.2.2  |
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-100   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 40 Priority: High  |
| <b>Timeline for Completion:</b>  | 1-3 months  |
| <b>Potential Fund Sources:</b>   | General funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

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|---------------------------------------|--|
| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | Village of Freistatt   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>           | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | Village of Freistatt 1.3.1   |
| <b>Name of Action or Project:</b>     | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b> | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | \$1,000-\$10,000   |
| <b>Benefits:</b>                      | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>        |  |

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| <b>Responsible Organization/Department:</b>                            | Administration and private property owners |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium         |
| <b>Timeline for Completion:</b>  | 1-5 years                                  |
| <b>Potential Fund Sources:</b>   | City and private funds                     |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress                     |
| <b>Report of Progress</b>  | Local structures in place.                 |

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | Village of Freistatt  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Loss of Life  |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Storms  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Village of Freistatt 1.3.2  |
| <b>Name of Action or Project:</b>                                      | Safe Room Construction  |
| <b>Action or Project Description:</b>                                  | Retrofit existing critical public buildings & infrastructures where possible to provide shelter from natural hazards. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$10,000-\$100,000  |
| <b>Benefits:</b>   | Reduction in loss of life and structures.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | City  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High  |
| <b>Timeline for Completion:</b>  | 5+ years  |
| <b>Potential Fund Sources:</b>   | HMGP, PDM, Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Capital Improvement Plan  |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>               |  |
|---------------------------------------|--|
| <b>Name of Jurisdiction:</b>          | Village of Freistatt   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Loss of Life   |
| <b>Hazard(s) Addressed:</b>           | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | Village of Freistatt 1.3.3   |
| <b>Name of Action or Project:</b>     | Safe Refuge Area Plan  |
| <b>Action or Project Description:</b> | Encourage that all new public buildings have a best identified available refuge area (these do not comply with FEMA Publication 361 for safe rooms) or safe room, equipped with radios and emergency local communications. |

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| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards |
| <b>Estimated Cost:</b>   | \$0-\$1,000  |
| <b>Benefits:</b>   | Reduction in loss of lives.                                    |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | City Administration  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High                               |
| <b>Timeline for Completion:</b>  | 1-3 years  |
| <b>Potential Fund Sources:</b>   | HMGP, Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Capital Improvement Plan                                       |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Village of Freistatt   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Public refuge areas for vulnerable populations.  |
| <b>Hazard(s) Addressed:</b>  | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Village of Freistatt 1.3.5   |
| <b>Name of Action or Project:</b>                                      | Community Extreme Temperature Refuge Areas   |
| <b>Action or Project Description:</b>                                  | Identify and designate heating and cooling refuge areas in community buildings, and make these location available to the public during extreme temperature events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$500  |
| <b>Benefits:</b>   | Vulnerable populations such as the elderly and disabled will have a place to go in the event of extreme temperatures.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Board of Trustees, Public Works Official   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | 1 year   |
| <b>Potential Fund Sources:</b>   | General funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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|---------------------------------|---|
| <b>Action Worksheet</b>         |   |
| <b>Name of Jurisdiction:</b>    | Village of Freistatt  |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Lack of items to deal with extreme weather for those at risk. |
| <b>Hazard(s) Addressed:</b>     | Extreme Heat, Winter Weather/Snow/Ice/Severe Cold             |
| <b>Action or Project</b>        |   |

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|--|---|
| <b>Action/Project Number:</b>  | Village of Freistatt 1.4.2  |
| <b>Name of Action or Project:</b>                                      | Community Involvement Projects  |
| <b>Action or Project Description:</b>                                  | Community organizations should continue programs to provide fans, air conditioners & winter weatherization for those at risk (the elderly, low-income, younger, and handicapped). |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-\$10,000  |
| <b>Benefits:</b>   | Well-being of individuals and families.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Board of Trustees, Community Organizations  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High  |
| <b>Timeline for Completion:</b>  | 1-3 years   |
| <b>Potential Fund Sources:</b>   | Local Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Village of Freistatt   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Increased public participation and response efficiency to the mitigation of natural hazards.   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Sever Thunderstorm, Flood, Winter Weather, Drought, Extreme Heat, Earthquake, Dam Failure, Wildfire                         |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Village of Freistatt 1.4.4   |
| <b>Name of Action or Project:</b>                                      | Citizen Preparedness   |
| <b>Action or Project Description:</b>                                  | Establish and maintain participation in citizen preparedness activities such as: CERT, COAD, Neighborhood Watch, Amateur Radio, etc. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-100  |
| <b>Benefits:</b>   | Reduction in loss of lives and property.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | City, individual committees  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-3 months   |
| <b>Potential Fund Sources:</b>   | General funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 2: Ensure the continued operation of government and emergency services.**

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | Village of Freistatt  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Access to information on mitigation resources.  |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Village of Freistatt 2.1.2  |
| <b>Name of Action or Project:</b>                                      | Database Mitigation Resources   |
| <b>Action or Project Description:</b>                                  | Establish and maintain a database on available mitigation resources and programs that can be shared with local governments, response and preparedness agencies, social service organizations, and emergency care providers. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$500-1,000   |
| <b>Benefits:</b>   | Reduction in loss of lives and property.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High  |
| <b>Timeline for Completion:</b>  | On-going  |
| <b>Potential Fund Sources:</b>   | General funds, 911  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | County 911 cooperation  |

| <b>Action Worksheet</b>                     |  |
|---|--|
| <b>Name of Jurisdiction:</b>                | Village of Freistatt   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>                 | All Hazards  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | Village of Freistatt 2.1.3   |
| <b>Name of Action or Project:</b>           | Communication Network  |
| <b>Action or Project Description:</b>       | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | \$150,000  |
| <b>Benefits:</b>                            | Reduction in loss of lives and property.   |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Administration   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 33 Priority: High   |
| <b>Timeline for Completion:</b>             | 1-5 years  |
| <b>Potential Fund Sources:</b>              | HMGP, Local Funds, Private Donations   |



|   |                        |
|---|------------------------|
| Local Planning Mechanisms to be Used in Implementation, if any: | N/A                    |
| <b>Progress Report</b>  |                        |
| Action Status   | Continuing Not Started |
| Report of Progress  | N/A                    |

|   |  |
|---|--|
| <b>Action Worksheet</b>   |  |
| Name of Jurisdiction:   | Village of Freistatt   |
| <b>Risk / Vulnerability</b>                                     |  |
| Problem being Mitigated:  | Countywide frequency repeater network  |
| Hazard(s) Addressed:  | All Hazards  |
| <b>Action or Project</b>  |  |
| Action/Project Number:  | Village of Freistatt 2.1.4   |
| Name of Action or Project:                                      | Countywide Network Increase  |
| Action or Project Description:                                  | Continue to increase countywide frequency repeater network, including new wireless units |
| Applicable Goal Statement:                                      | Protect lives and property from the effects of natural hazards                           |
| Estimated Cost:   | \$100,000  |
| Benefits:   | Reduction in loss of lives.  |
| <b>Plan for Implementation</b>                                  |  |
| Responsible Organization/Department:                            | City/County  |
| Action/Project Priority:  | STAPLEE score: 31 Priority: High   |
| Timeline for Completion:  | 5+ years   |
| Potential Fund Sources:   | Grants   |
| Local Planning Mechanisms to be Used in Implementation, if any: | N/A  |
| <b>Progress Report</b>  |  |
| Action Status   | Continuing Not Started   |
| Report of Progress  | N/A  |

|                                      |  |
|--------------------------------------|--|
| <b>Action Worksheet</b>              |  |
| Name of Jurisdiction:                | Village of Freistatt   |
| <b>Risk / Vulnerability</b>          |  |
| Problem being Mitigated:             | Efficiency of public officials to respond to natural hazard events.  |
| Hazard(s) Addressed:                 | All natural hazards  |
| <b>Action or Project</b>             |  |
| Action/Project Number:               | Village of Freistatt 2.1.6   |
| Name of Action or Project:           | NIMS Training  |
| Action or Project Description:       | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| Applicable Goal Statement:           | Protect lives and property from the effects of natural hazards   |
| Estimated Cost:                      | \$100-500  |
| Benefits:                            | Reduction in loss of lives.  |
| <b>Plan for Implementation</b>       |  |
| Responsible Organization/Department: | Board of Trustees, Emergency Management Coordinator  |

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| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High |
| <b>Timeline for Completion:</b>  | 1 year                           |
| <b>Potential Fund Sources:</b>   | General funds                    |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                              |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | Continuing Not Started           |
| <b>Report of Progress</b>  | N/A                              |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Village of Freistatt   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Accessibility of fire stations to areas.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Village of Freistatt 2.2.1   |
| <b>Name of Action or Project:</b>                                      | Construction of Fire Stations  |
| <b>Action or Project Description:</b>                                  | Construct additional fire stations in communities and rural fire districts or fire protection associations to improve accessibility to areas impacted by natural or manmade barriers during hazard events. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$100,000-\$1,000,000  |
| <b>Benefits:</b>   | Lives and property saved due to better response time.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Board of Trustees  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 41 Priority: High   |
| <b>Timeline for Completion:</b>  | 3-5 years  |
| <b>Potential Fund Sources:</b>   | USDA, Local Funds, Bonds, Loans  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

|                                       |  |
|---------------------------------------|--|
| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | Village of Freistatt   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Hazards impacting wastewater treatment facilities.   |
| <b>Hazard(s) Addressed:</b>           | Flooding, Earthquakes, Tornados  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | Village of Freistatt 3.1.1   |
| <b>Name of Action or Project:</b>     | Wastewater Treatment   |
| <b>Action or Project Description:</b> | Maintain appropriate operations of wastewater treatment facilities and reduce &/or eliminate hazard risks. |

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| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards |
| <b>Estimated Cost:</b>   | \$10,000-\$500,000   |
| <b>Benefits:</b>   | Reduce impact of hazards.                                      |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Board of Trustees, Public Works Official                       |
| <b>Action/Project Priority:</b>  | STAPLEE score: 26 Priority: High                               |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | Grants- HMGP, USDA, DNR, EDA, local funds                      |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | System is being maintained.                                    |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Village of Freistatt   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Village of Freistatt 3.1.2   |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$100-\$10,000   |
| <b>Benefits:</b>   | Equipment breakdown and delays in restoration.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Board of Trustees, Emergency Management Coordinator  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-3 months   |
| <b>Potential Fund Sources:</b>   | Grants- HMGP, General funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

|                                 |   |
|---------------------------------|---|
| <b>Action Worksheet</b>         |   |
| <b>Name of Jurisdiction:</b>    | Village of Freistatt                              |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Public access to water in case of natural hazard. |
| <b>Hazard(s) Addressed:</b>     | Earthquakes, Tornado, Winter Weather              |
| <b>Action or Project</b>        |   |
| <b>Action/Project Number:</b>   | Village of Freistatt 3.1.3                        |

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|--|---|
| <b>Name of Action or Project:</b>                                      | Backup Power Generators   |
| <b>Action or Project Description:</b>                                  | Provide backup generators for all water towers & wastewater treatment facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards                    |
| <b>Estimated Cost:</b>   | \$180,000   |
| <b>Benefits:</b>   | Equipment breakdown/ delays in restoration  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Public Works  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High  |
| <b>Timeline for Completion:</b>  | 1-3 years   |
| <b>Potential Fund Sources:</b>   | Grants- HMGP, PDM, DNR  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Village of Freistatt   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Buildup of debris in flooded areas.                                  |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Village of Freistatt 3.1.5   |
| <b>Name of Action or Project:</b>                                      | Debris & Overgrowth Cleanup  |
| <b>Action or Project Description:</b>                                  | Clean up debris & overgrowth from drainage channels & under bridges. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards       |
| <b>Estimated Cost:</b>   | \$2,000  |
| <b>Benefits:</b>   | Mitigate future damage.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Public Works   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High                                     |
| <b>Timeline for Completion:</b>  | On-going   |
| <b>Potential Fund Sources:</b>   | General funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | On-going work.   |

|                                 |  |
|---------------------------------|--|
| <b>Action Worksheet</b>         |  |
| <b>Name of Jurisdiction:</b>    | Village of Freistatt                               |
| <b>Risk / Vulnerability</b>     |  |
| <b>Problem being Mitigated:</b> | Wildfires caused by fires not properly controlled. |
| <b>Hazard(s) Addressed:</b>     | Wildfires  |

| <b>Action or Project</b>   |  |
|--|--|
| <b>Action/Project Number:</b>  | Village of Freistatt 3.1.6   |
| <b>Name of Action or Project:</b>                                      | Burn Bans  |
| <b>Action or Project Description:</b>                                  | Implement burn restrictions during time of weather conditions conducive to the spread of wildfire. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.                                    |
| <b>Estimated Cost:</b>   | \$0  |
| <b>Benefits:</b>   | Reduction in loss of lives and property.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Building/ Emergency Management   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 47 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-3 months   |
| <b>Potential Fund Sources:</b>   | General funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | Ordinances in place  |

**Goal 1: Protect lives and property from the effects of natural hazards.**

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | Marionville R-IX  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Marionville R-IX 1.1.1  |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$0-100   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School District, ELL Staff  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 year  |
| <b>Potential Fund Sources:</b>   | HMGP, local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |

| <b>Progress Report</b>    |  |
|---------------------------|--|
| <b>Action Status</b>      | New  |
| <b>Report of Progress</b> | Only barrier would be obtaining special information to be distributed. |

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | Marionville R-IX  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Marionville R-IX 1.1.2  |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$0-100   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School District, ELL Staff  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 year  |
| <b>Potential Fund Sources:</b>   | HMGP, Local Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | Only barrier would be obtaining specific information to be distributed.   |

| <b>Action Worksheet</b>         |   |
|---------------------------------|---|
| <b>Name of Jurisdiction:</b>    | Marionville R-IX  |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Improve the communication of important information to critical facilities in the event of natural hazard. |
| <b>Hazard(s) Addressed:</b>     | All Hazards   |
| <b>Action or Project</b>        |   |
| <b>Action/Project Number:</b>   | Marionville R-IX 1.2.2  |

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|--|---|
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$500-1,000   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School District   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 month – 1 year  |
| <b>Potential Fund Sources:</b>   | HMGP, General Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | Barriers include obtaining funds for radios.  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Marionville R-IX   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Marionville R-IX 1.3.1   |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$500,000-\$1.5 million  |
| <b>Benefits:</b>   | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | School District  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 38 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-2 years  |
| <b>Potential Fund Sources:</b>   | Federal/State funds, local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | School Emergency Plan  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | Obtain funding.  |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b> |
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| <b>Name of Jurisdiction:</b>   |  | Marionville R-IX |
| <b>Risk / Vulnerability</b>  |  |                  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |                  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |                  |
| <b>Action or Project</b>   |  |                  |
| <b>Action/Project Number:</b>  | Marionville R-IX 2.1.6   |                  |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |                  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |                  |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |                  |
| <b>Estimated Cost:</b>   | \$0-\$100  |                  |
| <b>Benefits:</b>   | The more people that are trained, the better opportunity to provide safety for the community.  |                  |
| <b>Plan for Implementation</b>   |  |                  |
| <b>Responsible Organization/Department:</b>                            | Superintendent   |                  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 31 Priority: High   |                  |
| <b>Timeline for Completion:</b>  | 1 year   |                  |
| <b>Potential Fund Sources:</b>   | Local Funds  |                  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |                  |
| <b>Progress Report</b>   |  |                  |
| <b>Action Status</b>   | New  |                  |
| <b>Report of Progress</b>  | Finding appropriate training sessions which meet criteria.   |                  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

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|---|--|------------------|
| <b>Action Worksheet</b>                     |  |                  |
| <b>Name of Jurisdiction:</b>                |  | Marionville R-IX |
| <b>Risk / Vulnerability</b>                 |  |                  |
| <b>Problem being Mitigated:</b>             | Access to backup power generators in public buildings.   |                  |
| <b>Hazard(s) Addressed:</b>                 | Earthquakes, Thunderstorms, Tornado, Winter Weather  |                  |
| <b>Action or Project</b>                    |  |                  |
| <b>Action/Project Number:</b>               | Marionville R-IX 3.1.2   |                  |
| <b>Name of Action or Project:</b>           | Backup Power Generators  |                  |
| <b>Action or Project Description:</b>       | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |                  |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |                  |
| <b>Estimated Cost:</b>                      | \$10,000-20,000  |                  |
| <b>Benefits:</b>                            | Reduction in loss of life.   |                  |
| <b>Plan for Implementation</b>              |  |                  |
| <b>Responsible Organization/Department:</b> | Superintendent, School Board   |                  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 28 Priority: Medium   |                  |
| <b>Timeline for Completion:</b>             | 1 year   |                  |
| <b>Potential Fund Sources:</b>              | HMGP, grants, local funds  |                  |



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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | School Emergency Plan  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | District could not justify the expense associated with the purchasing of generators without a grant. |

**Goal 1: Protect lives and property from the effects of natural hazards.**

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Miller R-II   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Miller R-II 1.1.1   |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$0-\$5,000   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School District   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 year  |
| <b>Potential Fund Sources:</b>   | HMGP, Local Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | Lack of literature.   |

|                              |             |
|------------------------------|-------------|
| <b>Action Worksheet</b>      |             |
| <b>Name of Jurisdiction:</b> | Miller R-II |
| <b>Risk / Vulnerability</b>  |             |

|  |   |
|--|---|
| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Miller R-II 1.1.2   |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$5,000   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Administration  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 37 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 year  |
| <b>Potential Fund Sources:</b>   | HMGP, Local Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | Lack of literature and finances.  |

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| <b>Action Worksheet</b>                     |   |
| <b>Name of Jurisdiction:</b>                | Miller R-II   |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>                 | All Hazards   |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | Miller R-II 1.2.2   |
| <b>Name of Action or Project:</b>           | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>       | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                      | \$4,000   |
| <b>Benefits:</b>                            | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | School District   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 39 Priority: High  |
| <b>Timeline for Completion:</b>             | 1 year  |
| <b>Potential Fund Sources:</b>              | Local funding, grants   |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started                            |
| <b>Report of Progress</b>  | Financing and radios have halted starting action. |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Miller R-II  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Miller R-II 1.3.1  |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$2.5 million  |
| <b>Benefits:</b>   | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | School Districts, Superintendent   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 40 Priority: High   |
| <b>Timeline for Completion:</b>  | 2 years  |
| <b>Potential Fund Sources:</b>   | HMGP Grants, Bond Issue, Capital Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | School Emergency Plan  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | Lack of financing.   |

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | Miller R-II  |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>           | All Hazards  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | Miller R-II 2.1.3  |
| <b>Name of Action or Project:</b>     | Communication Network  |
| <b>Action or Project Description:</b> | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | \$10,000   |
| <b>Benefits:</b>                      | Allows for better communication.   |
| <b>Plan for Implementation</b>        |  |

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| <b>Responsible Organization/Department:</b>                            | School Districts, Director of Safety   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 27 Priority: Medium     |
| <b>Timeline for Completion:</b>  | 1 year                                 |
| <b>Potential Fund Sources:</b>   | Local Funds, Grants                    |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                                    |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress                 |
| <b>Report of Progress</b>  | Radios are distributed to individuals. |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Miller R-II  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Miller R-II 2.1.6  |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$300  |
| <b>Benefits:</b>   | The more people that are trained, the better opportunity to provide safety for the community.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | School District, Director of Safety  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 20 Priority: Low  |
| <b>Timeline for Completion:</b>  | 3 years  |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | Lack of finances and computer hardware and software.   |

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| <b>Action Worksheet</b>           |  |
| <b>Name of Jurisdiction:</b>      | Miller R-II  |
| <b>Risk / Vulnerability</b>       |  |
| <b>Problem being Mitigated:</b>   | Access to backup power generators in public buildings. |
| <b>Hazard(s) Addressed:</b>       | Earthquakes, Thunderstorms, Tornado, Winter Weather    |
| <b>Action or Project</b>          |  |
| <b>Action/Project Number:</b>     | Miller R-II 3.1.2                                      |
| <b>Name of Action or Project:</b> | Backup Power Generators                                |

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| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$500,000  |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | School Board, Director of Safety   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 20 Priority: Low  |
| <b>Timeline for Completion:</b>  | 3 years  |
| <b>Potential Fund Sources:</b>   | Grants, Capitol Project Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Capital Improvement Plan   |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | Lack of Finances.  |

**Goal 1: Protect lives and property from the effects of natural hazards.**

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Monett R-I  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Monett R-I 1.1.1  |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$500 - \$1,000   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School Safety Director, Superintendent  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 41 Priority: High  |
| <b>Timeline for Completion:</b>  | 2-4 years   |
| <b>Potential Fund Sources:</b>   | HMGP, School Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |

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| <b>Action Status</b>      | Continuing in progress |
| <b>Report of Progress</b> | Continuing             |

| <b>Action Worksheet</b>  |   |
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| <b>Name of Jurisdiction:</b>   | Monett R-I  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Monett R-I 1.1.2  |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$500-1,000   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School Safety Director, Superintendent  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 40 Priority: High  |
| <b>Timeline for Completion:</b>  | 2-4 years   |
| <b>Potential Fund Sources:</b>   | HMGP, School Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing In Progress  |
| <b>Report of Progress</b>  | Continuing  |

| <b>Action Worksheet</b>           |   |
|-----------------------------------|---|
| <b>Name of Jurisdiction:</b>      | Monett R-I  |
| <b>Risk / Vulnerability</b>       |   |
| <b>Problem being Mitigated:</b>   | Improve the communication of important information to critical facilities in the event of natural hazard. |
| <b>Hazard(s) Addressed:</b>       | All Hazards   |
| <b>Action or Project</b>          |   |
| <b>Action/Project Number:</b>     | Monett R-I 1.2.2  |
| <b>Name of Action or Project:</b> | NOAA Radio Implementations  |

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| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$500   |
| <b>Benefits:</b>   | Reduction in loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School Safety Director, Superintendent  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 24 Priority: Low   |
| <b>Timeline for Completion:</b>  | 1-2 years   |
| <b>Potential Fund Sources:</b>   | School/County funding   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing in Progress  |
| <b>Report of Progress</b>  | Barriers having jurisdiction over other facilities besides the school district.   |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Monett R-I   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Monett R-I 2.1.3   |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$1,500  |
| <b>Benefits:</b>   | Allows for better communication.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | School Safety Director   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 33 Priority: High   |
| <b>Timeline for Completion:</b>  | Complete, but continuing.  |
| <b>Potential Fund Sources:</b>   | Individual organizations   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing in Progress   |
| <b>Report of Progress</b>  | It is continued, working to expand it each year.   |

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | Monett R-I   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Monett R-I 2.1.6   |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$500  |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Superintendent   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 23 Priority: Low  |
| <b>Timeline for Completion:</b>  | 4+ years   |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

| <b>Action Worksheet</b>                     |  |
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| <b>Name of Jurisdiction:</b>                | Monett R-I   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>                 | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | Monett R-I 3.1.2   |
| <b>Name of Action or Project:</b>           | Backup Power Generators  |
| <b>Action or Project Description:</b>       | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | \$0-\$1 Million  |
| <b>Benefits:</b>                            | Reduction in loss of life.   |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Superintendent, School Board   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 17 Priority: Low  |
| <b>Timeline for Completion:</b>             | 4+ years   |
| <b>Potential Fund Sources:</b>              | HMGP, Local funds  |



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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | School Emergency Plan |
| <b>Progress Report</b>   |                       |
| <b>Action Status</b>   | New                   |
| <b>Report of Progress</b>  | N/A                   |

**Goal 1: Protect lives and property from the effects of natural hazards.**

| <b>Action Worksheet</b>  |   |
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| <b>Name of Jurisdiction:</b>   | Mt. Vernon R-V  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Mt. Vernon R-V 1.1.1  |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$0-\$500   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School District   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 42 Priority: High  |
| <b>Timeline for Completion:</b>  | N/A   |
| <b>Potential Fund Sources:</b>   | HMGP  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>         |   |
|---------------------------------|---|
| <b>Name of Jurisdiction:</b>    | Mt. Vernon R-V  |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Educating the non-English speaking public on what to do in the event of a natural hazard. |

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| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Mt. Vernon R-V 1.1.2  |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | N/A   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Building administrator  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 34 Priority: High  |
| <b>Timeline for Completion:</b>  | 2-4 years   |
| <b>Potential Fund Sources:</b>   | HMGP, general funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

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| <b>Action Worksheet</b>                     |  |
| <b>Name of Jurisdiction:</b>                | Mt. Vernon R-V   |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>                 | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | Mt. Vernon R-V 1.3.1   |
| <b>Name of Action or Project:</b>           | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>       | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | \$0-\$1,000  |
| <b>Benefits:</b>                            | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | School Boards, district patrons  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 37 Priority: High   |
| <b>Timeline for Completion:</b>             | N/A  |
| <b>Potential Fund Sources:</b>              | Grants, school funds   |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | School Emergency Plan  |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | N/A                    |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Mt. Vernon R-V   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Mt. Vernon R-V 2.1.3   |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$1,000  |
| <b>Benefits:</b>   | Allows for better communication.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Superintendent   |
| <b>Action/Project Priority:</b>  | STAPLEE score:18 Priority: Low   |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | Mount Vernon R-V  |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Countywide frequency repeater network   |
| <b>Hazard(s) Addressed:</b>           | All Hazards   |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | Mount Vernon R-V 2.1.4  |
| <b>Name of Action or Project:</b>     | Countywide Network Increase   |
| <b>Action or Project Description:</b> | Continue to increase countywide frequency repeater network, including new wireless units            |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards                                      |
| <b>Estimated Cost:</b>                | \$0-\$50,000  |
| <b>Benefits:</b>                      | Improved and more reliable communication will ensure prompt response time from emergency personnel. |

| <b>Plan for Implementation</b>   |                                  |
|--|----------------------------------|
| <b>Responsible Organization/Department:</b>                            | Administration                   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 40 Priority: High |
| <b>Timeline for Completion:</b>  | 1-5 years                        |
| <b>Potential Fund Sources:</b>   | Grants                           |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                              |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | Continuing Not Started           |
| <b>Report of Progress</b>  | N/A                              |

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | Mount Vernon R-V   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Mount Vernon R-V 2.1.6   |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$100  |
| <b>Benefits:</b>   | Better training will ensure the best possible scenario to provide safety.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Superintendent   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Local funds, Grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

| <b>Action Worksheet</b>         |  |
|---------------------------------|--|
| <b>Name of Jurisdiction:</b>    | Mount Vernon R-V                                       |
| <b>Risk / Vulnerability</b>     |  |
| <b>Problem being Mitigated:</b> | Access to backup power generators in public buildings. |
| <b>Hazard(s) Addressed:</b>     | Earthquakes, Thunderstorms, Tornado, Winter Weather    |
| <b>Action or Project</b>        |  |
| <b>Action/Project Number:</b>   | Mount Vernon R-V 3.1.2                                 |

|  |  |
|--|--|
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$50,000   |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Superintendent, School Board   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | Local Funds, Grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | School Emergency Plan  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

**Goal 1: Protect lives and property from the effects of natural hazards.**

|  |   |
|--|---|
| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Pierce City R-VI  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Pierce City R-VI 1.1.1  |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$250   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Superintendent  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 35 Priority: High  |
| <b>Timeline for Completion:</b>  | 6 months  |
| <b>Potential Fund Sources:</b>   | HMGP, Local Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |

| <b>Progress Report</b>    |                        |
|---------------------------|------------------------|
| <b>Action Status</b>      | Continuing Not Started |
| <b>Report of Progress</b> | N/A                    |

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | Pierce City R-VI  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Pierce City R-VI 1.1.2  |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$250   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School District   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 39 Priority: High  |
| <b>Timeline for Completion:</b>  | 6 months  |
| <b>Potential Fund Sources:</b>   | HMGP, Local Funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>         |   |
|---------------------------------|---|
| <b>Name of Jurisdiction:</b>    | Pierce City R-VI  |
| <b>Risk / Vulnerability</b>     |   |
| <b>Problem being Mitigated:</b> | Improve the communication of important information to critical facilities in the event of natural hazard. |
| <b>Hazard(s) Addressed:</b>     | All Hazards   |
| <b>Action or Project</b>        |   |
| <b>Action/Project Number:</b>   | Pierce City R-VI 1.2.2  |

|  |   |
|--|---|
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$500   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | School District   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 40 Priority: High  |
| <b>Timeline for Completion:</b>  | 6 months  |
| <b>Potential Fund Sources:</b>   | Local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | Continuing Not Started  |
| <b>Report of Progress</b>  | N/A   |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Pierce City R-VI   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Pierce City R-VI 2.1.3   |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$10,000   |
| <b>Benefits:</b>   | Allows for better communication.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Superintendent   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 29 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 1 year   |
| <b>Potential Fund Sources:</b>   | Local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b> |  |
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| <b>Name of Jurisdiction:</b>   |  | Pierce City R-VI |
| <b>Risk / Vulnerability</b>  |  |                  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |                  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |                  |
| <b>Action or Project</b>   |  |                  |
| <b>Action/Project Number:</b>  | Pierce City R-VI 2.1.6   |                  |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |                  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |                  |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |                  |
| <b>Estimated Cost:</b>   | \$0-\$30,000   |                  |
| <b>Benefits:</b>   | Reduction in loss of life and injury.  |                  |
| <b>Plan for Implementation</b>   |  |                  |
| <b>Responsible Organization/Department:</b>                            | Superintendent   |                  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 20 Priority: Low  |                  |
| <b>Timeline for Completion:</b>  | 3 years  |                  |
| <b>Potential Fund Sources:</b>   | Grants, Local Funds  |                  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |                  |
| <b>Progress Report</b>   |  |                  |
| <b>Action Status</b>   | Continuing Not Started   |                  |
| <b>Report of Progress</b>  | N/A  |                  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

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| <b>Action Worksheet</b>                     |  |                  |
| <b>Name of Jurisdiction:</b>                |  | Pierce City R-VI |
| <b>Risk / Vulnerability</b>                 |  |                  |
| <b>Problem being Mitigated:</b>             | Access to backup power generators in public buildings.   |                  |
| <b>Hazard(s) Addressed:</b>                 | Earthquakes, Thunderstorms, Tornado, Winter Weather  |                  |
| <b>Action or Project</b>                    |  |                  |
| <b>Action/Project Number:</b>               | Pierce City R-VI 3.1.2   |                  |
| <b>Name of Action or Project:</b>           | Backup Power Generators  |                  |
| <b>Action or Project Description:</b>       | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |                  |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |                  |
| <b>Estimated Cost:</b>                      | \$0-\$500,000  |                  |
| <b>Benefits:</b>                            | Reduction in loss of life.   |                  |
| <b>Plan for Implementation</b>              |  |                  |
| <b>Responsible Organization/Department:</b> | Superintendent, School Board   |                  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 21 Priority: Low  |                  |
| <b>Timeline for Completion:</b>             | 1-5 years  |                  |
| <b>Potential Fund Sources:</b>              | HMGP, Local Funds  |                  |



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|--|------------------------|
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | School Emergency Plan  |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | N/A                    |

**Goal 1: Protect lives and property from the effects of natural hazards.**

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | Verona R-VIII   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Verona R-VIII 1.1.1   |
| <b>Name of Action or Project:</b>                                      | Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$100   |
| <b>Benefits:</b>   | The public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Safety Department   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>  | 6 months  |
| <b>Potential Fund Sources:</b>   | HMGP  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>      |              |
|------------------------------|--------------|
| <b>Name of Jurisdiction:</b> | Verona R-VII |
| <b>Risk / Vulnerability</b>  |              |

|  |   |
|--|---|
| <b>Problem being Mitigated:</b>  | Educating the non-English speaking public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Verona R-VII 1.1.2  |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education   |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and cultural organizations. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards.   |
| <b>Estimated Cost:</b>   | \$500   |
| <b>Benefits:</b>   | The non-English speaking public will have a better understanding on what actions to take during a natural hazard event, potentially reducing property damage and loss of life.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | ELL Department  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High  |
| <b>Timeline for Completion:</b>  | 1 year  |
| <b>Potential Fund Sources:</b>   | HMGP  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

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|---|---|
| <b>Action Worksheet</b>                     |   |
| <b>Name of Jurisdiction:</b>                | Mt. Vernon R-V  |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>                 | All Hazards   |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | Mt. Vernon R-V 1.2.2  |
| <b>Name of Action or Project:</b>           | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>       | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                      | \$0-\$100   |
| <b>Benefits:</b>                            | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | School District Officials   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 40 Priority: High  |
| <b>Timeline for Completion:</b>             | 1-3 years   |
| <b>Potential Fund Sources:</b>              | School Funds, Grants  |

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|--|------------------------|
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A                    |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | Continuing Not Started |
| <b>Report of Progress</b>  | N/A                    |

|  |   |
|--|---|
| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Verona R-VII  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Verona R-VII 1.2.2  |
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$100   |
| <b>Benefits:</b>   | Reduction in loss of life and injuries.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Superintendent, School Board  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 32 Priority: High  |
| <b>Timeline for Completion:</b>  | 6 months  |
| <b>Potential Fund Sources:</b>   | Local funds   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

|                                       |  |
|---------------------------------------|--|
| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | Verona R-VII   |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>           | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | Verona R-VII 1.3.1   |
| <b>Name of Action or Project:</b>     | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b> | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | \$1,000  |
| <b>Benefits:</b>                      | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>        |  |

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|--|----------------------------------|
| <b>Responsible Organization/Department:</b>                            | School Board                     |
| <b>Action/Project Priority:</b>  | STAPLEE score: 30 Priority: High |
| <b>Timeline for Completion:</b>  | 2 years                          |
| <b>Potential Fund Sources:</b>   | Capital Project Funds            |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | School Emergency Plan            |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | New                              |
| <b>Report of Progress</b>  | N/A                              |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Verona R-VII   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | County-wide awareness.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Verona R-VII 2.1.3   |
| <b>Name of Action or Project:</b>                                      | Communication Network  |
| <b>Action or Project Description:</b>                                  | Continue to provide radios for essential emergency personnel and a designated public official or community leader in all communities to improve the county-wide communication network. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$1,000  |
| <b>Benefits:</b>   | Allows for better communication.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Superintendent   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 28 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 3 years  |
| <b>Potential Fund Sources:</b>   | Grants, General Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

|                                   |   |
|-----------------------------------|---|
| <b>Action Worksheet</b>           |   |
| <b>Name of Jurisdiction:</b>      | Verona R-VII  |
| <b>Risk / Vulnerability</b>       |   |
| <b>Problem being Mitigated:</b>   | Efficiency of public officials to respond to natural hazard events. |
| <b>Hazard(s) Addressed:</b>       | All natural hazards   |
| <b>Action or Project</b>          |   |
| <b>Action/Project Number:</b>     | Verona R-VII 2.1.6  |
| <b>Name of Action or Project:</b> | NIMS Training   |

|  |  |
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| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$100  |
| <b>Benefits:</b>   | The more people that are trained, the better opportunity to provide safety for the community.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Superintendent, Safety Director  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 26 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

|  |  |
|--|--|
| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Verona R-VII   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Verona R-VII 3.1.2   |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$10,000   |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Superintendent, School Board   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 27 Priority: Medium   |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | HMGP, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | School Emergency Plan  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 1: Protect lives and property from the effects of natural hazards.**

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | Barry-Lawrence Regional Library  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Educating the public on what to do in the event of a natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Barry-Lawrence Regional Library 1.1.1  |
| <b>Name of Action or Project:</b>                                      | Multilingual Hazard Awareness Education  |
| <b>Action or Project Description:</b>                                  | Establish a process to distribute educational materials on hazards through schools, major employers, and social/cultural organizations including materials on safe generator use and developing personal/family hazard preparedness plans. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$500  |
| <b>Benefits:</b>   | Reduction of loss of life, injury, and property during hazard events.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | District Board, Branch Staff   |
| <b>Action/Project Priority:</b>  | 33; High   |
| <b>Timeline for Completion:</b>  | 1-3 years  |
| <b>Potential Fund Sources:</b>   | General Fund, Grants, HMGP   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  |  |

| <b>Action Worksheet</b>                     |  |
|---|--|
| <b>Name of Jurisdiction:</b>                | Barry-Lawrence Regional Library  |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Educating the non-English speaking public on what to do in the event of a natural hazard.  |
| <b>Hazard(s) Addressed:</b>                 | All Hazards  |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | Barry-Lawrence Regional Library 1.1.2  |
| <b>Name of Action or Project:</b>           | Multilingual Hazard Awareness Education  |
| <b>Action or Project Description:</b>       | Establish a process to distribute educational materials in other languages on hazards and actions to minimize risks for distribution to the non-English speaking population through the schools, major employers, and social/cultural organizations. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                      | \$0-\$500  |
| <b>Benefits:</b>                            | Reduction of loss of life, injury, and property during hazard events.  |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | District Board, Branch Staff   |
| <b>Action/Project Priority:</b>             | 32; High   |

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|--|----------------------------|
| <b>Timeline for Completion:</b>  | 1-3 years                  |
| <b>Potential Fund Sources:</b>   | General Fund, Grants, HMGP |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process      |
| <b>Progress Report</b>   |                            |
| <b>Action Status</b>   | New                        |
| <b>Report of Progress</b>  |                            |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Barry-Lawrence Regional Library   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Educating the public on the location of refuge areas and safe rooms in the community.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Barry-Lawrence Regional Library 1.1.4   |
| <b>Name of Action or Project:</b>                                      | Refuge Areas and Safe Room Location Education   |
| <b>Action or Project Description:</b>                                  | Make the location of best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) and safe rooms in communities available to the public. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-\$500   |
| <b>Benefits:</b>   | Reduction in loss of life and injury during hazard events.  |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | District Board, Branch Staff  |
| <b>Action/Project Priority:</b>  | 32; High  |
| <b>Timeline for Completion:</b>  | 1-3 years   |
| <b>Potential Fund Sources:</b>   | General Fund, HMGP, Grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  |   |

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|---------------------------------------|---|
| <b>Action Worksheet</b>               |   |
| <b>Name of Jurisdiction:</b>          | Barry-Lawrence Regional Library   |
| <b>Risk / Vulnerability</b>           |   |
| <b>Problem being Mitigated:</b>       | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>           | All Hazards   |
| <b>Action or Project</b>              |   |
| <b>Action/Project Number:</b>         | Barry-Lawrence Regional Library 1.2.2   |
| <b>Name of Action or Project:</b>     | NOAA Radio Implementations  |
| <b>Action or Project Description:</b> | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |

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| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards |
| <b>Estimated Cost:</b>   | \$0-\$100  |
| <b>Benefits:</b>   | Improves communication during hazard events.                   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | District Board, Branch Staff                                   |
| <b>Action/Project Priority:</b>  | 33; High   |
| <b>Timeline for Completion:</b>  | 1-3 years  |
| <b>Potential Fund Sources:</b>   | General Fund, Grants   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  |  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Barry-Lawrence Regional Library  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Barry-Lawrence Regional Library 3.1.2  |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Ensure the functional operation of critical infrastructures serving the public and the local economy.  |
| <b>Estimated Cost:</b>   | \$0-\$50,000   |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | District Board   |
| <b>Action/Project Priority:</b>  | 29; Medium   |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | General Fund, Grants, HMGP   |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  |  |



**Goal 1: Protect lives and property from the effects of natural hazards.**

| <b>Action Worksheet</b>  |   |
|--|---|
| <b>Name of Jurisdiction:</b>   | Green Benefit Special Road District   |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Green Benefit Special Road District 1.2.2   |
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-\$100   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | N/A   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 27 Priority: Medium  |
| <b>Timeline for Completion:</b>  | 1-3 years   |
| <b>Potential Fund Sources:</b>   | HMGP  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | N/A   |

| <b>Action Worksheet</b>                     |   |
|---|---|
| <b>Name of Jurisdiction:</b>                | Green Benefit Special Road District   |
| <b>Risk / Vulnerability</b>                 |   |
| <b>Problem being Mitigated:</b>             | Improve the visibility of low water crossing markers for the public.  |
| <b>Hazard(s) Addressed:</b>                 | Flooding  |
| <b>Action or Project</b>                    |   |
| <b>Action/Project Number:</b>               | Green Benefit Special Road District 1.2.3   |
| <b>Name of Action or Project:</b>           | Low Water Crossing Marker Visibility  |
| <b>Action or Project Description:</b>       | Replace low water crossing markers as necessary to assist drivers in becoming more aware flood-prone areas. |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>                      | \$500-\$5,000   |
| <b>Benefits:</b>                            | Reduction in loss of life, increased awareness.   |
| <b>Plan for Implementation</b>              |   |
| <b>Responsible Organization/Department:</b> | Maintenance   |
| <b>Action/Project Priority:</b>             | STAPLEE score: 27 Priority: Medium  |
| <b>Timeline for Completion:</b>             | 1-5 years   |
| <b>Potential Fund Sources:</b>              | HMGP, General Fund  |

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| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process  |
| <b>Progress Report</b>   |                        |
| <b>Action Status</b>   | New                    |
| <b>Report of Progress</b>  | Money and time issues. |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Green Benefit Road District  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Lack of tornado safe rooms   |
| <b>Hazard(s) Addressed:</b>  | Tornado, Severe Thunderstorms  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Green Benefit Road District 1.3.1  |
| <b>Name of Action or Project:</b>                                      | Tornado Safe Room Construction   |
| <b>Action or Project Description:</b>                                  | Encourage construction of tornado safe rooms and best identified available refuge areas (these do not comply with FEMA Publication 361 for safe rooms) in areas of population concentration. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$10,000   |
| <b>Benefits:</b>   | Decreased loss of life from tornadoes and high winds.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Commissioners  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 24 Priority: Low  |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | Grants, General Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | Money and time issues.   |

**Goal 2: Ensure the continued operation of government and emergency services.**

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| <b>Action Worksheet</b>               |  |
| <b>Name of Jurisdiction:</b>          | Green Benefit Road District  |
| <b>Risk / Vulnerability</b>           |  |
| <b>Problem being Mitigated:</b>       | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>           | All natural hazards  |
| <b>Action or Project</b>              |  |
| <b>Action/Project Number:</b>         | Green Benefit Road District 2.1.6  |
| <b>Name of Action or Project:</b>     | NIMS Training  |
| <b>Action or Project Description:</b> | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>     | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>                | \$0-\$100  |
| <b>Benefits:</b>                      | Reduction in loss of life.   |

| <b>Plan for Implementation</b>   |                                  |
|--|----------------------------------|
| <b>Responsible Organization/Department:</b>                            | Commissioners                    |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High |
| <b>Timeline for Completion:</b>  | 1—5 years                        |
| <b>Potential Fund Sources:</b>   | Grants, General Fund             |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual budget process            |
| <b>Progress Report</b>   |                                  |
| <b>Action Status</b>   | New                              |
| <b>Report of Progress</b>  | N/A                              |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

| <b>Action Worksheet</b>  |  |
|--|--|
| <b>Name of Jurisdiction:</b>   | Green Benefit Road District  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Access to backup power generators in public buildings.   |
| <b>Hazard(s) Addressed:</b>  | Earthquakes, Thunderstorms, Tornado, Winter Weather  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Green Benefit Road District 3.1.2  |
| <b>Name of Action or Project:</b>                                      | Backup Power Generators  |
| <b>Action or Project Description:</b>                                  | Promote the location of backup power generators in all new and existing city halls, schools, hospitals, nursing homes, fire departments and other critical or vulnerable facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$15,000   |
| <b>Benefits:</b>   | Reduction in loss of life.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | N/A  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 36 Priority: High   |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | HMGP, local funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | Money issues.  |

| <b>Action Worksheet</b>         |  |
|---------------------------------|--|
| <b>Name of Jurisdiction:</b>    | Green Benefit Road District                |
| <b>Risk / Vulnerability</b>     |  |
| <b>Problem being Mitigated:</b> | Damage to personal property from flooding. |
| <b>Hazard(s) Addressed:</b>     | Flooding                                   |
| <b>Action or Project</b>        |  |
| <b>Action/Project Number:</b>   | Green Benefit Road District 3.1.4          |

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| <b>Name of Action or Project:</b>                                      | Low Water Crossing Improvements                                |
| <b>Action or Project Description:</b>                                  | Upgrade low water crossings that flood frequently.             |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards |
| <b>Estimated Cost:</b>   | \$100,000-\$500,000  |
| <b>Benefits:</b>   | Reduction in loss of life.                                     |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Commissioners  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 37 Priority: High                               |
| <b>Timeline for Completion:</b>  | 3 years  |
| <b>Potential Fund Sources:</b>   | HMGP, PDM, MDC grants  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | Continuing Not Started   |
| <b>Report of Progress</b>  | N/A  |

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| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Green Benefit Road District  |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Buildup of debris in flooded areas.                                  |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Green Benefit Road District 3.1.5                                    |
| <b>Name of Action or Project:</b>                                      | Debris & Overgrowth Cleanup  |
| <b>Action or Project Description:</b>                                  | Clean up debris & overgrowth from drainage channels & under bridges. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards       |
| <b>Estimated Cost:</b>   | \$0-\$20,000   |
| <b>Benefits:</b>   | Mitigate future damage.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Commissioners  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 43 Priority: High                                     |
| <b>Timeline for Completion:</b>  | N/A  |
| <b>Potential Fund Sources:</b>   | HMGP, PDM, General fund  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | Lack of money, time, and manpower.                                   |

**Goal 1: Protect lives and property from the effects of natural hazards.**

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|------------------------------|--------------------------------------|
| <b>Action Worksheet</b>      |                                      |
| <b>Name of Jurisdiction:</b> | Miller Benefit Special Road District |
| <b>Risk / Vulnerability</b>  |                                      |

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| <b>Problem being Mitigated:</b>  | Improve the communication of important information to critical facilities in the event of natural hazard.   |
| <b>Hazard(s) Addressed:</b>  | All Hazards   |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Miller Benefit Special Road District 1.2.2  |
| <b>Name of Action or Project:</b>                                      | NOAA Radio Implementations  |
| <b>Action or Project Description:</b>                                  | Promote the usage of NOAA radios and new communications technologies in all vulnerable and critical facilities, such as schools, medical facilities, nursing homes and day care facilities. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$0-\$100   |
| <b>Benefits:</b>   | Reduction in loss of lives.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | N/A   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 24 Priority: Low   |
| <b>Timeline for Completion:</b>  | Less than 1 year  |
| <b>Potential Fund Sources:</b>   | HMGP  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | N/A   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | Money issues.   |

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| <b>Action Worksheet</b>  |   |
| <b>Name of Jurisdiction:</b>   | Miller Benefit Special Road District  |
| <b>Risk / Vulnerability</b>  |   |
| <b>Problem being Mitigated:</b>  | Improve the visibility of low water crossing markers for the public.  |
| <b>Hazard(s) Addressed:</b>  | Flooding  |
| <b>Action or Project</b>   |   |
| <b>Action/Project Number:</b>  | Miller Benefit Special Road District 1.2.3  |
| <b>Name of Action or Project:</b>                                      | Low Water Crossing Marker Visibility  |
| <b>Action or Project Description:</b>                                  | Replace low water crossing markers as necessary to assist drivers in becoming more aware flood-prone areas. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards  |
| <b>Estimated Cost:</b>   | \$500-\$5,000   |
| <b>Benefits:</b>   | Reduction in loss of lives and damages.   |
| <b>Plan for Implementation</b>   |   |
| <b>Responsible Organization/Department:</b>                            | Commissioners   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 42 Priority: High  |
| <b>Timeline for Completion:</b>  | 1-5 years   |
| <b>Potential Fund Sources:</b>   | HMGP, General Fund  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process   |
| <b>Progress Report</b>   |   |
| <b>Action Status</b>   | New   |
| <b>Report of Progress</b>  | Money issues.   |

**Goal 2: Ensure the continued operation of government and emergency services.**

| <b>Action Worksheet</b>  |  |
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| <b>Name of Jurisdiction:</b>   | Miller Benefit Special Road District   |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Efficiency of public officials to respond to natural hazard events.  |
| <b>Hazard(s) Addressed:</b>  | All natural hazards  |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Miller Benefit Special Road District 2.1.6   |
| <b>Name of Action or Project:</b>                                      | NIMS Training  |
| <b>Action or Project Description:</b>                                  | All elected officials, public administrators, community stakeholders and responders will participate in the National Incident Management System (NIMS) and WebEOC training programs. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards   |
| <b>Estimated Cost:</b>   | \$0-\$100  |
| <b>Benefits:</b>   | Gives beneficial information to workers.   |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Road Supervisors, Commissioners  |
| <b>Action/Project Priority:</b>  | STAPLEE score: 37 Priority: High   |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | Local Funds  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | N/A  |

**Goal 3: Ensure the functional operation of critical infrastructures serving the public and the local economy.**

| <b>Action Worksheet</b>                     |  |
|---|--|
| <b>Name of Jurisdiction:</b>                | Miller Benefit Special Road District                           |
| <b>Risk / Vulnerability</b>                 |  |
| <b>Problem being Mitigated:</b>             | Damage to personal property from flooding.                     |
| <b>Hazard(s) Addressed:</b>                 | Flooding   |
| <b>Action or Project</b>                    |  |
| <b>Action/Project Number:</b>               | 3.1.4  |
| <b>Name of Action or Project:</b>           | Low Water Crossing Improvements                                |
| <b>Action or Project Description:</b>       | Upgrade low water crossings that flood frequently.             |
| <b>Applicable Goal Statement:</b>           | Protect lives and property from the effects of natural hazards |
| <b>Estimated Cost:</b>                      | \$100,000-\$500,000  |
| <b>Benefits:</b>                            | Save money from damages that would occur.                      |
| <b>Plan for Implementation</b>              |  |
| <b>Responsible Organization/Department:</b> | Commissioners  |
| <b>Action/Project Priority:</b>             | STAPLEE score: 31 Priority: High                               |
| <b>Timeline for Completion:</b>             | 1-5 years  |

|  |                       |
|--|-----------------------|
| <b>Potential Fund Sources:</b>   | HMGP, PDM, MDC grants |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process |
| <b>Progress Report</b>   |                       |
| <b>Action Status</b>   | New                   |
| <b>Report of Progress</b>  | N/A                   |

|  |  |
|--|--|
| <b>Action Worksheet</b>  |  |
| <b>Name of Jurisdiction:</b>   | Miller Benefit Special Road District                                 |
| <b>Risk / Vulnerability</b>  |  |
| <b>Problem being Mitigated:</b>  | Buildup of debris in flooded areas.                                  |
| <b>Hazard(s) Addressed:</b>  | Flooding   |
| <b>Action or Project</b>   |  |
| <b>Action/Project Number:</b>  | Miller Benefit Special Road District 3.1.5                           |
| <b>Name of Action or Project:</b>                                      | Debris & Overgrowth Cleanup  |
| <b>Action or Project Description:</b>                                  | Clean up debris & overgrowth from drainage channels & under bridges. |
| <b>Applicable Goal Statement:</b>                                      | Protect lives and property from the effects of natural hazards       |
| <b>Estimated Cost:</b>   | \$0-\$20,000   |
| <b>Benefits:</b>   | Mitigate future damage.  |
| <b>Plan for Implementation</b>   |  |
| <b>Responsible Organization/Department:</b>                            | Commissions, Road Supervisor   |
| <b>Action/Project Priority:</b>  | STAPLEE score: 44 Priority: High                                     |
| <b>Timeline for Completion:</b>  | 1-5 years  |
| <b>Potential Fund Sources:</b>   | HMGP, PDM, General fund  |
| <b>Local Planning Mechanisms to be Used in Implementation, if any:</b> | Annual Budget Process  |
| <b>Progress Report</b>   |  |
| <b>Action Status</b>   | New  |
| <b>Report of Progress</b>  | Debris and overgrowth is removed as needed.                          |

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## 5 PLAN MAINTENANCE PROCESS

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|--|------------|
| <b>5 PLAN MAINTENANCE PROCESS.....</b>                           | <b>5.1</b> |
| 5.1 <i>Monitoring, Evaluating, and Updating the Plan</i> .....   | 5.1        |
| 5.1.1 Responsibility for Plan Maintenance .....                  | 5.1        |
| 5.1.2 Plan Maintenance Schedule .....                            | 5.2        |
| 5.1.3 Plan Maintenance Process.....                              | 5.2        |
| 5.2 <i>Incorporation into Existing Planning Mechanisms</i> ..... | 5.3        |
| 5.3 <i>Continued Public Involvement</i> .....                    | 5.6        |

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

### 5.1 Monitoring, Evaluating, and Updating the Plan

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

#### 5.1.1 Responsibility for Plan Maintenance

The MPC is an advisory body and can only make recommendations to county, city, town, or district elected officials. Its primary duty is to see the plan successfully carried out and to report to the community governing boards and the public on the status of plan implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation proposals, hearing stakeholder concerns about hazard mitigation, passing concerns on to appropriate entities, and posting relevant information in areas accessible to the public.

The Mitigation Planning Committee (MPC) has served as an advisory body during the plan update process, but is not a standing committee. Many MPC representatives and stakeholders are also represented on the Local Emergency Planning Committee (LEPC), as well as several other committees and groups in Lawrence County. The LEPC is overseen by the County Emergency Management Director. Lawrence County is planning to expand the LEPC and create a Community Organizations Active in Disasters (COAD) committee. This committee will be responsible for overseeing the plan monitoring, evaluation, and maintenance. However, it will be up to the County Commission, Office of Emergency Management, and the local jurisdictions to carry out the goals and actions outlined.

Maintenance will involve agreement of the participating jurisdictions, including schools and special districts, to:

- Meet annually, and after a disaster event, to monitor and evaluate the implementation of the plan;
- Act as a forum for hazard mitigation issues;



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- Disseminate hazard mitigation ideas and activities to all participants;
  - Pursue the implementation of high priority, low- or no-cost recommended actions;
  - Maintain vigilant monitoring of multi-objective, cost-share, and other funding opportunities to help the community implement the plan's recommended actions for which no current funding exists;
  - Monitor and assist in implementation and update of this plan;
  - Keep the concept of mitigation in the forefront of community decision making by identifying plan recommendations when other community goals, plans, and activities overlap, influence, or directly affect increased community vulnerability to disasters;
  - Report on plan progress and recommended changes to the County Board of Supervisors and governing bodies of participating jurisdictions; and
  - Inform and solicit input from the public.

### **5.1.2 Plan Maintenance Schedule**

The EMD will facilitate meetings of the COAD, and agrees to meet at least annually and after a state or federally declared disaster event as appropriate to monitor progress and update the mitigation strategy. The Lawrence County Emergency Management Director will be responsible for initiating the plan reviews.

In coordination with all participating jurisdictions, a five-year written update of the plan will be submitted to the Missouri State Emergency Management Agency (SEMA) and FEMA Region VII per Requirement §201.6(c)(4)(i) of the Disaster Mitigation Act of 2000, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule.

### **5.1.3 Plan Maintenance Process**

Progress on the proposed actions can be monitored by evaluating changes in vulnerabilities identified in the plan. The COAD, acting as an expanded MPC, during the annual meetings should review changes in vulnerability identified as follows:

- Decreased vulnerability as a result of implementing recommended actions,
- Increased vulnerability as a result of failed or ineffective mitigation actions,
- Increased vulnerability due to hazard events, and/or
- Increased vulnerability as a result of new development (and/or annexation).

Future 5-year updates to this plan will include the following activities:

- Consideration of changes in vulnerability due to action implementation,
- Documentation of success stories where mitigation efforts have proven effective,
- Documentation of unsuccessful mitigation actions and why the actions were not effective,
- Documentation of previously overlooked hazard events that may have occurred since the previous plan approval,
- Incorporation of new data or studies with information on hazard risks,
- Incorporation of new capabilities or changes in capabilities,
- Incorporation of growth data and changes to inventories, and
- Incorporation of ideas for new actions and changes in action prioritization.

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In order to best evaluate any changes in vulnerability as a result of plan implementation, the participating jurisdictions will adopt the following process:

- Each proposed action in the plan identified an individual, office, or agency responsible for action implementation. This entity will track and report on an annual basis to the jurisdictional COAD member on action status. The entity will provide input on whether the action as implemented meets the defined objectives and is likely to be successful in reducing risk.
- If the action does not meet identified objectives, the jurisdictional COAD member will determine necessary remedial action, making any required modifications to the plan.

Changes will be made to the plan to remedy actions that have failed or are not considered feasible. Feasibility will be determined after a review of action consistency with established criteria, time frame, community priorities, and/or funding resources. Actions that were not ranked high but were identified as potential mitigation activities will be reviewed as well during the monitoring of this plan. Updating of the plan will be accomplished by written changes and submissions, as the COAD deems appropriate and necessary. Changes will be approved by the Lawrence County Board of Commissioners and the governing boards of the other participating jurisdictions.

## **5.2 Incorporation into Existing Planning Mechanisms**

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

Where possible, plan participants, including school and special districts, will use existing plans and/or programs to implement hazard mitigation actions. Those existing plans and programs were described in Community Profiles and Capabilities chapter of this plan. Based on the capability assessments of the participating jurisdictions, communities in Lawrence County will continue to plan and implement programs to reduce losses to life and property from hazards. This plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing actions, where possible, through the following plans:

- General or master plans of participating jurisdictions;
- Ordinances of participating jurisdictions;
- Lawrence County Emergency Operations Plan;
- Capital improvement plans and budgets;
- Other community plans within the County, such as water conservation plans, storm water management plans, and parks and recreation plans;
- School and Special District Plans and budgets; and
- Other plans and policies outlined in the capability assessment sections for each jurisdiction in Chapter 2 of this plan.

Jurisdictional representatives involved in updating these existing planning mechanisms will be responsible for integrating the findings and actions of the mitigation plan, as appropriate. The COAD is also responsible for monitoring this integration and incorporation of the appropriate information into the five-year update of the multi-jurisdictional hazard mitigation plan.

Additionally, after the annual review of the Hazard Mitigation Plan, the Lawrence County Emergency Management Director will provide the updated Mitigation Strategy with current status of each mitigation action to the County Commissions as well as all Mayors, City Clerks, and School District Superintendents. The Emergency Manager Director will request that the mitigation strategy be incorporated, where appropriate, in other planning mechanisms.

0 below lists the planning mechanisms by jurisdiction into which the Hazard Mitigation Plan will be integrated.

**Table 5.1 Planning Mechanisms Identified for Integration of Hazard Mitigation Plan**

| <b>Jurisdiction</b>            | <b>Planning Mechanisms</b>   | <b>Integration Process for Previous Plan</b>   | <b>Integration Process for Current Plan</b>                                |
|--------------------------------|--|--|--|
| Unincorporated Lawrence County | Capital Improvement Plan<br>County Emergency Plan<br>County Recovery Plan<br>Debris Management Plan<br>Transportation Plan<br>Critical Facilities Plan<br>Floodplain Ordinance   | Emergency Management Committee<br>County Emergency Plan  | Community Organizations Active in Disasters (COAD)<br>Floodplain Ordinance |
| City of Aurora                 | Comprehensive Plan<br>Building Code<br>County Emergency Plan<br>Economic Development Plan<br>Land-Use Plan<br>Transportation Plan<br>Watershed Plan<br>Zoning Ordinance<br>Floodplain Ordinance<br>Subdivision Ordinance<br>Nuisance Ordinance<br>Storm water Ordinance<br>Site Plan Review Requirements | County Emergency Plan<br>Building Code/Official Comprehensive Plan<br>Zoning Ordinance<br>Floodplain Ordinance | Building Code<br>Zoning Ordinance  |
| Village of Freistatt           | Comprehensive Plan<br>Capital Improvement Plan<br>County Emergency Plan  | County Emergency Plan  | Capital Improvement Plan   |
| City of Marionville            | Comprehensive Plan<br>Land-Use Plan<br>Flood Mitigation Assistance (FMA) Plan<br>Zoning Ordinance<br>Building Code<br>Nuisance Ordinance<br>Storm water Ordinance<br>Drainage Ordinance<br>Site Plan Review Requirements<br>Landscape Ordinance  | County Emergency Plan<br>Building Code   | Building Code  |

|                     |  |  |   |
|---------------------|--|--|---|
| City of Miller      | Capital Improvement Plan<br>Building Code<br>Nuisance Ordinance<br>Storm water Ordinance   | County Emergency Plan  | Capital Improvement Plan<br>Building Code                     |
| City of Monett      | Capital Improvement Plan<br>Debris Management Plan<br>Land-Use Plan<br>Transportation Plan<br>Critical Facilities Plan<br>Zoning Ordinance<br>Building Code<br>Floodplain Ordinance<br>Subdivision Ordinance<br>Tree Trimming Ordinance<br>Nuisance Ordinance<br>Storm water Ordinance<br>Site Plan Review Requirements<br>Landscape Ordinance | N/A – did not participate in previous Lawrence County Plan                         | Building Code<br>Tree Trimming Ordinance                      |
| City of Mt. Vernon  | Comprehensive Plan<br>Capital Improvement Plan<br>Debris Management Plan<br>Economic Development Plan<br>Land-Use Plan<br>Zoning Ordinance<br>Building Code<br>Floodplain Ordinance<br>Subdivision Ordinance<br>Nuisance Ordinance<br>Site Plan Review Requirements  | County Emergency Plan<br>Building Code<br>Zoning Ordinance<br>Floodplain Ordinance | Building Code<br>Capital Improvement Plan<br>Zoning Ordinance |
| City of Pierce City | Zoning Ordinance<br>Building Code<br>Floodplain Ordinance<br>Subdivision Ordinance<br>Nuisance Ordinance   | County Emergency Plan<br>Building Code   | Building Code<br>Zoning Ordinance<br>Floodplain Ordinance     |
| City of Verona      | Comprehensive Plan<br>Capital Improvement Plan<br>Debris Management Plan<br>Transportation Plan<br>Land-Use Plan<br>Flood Mitigation Assistance (FMA) Plan<br>Zoning Ordinance<br>Building Code<br>Floodplain Ordinance<br>Subdivision Ordinance<br>Nuisance Ordinance   | County Emergency Plan  | Building Code<br>Capital Improvement Plan                     |

|  |   |                          |   |
|--|---|--------------------------|---|
|  | Storm water Ordinance<br>Drainage Ordinance<br>Site Plan Review<br>Requirements       |                          |   |
| Barry-Lawrence<br>Regional Library<br>District | Annual Budget Process   | N/A                      | Annual Budget<br>Process                                |
| Green Benefit<br>Special Road<br>District      | Annual Budget Process   | N/A                      | Annual Budget<br>Process                                |
| Miller Benefit<br>Special Road<br>District     | Annual Budget Process   | N/A                      | Annual Budget<br>Process                                |
| Marionville R-IX<br>Schools                    | Capital Improvement<br>Plan<br>School Emergency Plan<br>Weapons Policy                | School Emergency<br>Plan | Capital Improvement<br>Plan<br>School Emergency<br>Plan |
| Miller R-II Schools                            | Master Plan<br>Capital Improvement<br>Plan<br>School Emergency Plan<br>Weapons Policy | School Emergency<br>Plan | School Emergency<br>Plan                                |
| Monett R-I Schools                             | Capital Improvement<br>Plan<br>School Emergency Plan<br>Weapons Policy                | N/A                      | Capital Improvement<br>Plan<br>School Emergency<br>Plan |
| Mt. Vernon R-V<br>Schools                      | School Emergency Plan<br>Weapons Policy   | School Emergency<br>Plan | School Emergency<br>Plan                                |
| Verona R-VII<br>Schools                        | School Emergency Plan<br>Weapons Policy   | School Emergency<br>Plan | School Emergency<br>Plan                                |

### 5.3 Continued Public Involvement

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

The hazard mitigation plan update process provides an opportunity to publicize success stories resulting from the plan’s implementation and seek additional public comment. Information about the annual reviews will be posted in the local newspaper as well as on the Lawrence County website following each annual review of the mitigation plan. When the MPC reconvenes for the five-year update, it will coordinate with all stakeholders participating in the planning process. Included in this group will be those who joined the MPC after the initial effort, to update and revise the plan. Public notice will be posted and public participation will be actively solicited, at a minimum, through available website postings and press releases to local media outlets, primarily newspapers.