BARRY COUNTY
MISSOURI
2021 Multi-Jurisdictional
Natural Hazard Mitigation Plan

Approved September 22, 2021

Prepared by:

SMCOG
Southwest Missouri
COUNCIL OF GOVERNMENTS

U.S. Department of Homeland Security
FEMA Region VII
11224 Holmes Road
Kansas City, MO 64131

FEMA

September 30, 2021

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

Subject: Review of the Barry County Multi-jurisdiction Hazard Mitigation Plan Update

Dear Mr. Remillard:

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. After the review or revisions are completed the plan will need to be resubmitted for approval by FEMA 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
Barry County	August 27, 2021	September 22, 2021	June 14, 2021	September 22, 2026	Approved

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

Sincerely,

TERI A MAYER Digitally signed by TERI A MAYER
Date: 2021.09.30 09:42:24 -05'00'

For Catherine R. Sanders, Director
Mitigation Division

Barry County Hazard Mitigation Planning Committee

Jurisdictional Representatives

Name	Title	Department	Jurisdiction/Agency/Organization
David Compton	Barry County EMD	Emergency Management	Barry County
Dana Kammerlohr	Chief of Police	Police	City of Cassville
Steve Walensky	City Administrator	Administration	City of Cassville
David Brock	Public Works Director	Public Works	City of Cassville
Courtney Hoppes	Police Clerk	Police	City of Cassville
Marissa Robbins	City Clerk	Administration	City of Exeter
Myrna Eisenbraum	Assistant City Clerk	Administration	City of Exeter
Rhonda Scott	Alderperson	Administration	City of Exeter
Bonnie Witt-Schulte	Director of Monett-Lawrence County 911 Emergency Services	Office of Emergency Management	City of Monett
Sarah Kissinger	Deputy Clerk	Administration	City of Seligman
Josh Kinnaman	Utility Superintendent	Utilities	City of Wheaton
JoGina Park	City Clerk	Administration	City of Wheaton
David Greek	Utility Work	Utilities	City of Wheaton
Marcy Merkle	Court Clerk	Administration	City of Wheaton
Clint Danforth	Chief of Police	Police	City of Wheaton
Eric White	Director of Learning	Administration	Cassville R-IV School District
Dusty Reid	Director of Facilities and Operations	Operations	Cassville R-IV School District
Angela Seymour	Director, Cassville Campus	Administration	Crowder College – Cassville
Ernest Raney	Superintendent	Administration	Exeter R-VI School District
Steve Garner	Director of Operations	Operations	Monett R-I School District
Mindi Gates	Superintendent	Administration	Purdy R-II School District
John Rakestraw	School Resource Officer	Administration	Shell Knob 78 School District
Tosha Tilford	Superintendent	Administration	Southwest R-V School District
Trish Wilson	Superintendent	Administration	Wheaton R-III School District
Gary Bertalotto	Maintenance/Transportation Director	Maintenance	Wheaton R-III School District
Valerie Wilson	Operations Chief	Administration	Barry-Lawrence Ambulance District
Rusty Rickard	Fire Chief	Fire	Central Crossing Fire Protection District
William Shane Vaughan	Manager Regional EMS-South	Emergency Medical Services	South Barry County Ambulance District

Stakeholder Representatives

Name	Title	Jurisdiction/Agency/Organization
Jennifer McBroom	CEO/General Manager	Barry Electric Cooperative
Kevin Holloway	Line Operations Manager	Barry Electric Cooperative
Rachel Freeman	Director	Cassville Area Chamber of Commerce
Gail reed	Barry County Neighborhood Center Supervisor	OACAC Barry County

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EXECUTIVE SUMMARY

The purpose of hazard mitigation is to reduce or eliminate long-term risk to people and property from hazards. Barry County and the 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 November 23, 2016. 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 Barry County Hazard Mitigation Plan is a multi-jurisdictional plan that covers the following jurisdictions that participated in the planning process:

- Barry County
- City of Cassville
- City of Exeter
- City of Monett
- City of Seligman
- City of Wheaton
- Cassville R-IV School District
- Crowder College – Cassville
- Exeter R-VI School District
- Monett R-I School District
- Purdy R-II School District
- Shell Knob 78 School District
- Southwest R-V School District
- Wheaton R-III School District
- Barry-Lawrence Ambulance District

Local jurisdictions that were invited to participate but did not include:

- Village of Arrow Point
- Village of Butterfield
- Village of Chain-O-Lakes
- Village of Emerald Beach
- City of Purdy
- City of Washburn
- University of Missouri Extension – Barry County
- Butterfield Fire Protection District
- Eagle Rock, Golden, Mano Fire Protection District
- Jenkins Fire Protection District
- Monett Rural Fire Protection District
- Purdy Fire Protection District
- Seligman Fire Protection District
- Shell Knob Special Road District
- Washburn Fire Protection District
- Wheaton Fire Protection District
- Central Crossing Fire Protection District
- South Barry County Ambulance District

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

Barry County and the 2016 participating entities created a Multi-Jurisdictional Hazard Mitigation Plan that was approved by FEMA on November 23, 2016. This current planning effort serves to update that previously approved plan.

The plan update process followed a methodology in accordance with FEMA guidance, which began with the formation of a Mitigation Planning Committee (MPC) comprised of representatives from Barry County and participating jurisdictions. The MPC updated the risk assessment that identified and profiled hazards that pose a risk to Barry 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 storms (including, thunderstorms, hail, lightning, and 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 the lives and livelihood of all citizens
2. Reduce the potential impact of natural disasters to property, infrastructure, and the local economy
3. Ensure continued operation of government, emergency functions, and critical infrastructure in a disaster

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

Table I. Mitigation Action Matrix

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
	Prevention Public Education							
2.1	Work towards re-entry into the NFIP	City of Cassville	23	2	Flooding			X
2.1	Acquire, elevate, or flood-proof properties and critical infrastructure within flood hazard areas	City of Exeter	19	2	Flooding	X		X
2.2	Enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SFHAs), floodplain identification, and mapping (including local requests for maps)	City of Exeter	35	2	Flooding	X	X	X
2.1	Acquire, elevate, or flood-proof properties and critical infrastructure within flood hazard areas	City of Monett	36	2	Flooding			X
2.2	Enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SFHAs), floodplain identification, and mapping (including local requests for maps)	City of Monett	40	2	Flooding	X	X	X
2.3	Adopt and/or update appropriate building codes	City of Monett	35	2	Earthquake, flooding, tornado, severe thunderstorm	X	X	
3.2	Implement burn restrictions during time of weather conditions conductive to the spread of wildfires	City of Monett	42	3	Wildfires			
2.1	Adopt and/or update appropriate building codes	City of Seligman	36	2	Earthquake, flooding, tornado, severe thunderstorm	X	X	
3.2	Implement burn restrictions during time of weather conditions conductive to the spread of wildfires	City of Seligman	37	3	Wildfires			
1.3	Adopt and/or update appropriate building codes	Cassville R-IV	20	1	Earthquake, flooding, tornado, severe thunderstorm	X	X	
2.2	Prune trees around building in order to prevent damage from extreme weather. Purchasing a new boom lift may be necessary	Monett R-I	42	2	Severe thunderstorm			

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
2.2	Improve drainage on school campus near building entrances	Wheaton R-III	38	2	Flooding			
	Structure and Infrastructure Projects							
1.5	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Barry County	28	1	Tornado, severe thunderstorms	X		
1.1	Construct a safe room on the south end of town	City of Cassville	26	1	Tornado, severe thunderstorms		X	
1.4	Integrate safe room construction in new community buildings, schools, large facilities, and other establishments serving the public in areas of population concentration where feasible	City of Exeter	34	1	Tornado	X	X	
1.4	Integrate safe room construction in new community buildings, schools, large facilities, and other establishments serving the public in areas of population concentration where feasible	City of Seligman	37	1	Tornado	X	X	
1.6	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	City of Seligman	30	1	Tornado, severe thunderstorm	X		
1.3	Integrate safe room construction in community buildings	City of Wheaton	30	1	Tornado, severe thunderstorm		X	
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Cassville R-IV	29	1	Tornado, severe thunderstorm	X		
1.1	Purchase a FEMA approved safe room for the campus	Crowder College – Cassville	42	1	Tornado	X	X	
1.2	Install a drainage system below the facility and sidewalks to reduce water buildup and improve drainage of rain and snow melt	Crowder College – Cassville	36	1	Extreme temperatures	X		
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Exeter R-VI	36	1	Tornado, severe thunderstorm	X		
1.3	Build a safe room on the school campus	Exeter R-VI	36	1	Tornado	X	X	
1.1	Construct a FEMA approved shelter at the middle school campus. Currently in the application process	Monett R-I	44	1	Tornado	X	X	

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
1.2	Add building insulation to prevent frozen pipes and the possibility of pipes bursting during severe temperatures	Monett R-I	38	1	Extreme temperature	X		
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Purdy R-II	33	1	Tornado, severe thunderstorms	X		
1.1	Purchase a generator to prevent disruption of services due to severe weather conditions	Shell Knob 78	42	1	Tornado, severe thunderstorm	X		
1.2	Purchase a building-wide tornado alert system with strobe lights in the gym and music room	Shell Knob 78	38	1	Tornado, severe thunderstorm	X		
1.3	Construct a FEMA approved safe room on the school campus	Shell Knob 78	38	1	Tornado, severe thunderstorm	X		
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Southwest R-V	23	1	Tornado, severe thunderstorms	X		
1.3	Construct a safe room on the school campus	Southwest R-V	27	1	Tornado, severe thunderstorm	X		
2.1	Address flooding on the athletic fields, high school parking lot, and around the Lower Elementary School. Consider elevating surfaces, improving drainage, and other flood control measures	Southwest R-V	36	2	Flooding	X	X	
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Wheaton R-III	42	1	Tornado, severe thunderstorm	X		
1.3	Construct a new safe room on the school campus. Already applied for a FEMA BRIC grant. Waiting to hear from FEMA if we are selected	Wheaton R-III	44	1	Tornado, severe thunderstorm	X		
2.1	Purchase a generator to prevent disruption of services due to severe weather	Wheaton R-III	40	2	Severe thunderstorm, tornado	X	X	
3.1	Purchase a generator to support functions of the station if power is lost	Barry Lawrence Ambulance District	40	3	Severe thunderstorm, tornado	X	X	
3.2	Construct a FEMA approved safe room	Barry Lawrence Ambulance District	41	3	Severe thunderstorm, tornado	X	X	
	Natural Systems Protection							

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
2.4	Develop an open space acquisition, reuse, and preservation plan targeting hazard prone areas	City of Monett	32	2	Flooding			X
3.3	Develop and ordinance to restrict the use of public water resources for non-essential uses such as landscaping, washing cars, filling swimming pools, etc during drought conditions	City of Monett	39	3	Drought			
3.2	Develop a policy to limit water use on athletic fields and turf maintenance during drought conditions	Cassville R-IV	25	3	Drought			
	Emergency Services							
	Education and Outreach							
1.1	Create a countywide natural hazard education and awareness program	Barry County	36	1	All			
1.2	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	Barry County	35	1	Flooding			
1.3	Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	Barry County	34	1	Land subsidence/sinkholes			
1.4	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	Barry County	34	1	All			
2.1	Maintain communications with the U.S. Army Corps of Engineers regarding dam safety status and water levels for Beaver Dam in Arkansas.	Barry County	36	2	Dam failure			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	Barry County	31	3	All			
1.1	Create a countywide natural hazard education and awareness program	City of Exeter	34	1	All			
1.2	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	City of Exeter	29	1	Flooding			X

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
1.3	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	City of Exeter	29	1	All			
1.5	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	City of Exeter	29	1	Tornado, severe thunderstorm	X	X	
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	City of Exeter	37	3	All			
1.1	Create a countywide natural hazard education and awareness program	City of Monett	40	1	All			
1.2	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	City of Monett	32	1	Flooding			X
1.3	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	City of Monett	40	1	All			
1.4	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	City of Monett	35	1	Tornado, severe thunderstorms	X		
1.5	Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available	City of Monett	37	1	Tornado			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	City of Monett	37	3	All			
1.1	Create a countywide natural hazard education and awareness program	City of Seligman	30	1	All			

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
1.2	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	City of Seligman	35	1	Flooding			
1.3	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	City of Seligman	35	1	All			
1.5	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	City of Seligman	36	1	Tornado, severe thunderstorm	X		
1.7	Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available	City of Seligman	37	1	Tornado		X	
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	City of Seligman	34	3	All			
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	City of Wheaton	39	1	Tornado, severe thunderstorm			
1.2	Create a handout to mail to residents with information regarding extreme temperature risk and safety	City of Wheaton	38	1	Extreme temperatures			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	City of Wheaton	31	3	All			
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	Cassville R-IV	31	1	Tornado, severe thunderstorms			

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	Cassville R-IV	34	3	All			
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	Exeter R-VI	36	1	Tornado, severe thunderstorm			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	Exeter R-VI	25	3	All			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	Monett R-I	30	3	All			
1.1	Create a countywide natural hazard education and awareness program	Purdy R-II	27	1	All			
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	Southwest R-V	27	1	Tornado, severe thunderstorm	X		
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	Wheaton R-III	45	1	Tornado, severe thunderstorm	X		

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

Model Resolution

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

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

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

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

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

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

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

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

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

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

By (Sig): _____
Print name: _____

ATTEST:
By (Sig.): _____
Print name: _____

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

1 INTRODUCTION AND PLANNING PROCESS

1.1 PURPOSE

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

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 it for approval every five (5) years in order to continue to be eligible for mitigation project grant funding. The 2021 Barry 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 November 23, 2016.

The plan is a major rewrite of the 2016 plan and reflects changes in priorities and development, and the continued commitment of local jurisdictions to mitigate the impact of natural hazards in Barry County. Local participating jurisdictions include:

- Barry County
- City of Cassville
- City of Exeter
- City of Monett

- City of Seligman
- City of Wheaton
- Cassville R-IV School District
- Crowder College – Cassville
- Exeter R-VI School District
- Monett R-I School District
- Purdy R-II School District
- Shell Knob 78 School District
- Southwest R-V School District
- Wheaton R-III School District
- Barry-Lawrence Ambulance District

Local jurisdictions that were invited to participate but did not include:

- Village of Arrow Point
- Village of Butterfield
- Village of Chain-O-Lakes
- Village of Emerald Beach
- City of Purdy
- City of Washburn
- University of Missouri Extension – Barry County
- Butterfield Fire Protection District
- Eagle Rock, Golden, Mano Fire Protection District
- Jenkins Fire Protection District
- Monett Rural Fire Protection District
- Purdy Fire Protection District
- Seligman Fire Protection District
- Shell Knob Special Road District
- Washburn Fire Protection District
- Wheaton Fire Protection District
- Central Crossing Fire Protection District
- South Barry County Ambulance District

All jurisdictions received letter and email communications notifying representatives of upcoming meetings and participation requirements.

The local mitigation plan is the representation of the jurisdiction's 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

The Plan is organized into five chapters. The 2016 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, 2017. 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 Section	Summary of Updates
Chapter 1 - Introduction and Planning Process	• Updated list of participating jurisdictions and stakeholders • Updated list of mitigation planning committee members • Added roles for participating MPC members • Added Table 1.3 – MPC Capability with Six Mitigation Categories • Added columns for “Fifth Meeting” and “Adoption Resolution” to table 1.4 • An online community survey was conducted regarding hazard threats and mitigation activities in the community • Eliminated objective statements from goals
Chapter 2 - Planning Area Profile and Capabilities	• Added table of contents • Updated demographic information • Incorporated revisions to community profiles as draft sections were reviewed by local officials • Added a table for FEMA PA Grants
Chapter 3 - Risk Assessment	• Added Table of Contents • Extreme Heat and Extreme Cold were combined into Extreme Temperatures • Added Table 3.19 Barry County Repetitive Loss Properties and Table 3.20 Barry County Severe Repetitive Loss Properties • Added Community Comments on Hazard section to each of the assessed hazards • Changed the ordering of the hazards
Chapter 4 - Mitigation Strategy	• Added table of contents • Removed the objectives from the goals • Added Table 4.1 – Action Status Summary • Reformatted the Completed Actions and Deleted Actions tables • Reworked the mitigation action worksheet • Action/project number was reworked to reflect the change in goal numbering • Mitigation category of each jurisdiction was added to the action worksheet • Each jurisdiction was given it’s own action sheet for each of it’s actions (multiple jurisdictions could be listed on same action in the last plan)

Chapter 5 - Plan Implementation and Maintenance	• Table of Contents added

1.4 PLANNING PROCESS

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

The Southwest Missouri Council of Governments (SMCOG) was contracted to facilitate the plan development process. SMCOG staff met with the Barry County EMD during an initial scoping meeting to develop contact information for the area stakeholders and local jurisdiction representatives to establish the Mitigation Planning Committee (MPC). Meeting locations and schedules were discussed, and the most effective way to inform and include the public was determined. Also discussed was previous plan maintenance and any updates made since 2016. It was determined that the document had not been officially updated or annually monitored.

The planning process included the kick-off meeting and four subsequent MPC meetings. SMCOG staff was 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**. SMCOG also assisted in soliciting public involvement in the planning process by creating a community survey. Notification of the MPC meetings on January 21, 2021, February 25, 2021, March 25, 2021, April 22, 2021, and May 20, 2021 were posted on the SMCOG website in advance. Appendix B provides documentation of the planning process including public involvement solicitations and meeting notices.

The preliminary draft of the plan was posted on the SMCOG website for public review and comment on Wednesday, June 18th, 2021. A public notice was published in the Barry County Advertiser seeking public input on the draft plan. A final draft of the Plan will be sent to all MPC members and posted on the SMCOG website once the plan is approved by SEMA/FEMA. 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, and the American Red Cross. A complete list of all agencies invited to participate in the planning process and what meetings they attended is include in Appendix B.

Table 1.2 shows the MPC members and the entities they represent, along with their titles.

Table 1.2. Jurisdictional Representatives of Barry County Mitigation Planning Committee

Name	Title	Department	Jurisdiction/Agency/Organization
David Compton	Barry County EMD	Emergency Management	Barry County
Dana Kammerlohr	Chief of Police	Police	City of Cassville
Steve Walensky	City Administrator	Administration	City of Cassville
David Brock	Public Works Director	Public Works	City of Cassville
Courtney Hoppes	Police Clerk	Police	City of Cassville
Marissa Robbins	Court Clerk	Administration	City of Exeter
Myrna Eisenbraum	City Clerk	Administration	City of Exeter
Rhonda Scott	Alderperson	Administration	City of Exeter
Bonnie Witt-Schulte	Director of Monett-Lawrence County 911 Emergency Services	Office of Emergency Management	City of Monett
Sarah Kissinger	Deputy Clerk	Administration	City of Seligman
Josh Kinnaman	Utility Superintendent	Utilities	City of Wheaton
JoGina Park	City Clerk	Administration	City of Wheaton
David Greek	Utility Work	Utilities	City of Wheaton
Marcy Merkle	Court Clerk	Administration	City of Wheaton
Clint Danforth	Chief of Police	Police	City of Wheaton
Eric White	Director of Learning	Administration	Cassville R-IV School District
Dusty Reid	Director of Facilities and Operations	Operations	Cassville R-IV School District
Angela Seymour	Director, Cassville Campus	Administration	Crowder College – Cassville
Ernest Raney	Superintendent	Administration	Exeter R-VI School District
Steve Garner	Director of Operations	Operations	Monett R-I School District
Mindi Gates	Superintendent	Administration	Purdy R-II School District
John Rakestraw	School Resource Officer	Administration	Shell Knob 78 School District
Tosha Tilford	Superintendent	Administration	Southwest R-V School District
Trish Wilson	Superintendent	Administration	Wheaton R-III School District
Gary Bertalotto	Maintenance/Transportation Director	Maintenance	Wheaton R-III School District
Valerie Wilson	Operations Chief	Administration	Barry-Lawrence Ambulance District
Rusty Rickard	Fire Chief	Fire	Central Crossing Fire Protection District
William Shane Vaughan	Manager Regional EMS-South	Emergency Medical Services	South Barry County Ambulance District
Stakeholders			
Jennifer McBroom	CEO/General Manager		Barry Electric Cooperative
Kevin Holloway	Line Operations Manager		Barry Electric Cooperative
Rachel Freeman	Director		Cassville Area Chamber of Commerce
Gail reed	Barry County Neighborhood Center Supervisor		OACAC Barry County

Table 1.3. MPC Capability with Six Mitigation Categories

Community Department/Office	Preventive Measures	Structure and Infrastructure Projects		Natural Resource Protection	Public Information	Emergency Services
		Property Protection	Structural Flood Control Projects			
Barry County Commission	X	X	X	X	X	X
Barry County EMA	X	X	X	X	X	X
Cassville Public Works	X		X	X		X
Cassville Administration	X	X	X	X	X	X
Exeter Administration	X	X	X	X	X	X
Exeter Police Department	X	X			X	X
Monett Emergency Management	X	X	X	X	X	X
Monett Police Department	X	X			X	X
Monett Fire Department	X	X		X	X	X
Monett Administration	X	X	X	X	X	X
Seligman Administration	X	X	X	X	X	X
Seligman Utilities	X		X			
Seligman Fire Department	X	X		X	X	X
Wheaton Administration	X	X	X	X	X	X
Wheaton Utilities	X					
Cassville R-IV Administration	X	X			X	X
Cassville R-IV Maintenance	X		X			
Crowder College Administration	X	X	X		X	X
Crowder College Campus Police	X	X			X	X
Crowder College Maintenance	X		X			
Exeter R-VI Administration	X	X	X		X	X
Exeter R-Vi Maintenance	X		X			
Monett R-I Administration	X	X	X		X	X
Monett R-I Operations	X		X			
Purdy R-II Administration	X	X			X	X
Purdy R-II Maintenance	X		X			

Shell Knob 78 Administration	X	X			X	X
Shell Knob 78 Maintenance	X		X			
Southwest R-V Administration	X	X			X	X
Southwest R-V Maintenance	X		X			
Wheaton R-III Administration	X	X			X	X
Wheaton R-III Buildings and Grounds	x		X			
Barry Lawrence Ambulance Administration	X	X	X	X	X	X

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 Barry County to assure participation in the planning process and the development of a plan that represents the needs and interests of Barry 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 July 16, 2018. 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;
- 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.

If, however, a representative was not able to attend at least two meetings, they were instead able to conduct a one-on-one meeting with SMCOG staff. Due to the COVID-19 Pandemic, all meetings were held virtually via Zoom.

Jurisdictions that met the minimum requirements are considered to have satisfactorily participated in the planning process.

Table 1.4 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 and development of mitigation actions, documented the donation of time, and passed an adoption resolution. Meeting sign-in sheets are located in Appendix B.

Table 1.4. 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
Barry County	X	X	X	X	X	X	X	X
City of Cassville	X	X	X	X		X	X	X
City of Exeter		X	X	X		X	X	X
City of Monett	X	X	X	X		X	X	X
City of Seligman			X	X	X	X	X	X
City of Wheaton		X		X	X	X	X	X
Cassville R-IV	X	X		X		X	X	X
Crowder College - Cassville	X	X	X	X	X	X	X	X
Exeter R-VI	X	X	X	X		X	X	X
Monett R-I		X	X	X	X	X	X	X
Purdy R-II	X	X		X		X	X	X
Shell Knob 78	X	X	X	X		X	X	X
Southwest R-V	X	X	X	X	X	X	X	X
Wheaton R-III	X	X		X	X	X	X	X
Barry-Lawrence Ambulance	X		x	X	X	X	X	X

*Rather than meeting as a group for meeting #4, SMCOG staff conducted individual calls to all participating jurisdictions to discuss and review their mitigation actions

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, BRIC (formerly the Pre-Disaster Mitigation Program), Community Rating System, and Flood Mitigation Assistance Program. **Table 1.5** shows how the CRS process aligns with the Nine Task Process outlined in the 2013 Local Mitigation Planning Handbook.

Table 1.5. County Mitigation Plan Update Process

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

Step 1: Organize the Planning Team (Handbook Tasks 1, 2, and 4)

In December 2019, SMCOG entered into cooperative agreements with SEMA and Barry County to prepare this multi-jurisdictional plan for public entities in Barry County. Discussions on the development of the Barry County Multi-Jurisdictional Natural Hazard Mitigation Plan began on September 18, 2020 with an introductory scoping meeting between SMCOG staff and the Barry 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 dates for five planning committee meetings, beginning with a kick-off meeting on January 21, 2021, 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 January through May 2021 to collaborate on the development of the Plan update. Participants assisted in data collection; reviewed and revised the Plan's goals 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 1.6** shows the meeting schedule and items discussed for MPC meetings.

Table 1.6. Schedule of MPC Meetings

Meeting	Topics Discussed	Date
Informational Meeting	• Discussion of general process of updating the Hazard Mitigation Plan • Prepared planning committee members and reviewed contact list • Planned future dates for planning committee. • Discussed communication with the public, stakeholders, city officials, and other jurisdictions to make aware of hazard mitigation meetings. • Discussed previous plan maintenance and established procedure for future plan maintenance.	9/18/2020
Kick-off Meeting	• Introduction to hazard mitigation • The planning process • Participation requirements • Options for Public Input • Future meeting dates	1/21/2021
Planning Meeting #2	• Participation requirements • The planning process – recap • Risk assessment • Mitigation goals and strategies preview • Future meeting dates	2/25/2021
Planning Meeting #3	• Participation requirements • The planning process – recap • Survey results • Mitigation strategies: goals and actions • STAPLEE sheet discussion	3/25/2021
Planning Meeting #4*	• Participation requirements • The planning process – recap • Mitigation strategies: goals and actions • STAPLEE sheet discussion • Review of actions prioritization and development of action sheets – funding mechanisms & implementation • Future meeting dates	4/22/2021
Planning Meeting #5	• Participation requirements • The planning process – recap • Review of actions prioritization • Funding mechanisms & implementation • Plan adoptions and maintenance	5/20/2021

* = Meeting #4 was held via one-one-one phone calls between participating jurisdictions and SMCOG staff to discuss and review mitigation actions.

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 of the Plan were discussed with the MPC at the kick-off meeting held on January 21st, 2021. SMCOG staff explained the importance of public involvement during the planning process. It was determined that SMCOG staff would advertise MPC meetings through on the SMCOG website MPC members would share the meeting details with their community. In addition, a draft of the plan was posted on the SMCOG website for public comment

prior to the plan being submitted to SEMA for review. Press releases were sent to local news publications, and a legal notice was published in the Barry County Advertiser when the draft was posted on the SMCOG website. Copies of these documents can be found 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 aldermen, county commission meetings, board of education meetings, and local emergency planning committee meetings.

The MPC decided that SMCOG staff would assist in developing an online community survey. The survey was via the SMCOG website and the MPC members providing it to their residents. 175 responses were received during the one-month time period it was open. Some notes from the survey include:

- 13.7% of the responders indicated they had been impacted by a disaster
- When asked to indicate their opinion on the likelihood for each hazard type impacting their community, 64% felt severe thunderstorms are highly likely, 44.6% felt tornadoes are highly likely, and 40% felting that flooding is highly likely.
- Responders are most concerned about tornadoes, severe thunderstorms, and flooding, while least concerned about dam failure, earthquakes, and land subsidence/sinkholes.
- Responders overwhelmingly felt that tornadoes would have the highest magnitude of impact on their community (52% felt it could have a catastrophic impact)
- New tornado safe room construction was the most supported sample project, followed by structural retrofitting to add safe rooms to existing structures, and minor localized flood reduction projects.
- “The tornado two yeas ago came within two blocks of our school buildings. We were in session and don’t have a ‘safe room’. I feel this is vital for the school”
- “Buy out houses and property along Flat Creek. The same houses have been flooded over and over”
- “Tornado shelter needed in Wheaton community”

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 above, 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, as well as local and regional agencies such as OACAC, Health Departments, and special districts. 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 the FEMA Risk Map projects during the update of this plan. An update of the project is currently underway, and the preliminary maps would not be available until July 2021.

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 list of references to plans, studies, reports, and technical information to incorporate into hazard profiles, risk assessment, and profile and capability sections. A few examples of information incorporated from the review of existing plans, etc. include:

- 2018 Missouri State Hazard Mitigation Plan
- State Department of Natural Resources (DNR) dam information, the National Inventory of Dams (NID)
- 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
- USDA Risk Management Agency Crop Insurance Statistics

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

At the second MPC meeting on February 25th, 2021, profiles of identified hazards from the 2016 Plan were presented. Some event data from the National Centers for Environmental Information 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 the following:

- 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.

Hazards identified include flooding (riverine and flash), dam failure, earthquakes, land subsidence/sinkholes, drought, extreme temperatures, severe thunderstorms, severe winter weather, tornadoes, and wildfires.

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

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 Barry County Assessor, the Barry County Structures GIS dataset from MSDIS, local jurisdiction data collection questionnaires, and the U.S. Census. Potential losses to existing development were estimated based on hazard event

scenarios. In most cases the assessor 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.

Most jurisdictions estimated local capabilities and assets based on the best available data and staff knowledge. In some cases, MPC members were not able to fully complete questionnaires due to limited local information being available.

Step 6: Set Goals (Handbook Task 6)

The MPC conducted a discussion session during their third meeting on March 25th, 2021 to review and update the Plan goals. The MPC also reviewed the goals from surrounding counties' plans. In the 2016 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 2016 Plan and eliminate the objective statements, moving forward with broad goals and specific mitigation actions. Objectives seemed to add a layer of complication and potential confusion. During this update process, the intent was to provide a useable set of actions that each jurisdiction was able to work towards partial or full implementation, and objectives seemed unnecessary.

The Plan update goals are as follows:

Goal 1: Protect lives and livelihood of all citizens.
Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.
Goal 3: Ensure continued operation of government, emergency functions, and critical infrastructure in a disaster.

These goals and the identified mitigation actions are discussed in more detail in Chapter 4.

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

In addition to discussing the overall goals at the third MPC meeting, the MPC also reviewed mitigation actions from the previous plan and any potential new actions. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during the meeting:

- Previously proposed mitigation actions
- Responses to questionnaires- where jurisdictions had reported progress made
- Reference to the FEMA publication, Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013)
- STAPLEE discussion on how to score potential new actions

This mitigation action discussion continued all the way through the fifth and final meeting on May 20th, 2021. Jurisdiction representatives on the MPC were encouraged to review the details of the risk assessment vulnerability analysis specific to their jurisdiction, and the previously identified mitigation actions prior to the meeting. Representatives were provided a link to the FEMA publication, Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013) prior to the meeting. Another FEMA publication, Hazard mitigation Assistance Guidance: Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program, was used to help facilitate this discussion. These documents were developed by FEMA

as a resource for identification of a range of potential mitigation actions for reducing risk to natural hazards and disasters. Additionally, survey responses which identified community support for specific mitigation actions were reviewed and discussed.

During the meetings, and through subsequent calls to each participating jurisdiction, new actions were proposed by the committee while some were reworded. Additional discussion was held over making actions SMART: specific, measurable, achievable, relevant, and time-bound. New participants were instructed to identify potential actions and score using STAPLEE to determine feasibility.

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

During the fourth and fifth meetings, SMCOG staff and jurisdiction representatives worked on scoring their mitigation actions via the STAPLEE sheets. The method was used to develop a priority score for proposed actions. During the meetings, SMCOG staff provided an over of the scoring criteria and example scoring. MPC members were encouraged to use the STAPLEE scoring to determine which actions applied to their jurisdiction. Actions were eliminated due to non-applicability or low feasibility scores.

After the fifth formal meeting, SMCOG staff worked with individual jurisdictions to complete their action sheets. SMCOG staff reviewed the action sheets in detail and discussed what department or position would be responsible for implementing the action, potential funding sources, timelines for completion, and local planning mechanisms for implementation. The action plans are listed for each jurisdiction in the Mitigation Strategy Chapter, Chapter 4.

Step 9: Adopt the Plan (Handbook Task 8)

The final meeting on May 20th, 2021 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)

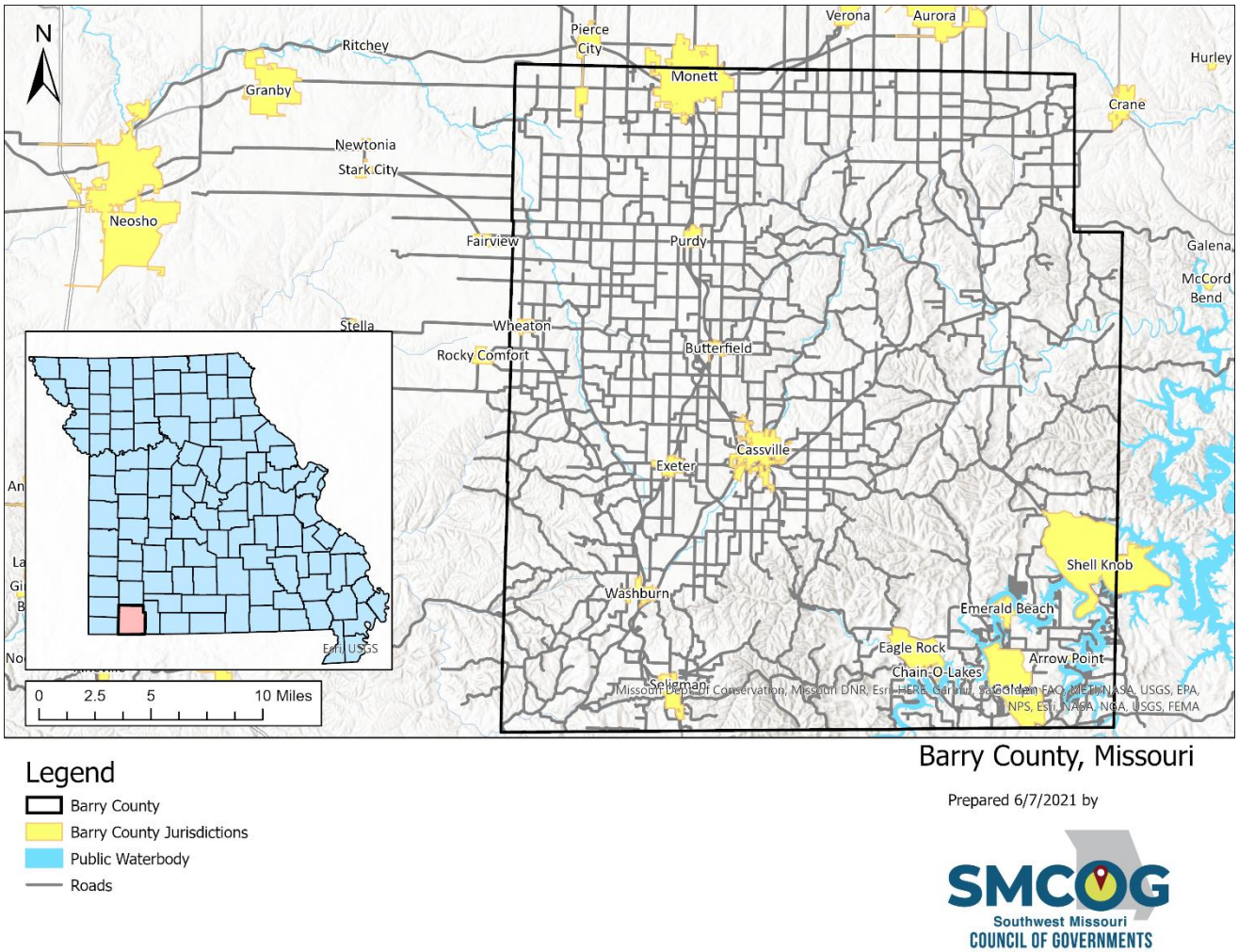
At the final MPC meeting on May 20th, 2021, and through subsequent calls and emails between SMCOG staff and representatives, potential funding sources for mitigation projects were discussed, and the process for reviewing and monitoring the plan. Barry County Emergency Management will be charged with maintenance of the plan over the next five years. The overall strategy has been updated and is presented in the Plan Maintenance Chapter.

2 PLANNING AREA PROFILE AND CAPABILITIES

2.1 BARRY COUNTY PLANNING AREA PROFILE

Barry County is bordered by McDonald, Newton, Lawrence, and Stone Counties in Southwest Missouri. Barry County has had only small amounts of growth in the past decade. Incorporated communities include the cities of Cassville, Exeter, Monett, Purdy, Seligman, Washburn, Wheaton, Arrow Point, Butterfield, Chain-O-Lakes, and Emerald Beach. Of these cities, Monett and Cassville are the largest, with an estimated 2019 population of 9,124 and 3,290 respectively. The county seat is Cassville. **Figure 2.1** is a map of the county's location in Missouri.

Figure 2.1. Map of Barry County



According to the U.S. Bureau of the Census July 1, 2019 Population Estimates, the population of Barry County was 35,789. At the time of the 2000 U.S. Census, the county had a population of 34,010. Between 2000 and 2019 the county experienced a 5.2% increase in population compared to a statewide increase of 9.7% and a nationwide increase of 16.6% within those same years.

The American Community Survey estimates median household income in Barry County in 2019 had risen to $44,403 from $36,143 in 2010. The percent growth experienced over this period was 22.9%, compared to 19.9% statewide and 21.1% nationwide. In 2019, ACS estimates the median housing value in Barry County at $120,600, an increase from 2010 where the median housing value was $101,600. This represents a growth of 18.7%.

2.1.1 Geography, Geology and Topography

Barry County includes 778 square miles of land and 13 square miles of water located in southwest Missouri. The majority of residents, approximately 73 percent, live in rural areas. The county has four municipalities with populations over 1,000: Monett, Cassville, Purdy, and Seligman. All four communities experienced population increase over the past decade. Monett experienced a significant increase of 1,588 people from 2000 to 2019, a 21.5% increase.

The county is located in the southwest portion of the Ozark Highlands 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), Barry County lies within four (4) HUC 8 watersheds: The Spring River Basin, The James River Basin, The Elk River Basin, and the Beaver Reservoir. The Spring River Basin covers the northern boundary, northwestern, and west-central portions of Barry County. The Spring River originates along the Barry-Lawrence county line south of the community of Verona. The James River Basin, a sub-basin to the White River Basin, covers the center to the northeastern portions of Barry County. The James River flows in a predominately southern direction into Table Rock Lake in Stone County. Major tributaries to the James River in Barry County include Crane Creek and Flat Creek. The west-southwestern portions of Barry County lie within the Elk River Basin. The Elk River headwaters originate with the Big Sugar Creek near Seligman and Little Sugar Creek near Bentonville, Arkansas. These two streams merge near Pineville in McDonald County to form the Elk River. The Beaver Reservoir watershed covers a large area in northwest Arkansas and covers the southeast corner of Barry County. The communities of Arrow Point, Chain-O-Lakes and Emerald Beach, and the Shell Knob settlement area are located within the Table Rock Lake watershed (Kiner and Vitello, n.d.)

The Ozarks Highlands are divided into subsections of ecological land types that have a similar geology, topography, climate, and vegetation patterns (Nigh and Schroeder, 2002). Barry County straddles the Springfield Plain, Elk River Hills and White River Hills sections of the Ozarks Highlands. Characteristics of these land types are described in The Atlas of Missouri Ecoregions:

<u>Springfield Plain</u>
Topography – gently undulating plain with generally low relief.
Substrate – Extensive Missipian aged Burlington Limestones 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.

<u>White River Hills</u>
Topography – Deeply dissected basin with extensive bedrock exposures and high-relief, steep slopes.
Substrate – Thick-bedded, shaley and cherty Ordivician dolomites with localized areas of Ordivician sandstones; high-base clayey or loamey soils derived from dolomite and some weathered acidic soils on uplands.
Ecological System – Extensive dolomite glades and high-base woodland complexes with stranded mesophytic woodlands on cherty ridges; pine, oak, and acid deciduous woodland complexes on sandstone derived substrates.

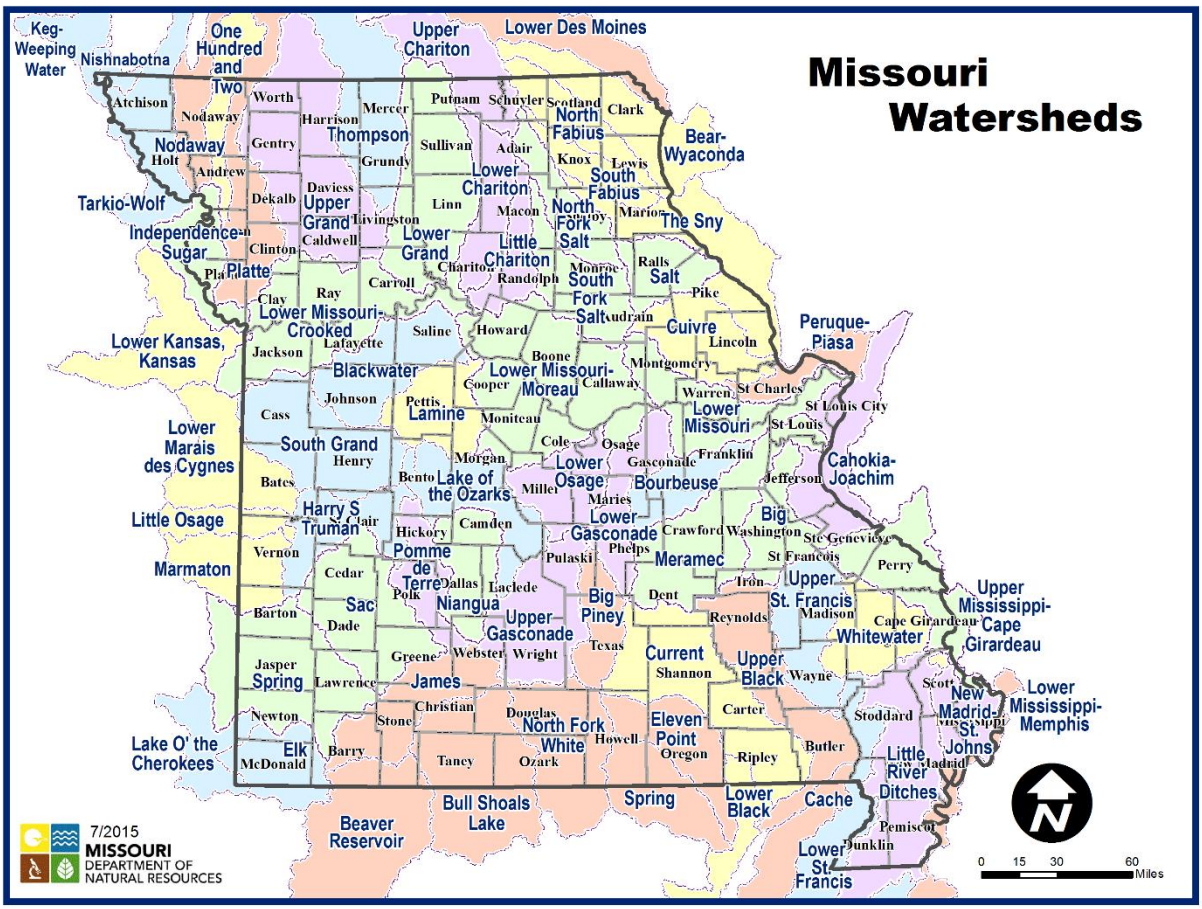
<u>Elk River Hills</u>
Topography – Highly dissected drainage basin with abundant narrow ridges and ravines, steep slopes, and frequent large bluff exposures.
Substrate – Predominantly cherty limestones of the Ordavician Burlington formation with Ordavician dolomites in the deepest dissecations; soils predominantly derived from cherty limestones.
Ecological System – Open oak woodland and extensive oak savannah with predominant and diverse grassy ground layer; small limestone glades, prairie openings, and frequent small springs.

Much of Barry 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.

Barry County is covered by the James, Beaver Reservoir, Spring, and Elk Watersheds. **Figure 2.2** provides a map of Missouri Watersheds.

Figure 2.2. Map of Barry County



2.1.2 Climate

Barry County has a continental climate with mild winters and hot summers. Based on information from the Midwest Regional Climate Center, Monett, MO has an average annual temperature of 56.3 Fahrenheit. The average high in July is 85.3 Fahrenheit and the average low in January is 19 Fahrenheit. It averages 45.85 inches of precipitation, with snow accounting for 9.0 inches annually.

Barry County currently has The National Flood Hazard Layer (NFHL). This is a geospatial database that contains current effective flood hazard data. FEMA provides the flood hazard data to support the National Flood Insurance Program. This information can be used to better understand the level of flood risk and type of flooding. (https://msc.fema.gov/portal)

2.1.3 Population/Demographics

Table 2.1 provides the total population for the county and each participating city for 2000, 2010, and 2019 with the number and percentage change from 2010 to 2019.

During this time period, the County grew from 34,010 in 2000 to 35,789 in 2019, an increase of 5.2%. The city of Exeter experienced the largest percent change from 2010 to 2019 at 6%, while Barry County added the most new citizens (192), followed by Monett (111). It should be noted that Monett lies within both Barry County and Lawrence County to the north.

Table 2.1. Barry County Population 2000-2019 by Jurisdiction

Jurisdiction	2000 Population	2010 Population	2019 Annual Population Estimate or ACS Population	# Change (2010-2019)	% Change (2010-2019)
Unincorporated Barry County	34,010	35,597	35,789	+192	+0.54%
Cassville	2,890	3,266	3,267	+1	+0.00%
Exeter	707	772	818	+46	+6.00%
Monett*	7,396	8,873	8,984	+111	+1.25%
Seligman	887	851	881	+30	+3.53%
Wheaton	721	696	581	-115	-16.52%

Source: U.S. Bureau of the Census, Decennial Census, annual population estimates/ 5-Year American Community Survey 2019;
*population includes the portions of these cities in adjacent counties

Barry County's most at-risk populations are somewhat similar and on par with state and national averages. Children under 5 in the county represent 5.8% of the population, similar to the state and national average of 6.1%. However, persons age 65 and above make up 20% of the population of Barry County, which is higher than both the state (16%) and national average (16%). The median age is 43.7 years for Barry County, 38.6 for Missouri, and 38.1 for the United States, meaning the population of Barry County is on average older when compared to the state of Missouri and the nationwide averages.

Table 2.2 provides the number of Barry County residents within specific age groups and a comparison of percentages with the state of Missouri and the United States.

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

Age Group	# of People	Percent	Missouri Percent	United States Percent
Persons under 5 years old	2,053	5.8%	6.1%	6.1%
Persons 5 to 9 years old	2,235	6.3%	6.2%	6.2%
Persons 10 to 14 years old	2,381	6.7%	6.4%	6.4%
Persons 15 to 19 years old	2,223	6.3%	6.5%	6.5%
Persons 20 to 24 years old	1,778	5.0%	6.8%	6.8%
Persons 25 to 34 years old	3,759	10.6%	13.3%	13.9%
Persons 35 to 44 years old	3,871	10.9%	12.0%	12.6%
Persons 45 to 54 years old	4,569	12.9%	12.6%	13.0%
Persons 55 to 59 years old	2,569	7.2%	7.0%	6.7%
Persons 60 to 64 years old	2,909	8.2%	6.5%	6.2%
Persons 65 to 74 years old	4,129	11.6%	9.4%	9.1%
Persons 75 to 84 years old	2,345	6.6%	5.0%	4.6%
Persons 85 and older	709	2.0%	2.0%	1.9%

Total	**35,530**	**-**	**6,104,910**	**324,697,795**
Median Age	**43.7**	**-**	**38.6**	**38.1**

Source: 5-Year American Community Survey 2019

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 difference 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.

Barry County is listed as medium vulnerability in the 2018 State Plan and has a SoVI ® score of 0.519999981, placing it at the 59.3 percentile when compared to the rest of the nation. This score means that 59.3 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. Unemployment, Poverty, Education, and Language Percentage Demographics, Barry County, Missouri

Jurisdiction	Total in Labor Force	Percent of Population Unemployed	Percent of Families Below the Poverty Level	Percentage of Population (High School graduate)	Percentage of Population (Bachelor's degree or higher)	Percentage of population with spoken language other than English
Barry County	15,409	4.6%	5.2%	83.6	14.6%	8.4%
Cassville	1,235	8.4%	27.5%	75.9	10.9%	8.9%
Exeter	358	0.0%	9.4%	80.7%	10.9%	1.1%
Monett	4,487	2.8%	15.5%	81.8%	18.3%	23.6%
Seligman	326	5.2%	37.1%	72.3%	3.4%	29.8%
Wheaton	206	3.4%	21.6%	83.6%	1.3%	0.0%
Missouri	3,078,235	3.8%	9.4%	89.9%	29.2%	6.3%
United States	167,501,734	4.5%	9.5%	88.0%	32.1%	21.6%

Source: U.S. Census, 2019 American Community Survey, 5-year Estimates.

2.1.4 History

Barry County was formed from Greene County in 1835 and contained the present counties of Barry, Lawrence, Dade, McDonald, Newton, Jasper, Barton, and a part of Cedar County. It was named after either Commodore Barry of the American Navy or U.S. Postmaster General William T. Barry, depending on the source. The original county seat was Mount Pleasant, located just west of the present-day Pierce City. By 1840, Barry County had been reduced to the present-day Barry County and the southern half of Lawrence County. The formation of Lawrence County by 1845 reduced it to its present size, and the county seat was moved to Cassville in order to be more centrally located (Tortorelli, 1999).

Approximately 60% of Barry County was in forest when settlers first arrived, which provided for many of their necessities. Springs flowed year round, and several of the communities developed around these springs. Grist mills and saw mills were built in many of these new communities. By the late 1800s, specialty crops, such as small fruits, tomatoes, and vegetables, were raised because of the soil and climate. Newspapers promoted the area proclaiming it as “one of the best parts of the State for farming and fruit raising purposes” (Banks, Early Monett, Missouri Newspaper Articles, October 27, 1887). Barry County settlers were also harvesting timber into building lumber and railroad ties, but after years of mismanagement, the quality and quantity of the timber had declined. The cleared land from timber cutting became open range for livestock. In the late 1930s, the Forest Service started acquiring land in Barry County and began applying protection measures to reduce wildfires (Aldrich, 1994, p. 63).

From 1900 to 1950, farming was a major economic factor in Barry County. The number of farms increased from 3,308 to 3,926 within the five decades. Total county acreage in farmland increased from 339,374 in 1900 to 403,890 in 1950. The number of farms gradually decreased in the county after 1950, although the average farm size increased. According to the 2017 Census of Agriculture, Barry County had a total of 1,392 farms with an average farm size of 208 acres.

2.1.5 Occupations

Occupation information for the Barry County labor force comes from the 2019 American Community Survey. 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 Barry County.

Seligman has the highest percentage of production, transportation, and material moving occupations, while Cassville boasts the highest percentage for management, business, science, and arts occupations. Cassville, Exeter, and Monett have the lowest percentage of jobs in natural resources, construction, and maintenance occupations. Wheaton is the only city in the planning area where service occupations is the highest percentage of all jobs. Barry County’s highest percentage is in management, business, science and arts, closely followed by production, transportation, and material moving.

Table 2.4. Occupation Statistics, Barry County, Missouri 2019

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
Barry County	27.98%	16.62%	17.45%	12.59%	25.36%
Cassville	30.06%	21.84%	12.20%	7.87%	28.03%
Exeter	28.93%	15.60%	13.87%	9.47%	32.13%
Monett	23.75%	19.21%	18.91%	9.54%	28.59%
Seligman	16.18%	12.30%	19.74%	17.15%	34.63%
Wheaton	20.11%	28.14%	14.07%	13.06%	24.62%

Source: U.S. Census, 2019 American Community Survey, 5-year Estimates.

2.1.6 Agriculture

According to the USDA 2017 Agricultural Census, there were 1,392 farms covering 289,638 acres in Barry County. The average farm size was 208 acres, which is about 2/3rds the average farm size in Missouri at 291 acres. The average market value of agricultural products sold in Missouri by farm is $110,427, while the average value for Barry County was $289,561. Of the total, $16,817,000 were crop, nursery, and greenhouse products and $386,254,000 were livestock, poultry, and their products. The Barry County Agriculture Census of 2017 reports that 96% of farms were in livestock, poultry, and products and 4% of farms yielded crops. The production of poultry and eggs held the majority of farm activities. According to the census, there are a total of 2,269 producers in Barry County. 27% of these farms hire farm labor, and 98% of farms in Barry County are considered family farms.

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

From 2007 to 2020, local jurisdictions in Barry County have been awarded a total of $10,721,986 in FEMA HMA grants. HMA grants in the community have been used to fund multiple safe rooms in both city and school jurisdictions, as well as an acquisition of private real property (more commonly referred to as a flood buyout) and a warning system. **Table 2.5** shows the details for each project.

Table 2.5. FEMA HMA Grants in Barry County from 1993-2021

Disaster Declaration	Project Type	Sub-Grantee	Date Approved	Project Total
DR-1980-0035-R	Safe room	Monett	1/21/2015	$833,349
DR-1980-0040-R	Safe room	Monett School Superintendent	12/09/2014	$2,549,772
DR-4250-0010-R	Safe room	Purdy School District	4/04/2017	$1,579,000
DR-1980-0064-R	Safe room	Cassville School District	1/21/2015	$1,383,942
DR-1749-0004-R	Safe room	Monett School District	2/11/2013	$914,578
DR-1847-0005-R	Safe room	Cassville School District	9/13/2012	$1,552,250
DR-4317-0042-R	Acquisition of private real property	Monett	5/19/2020	$659,741
DR-1403-0010-F	Warning systems	KAMO Electric	2/27/2007	$57,576
DR-1676-0023-P	Local multihazard mitigation plan	Statewide	10/28/2013	$1,191,778
Total				**$10,721,986**

Source: Federal Emergency Management Agency, 6/10/2021

2.1.8 FEMA Public Assistance (PA) Grants in Planning Area

Since 2002, jurisdictions in Barry County have received over fifteen million dollars in public assistance due to natural hazard damages. **Table 2.6** shows all the public assistance payouts received by jurisdictions, as well as the project type and disaster declaration.

Table 2.6. FEMA PA Grants in County from 2002-2021

Disaster Declaration	Project Type	Project Size	Applicant	Project Amount ($)
1412	Debris Removal	Small	Cassville	1010.06
1412	Protective Measures	Small	Cassville	2821.94
1412	Protective Measures	Small	Mineral Springs Road District	1184.92
1412	Roads and Bridges	Small	Cassville	1799.72
1412	Roads and Bridges	Small	Purdy Road District	3958.36

1412	Debris Removal	Small	Purdy Road District	2752
1412	Roads and Bridges	Small	Purdy Road District	16792.16
1412	Roads and Bridges	Small	Purdy Road District	47109.06
1412	Recreational or Other	Small	Cassville	9070.35
1412	Roads and Bridges	Small	Mineral Springs Road District	42613.27
1412	Roads and Bridges	Small	Roaring River Road District	44024.28
1412	Roads and Bridges	Large	Flat Creek Special Road District	86725.47
1412	Roads and Bridges	Small	McDonald Road District	15779.59
1412	Roads and Bridges	Small	Sugar Creek Road District	23166
1412	Roads and Bridges	Small	Sugar Creek Road District	-
1412	Roads and Bridges	Small	Sugar Creek Road District	-
1412	Roads and Bridges	Small	Shell Knob Road District	-
1412	Roads and Bridges	Large	Pleasant Ridge Road Distict	117749.79
1412	Roads and Bridges	Large	Exeter Special Road District	166560.34
1412	Roads and Bridges	Large	Wheaton Special Road District	82806.75
1412	Roads and Bridges	Small	Mountain Road District	7629.25
1412	Roads and Bridges	Small	Wheaton Special Road District	10092
1412	Roads and Bridges	Large	Butterfield Special Road District	56202.76
1412	Roads and Bridges	Large	Corsicana Special Road District #16	118767.98
1412	Roads and Bridges	Large	Jenkins Special Road District	49553.13
1412	Roads and Bridges	Large	Ash Creek Road District	86938.86
1412	Roads and Bridges	Large	Washburn Special Road District	84446.5
1412	Roads and Bridges	Large	Greasy Creek Road District	61404.77
1412	Roads and Bridges	Small	009-UVBKW-00	9935.2
1412	Roads and Bridges	Small	Exeter Special Road District	8777.91
1412	Roads and Bridges	Small	Exeter Special Road District	1740
1412	Roads and Bridges	Small	Exeter Special Road District	3828
1676	Debris Removal	Small	Wheaton	16443.76
1676	Debris Removal	Small	Washburn	2400
1676	Recreational or Other	Small	Wheaton R-III School District	500
1676	Protective Measures	Small	Butterfield	6997.13
1676	Protective Measures	Small	Butterfield	1319.9
1676	Debris Removal	Small	Butterfield	13604.06
1676	Protective Measures	Small	Pleasant Ridge Road Distict	9435
1676	Debris Removal	Small	Corsicana Special Road District #16	19730
1676	Debris Removal	Small	Purdy	25801.88
1676	Debris Removal	Small	Exeter	13585.28
1676	Public Buildings	Small	Purdy R-II School District	1223.97
1676	Debris Removal	Small	Monett	57589.34
1676	Protective Measures	Small	Cassville	2340.34
1676	Debris Removal	Large	Monett	461624.88
1676	Debris Removal	Small	Cassville	6095.5

1676	Protective Measures	Small	Monett	1083
1676	Protective Measures	Small	Monett	48471
1676	Debris Removal	Small	Lacoba Homes Inc.	15423.5
1676	Protective Measures	Small	Lacoba Homes Inc.	3042.4
1676	Debris Removal	Small	Seligman	1514.05
1676	Protective Measures	Small	Cox Monett Hospital	16069.1
1676	Recreational or Other	Small	Cassville	1678.97
1676	Public Utilities	Large	Monett	620421.43
1676	Roads and Bridges	Small	Cassville	9050
1676	Debris Removal	Small	Monett	16760
1676	Protective Measures	Small	Seligman	504.68
1676	Public Utilities	Large	Barry Electric Co-Op	639633.27
1676	Protective Measures	Small	Purdy	8769.35
1676	Protective Measures	Small	Butterfield	5827.9
1676	Protective Measures	Small	Purdy	1743.29
1676	Debris Removal	Small	Monett R-I School District	22247.5
1676	Protective Measures	Small	Barry Electric Co-Op	18127.77
1676	Debris Removal	Small	Pleasant Ridge Road Distict	44579.5
1676	Protective Measures	Small	Barry County	5789.21
1676	Protective Measures	Small	Wheaton	2773.78
1676	Protective Measures	Small	Barry County	11443.37
1676	Debris Removal	Small	Crane Creek Special Road District	21533
1676	Debris Removal	Small	McDonald Road District	4580
1676	Debris Removal	Small	Washburn Special Road District	6837.94
1676	Debris Removal	Small	Purdy Special Road District	12837.04
1676	Protective Measures	Small	Purdy Special Road District	5702.51
1676	Debris Removal	Small	Kings Prairie Special Road District	10900
1676	Debris Removal	Small	Butterfield Special Road District	1023.72
1676	Protective Measures	Small	Kings Prairie Special Road District	9727.5
1676	Debris Removal	Small	Flat Creek Special Road District	40696.68
1676	Debris Removal	Small	Capps Creek Special Road District	37926.38
1676	Debris Removal	Small	Exeter Special Road District	14222.93
1676	Debris Removal	Small	Mineral Springs Road District	6831.52
1676	Debris Removal	Small	Pioneer Special Road District	28352.8
1676	Protective Measures	Small	Mineral Springs Road District	1259.7
1676	Debris Removal	Small	Monett Special Road District	6402
1676	Debris Removal	Small	Monett Special Road District	9603
1676	Debris Removal	Small	Ash Special Road District	5694.28
1676	Protective Measures	Small	Monett	3090.4
1676	Protective Measures	Small	Jenkins Rural Fire Department, Inc.	1209.06
1676	Protective Measures	Small	Jenkins Rural Fire Department, Inc.	403.02
1676	Debris Removal	Small	Wheaton Special Road District	18795.02

1676	Public Utilities	Large	Barry Electric Co-Op	2307001.03
1742	Roads and Bridges	Small	Barry County	38622.66
1742	Public Buildings	Small	Barry County	9922.37
1742	Debris Removal	Small	Barry County	2535
1742	Public Buildings	Small	Barry County	6655.92
1742	Roads and Bridges	Small	Jenkins Special Road District	8546.22
1742	Roads and Bridges	Small	Jenkins Special Road District	2455.6
1742	Roads and Bridges	Small	Jenkins Special Road District	2796.01
1742	Roads and Bridges	Small	Crane Creek Special Road District	2454.17
1742	Roads and Bridges	Small	Crane Creek Special Road District	5642.93
1742	Roads and Bridges	Small	Pleasant Ridge Road Distict	13246.77
1742	Roads and Bridges	Small	Wheaton Special Road District	16714.46
1742	Debris Removal	Small	Pioneer Special Road District	5788
1742	Debris Removal	Small	Wheaton Special Road District	1869.83
1742	Roads and Bridges	Small	Wheaton Special Road District	6894.11
1742	Roads and Bridges	Small	Wheaton Special Road District	12934.93
1742	Roads and Bridges	Small	Mountain Road District	3366.6
1742	Roads and Bridges	Small	Purdy Special Road District	13365.2
1742	Roads and Bridges	Small	Capps Creek Special Road District	5820.84
1742	Roads and Bridges	Small	Pioneer Special Road District	5150.67
1742	Roads and Bridges	Small	Pioneer Special Road District	5613.07
1742	Debris Removal	Small	Kings Prairie Special Road District	6920
1742	Roads and Bridges	Small	Exeter Special Road District	21417.96
1742	Debris Removal	Small	Exeter Special Road District	1257.76
1742	Roads and Bridges	Small	Ozark Road District	22141.1
1742	Roads and Bridges	Small	Kings Prairie Special Road District	14674.98
1742	Debris Removal	Small	Corsicana Special Road District #16	23640
1742	Roads and Bridges	Small	Corsicana Special Road District #16	19351.13
1742	Roads and Bridges	Small	Monett	2748.24
1742	Debris Removal	Small	Monett	3654.92
1742	Recreational or Other	Small	Monett	10222.68
1742	Public Utilities	Small	Monett	1788.01
1742	Public Buildings	Small	Monett	1238.46
1742	Protective Measures	Small	Monett	8434.52
1742	Public Buildings	Small	Monett	1498.31
1749	Roads and Bridges	Small	Corsicana Special Road District #16	26558.32
1749	Roads and Bridges	Small	Barry County	2016
1749	Roads and Bridges	Small	Exeter Special Road District	31414.9
1749	Roads and Bridges	Small	Exeter Special Road District	15438.52
1749	Roads and Bridges	Small	Barry County	2362.04
1749	Roads and Bridges	Small	Ozark Road District	13153.04
1749	Roads and Bridges	Small	Ozark Road District	14167.33

1749	Roads and Bridges	Small	Ozark Road District	5891.37
1749	Roads and Bridges	Small	Exeter Special Road District	19853.43
1749	Roads and Bridges	Small	Kings Prairie Special Road District	8707.33
1749	Roads and Bridges	Small	Kings Prairie Special Road District	2243.75
1749	Roads and Bridges	Small	Barry County	18458.87
1749	Roads and Bridges	Small	Kings Prairie Special Road District	1247.47
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	1634.75
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	5214.1
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	1060.62
1749	Roads and Bridges	Small	Kings Prairie Special Road District	7670.8
1749	Roads and Bridges	Small	Exeter Special Road District	4300.63
1749	Roads and Bridges	Small	Exeter Special Road District	5846.46
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	16862.59
1749	Roads and Bridges	Small	Barry County	10409.1
1749	Roads and Bridges	Small	Purdy Special Road District	20320.55
1749	Roads and Bridges	Small	Corsicana Special Road District #16	49338.3
1749	Roads and Bridges	Small	Purdy Special Road District	45373.55
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	8699.5
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	2444.87
1749	Roads and Bridges	Small	Corsicana Special Road District #16	57941.04
1749	Roads and Bridges	Small	Corsicana Special Road District #16	44651.4
1749	Roads and Bridges	Small	Corsicana Special Road District #16	7038.38
1749	Roads and Bridges	Small	Corsicana Special Road District #16	49360.6
1749	Roads and Bridges	Small	Corsicana Special Road District #16	25162.9
1749	Debris Removal	Small	Purdy Special Road District	12673.86
1749	Roads and Bridges	Small	Purdy Special Road District	49718.21
1749	Roads and Bridges	Small	Purdy Special Road District	33935.51
1749	Roads and Bridges	Small	Ozark Road District	51853.79
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	4683.52
1749	Roads and Bridges	Small	Ozark Road District	14511.04
1749	Roads and Bridges	Small	Ozark Road District	6054.74
1749	Roads and Bridges	Small	Ozark Road District	12285.89
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	5369.16
1749	Debris Removal	Small	Pleasant Ridge Road Distict	4395
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	9788
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	6886.9
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	8834.97
1749	Roads and Bridges	Small	Kings Prairie Special Road District	24827.91
1749	Roads and Bridges	Small	Exeter Special Road District	27945.51
1749	Roads and Bridges	Small	Ash Special Road District	20341.4
1749	Roads and Bridges	Small	Village of Emerald Beach	5996.95
1749	Roads and Bridges	Small	Mountain Road District	58867.12

1749	Roads and Bridges	Small	Mountain Road District	53024.68
1749	Roads and Bridges	Small	Mountain Road District	59782.1
1749	Roads and Bridges	Small	Mountain Road District	19056.85
1749	Roads and Bridges	Small	Mountain Road District	56687.55
1749	Roads and Bridges	Small	Barry County	46319
1749	Roads and Bridges	Small	Butterfield	29459.3
1749	Roads and Bridges	Small	Kings Prairie Special Road District	55092.99
1749	Roads and Bridges	Small	Kings Prairie Special Road District	53625.96
1749	Roads and Bridges	Small	Kings Prairie Special Road District	3191.83
1749	Roads and Bridges	Small	Kings Prairie Special Road District	55714.69
1749	Roads and Bridges	Small	Pioneer Special Road District	3400
1749	Roads and Bridges	Small	Purdy Special Road District	58333
1749	Roads and Bridges	Large	Corsicana Special Road District #16	85429.72
1749	Roads and Bridges	Small	Mineral Springs Road District	38865.81
1749	Roads and Bridges	Small	Mineral Springs Road District	48755.8
1749	Roads and Bridges	Small	Crane Creek Special Road District	19386.94
1749	Roads and Bridges	Small	Barry County	4500
1749	Roads and Bridges	Small	Exeter Special Road District	13460.42
1749	Roads and Bridges	Small	Capps Creek Special Road District	19563.65
1749	Debris Removal	Small	Capps Creek Special Road District	9682.52
1749	Roads and Bridges	Small	Washburn Special Road District	30966
1749	Roads and Bridges	Small	Washburn Special Road District	53769
1749	Roads and Bridges	Small	Washburn Special Road District	38661.5
1749	Roads and Bridges	Small	Washburn Special Road District	43115.5
1749	Roads and Bridges	Small	Washburn Special Road District	50574
1749	Roads and Bridges	Small	Sugar Creek Road District	34132.74
1749	Roads and Bridges	Small	White River Road District #7	25437.62
1749	Roads and Bridges	Small	Washburn Special Road District	21544.14
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	57187.15
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	40129.76
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	59114.9
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	45162.56
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	49834.44
1749	Roads and Bridges	Small	White River Road District #7	6427.8
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	53354.22
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	29533.24
1749	Roads and Bridges	Small	Pleasant Ridge Road Distict	53307.4
1749	Roads and Bridges	Small	Wheaton Special Road District	31563.64
1749	Roads and Bridges	Large	Wheaton Special Road District	72347.69
1809	Debris Removal	Small	Ash Special Road District	2937.92
1809	Debris Removal	Small	Sugar Creek Road District	2769.75
1809	Debris Removal	Small	Mineral Springs Road District	1791.1

1809	Roads and Bridges	Small	Ash Special Road District	12385.99
1809	Debris Removal	Small	Shell Knob Road District	4744
1809	Roads and Bridges	Small	Shell Knob Road District	12475.95
1809	Roads and Bridges	Small	Greasy Creek Road District	10909.38
1809	Roads and Bridges	Small	Sugar Creek Road District	6823.86
1809	Roads and Bridges	Small	Greasy Creek Road District	9100
1809	Roads and Bridges	Small	Shell Knob Road District	7213.88
1809	Roads and Bridges	Small	Shell Knob Road District	8052.58
1809	Roads and Bridges	Small	Shell Knob Road District	4930.22
1809	Roads and Bridges	Small	Mineral Springs Road District	32421.39
1809	Roads and Bridges	Small	Mineral Springs Road District	1282.88
1809	Protective Measures	Small	Central Crossing Fire Protection District	1277.04
1809	Protective Measures	Small	Central Crossing Fire Protection District	1310
1822	Protective Measures	Small	Central Crossing Fire Protection District	8049.36
1822	Protective Measures	Small	Central Crossing Fire Protection District	1553.95
1822	Protective Measures	Small	Monett	39751.67
1822	Protective Measures	Small	Viola Special Road District #21	4421.21
1980	Roads and Bridges	Small	Crane Creek Special Road District	1124.53
1980	Public Buildings	Small	Seligman Sugar Creek Special Road District	500
1980	Debris Removal	Small	Greasy Creek Road District	1770
1980	Roads and Bridges	Small	Ash Special Road District	23485.95
1980	Roads and Bridges	Small	Greasy Creek Road District	5303.15
1980	Roads and Bridges	Small	White River Road District	45568.08
1980	Roads and Bridges	Small	Corsicana Special Road District #16	1065
1980	Roads and Bridges	Small	Corsicana Special Road District #16	7595
1980	Roads and Bridges	Large	Shell Knob Special Road District #9	93758.51
1980	Roads and Bridges	Small	Shell Knob Special Road District #9	4631.37
1980	Debris Removal	Small	Shell Knob Special Road District #9	5126.37
1980	Roads and Bridges	Small	Corsicana Special Road District #16	59112
1980	Roads and Bridges	Small	Greasy Creek Road District	31771.82
1980	Roads and Bridges	Small	Washburn Special Road District	50695.69
1980	Roads and Bridges	Small	Washburn Special Road District	39155.73
1980	Roads and Bridges	Small	Washburn Special Road District	19815.54
1980	Roads and Bridges	Small	Mineral Springs Road District	16302.29
1980	Roads and Bridges	Small	Pleasant Ridge Road District	49558.22
1980	Roads and Bridges	Small	Mountain Special Road District	60514.71
1980	Roads and Bridges	Small	Pleasant Ridge Road District	61063.44
1980	Roads and Bridges	Small	Barry County	11460
1980	Roads and Bridges	Small	Mountain Special Road District	24857.81
1980	Roads and Bridges	Small	Pleasant Ridge Road District	18699.26
1980	Roads and Bridges	Small	Seligman Sugar Creek Special Road District	8288.05
1980	Roads and Bridges	Large	Seligman Sugar Creek Special Road District	124179.74

1980	Roads and Bridges	Small	Seligman Sugar Creek Special Road District	9555.82
4144	Roads and Bridges	Small	Shell Knob Special Road District #9	2675.37
4144	Roads and Bridges	Small	Ash Special Road District	22971.89
4144	Roads and Bridges	Small	Seligman Sugar Creek Special Road District	10423.88
4144	Roads and Bridges	Small	Washburn Special Road District	39603.52
4144	Debris Removal	Small	Seligman Sugar Creek Special Road District	36179
4144	Roads and Bridges	Small	Greasy Creek Road District	9126.26
4144	Roads and Bridges	Small	Greasy Creek Road District	8471.73
4144	Roads and Bridges	Large	Seligman Sugar Creek Special Road District	240549.71
4144	Roads and Bridges	Large	Corsicana Special Road District #16	64054.51
4144	Roads and Bridges	Small	Pleasant Ridge Road District	9464.13
4144	Roads and Bridges	Large	Mountain Special Road District	79110.38
4238	Roads and Bridges	Small	Washburn Special Road District	13038
4238	Debris Removal	Small	Cassville	31133.98
4238	Roads and Bridges	Small	Cassville	8220.76
4238	Public Utilities	Small	Southwest Rural Water Supply District No. 1	3230.14
4238	Roads and Bridges	Small	Washburn Special Road District	12764.9
4238	Roads and Bridges	Small	Washburn Special Road District	17675.3
4238	Roads and Bridges	Small	Washburn Special Road District	16056.52
4238	Roads and Bridges	Small	Washburn Special Road District	16557.75
4238	Roads and Bridges	Small	Washburn Special Road District	15447.79
4238	Roads and Bridges	Small	Washburn Special Road District	20948.16
4238	Roads and Bridges	Small	Washburn Special Road District	14427.6
4238	Roads and Bridges	Small	Butterfield Special Road District	4814.88
4238	Roads and Bridges	Small	Shell Knob Special Road District #9	19715.01
4238	Roads and Bridges	Small	Barry County	58768.5
4238	Protective Measures	Small	Cassville	4603.2
4238	Roads and Bridges	Small	Flat Creek Special Road District	19047.15
4238	Roads and Bridges	Small	Greasy Creek Road District	11238
4238	Recreational or Other	Small	Cassville	18496.17
4238	Recreational or Other	Small	Cassville	30591.56
4238	Roads and Bridges	Large	Mountain Special Road District	-
4238	Roads and Bridges	Small	Flat Creek Special Road District	-
4238	Roads and Bridges	Small	Cassville	47203.57
4238	Roads and Bridges	Small	Mineral Springs Road District	22352.96
4238	Roads and Bridges	Small	Mineral Springs Road District	65958.44
4238	Roads and Bridges	Small	Sugar Creek Road District	10475.19
4238	Roads and Bridges	Large	Sugar Creek Road District	300933
4250	Roads and Bridges	Small	Mountain Special Road District	92642.22
4250	Roads and Bridges	Large	Kings Prairie Special Road District	75198.53
4250	Roads and Bridges	Small	Barry County	37214.28
4250	Roads and Bridges	Small	Barry County	76270.2

4250	Public Buildings	Large	Cassville R-IV School District	1894665.32
4250	Protective Measures	Small	Monett	22584.87
4250	Debris Removal	Small	Cassville	6062.93
4250	Roads and Bridges	Small	Mineral Springs Road District	17188.31
4250	Roads and Bridges	Small	Shell Knob Special Road District #9	12228.68
4250	Roads and Bridges	Small	Pleasant Ridge Road District	62197.41
4250	Roads and Bridges	Small	Greasy Creek Road District	15461.78
4250	Roads and Bridges	Small	Crane Creek Special Road District	16026.44
4250	Roads and Bridges	Small	Crane Creek Special Road District	80512.95
4250	Roads and Bridges	Small	Pioneer Special Road District	15899.06
4250	Roads and Bridges	Small	Shell Knob Special Road District #9	21516.86
4250	Roads and Bridges	Small	Butterfield Special Road District	30419.13
4250	Roads and Bridges	Small	Ash Special Road District	95582.16
4250	Roads and Bridges	Small	Barry County	8528.95
4250	Roads and Bridges	Small	Barry County	4571.12
4250	Roads and Bridges	Small	Greasy Creek Road District	9723.59
4250	Roads and Bridges	Small	Ash Special Road District	9399.36
4250	Roads and Bridges	Small	Pioneer Special Road District	13576.83
4250	Public Utilities	Small	Monett	44192.3
4250	Roads and Bridges	Small	Exeter Special Road District	38229.38
4250	Roads and Bridges	Small	Purdy Special Road District	77855.69
4250	Roads and Bridges	Small	Purdy Special Road District	8869.7
4250	Roads and Bridges	Small	Flat Creek Special Road District	18930.43
4250	Roads and Bridges	Small	Washburn Special Road District	63019.78
4250	Roads and Bridges	Small	Corsicana Special Road District #16	66132.5
4317	Roads and Bridges	Small	Greasy Creek Road District	88533.29
4317	Roads and Bridges	Small	Purdy Special Road District	5186.66
4317	Roads and Bridges	Small	Purdy Special Road District	4607.16
4317	Roads and Bridges	Large	Corsicana Special Road District #16	184801.7
4317	Roads and Bridges	Small	Barry County	87518.35
4317	Roads and Bridges	Large	Crane Creek Special Road District	61969.31
4317	Roads and Bridges	Small	Exeter Special Road District	7457.05
4317	Roads and Bridges	Small	Shell Knob Special Road District #9	10337.68
4317	Roads and Bridges	Small	Crane Creek Special Road District	11965.3
4317	Roads and Bridges	Large	Sugar Creek Road District	217475.67
4317	Roads and Bridges	Small	Pleasant Ridge Road District	30566.16
4317	Debris Removal	Small	Sugar Creek Road District	62826.95
4317	Public Utilities	Small	Cassville	7669.47
4317	Roads and Bridges	Small	Wheaton Special Road District	21312.75
4317	Roads and Bridges	Small	Jenkins Special Road District	69457.4
4317	Debris Removal	Small	Cassville	13155.55
4317	Public Utilities	Small	Cassville	18911.86

4317	Recreational or Other	Small	Cassville	4384.08
4317	Protective Measures	Small	Cassville	4373.73
4317	Roads and Bridges	Small	Pleasant Ridge Road District	97099.28
4317	Roads and Bridges	Small	Mineral Springs Road District	6354
4317	Roads and Bridges	Small	Cassville	10632.47
4317	Roads and Bridges	Small	Wheaton Special Road District	10445.24
4317	Roads and Bridges	Small	Mineral Springs Road District	55891.81
4317	Roads and Bridges	Large	Washburn Special Road District	265644.81
4451	Roads and Bridges	Small	Exeter	35371.42
4451	Roads and Bridges	Small	Exeter	6085.93
4451	Debris Removal	Small	Corsicana Special Road District #16	11280.64
4451	Protective Measures	Small	Cassville	3461.8
4451	Recreational or Other	Small	Exeter	5079.06
4451	Roads and Bridges	Small	Mineral Springs Road District	24548.12
4451	Protective Measures	Small	Cassville	3572.5
4451	Roads and Bridges	Small	Mineral Springs Road District	3293.98
4451	State Management	Small	Exeter	1043.26
4490	Protective Measures	Small	Cassville	7500
4451	Roads and Bridges	Small	Cassville	13778.21
4451	Debris Removal	Small	Cassville	14754.9
4451	Debris Removal	Small	Jenkins Special Road District	8448.75
4451	Public Utilities	Small	Cassville	15927.05
4451	State Management	Small	Cassville	2574.72
4451	Debris Removal	Small	Ash Special Road District	21985.05
4451	Roads and Bridges	Small	Corsicana Special Road District #16	99506.06
4451	Roads and Bridges	Large	Ash Special Road District	375046
4451	Roads and Bridges	Small	Mineral Springs Road District	37276.5
4451	State Management	Small	Mineral Springs Road District	-
4451	State Management	Small	Ash Special Road District	19851.56
4490	Protective Measures	Small	Monett	6596.56
4490	Protective Measures	Small	Monett	6279.1
Total				**15,848,234.37**

Source: Federal Emergency Management Agency, 6/10/2021

2.2 JURISDICTIONAL PROFILES AND MITIGATION CAPABILITIES

This section includes profiles for each participating jurisdiction. In those summaries are previous mitigation initiatives and capabilities of each jurisdiction. The unincorporated county is profiled first, followed by the incorporated communities, the public school districts, and the special districts.

2.2.1 Unincorporated Barry County

Barry County's jurisdiction includes all unincorporated areas within the county boundaries. Barry

County is classified as a Class III County in Missouri and is governed by a county commission consisting of a presiding commissioner, a northern commissioner, and southern commissioner.

The County Commission sets broad operating policies, enacts ordinances, 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 operation of county offices, equipment, and services. The county departments include the Board of Commissioners, County Assessor, County Attorney, County Clerk, County Collector, County Coroner, County Recorder, County Treasurer, and the Road District.

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.

Refer to **Table 2.7** for a summary of Barry County's mitigation capabilities.

Table 2.7. Barry County Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	N
Builder's Plan	N
Capital Improvement Plan	N
City Emergency Operations Plan	N
County Emergency Operations Plan	Y, January 2018
Local Recovery Plan	N
County Recovery Plan	Y, January 2018
City Mitigation Plan	N
County Mitigation Plan	Y, October 2016
Debris Management Plan	N
Economic Development Plan	N
Transportation Plan	Y
Land-use Plan	N
Flood Mitigation Assistance (FMA) Plan	N
Watershed Plan	N
Firewise or other fire mitigation plan	N
School Mitigation Plan	N
Critical Facilities Plan (Mitigation/Response/Recovery)	N
Policies/Ordinance	
Zoning Ordinance	N
Building Code	N
Floodplain Ordinance	N
Subdivision Ordinance	N
Tree Trimming Ordinance	N
Nuisance Ordinance	N
Stormwater Ordinance	N

Drainage Ordinance	N
Site Plan Review Requirements	N
Historic Preservation Ordinance	N
Landscape Ordinance	N
Seismic Construction Ordinance	N
Program	
Zoning/Land Use Restrictions	N
Codes Building Site/Design	N
Hazard Awareness Program	N
National Flood Insurance Program (NFIP)	N
NFIP Community Rating System (CRS) program	N
National Weather Service (NWS) Storm Ready	N
Firewise Community Certification	
Building Code Effectiveness Grading (BCEGs)	N
ISO Fire Rating	Y, 6
Economic Development Program	N
Land Use Program	N
Public Education/Awareness	Y
Property Acquisition	N
Planning/Zoning Boards	N
Stream Maintenance Program	N
Tree Trimming Program	N
Engineering Studies for Streams (Local/County/Regional)	N
Mutual Aid Agreements	Y
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N
Hazard Analysis/Risk Assessment (County)	Y, included in RHSOC Region D THIRA
Flood Insurance Maps	N
FEMA Flood Insurance Study (Detailed)	N
Evacuation Route Map	Y
Critical Facilities Inventory	Y
Vulnerable Population Inventory	Y
Land Use Map	N
Staff/Department	
Building Code Official	N
Building Inspector	N
Mapping Specialist (GIS)	N
Engineer	N
Development Planner	N
Public Works Official	N
Emergency Management Director	Y
NFIP Floodplain Administrator	N
Emergency Response Team	N
Hazardous Materials Expert	N
Local Emergency Planning Committee	Y
County Emergency Management Commission	Y, included in LEPC meetings
Sanitation Department	N
Transportation Department	N
Economic Development Department	N
Housing Department	N
Historic Preservation	N
Non-Governmental Organizations (NGOs)	
American Red Cross	Y
Salvation Army	Y
Veterans Groups	Y

Local Environmental Organization	Y
Homeowner Associations	Y
Neighborhood Associations	Y
Chamber of Commerce	Y
Community Organizations (Lions, Kiwanis, etc.	Y
Local Funding Availability	
Apply for Community Development Block Grants	Y
Fund projects through Capital Improvements funding	Y
Authority to levy taxes for a specific purpose	Y
Fees for water, sewer, gas, or electric services	N
Impact fees for new development	N
Ability to incur debt through general obligation bonds	Y
Ability to incur debt through special tax bonds	Y
Ability to incur debt through private activities	N
Withhold spending in hazard prone areas	N

2.2.2 City of Cassville

The City of Cassville is centrally located in Barry County along Highway 37. The governing body of Cassville includes a mayor, a city administrator, and a board of four (4) Aldermen. Cassville is the county seat of Barry County. Cassville has experienced a 13% increase in population since 2000. At the time of the 2000 census the population of Cassville was 2,890. The 2019 ACS population estimate for Cassville was 3,267. City departments include the Mayor/Board of Alderman, City Administrator, Municipal Court Administrator, City Clerk, Planning and Zoning Commission, Board of Adjustment, Public Works, Water and Sewer, Collection Department, Street Department, and the Police Department.

According to the 2019 MCDC American Community Survey Estimates, 57.8% of housing units in Cassville were constructed before 1970. Additionally, 20.3% of the population was over 65, median household income was $31,818, and 32.0% of the residents of Cassville were living below the poverty level. Mitigation capabilities/activities in Cassville include five (5) outdoor warning sirens and a FEMA public tornado shelter/saferoom

Refer to **Table 2.8** for a summary of the City of Cassville's mitigation capabilities.

Table 2.8. City of Cassville's Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	N
Builder's Plan	Y, 2012
Capital Improvement Plan	Y, 2016
City Emergency Operations Plan	Y, updated yearly
County Emergency Operations Plan	N
Local Recovery Plan	N
County Recovery Plan	N
City Mitigation Plan	Y, 2016
County Mitigation Plan	Y, 2016
Debris Management Plan	N
Economic Development Plan	N
Transportation Plan	N
Land-use Plan	Y
Flood Mitigation Assistance (FMA) Plan	N
Watershed Plan	N

Firewise or other fire mitigation plan	N
School Mitigation Plan	N
Critical Facilities Plan (Mitigation/Response/Recovery)	N
Policies/Ordinance	
Zoning Ordinance	Y
Building Code	Y, IBC 2006
Floodplain Ordinance	N
Subdivision Ordinance	Y
Tree Trimming Ordinance	N
Nuisance Ordinance	Y
Stormwater Ordinance	Y
Drainage Ordinance	Y
Site Plan Review Requirements	Y
Historic Preservation Ordinance	N
Landscape Ordinance	Y
Seismic Construction Ordinance	N
Program	
Zoning/Land Use Restrictions	Y
Codes Building Site/Design	Y
Hazard Awareness Program	N
National Flood Insurance Program (NFIP)	N
NFIP Community Rating System (CRS) program	N
National Weather Service (NWS) Storm Ready	N
Firewise Community Certification	N
Building Code Effectiveness Grading (BCEGs)	N
ISO Fire Rating	Y, 6
Economic Development Program	Y
Land Use Program	Y
Public Education/Awareness	Y
Property Acquisition	N
Planning/Zoning Boards	Y
Stream Maintenance Program	N
Tree Trimming Program	N
Engineering Studies for Streams (Local/County/Regional)	Y
Mutual Aid Agreements	N
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N
Hazard Analysis/Risk Assessment (County)	N
Flood Insurance Maps	N
FEMA Flood Insurance Study (Detailed)	N
Evacuation Route Map	N
Critical Facilities Inventory	N
Vulnerable Population Inventory	N
Land Use Map	N
Staff/Department	
Building Code Official	Y, part-time
Building Inspector	Y, part-time
Mapping Specialist (GIS)	Y
Engineer	N
Development Planner	N
Public Works Official	Y, full-time
Emergency Management Director	Y, police chief, full-time
NFIP Floodplain Administrator	N
Emergency Response Team	N

Hazardous Materials Expert	N
Local Emergency Planning Committee	N
County Emergency Management Commission	N
Sanitation Department	Y
Transportation Department	Y
Economic Development Department	Y
Housing Department	N
Historic Preservation	N
Non-Governmental Organizations (NGOs)	
American Red Cross	N
Salvation Army	N
Veterans Groups	Y
Local Environmental Organization	N
Homeowner Associations	N
Neighborhood Associations	N
Chamber of Commerce	Y
Community Organizations (Lions, Kiwanis, etc.	Y
Local Funding Availability	
Apply for Community Development Block Grants	Y
Fund projects through Capital Improvements funding	Y
Authority to levy taxes for a specific purpose	Y
Fees for water, sewer, gas, or electric services	Y
Impact fees for new development	Y
Ability to incur debt through general obligation bonds	Y
Ability to incur debt through special tax bonds	Y
Ability to incur debt through private activities	Y
Withhold spending in hazard prone areas	N

2.2.3 City of Exeter

The City of Exeter was officially founded around 1880. It lies just west of Cassville on Highway 76. The governing body of Exeter consists of a mayor and a four person Board of Alderman. From 2000 to 2019, the city population grew 15%. City departments include mayor/board of aldermen, public works, city clerk, treasurer, police, and city attorney.

According to the 2019 American Community Survey, Exeter has 367 total housing units (88.3% of them are occupied). 258 of those units were built in 1970 or after; however, there have been no new units built since 2013.

Refer to **Table 2.9** for a summary of the City of Exeter's mitigation capabilities.

Table 2.9. City of Exeter Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	N
Builder's Plan	N
Capital Improvement Plan	N
City Emergency Operations Plan	Y, 2003
County Emergency Operations Plan	N
Local Recovery Plan	N
County Recovery Plan	N
City Mitigation Plan	N
County Mitigation Plan	Y

Debris Management Plan	N
Economic Development Plan	N
Transportation Plan	N
Land-use Plan	N
Flood Mitigation Assistance (FMA) Plan	N
Watershed Plan	N
Firewise or other fire mitigation plan	N
School Mitigation Plan	N
Critical Facilities Plan (Mitigation/Response/Recovery)	N
Policies/Ordinance	
Zoning Ordinance	N
Building Code	N
Floodplain Ordinance	Y
Subdivision Ordinance	N
Tree Trimming Ordinance	Y
Nuisance Ordinance	Y
Stormwater Ordinance	N
Drainage Ordinance	N
Site Plan Review Requirements	N
Historic Preservation Ordinance	N
Landscape Ordinance	N
Seismic Construction Ordinance	N
Program	
Zoning/Land Use Restrictions	Y
Codes Building Site/Design	N
Hazard Awareness Program	N
National Flood Insurance Program (NFIP)	Y
NFIP Community Rating System (CRS) program	N
National Weather Service (NWS) Storm Ready	N
Firewise Community Certification	N
Building Code Effectiveness Grading (BCEGs)	N
ISO Fire Rating	Y, 8
Economic Development Program	N
Land Use Program	N
Public Education/Awareness	N
Property Acquisition	N
Planning/Zoning Boards	N
Stream Maintenance Program	N
Tree Trimming Program	N
Engineering Studies for Streams (Local/County/Regional)	N
Mutual Aid Agreements	Y, 911
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N
Hazard Analysis/Risk Assessment (County)	N
Flood Insurance Maps	N
FEMA Flood Insurance Study (Detailed)	N
Evacuation Route Map	N
Critical Facilities Inventory	N
Vulnerable Population Inventory	N
Land Use Map	N
Staff/Department	
Building Code Official	N
Building Inspector	N
Mapping Specialist (GIS)	N

Engineer	Y
Development Planner	N
Public Works Official	Y, full-time
Emergency Management Director	Y
NFIP Floodplain Administrator	Y
Emergency Response Team	N
Hazardous Materials Expert	N
Local Emergency Planning Committee	N
County Emergency Management Commission	N
Sanitation Department	N
Transportation Department	N
Economic Development Department	N
Housing Department	N
Historic Preservation	N
Non-Governmental Organizations (NGOs)	
American Red Cross	N
Salvation Army	N
Veterans Groups	N
Local Environmental Organization	N
Homeowner Associations	N
Neighborhood Associations	N
Chamber of Commerce	N
Community Organizations (Lions, Kiwanis, etc.	N
Local Funding Availability	
Apply for Community Development Block Grants	Y
Fund projects through Capital Improvements funding	N
Authority to levy taxes for a specific purpose	N
Fees for water, sewer, gas, or electric services	Y
Impact fees for new development	N
Ability to incur debt through general obligation bonds	Y
Ability to incur debt through special tax bonds	Y
Ability to incur debt through private activities	Y
Withhold spending in hazard prone areas	N

2.2.4 City of Monett

The City of Monett straddles the northern border of Barry County and southern border of Lawrence County, and is located on State Highway 60. The governing body of Monett includes a mayor, 2 commissioners, and a city administrator. Monett is the largest city in Barry County with current population estimates at 8,984 people, an increase of 21.8% since the 2000 census. City departments include the Mayor/Board of Aldermen, City Clerk, City Collector, Parks and Recreation, Airport, Planning and Zoning, Police Department, Utilities, Sanitation, Human Resources, Emergency, Management, Municipal Court, Fire Department, and the Street Department

According to the 2019 MCDC American Community Survey Estimates, 64.1% of housing units in Monett were constructed before 1970. Additionally, 13.7% of the population was over 65, median household income was $39,728, and 24.3% of the residents of Monett were living below the poverty level. Mitigation capabilities/activities in Monett include eight (8) outdoor warning sirens, FEMA public, tornado shelters/saferooms, EMA educational program, City-wide notification system (CivicReady, and Mutual Aid Agreements.

Refer to **Table 2.10** for a summary of the City of Monett's mitigation capabilities.

Table 2.10. City of Monett Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	N
Builder's Plan	N
Capital Improvement Plan	Y, reviewed yearly
City Emergency Operations Plan	Y, October 2019
County Emergency Operations Plan	N
Local Recovery Plan	Y, see EOP
County Recovery Plan	N
City Mitigation Plan	N
County Mitigation Plan	Y
Debris Management Plan	Y, part of EOP
Economic Development Plan	N
Transportation Plan	Y, August 2015 ongoing development
Land-use Plan	Y, 1997
Flood Mitigation Assistance (FMA) Plan	N
Watershed Plan	N
Firewise or other fire mitigation plan	N
School Mitigation Plan	N
Critical Facilities Plan (Mitigation/Response/Recovery)	Y, listed in directory/EOP
Policies/Ordinance	
Zoning Ordinance	Y
Building Code	Y, 2012 IBC
Floodplain Ordinance	Y, 2000
Subdivision Ordinance	Y
Tree Trimming Ordinance	Y, chapter 235; 235.070
Nuisance Ordinance	Y
Stormwater Ordinance	Y, 1994
Drainage Ordinance	N
Site Plan Review Requirements	Y
Historic Preservation Ordinance	N
Landscape Ordinance	Y
Seismic Construction Ordinance	N
Program	
Zoning/Land Use Restrictions	Y
Codes Building Site/Design	Y
Hazard Awareness Program	Y, EMA PR
National Flood Insurance Program (NFIP)	Y
NFIP Community Rating System (CRS) program	N
National Weather Service (NWS) Storm Ready	Y
Firewise Community Certification	N
Building Code Effectiveness Grading (BCEGs)	9
ISO Fire Rating	Y, 4/4X
Economic Development Program	N
Land Use Program	Y
Public Education/Awareness	Y
Property Acquisition	Y
Planning/Zoning Boards	Y
Stream Maintenance Program	N
Tree Trimming Program	Y
Engineering Studies for Streams (Local/County/Regional)	N

Mutual Aid Agreements	Y, LE, OMA, APPA, EMA, 911
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	Y, EOP/THIRA
Hazard Analysis/Risk Assessment (County)	N
Flood Insurance Maps	N
FEMA Flood Insurance Study (Detailed)	N
Evacuation Route Map	Y, EOP
Critical Facilities Inventory	Y, EOP
Vulnerable Population Inventory	N
Land Use Map	Y, 1997
Staff/Department	
Building Code Official	Y, full-time
Building Inspector	Y, full-time
Mapping Specialist (GIS)	Y, contracted
Engineer	Y, contracted
Development Planner	N
Public Works Official	Y, full-time
Emergency Management Director	Y, full-time
NFIP Floodplain Administrator	Y, full-time
Emergency Response Team	Y, CERT, LE, SRT, HAZMAT
Hazardous Materials Expert	Y, full-time
Local Emergency Planning Committee	Y, volunteer
County Emergency Management Commission	N
Sanitation Department	Y, full-time
Transportation Department	N
Economic Development Department	Y, full-time
Housing Department	N
Historic Preservation	N
Non-Governmental Organizations (NGOs)	
American Red Cross	Y
Salvation Army	N
Veterans Groups	Y
Local Environmental Organization	N
Homeowner Associations	Y
Neighborhood Associations	N
Chamber of Commerce	Y
Community Organizations (Lions, Kiwanis, etc.	Y
Local Funding Availability	
Apply for Community Development Block Grants	Y
Fund projects through Capital Improvements funding	Y
Authority to levy taxes for a specific purpose	Y
Fees for water, sewer, gas, or electric services	Y
Impact fees for new development	Y
Ability to incur debt through general obligation bonds	Y
Ability to incur debt through special tax bonds	Y
Ability to incur debt through private activities	Y
Withhold spending in hazard prone areas	Y

2.2.5 City of Seligman

The City of Seligman is located in the southern portion of Barry County, 14 miles south of Cassville and about 2 miles north of the Arkansas border. Highway 37 runs through the city. The governing body of Seligman consists of a mayor and four city council members. From 2010 to 2019, the city's population grew about 3.5% to 881. City departments include: mayor/city council, planning and zoning, police, public works, and parks.

According to the 2019 ACS, about 9% of the population is over the age of 65, 37.1% of families live below the poverty line, the median household income is $26.827, and 21.9% of the population lives with a disability.

The city has 2 outdoor warning sirens which are activated by Barry County 911.

Refer to **Table 2.11** for a summary of the City of Seligman's mitigation capabilities.

Table 2.11. City of Seligman Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Y
Builder's Plan	N
Capital Improvement Plan	N
City Emergency Operations Plan	Y
County Emergency Operations Plan	N
Local Recovery Plan	N
County Recovery Plan	N
City Mitigation Plan	N
County Mitigation Plan	Y
Debris Management Plan	N
Economic Development Plan	N
Transportation Plan	N
Land-use Plan	N
Flood Mitigation Assistance (FMA) Plan	N
Watershed Plan	N
Firewise or other fire mitigation plan	N
School Mitigation Plan	N
Critical Facilities Plan (Mitigation/Response/Recovery)	Y
Policies/Ordinance	
Zoning Ordinance	Y
Building Code	N
Floodplain Ordinance	N
Subdivision Ordinance	N
Tree Trimming Ordinance	N
Nuisance Ordinance	Y
Stormwater Ordinance	N
Drainage Ordinance	N
Site Plan Review Requirements	Y
Historic Preservation Ordinance	N
Landscape Ordinance	N
Seismic Construction Ordinance	N
Program	
Zoning/Land Use Restrictions	Y
Codes Building Site/Design	Y
Hazard Awareness Program	N
National Flood Insurance Program (NFIP)	N
NFIP Community Rating System (CRS) program	N
National Weather Service (NWS) Storm Ready	N
Firewise Community Certification	N
Building Code Effectiveness Grading (BCEGs)	N
ISO Fire Rating	N

Economic Development Program	N
Land Use Program	N
Public Education/Awareness	N
Property Acquisition	N
Planning/Zoning Boards	N
Stream Maintenance Program	N
Tree Trimming Program	N
Engineering Studies for Streams (Local/County/Regional)	N
Mutual Aid Agreements	N
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N
Hazard Analysis/Risk Assessment (County)	N
Flood Insurance Maps	N
FEMA Flood Insurance Study (Detailed)	N
Evacuation Route Map	N
Critical Facilities Inventory	N
Vulnerable Population Inventory	N
Land Use Map	N
Staff/Department	
Building Code Official	Y
Building Inspector	Y
Mapping Specialist (GIS)	Y
Engineer	N
Development Planner	N
Public Works Official	Y
Emergency Management Director	N
NFIP Floodplain Administrator	N
Emergency Response Team	Y
Hazardous Materials Expert	N
Local Emergency Planning Committee	N
County Emergency Management Commission	N
Sanitation Department	Y
Transportation Department	N
Economic Development Department	N
Housing Department	N
Historic Preservation	N
Non-Governmental Organizations (NGOs)	
American Red Cross	Y
Salvation Army	Y
Veterans Groups	Y
Local Environmental Organization	N
Homeowner Associations	N
Neighborhood Associations	N
Chamber of Commerce	Y
Community Organizations (Lions, Kiwanis, etc.	N
Local Funding Availability	
Apply for Community Development Block Grants	Y
Fund projects through Capital Improvements funding	Y
Authority to levy taxes for a specific purpose	Y
Fees for water, sewer, gas, or electric services	Y
Impact fees for new development	Y
Ability to incur debt through general obligation bonds	Y
Ability to incur debt through special tax bonds	Y
Ability to incur debt through private activities	Y
Withhold spending in hazard prone areas	Y

2.2.6 City of Wheaton

The City of Wheaton is located on the western edge of the county on Highway 86 and just north of the intersection with Highway 76. The governing body of Wheaton includes a mayor and board of four (4) Aldermen. Wheaton is a declining community in Barry County and has not seen any significant growth in population between 2000 and 2019. In 2000, the population was 721 people. Current population estimates for 2014 put the population relatively unchanged at 688 people. City departments include the Mayor/Board of Alderman, City Clerk, and Public Works.

According to the MCDC American Community Survey 2019, there are 237 households in Wheaton. Additionally, 18.8% of the population is over the age of 65, median household income was $35,104, and 28.4% of the residents on Wheaton were living below the poverty level.

Mitigation capabilities/activities in Wheaton include two (2) outdoor warning sirens, and mutual aid agreements.

Refer to **Table 2.12** for a summary of the City of Wheaton's mitigation capabilities.

Table 2.12. City of Wheaton Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	N
Builder's Plan	N
Capital Improvement Plan	N
City Emergency Operations Plan	N
County Emergency Operations Plan	N
Local Recovery Plan	N
County Recovery Plan	N
City Mitigation Plan	Y
County Mitigation Plan	N
Debris Management Plan	N
Economic Development Plan	N
Transportation Plan	N
Land-use Plan	N
Flood Mitigation Assistance (FMA) Plan	N
Watershed Plan	N
Firewise or other fire mitigation plan	N
School Mitigation Plan	N
Critical Facilities Plan (Mitigation/Response/Recovery)	N
Policies/Ordinance	
Zoning Ordinance	Y
Building Code	N
Floodplain Ordinance	N
Subdivision Ordinance	N
Tree Trimming Ordinance	N
Nuisance Ordinance	Y
Stormwater Ordinance	N
Drainage Ordinance	N
Site Plan Review Requirements	N
Historic Preservation Ordinance	N
Landscape Ordinance	Y
Seismic Construction Ordinance	N

Program	
Zoning/Land Use Restrictions	Y
Codes Building Site/Design	Y
Hazard Awareness Program	N
National Flood Insurance Program (NFIP)	N
NFIP Community Rating System (CRS) program	N
National Weather Service (NWS) Storm Ready	Y
Firewise Community Certification	N
Building Code Effectiveness Grading (BCEGs)	N
ISO Fire Rating	Y, 6
Economic Development Program	N
Land Use Program	N
Public Education/Awareness	N
Property Acquisition	N
Planning/Zoning Boards	Y
Stream Maintenance Program	N
Tree Trimming Program	N
Engineering Studies for Streams (Local/County/Regional)	N
Mutual Aid Agreements	Y
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N
Hazard Analysis/Risk Assessment (County)	N
Flood Insurance Maps	N
FEMA Flood Insurance Study (Detailed)	N
Evacuation Route Map	N
Critical Facilities Inventory	N
Vulnerable Population Inventory	N
Land Use Map	N
Staff/Department	
Building Code Official	N
Building Inspector	N
Mapping Specialist (GIS)	N
Engineer	N
Development Planner	N
Public Works Official	Y
Emergency Management Director	N
NFIP Floodplain Administrator	N
Emergency Response Team	N
Hazardous Materials Expert	N
Local Emergency Planning Committee	N
County Emergency Management Commission	N
Sanitation Department	N
Transportation Department	N
Economic Development Department	N
Housing Department	N
Historic Preservation	N
Non-Governmental Organizations (NGOs)	
American Red Cross	N
Salvation Army	N
Veterans Groups	N
Local Environmental Organization	N
Homeowner Associations	N
Neighborhood Associations	N
Chamber of Commerce	N
Community Organizations (Lions, Kiwanis, etc.	N

Local Funding Availability	
Apply for Community Development Block Grants	N
Fund projects through Capital Improvements funding	N
Authority to levy taxes for a specific purpose	N
Fees for water, sewer, gas, or electric services	Y
Impact fees for new development	N
Ability to incur debt through general obligation bonds	Y
Ability to incur debt through special tax bonds	N
Ability to incur debt through private activities	N
Withhold spending in hazard prone areas	N

2.2.7 Summary of Jurisdictional Capabilities

Table 2.13 summarizes the mitigation capabilities of the county and participating cities. For each capability, a "Y" or "N" indicates if the capability is in place.

Table 2.13. Mitigation Capabilities Summary Table

CAPABILITIES	Unincorporated Barry County	City of Cassville	City of Exeter	City of Monett	City of Seligman	City of Wheaton
Planning Capabilities						
Comprehensive Plan	N	N	N	N/A	Y	N
Builder's Plan	N	Y, 2012	N	N/A	N/A	N/A
Capital Improvement Plan	N	Y, 2016	N	Y, reviewed yearly	N	N/A
Local Emergency Plan	N/A	Y, updated yearly	Y, 2003	Y, reviewed October 2019	Y	N
County Emergency Plan	Y, January 2018	N/A	N/A	N/A	N/A	N
Local Recovery Plan	N/A	N	N	Y, see EOP	N/A	N/A
County Recovery Plan	Y, January 2018 - LEOP	N/A	N/A	N/A	N/A	N
Local Mitigation Plan	N/A	Y, 2016	N	N/A	N	N
County Mitigation Plan	Y, October 2016	Y, 2016	Y	Y	Y	Y
Local Mitigation Plan (PDM)	N/A	N/A	N/A	N/A	N/A	N/A
County Mitigation Plan (PDM)	N/A	N/A	N/A	N/A	N/A	N/A
Debris Management Plan	N	N	N	Y, part of EOP	N	N
Economic Development Plan	N	N	N	N	N	N
Transportation Plan	Y	N	N	Y, 08/2015 ongoing development	N	N/A
Land-use Plan	N	Y	N	Y, 1997	N	N/A
Flood Mitigation Assistance (FMA) Plan	N	N	N	N	N	N
Watershed Plan	N	N	N	N	N	N
Firewise or other fire mitigation plan	N	N	N	N	N	N/A
School Mitigation Plan	N/A	N/A	N/A	N/A	N/A	N
Critical Facilities Plan (Mitigation/Response/Recovery)	N	N	n	Y, listed in directory/EOP	Y	N
Policies/Ordinance						
Zoning Ordinance	N	Y	N	Y	Y	Y
Building Code	N	Y, IBC 2006	N	Y, 2012 IBC	N/A	N
Floodplain Ordinance	N	N	Y	Y, 2000	N	N
Subdivision Ordinance	N	Y	N	Y	N	N

CAPABILITIES	Unincorporated Barry County	City of Cassville	City of Exeter	City of Monett	City of Seligman	City of Wheaton
Tree Trimming Ordinance	N	N	Y	Y, Chapter 235; 235.070	N/A	N
Nuisance Ordinance	N	Y	Y	Y	Y	Y
Storm Water Ordinance	N	Y	N	Y, 1994	N	N
Drainage Ordinance	N	Y	N	N	N	N
Site Plan Review Requirements	N	Y	N	Y	Y	N
Historic Preservation Ordinance	N	N	N	N	N	N
Landscape Ordinance	N	Y	N	Y	N	Y
Seismic Construction Ordinance	N	N	N	N	N	N
Program						
Zoning/Land Use Restrictions	N	Y	Y	Y	Y	Y
Codes Building Site/Design	N	Y	N	Y	Y	Y
National Flood Insurance Program (NFIP) Participant	N, sanctioned 08/16/1989	N, sanctioned 05/02/1977	Y	Y	N	N
NFIP Community Rating System (CRS) Participating Community	N	N	N	N	N	N
Hazard Awareness Program	N	N	N	Y, EMA PR	N	N
National Weather Service (NWS) Storm Ready	N	N	N	Y	N	Y
Building Code Effectiveness Grading (BCEGs)	N	N	N	9	N	N/A
ISO Fire Rating	Y, 6	Y, 6	Y, 8	4/4X	N/A	6
Economic Development Program	N	Y	N	N	N	N
Land Use Program	N	Y	N	Y	N	N
Public Education/Awareness	Y	Y	N	Y	N	N
Property Acquisition	N	N/A	N	Y	N	N
Planning/Zoning Boards	N	Y	N	Y	Y	Y
Stream Maintenance Program	N	N	N	N/A	N	N
Tree Trimming Program	N	N	N	Y, utility trimming	N	N
Engineering Studies for Streams (Local/County/Regional)	N	Y	N	N/A	N/A	N
Mutual Aid Agreements	Y	N	Y, 911	Y, LE, OMA, APPA, EMA, 911	N	Y
Studies/Reports/Maps						
Hazard Analysis/Risk Assessment (Local)	N/A	N/A	N/A	Y, EOP/THIRA	N	N/A
Hazard Analysis/Risk Assessment (County)	Y, included in RHSOC Region D THIRA	N/A	N/A	N/A	N/A	N/A
Flood Insurance Maps	N/A	N	N	N/A	N	N
FEMA Flood Insurance Study (Detailed)	N/A	N	N	N/A	N/A	N
Evacuation Route Map	Y	N	N	Y, EOP	N	N/A

CAPABILITIES	Unincorporated Barry County	City of Cassville	City of Exeter	City of Monett	City of Seligman	City of Wheaton
Critical Facilities Inventory	Y	N/A	N	Y, EOP	N	N/A
Vulnerable Population Inventory	Y	N/A	N/A	N	N	N/A
Land Use Map	N	N/A	N	Y, 1997	N	N/A
Staff/Department						
Building Code Official	N	Y, part-time	N	Y, full-time	Y, full-time	N
Building Inspector	N	Y, part-time	N	Y, full-time	Y, full-time	N
Mapping Specialist (GIS)	N	Y	N	Y, contracted	Y, full-time	N
Engineer	N	N	Y	Y, contracted	N	N
Development Planner	N	N	N	N	N	N
Public Works Official	N	Y, full-time	Y, full-time	Y, full-time	Y, full-time	Y, full and part-time
Emergency Management Coordinator	Y	Y, police chief, full-time	Y	Y, full-time	N/A	N/A
NFIP Floodplain Administrator	N	N	Y	Y, full-time	N	N
Emergency Response Team	N	N	N	Y, CERT, LE, SRT, HAZMAT	Y, full-time	N
Hazardous Materials Expert	N	N	N	Y, full-time	N	N
Local Emergency Planning Committee	Y	N	N	Y, volunteer	N	N
County Emergency Management Commission	Y, included in LEPC meetings	N/A	N	N/A	N/A	N
Sanitation Department	N	Y	N	Y, full-time	Y, full=-time	N
Transportation Department	N	Y	N	N	N	N
Economic Development Department	N	Y	N	Y, full-time	N	N
Housing Department	N	N	N	N	N	N
Historic Preservation	N	N	N	N	N	N
Non-Governmental Organizations (NGOs)						
American Red Cross	Y	N	N	Y	Y	N
Salvation Army	Y	N	N	N	Y	N
Veterans Groups	Y	Y	N	Y	Y	N
Environmental Organization	Y	N	N	N	N	N
Homeowner Associations	Y	N	N	Y	N	N
Neighborhood Associations	Y	N	N	N	N	N
Chamber of Commerce	Y	Y	N	Y	Y	N
Community Organizations (Lions, Kiwanis, etc.	Y	Y	N	Y	N/A	N
Financial Resources						
Apply for Community Development Block Grants	Y	Y	Y	Y	Y	N

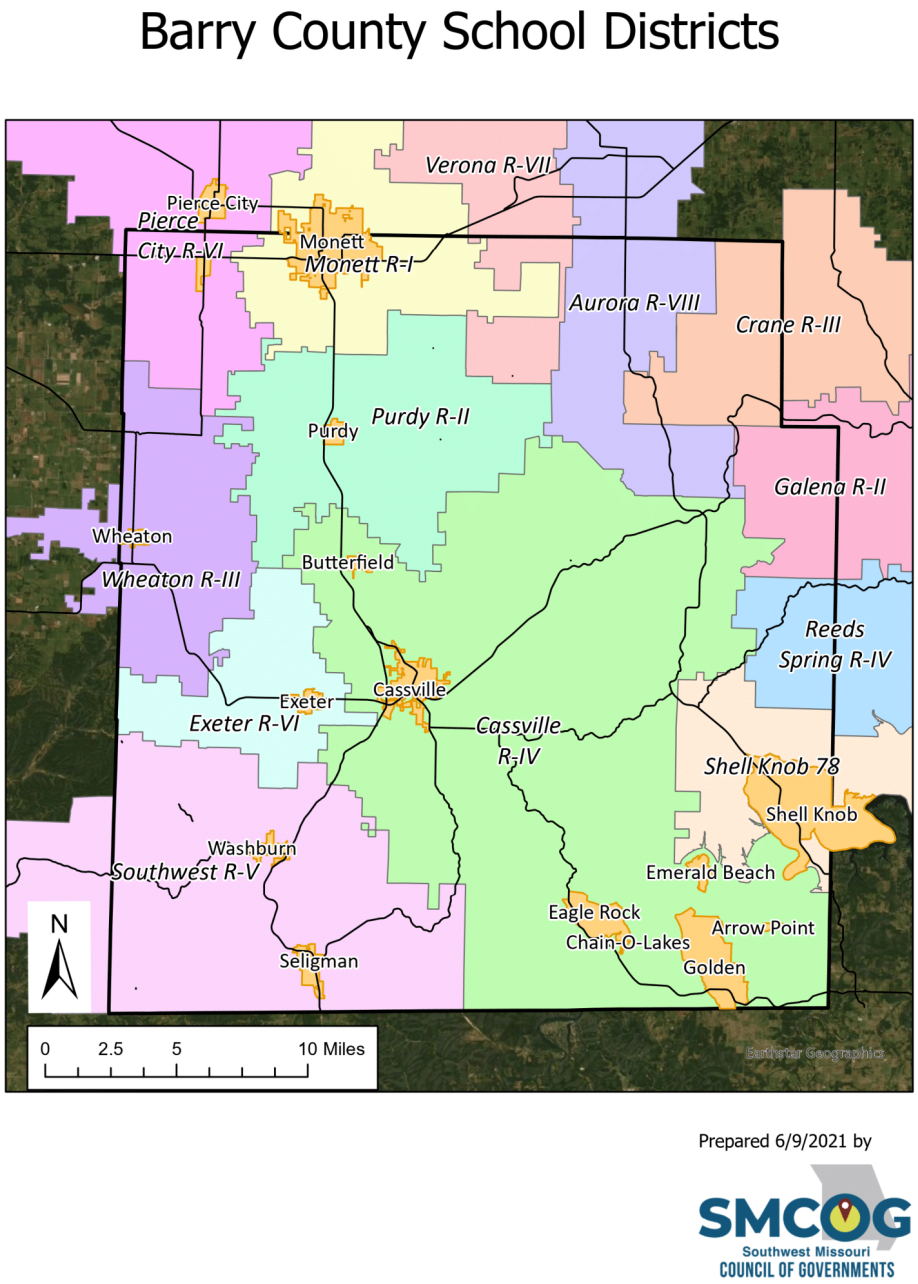
CAPABILITIES	Unincorporated Barry County	City of Cassville	City of Exeter	City of Monett	City of Seligman	City of Wheaton
Fund projects through Capital Improvements funding	Y	Y	N	Y	Y	N
Authority to levy taxes for specific purposes	Y	Y	N	Y	Y	N
Fees for water, sewer, gas, or electric services	N	Y	Y	Y	Y	Y
Impact fees for new development	N	Y	N	Y	Y	N
Incur debt through general obligation bonds	Y	Y	Y	Y	Y	Y
Incur debt through special tax bonds	Y	Y	Y	Y	Y	N
Incur debt through private activities	N/A	Y	Y	Y	Y	N
Withhold spending in hazard prone areas	N	N	N	Y	Y	N

Source: Data Collection Questionnaire

2.2.8 Public School District Profiles and Mitigation Capabilities

This section provides general information about participating school districts in the Plan. There are seven public school districts with facilities in Barry County, as well as two university districts. The University of Missouri Extension in Barry County was the only school district to not participate in the plan. Other school district boundaries include areas of Barry County, but do not have facilities within the county. **Figure 2.3** shows the school district boundaries in Barry County.

Figure 2.3. Barry County School District Boundaries



Prepared 6/9/2021 by

SMCOG Southwest Missouri COUNCIL OF GOVERNMENTS

Table 2.14 shows the total enrollment numbers for each school district.

Table 2.14. School Enrollment Data, 2019 – 2020 School Year

School District	Enrollment
Cassville R-IV	1,824
Crowder College – Cassville	572
Exeter R-VI	281
Monett R-I	2,309
Purdy R-II	639
Shell Knob 78	133
Southwest R-V	751
Wheaton R-III	460
Total	**6,969**

Source: Missouri Department of Elementary and Secondary Education https://apps.dese.mo.gov/MCDS/Visualizations.aspx?id=22

2.2.9 Cassville R-IV School District

The Cassville R-IV School District is governed by a Board of Education consisting of the Board President and six (6) Board members. The district serves 1,824 students and employs approximately 170 teachers and staff. District departments include: superintendent's office, facilities and operations, special services, technology, maintenance, custodial, transportation, food service, health services, and resources.

The district has two safe rooms rated to all FEMA specifications. They income systems throughout all buildings in the district, evacuation systems in place for the K-8 campus, and panic systems throughout the district. They also have NOAA weather radios.

A major mitigation project was completed at the Intermediate School that address underground water issues, which caused hydrostatic flooding in the lower section of the building. French drains and peer wells were put in place to counteract the flooding.

Refer to **Table 2.9** on **page 2.29** for a complete summary of the district's mitigation capabilities**.**

2.2.10 Crowder College - Cassville

The Crowder College Cassville campus offers full associates degrees in Business Administration, Criminal Justice, General Studies, History, Nursing, Psychology, and Teaching (elementary and secondary education). They also offer full certificates in CNA, EMT, Fire Science, and Phlebotomy.

The campus is equipped with MIR3 Emergency Notifications, which is a computer-based notification system with pre-programmed messages as well as options for live messages. They have speakers throughout the facility and can receive alert messages from the main campus (located in Neosho). The campus currently does not have a FEMA certified safe room and there are no remodel or new constructions plans planned for the next five years. Enrollment is expected to slightly decline in the next year and then increase as the COVID-19 pandemic diminishes.

Refer to **Table 2.9** on **page 2.29** for a complete summary of the district's mitigation capabilities**.**

2.2.11 Exeter R-VI School District

The Exeter R-VI School District is governed by a Board of Education consisting of the Board President and six (6) Board members. The district serves 281 students and employs approximately 36 teachers and staff.

The district is equipped with a PA system and has NOAA weather radios. Recently, French drains were added around the gymnasium to mitigate flood damage. The district currently has no plans to remodel or construct any buildings in the next five years.

Refer to **Table 2.9** on **page 2.29** for a complete summary of the district's mitigation capabilities**.**

2.2.12 Monett R-I School District

The Monett R-I School District is governed by a Board of Education consisting of the Board President and six (6) Board members. The district serves 2,309 students.

Each building in the district is equipped with a PA system for emergency alerts. The district also uses the CrisisGo app that each staff member has access to, and the buildings are equipped with NOAA Weather Radios. There are multiple safe rooms located throughout the district, and they are in the process of applying for new shelter at the new middle school building. A new 6-8th grade building is expected to be completed in August 2022. It will have a FEMA shelter.

Refer to **Table 2.9** on **page 2.29** for a complete summary of the district's mitigation capabilities**.**

2.2.13 Purdy R-II School District

The Purdy R-II School District is governed by a Board of Education consisting of the Board President and six (6) Board members. The district serves 639 students and employs approximately 80 teachers and staff.

Fire alarms and intercom systems are located in all buildings in the district. The weather alarms are dictated by the intercom system. The district has one safe room, completed in December 2018, rated to all FEMA specifications. They also have regularly scheduled drills throughout the year and have first responders teach students about the types of hazards that can occur. As of now, the district has no plans to remodel or construct any new additional buildings over the next five years.

Refer to **Table 2.9** on **page 2.29** for a complete summary of the district's mitigation capabilities**.**

2.2.14 Shell Knob 78 School District

The Shell Knob 78 School District is governed by a Board of Education consisting of the Board President and six (6) Board members. The district serves 133 students and employs approximately 45 teachers and staff.

Each classroom in the district is equipped with a public address system speaker and NOAA Weather Radios are available as well. The school resource officer incorporates safety drills into scenario-based drills throughout the school year. Basic drill concepts for fire, tornado, earthquakes, and intruder drills are taught with the scenarios progressing throughout the year.

The district is equipped with a below-ground level tornado/severe weather shelter which will hold all students and staff. It has been reinforced with 12 inches of concrete and ¼ inch steel. The shelter is stocked with snacks and water, as well as tools to aid in exit if debris or exterior structures were to block the exit.

Refer to **Table 2.9** on **page 2.29** for a complete summary of the district's mitigation capabilities**.**

2.2.15 Southwest R-V School District

The Southwest R-V School District is governed by a Board of Education consisting of the Board President and eight (8) Board members. The district serves 751 students and employs approximately 96 teachers and staff.

All district buildings are equipped with intercom systems and phones in the classrooms with recorded emergency alerts, as well as NOAA radios. All students and staff are trained to deal with emergency situations. The district does not currently have a saferoom. They have applied for a FEMA shelter in the past but have not been selected. However, the district has their portion of the funding saved in Fund 4.

Since 2016, the district has completed multiple construction projects. A north addition and new HVAC units were added to the Lower Elementary School. New HVAC units were added to the Upper Elementary School. Restroom renovations, gymnasium renovations, and new HVAC units were added to the Middle School. New ceilings, floors, windows, and classroom doors were added to the Elementary and Middle Schools. All buildings in the district have secured entrances and security systems.

Over the next five years, the district plans to explore the possibility of adding new roofs, parking lot renovations, drainage improvements, new HVAC units, and construction of baseball and softball fields.

Refer to **Table 2.9** on **page 2.29** for a complete summary of the district's mitigation capabilities**.**

2.2.16 Wheaton R-III School District

The Wheaton R-III School District is governed by a Board of Education consisting of the Board President and seven (7) Board members. The district serves 460 students and employs approximately 65 teachers and staff.

Each building in the district is equipped with an intercom system and NOAA weather radios. Faculty, staff, and students are trained each year on the hazards that can occur in the district. Recently, new windows were added to the Junior High building, repairs were made to the gymnasium roof, and guttering was installed to prevent leaking. The district does not have a safe room, but they did apply for BRIC grant in 2020 and are waiting to hear back from FEMA.

Refer to **Table 2.9** on **page 2.29** for a complete summary of the district's mitigation capabilities**.**

2.2.17 Summary of Public School District Capabilities

Table 2.15. Summary of Public School District Mitigation Capabilities

Capability	Cassville R-IV	Crowder College – Cassville	Exeter R-VI	Monett R-I	Purdy R-II	Shell Knob 78	Southwest R-V	Wheaton R-III
Planning Elements								
Master Plan/ Date	Y, 2020	Y, 2019-2020	N/A	Y	Y	Y, 2020	Y, 2020-2021	N
Capital Improvement Plan/Date	Y, 2020	Y, 2019-2020	N/A	In progress	Y	Y, 2020	Y, 2020-2021	N
School Emergency Plan / Date	Y, 2014	Y, 2019	Y, 2012	Y	Y, 2019-2020	Y, 2018	Y, 2020-2021	Y
Weapons Policy/Date	Y	Y, 2020	N/A	Y	Y, 2020	Y, 2018	Y, 2020-2021	Y
Personnel Resources								
Full-Time Building Official (Principal)	Y	Y	Y	Y	Y	Y	Y	Y
Emergency Manager	N	Y	Y	N/A	Y	Y	Y	Y
Grant Writer	N	Y	Y	N/A	N	Y	Y	N
Public Information Officer	Y	Y	Y	Y	Y	Y	Y	Y
Financial Resources								
Capital Improvements Project Funding	Y	Y	Y	Y	Y	Y	Y	Y
Local Funds	Y	Y	Y	Y	Y	Y	Y	Y
General Obligation Bonds	N/A	N	Y	N/A	Y	N	Y	Y
Special Tax Bonds	N/A	N	Y	N/A	N	N	Y	N
Private Activities/Donations	N/A	Y	Y	N/A	Y	Y	Y	N
State and Federal Funds/Grants	Y	Y	Y	Y	Y	Y	Y	N
Other								
Public Education Programs	N/A	Y	N/A	N/A	N/A	N/A	N/A	N/A
Privately or Self- Insured?	N/A	Private	N/A	N/A	N/A	N/A	N/A	N/A
Fire Evacuation Training	Y	Y	Y	Y	Y	Y	Y	Y
Tornado Sheltering Exercises	Y	Y	Y	Y	Y	Y	Y	Y
Public Address/Emergency Alert System	Y	Y	Y	Y	Y	Y	Y	Y
NOAA Weather Radios	Y	Y	Y	Y	Y	Y	Y	Y
Lock-Down Security Training	N/A	Y	N/A	N/A	N/A	N/A	N/A	N/A
Mitigation Programs	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A
Tornado Shelter/Saferoom	Y	N	N	N	Y	Y	N	N
Campus Police	Y	N	N	Y	N	Y	N	N

Source: Data collection questionnaire

2.2.18 Special Districts

2.2.19 Barry/Lawrence County Ambulance District

The Barry/Lawrence County Ambulance District serves an area of approximately 500 square miles, populated by 10,000 residents and visitors, and includes the towns of Monett, Pierce City, Purdy, Verona, and Freistatt. The board of directors is made up of six members.

The district hosts two EMT class each year and CPR classes are available to the public upon request.

They have one facility located in Monett. Services provide include emergency transport, fire department stand-by, event stand-by, advanced life support, critical transport, and community support. There are two 24-hour ambulances that serve the district, as well as one 12-hour day-time ambulance.

Table 2.10 shows a summary of the district's capabilities.

Table 2.16. Summary of Special District Capabilities

Capability	Barry Lawrence Ambulance District
Capital Improvement Plan	N/A
Emergency Operations Plan	N/A
Continuity of Operations Plan	N/A
Community Wildfire Protection Plan	N/A
Cross-Connection Program	N/A
Hydrant Flushing Program	N/A
Public Education/Awareness	Y, CPR/EMT classes
Tree Trimming Program	N/A
Mutual Aid Agreements	Y
Other	N
Evacuation Route Map	N/A
Critical Facilities Inventory	N/A
Fund projects thru Capital Improvements funding	N
Fees for water, sewer, gas, or electric services	N
Incur debt through general obligation bonds	N
Incur debt through special tax bonds	N
Incur debt through private activities	N
Withhold spending in hazard prone areas	N

Source: Data collection questionnaire

3 RISK ASSESSMENT

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 Barry 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 Barry County 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 plan is an update of the previous Barry County Hazard Mitigation Plan approved in November of 2016. According to the U.S. Census Bureau July 1, 2019 population estimate, the population of Barry County grew to 35,789 from 35,597 at the time of the 2010 decennial census. The population has experienced little growth over the last several decades and has increased by approximately 563 people since the Barry County Hazard Mitigation Plan was adopted in 2016.

This chapter is divided into four main parts:

- **Section 3.1 Hazard Identification** identifies the hazards that threaten the planning area and provides a factual basis for elimination of hazards from further consideration;
- **Section 3.2 Assets at Risk** provides the planning area's total exposure to natural hazards, considering critical facilities and other community assets at risk;
- **Section 3.3 Land Use and Development** discusses development that has occurred since the last plan update and any increased or decreased risk that resulted. This section also discusses areas of planned future development and any implications on risk/vulnerability;
- **Section 3.4 Hazard Profiles and Vulnerability Analysis** provides more detailed information about the hazards impacting the planning area. For each hazard, there are three sections: 1) Hazard Profile provides a general description and discusses the threat to the planning area, the geographic location at risk, potential Strength/Magnitude/Extent, previous occurrences of hazard events, probability of future occurrence, risk summary by jurisdiction, impact of future development on the risk; 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.

31 HAZARD IDENTIFICATION

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

The Plan profiles all natural hazards that can affect Barry County. The natural hazards that can affect the county have been identified in the 2016 Barry County Plan and the 2018 Missouri State Plan. Natural hazards are naturally occurring climatological, hydrological, or geologic events that have a negative effect of people and the built environment. Natural hazards identified include:

- Riverine and Flash Flood
- Dam Failure

- Earthquake
- Land Subsidence/ Sinkholes
- Drought
- Extreme Temperatures
- Severe Thunderstorm/High Winds/Lightning/Hail
- Severe Winter Weather
- Tornado
- Wildfire

3.1.1 Review of Existing Mitigation Plans

The Plan profiles all natural hazards that affect Barry County. The hazards identified in the 2016 Barry County Plan are identified in the 2018 Missouri State Plan. The State Plan also includes levee failure. Levee failure was excluded from the mitigation planning process as there are no mapped levees nor associated levee protected areas within or immediately upstream of Barry County.

Human-caused and technological hazards identified in the State Plan include:

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

In Missouri, local plans customarily include only natural hazards, as only natural hazards are required by federal regulations to be included. It was 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. The THIRA was referenced during the update in order to assist SMCOG staff in understanding the risk structure within Barry County.

3.1.2 Review Disaster Declaration History

Since 1976, FEMA has announced 26 disaster declarations that include Barry County. Examples of these disasters include the following: severe storms, tornadoes, flooding, severe winter storms, a pandemic, and a hurricane evacuation. 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.

The Robert T. Stafford Disaster Relief and Emergency Assistance Act, (PL 100-707) requires that all requests for a declaration by the President must be made by the governor of the affected state.

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. (https://www.fema.gov/declaration-process)

The most recent disaster declaration occurred on March 26, 2020. **Table 3.1** lists the federal FEMA disaster declarations that included Barry County.

Table 3.1. FEMA Disaster Declarations that included Barry County, Missouri, 1965-Present

Disaster Number	Description	Declaration Date	Incident Period	Individual Assistance (IA) Public Assistance (PA)
4552	Severe storms, tornadoes, straight-line winds, and flooding	7/9/2020	5/3/2020 – 5/4/2020	n/a
4490	COVID-19 pandemic	3/26/2020	1/20/2020 - continuing	IA and PA
3482	Missouri COVID-19	3/13/2020	1/20/2020 - continuing	PA
4451	Severe storms, tornadoes, and flooding	07/09/2019	4/29/2019 - continuing	PA
4317	Storms, tornadoes, straight-line winds, and flooding	06/02/2017	4/28/2017 – 5/11/2017	PA
4250	Storms, tornadoes, straight-line winds, and flooding	01/21/2016	12/23/2018 – 1/9/2016	IA and PA
4238	Storms, tornadoes, straight-line winds, and flooding	8/7/2015	5/15/2015 – 7/27/2015	PA
4144	Severe storms, straight-line winds, and flooding	09/06/2013	8/2/2013 – 8/14/2013	PA
3317	Severe winter storm	2/3/2011	1/31/2011 – 2/5/2011	PA
1980	Severe storms, tornadoes, and flooding	5/9/2011	4/19/2011 – 5/6/2011	PA
3303	Severe winter storm	1/30/2009	1/26/2009 – 1/28/2009	PA
1822	Severe winter storm	2/17/2009	1/26/2008 – 1/28/2009	PA
1847	Severe storms, tornadoes, and flooding	6/19/2009	5/8/2009 – 5/16/2009	IA
1742	Severe storms, tornadoes, and flooding	2/5/2008	1/7/2008 – 1/10/2008	PA
1809	Severe storms, flooding, and a tornado	11/13/2008	9/11/2008 – 9/24/2008	PA
1760	Severe storms and tornadoes	5/23/2008	5/10/2008 – 5/11/2008	IA
1749	Severe storms and flooding	3/19/2008	3/17/2008 – 5/9/2008	PA
1676	Severe winter storms and flooding	1/15/2007	1/12/2007 – 1/22/2007	PA
3281	Severe winter storms	12/12/2007	12/8/2007 – 12/15/2007	PA
3232	Hurricane Katrina evacuation	9/10/2005	8/29/2008 – 10/1/2005	PA

1463	Storms, tornadoes, and flooding	05/06/2003	5/4/2003 – 5/30/2003	IA
1412	Storms, tornadoes, and flooding	05/06/2002	4/24/2002 – 6/10/2002	IA and PA
1054	Storms, tornadoes, hail, and flooding	06/02/1995	5/13/1995 – 6/23/1995	IA and PA
1023	Storms, tornadoes, and flooding	04/21/1994	4/9/1994 – 5/5/1994	IA
995	Storms and flooding	07/09/1993	6/10/1993 – 10/25/1993	IA and PA
439	Storms and flooding	06/10/1974	6/10/1974	IA and PA

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

3.1.3 Research Additional Sources

A variety of sources were researched for data on natural hazards. Primary sources included FEMA, State Emergency Management Agency (SEMA), National Centers for Environmental Information (NCEI) 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 Barry County include:

- Missouri Hazard Mitigation Plans (2013 and 2018)
- Previously approved Barry County Hazard Mitigation Plan (2016)
- Federal Emergency Management Agency (FEMA)
- Missouri Department of Natural Resources
- National Drought Mitigation Center Drought Reporter
- US Department of Agriculture's (USDA) Risk Management Agency Crop Insurance Statistics
- National Agricultural Statistics Service (Agriculture production/losses)
- Data Collection Questionnaires completed by each jurisdiction
- State of Missouri GIS data
- Environmental Protection Agency
- Flood Insurance Administration
- Hazards US (Hazus)
- Missouri Department of Transportation
- Missouri Public Service Commission
- National Fire Incident Reporting System (NFIRS)
- National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI);
- County and local Comprehensive Plans to the extent available
- County Emergency Management
- County Flood Insurance Rate Map, FEMA
- Flood Insurance Study, FEMA
- SILVIS Lab, Department of Forest Ecology and Management, University of Wisconsin
- U.S. Army Corps of Engineers
- U.S. Department of Transportation
- United States Geological Survey (USGS)

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

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

The database currently contains data from January 1950 to March 2020, as entered by the NWS. Due to changes in the data collection and processing procedures over time, there are unique periods of record available depending on the event type. The following timelines show the different time spans for each period of unique data collection and processing procedures.

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

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

3.1.4 Hazards Identified

The natural hazards that may impact or have affected Barry County are profiled below. All hazards do not necessarily affect every jurisdiction participating in the same way. **Table 3.2** provides a summary of the jurisdictions that may be affected by each hazard. An “x” in the table indicates that jurisdiction is 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 Temperatures	Flooding (River and Flash)	Land Subsidence/Sinkholes	Severe Winter Weather	Thunderstorm/Lightning/Hail/High Wind	Tornado	Wildfire
Unincorporated Barry County	X	X	X	X	X	X	X	X	X	X
Cassville	-	X	X	X	X	X	X	X	X	X
Exeter	-	X	X	X	X	X	X	X	X	-
Monett	-	X	X	X	X	X	X	X	X	-
Seligman	-	X	X	X	X	X	X	X	X	X
Wheaton	-	X	X	X	X	X	X	X	X	-
Schools and Special Districts										
Cassville R-IV	-	-	X	X	X	X	X	X	X	X
Crowder College - Cassville	-	-	X	X	X	-	X	X	X	-
Exeter R-VI	-	-	X	X	X	X	X	X	X	-
Monett R-I	-	-	X	X	X	-	X	X	X	-
Purdy R-II	-	-	X	X	X	X	X	X	X	-
Shell Knob 78	-	-	X	X	X	X	X	X	X	X
Southwest R-V	-	-	X	X	X	X	X	X	X	X
Wheaton R-III	-	-	X	X	-	-	X	X	X	-
Barry-Lawrence County Ambulance District	-	-	X	X	X	-	X	X	X	-

3.1.5 Multi-Jurisdictional Risk Assessment

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

Barry County is fairly uniform in terms of climate, however, topography and building construction characteristics vary within the county. Barry County has experienced little growth in population and development from 2000 to the present. Mitigation capabilities of each jurisdiction are profiled in section 2.2.

The urbanized areas within the planning area, which have more assets at a greater density, have greater vulnerability to weather-related hazards. However, vulnerability to future development can 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 the planning area. These differences will be discussed in greater detail in the vulnerability sections of each hazard.

32 ASSETS AT RISK

This section assesses Barry County population, structures, critical facilities and infrastructure, and other important assets that may be at risk of natural hazards. The inventory of assets for each jurisdiction were derived from parcel data from the Barry County Assessor, the Barry County Structures dataset downloaded from the Missouri Spatial Data Information Service (MSDIS), and local jurisdiction data collection questionnaires. The Missouri Mitigation Viewer was also referenced to ensure that total counts are accurate.

3.2.1 Total Exposure of Population and Structures

Missouri Spatial Data Information Service (MSDIS) data was used for structure points and paired with Barry County Assessors data for values.

Unincorporated County and Incorporated Cities

In the following three tables, population data is based on 2019 Census Bureau data. Building counts and building exposure values are based on parcel data developed by the State of Missouri Geographic Information Systems (GIS) database and the Barry County Assessor.

Contents exposure values were calculated by factoring a multiplier to the building exposure values based on usage type. The multipliers were derived from the Hazus and are defined below in **Table 3.3Table 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. Note that 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 the planning area. **Table 3.4** provides the building value exposures for the county and each city in the planning area broken down by usage type. Finally, **Table 3.5** provides the building count total for the county and each city in the planning area broken out by building usage types (residential, commercial, industrial, and agricultural).

Table 3.3. Maximum Population and Building Exposure by Jurisdiction

Jurisdiction	2019 Annual Population Estimate	Building Count	Building Exposure ($)	Contents Exposure ($)	Total Exposure ($)
Unincorporated Barry County	35,530	22,562	$1,318,762,000	$799,157,000	$2,117,919,000
City of Cassville	3,267	1,466	$212,296,000	$145,700,500	$357,996,500
City of Exeter	1,728	394	$50,552,000	$35,680,000	$86,232,000
City of Monett	8,984	2,437	$338,543,000	$245,952,000	$584,495,000
City of Seligman	881	486	$48,091,000	$33,190,500	$81,281,500
City of Wheaton	810	374	$47,532,000	$30,119,500	$77,651,500
Totals	**52,245**	**28,021**	**$2,037,283,000**	**$1,302,884,500**	**$3,340,167,500**

Source: U.S. Bureau of the Census, Annual population estimates/ 5-Year American Community Survey 2019; Building Count and Building Exposure, Missouri GIS Database from SEMA Mitigation Management; Contents Exposure derived by applying multiplier to Building Exposure based on Hazus MH 2.1 standard contents multipliers per usage type as follows: Residential (50%), Commercial (100%), Industrial (150%), Agricultural (100%). For purposes of these calculations, government, school, and utility were calculated at the commercial contents rate.

Table 3.4. Building Values/Exposure by Usage Type

Jurisdiction	Residential	Commercial	Industrial	Agricultural	Total
Unincorporated Barry County	$1,127,239,000	$88,451,000	$88,029,000	$15,043,000	$1,318,762,000
City of Cassville	$155,710,000	$34,042,000	$22,519,000	$25,000	$212,296,000
City of Exeter	$37,933,000	$4,364,000	$8,189,000	$66,000	$50,552,000
City of Monett	$254,786,000	$14,127,000	$69,604,000	$26,000	$338,543,000
City of Seligman	$35,943,000	$5,819,000	$6,142,000	$187,000	$48,091,000
City of Wheaton	$36,872,000	$8,583,000	$2,047,000	$30,000	$47,532,000
Totals	**$1,665,327,000**	**$159,896,000**	**$196,530,000**	**$15,530,000**	**$2,037,283,000**

Source: Missouri GIS Database, SEMA Mitigation Management Section

Table 3.5. Building Counts by Usage Type

Jurisdiction	Residential Counts	Commercial Counts	Industrial Counts	Agricultural Counts	Total
Unincorporated Barry County	8,499	608	43	13,366	22,562
City of Cassville	1,174	234	11	22	1,466
City of Exeter	286	30	4	59	394
City of Monett	1,921	414	34	23	2,437
City of Seligman	271	40	3	166	486
City of Wheaton	278	59	1	27	374
Totals	**12,556**	**1416**	**96**	**13,799**	**28,021**

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

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).

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

Public School District	Enrolment	Building Count	Building Exposure ($)	Contents Exposure ($)	Total Exposure ($)
Cassville R-IV	1,824	7	$51,870,000.00	$8,541,000.00	$60,411,000.00
Crowder College – Cassville	572	3	$3,000,000.00	$250,000.00	$3,250,000.00
Exeter R-VI	281	2	Not provided	Not provided	N/A
Monett R-I	2,309	18	$65,309,000.00	$6,975,740.00	$72,284,740.00
Purdy R-II	639	6	$26,580,352.39	$3,982,309.36	$30,562,661.75
Shell Knob 78	133	7	$10,431,589.41	$1,930,365.79	$12,361,955.20
Southwest R-V	751	14	$20,266,430.98	$4,185,422.95	$24,451,853.93
Wheaton R-III	411	10	$14,755,910.02	$2,988,857.24	$17,744,767.26

Source: http://mcds.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.

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.

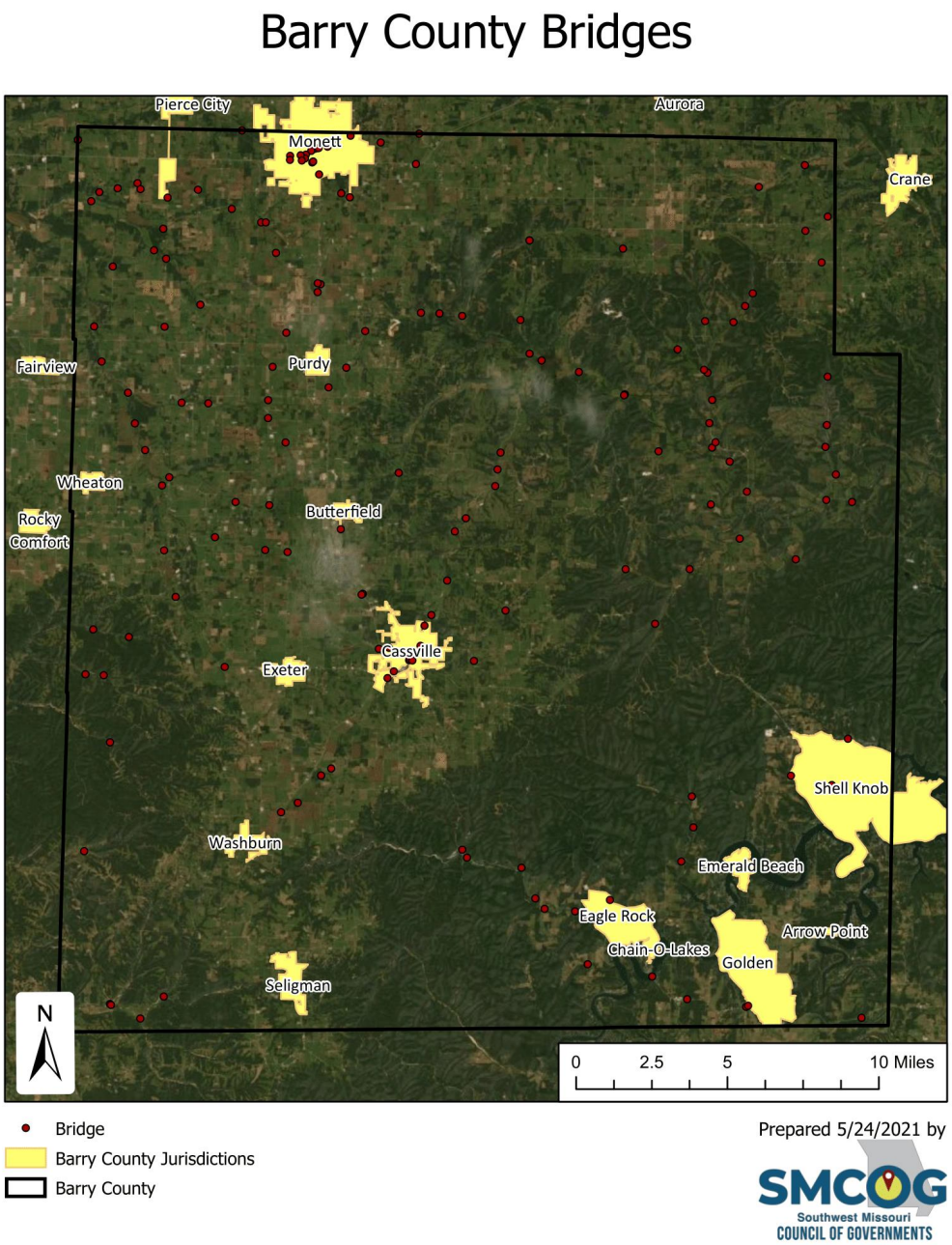
Table 3.7 includes a summary of the inventory of critical and essential facilities and infrastructure in the planning area.

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	Sanitary Pump Stations	School Facilities	Stormwater Pump Stations	Tier II Chemical Facility	Wastewater Facility	Total
Barry County	0	0	1	20	0	10	0	13	17,630	0	9	0	0	0	0	0	0	Y	0	0	0	0	3	**17,686**
Cassville	1	0	3	2	0	1	1	5	1,333	2	2	3	0	1	3	3	0	N	0	4	0	0	1	**1,365**
Exeter	0	0	1	1	0	0	1	1	367	0	0	0	0	0	0	0	0	Y	0	2	0	0	1	**374**
Monett	1	0	2	3	0	1	3	5	3,572	3	1	2	0	0	5	5	0	Y	0	0	0	0	1	**3,604**
Seligman	0	0	0	0	0	0	1	0	445	0	1	0	0	0	0	0	0	Y	0	7	0	0	1	**455**
Wheaton	0	0	0	0	0	0	1	0	294	0	0	0	0	0	0	0	0	N	0	2	0	0	1	**298**
Totals	**2**	**0**	**7**	**26**	**0**	**12**	**7**	**24**	**23,641**	**5**	**13**	**5**	**0**	**0**	**8**	**8**	**0**	**-**	**0**	**15**	**0**	**0**	**8**	**23,782**

Figure 3.1 is a map that shows the locations of bridges in Barry County included in the National Bridge Inventory (NBI) data set. The NBI 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 NBI information, there are no scour critical bridges identified in Barry County. The map shows the NBI’s classification of each bridge based on structure status.

Figure 3.1. Barry County Bridges



3.2.3 Other Assets

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

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

Table 3.8. Threatened and Endangered Species in Barry County

Common Name	Scientific Name	Status
Gray Bat	Myotis grisescens	Endangered
Indiana Bat	Myotis sodalist	Endangered
Northern Long-eared Bat	Myotis septentrionalis	Threatened
Ozark Big-eared Bat	Corynorhinus (=Plecotus) townsendii ingens	Endangered
Ozark Cavefish	Amblyopsis rosae	Threatened
Neosho Mucket	Lampsilis rafinesqueana	Endangered

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

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

Table 3.9. Parks in Barry County

Park / Conservation Area	Address	City
Flag Spring Conservation Area	Washburn vicinity off Route UU	Washburn
Lower Flat Creek Access	Highway 39/Route EE Junction	Barry County
Stubblefield Access	Farm Road 1195 off Highway 248	Barry County
Roaring River State Conservation Area	12716 Farm Road 2239	Cassville
Roaring River Fish Hatchery	24390 Farm Road 1135	Cassville

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

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.

There are sixteen registered historic properties in Barry County. **Table 3.10** provides a breakdown of

these properties.

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

Property	Address	City	Date Listed
Camp Smokey/Company 1713 Historic	Cassville vicinity off Park Road	Cassville	02/26/85
Cassville Ranger Station Historic District	State Highway 248	Cassville	08/04/03
Courdin House	2.4 miles SE of Monett		11/05/71
Downtown Monett Historic District	200-400 blocks of Broadway & Bond	Monett	06/27/14
McMurty Spring and Trail of Tears Roadbed Segment	Address restricted	Cassville	07/23/18
Natural Bridge Archaeological Site	Address restricted	n/a	05/05/72
Roaring River State Park Bath House	Cassville vicinity off Park Road	Cassville	03/04/85
Roaring River State Park Dam/Spillway	Cassville vicinity off Park Road	Cassville	02/28/85
Roaring River State Park Deep Leap Trail	Cassville vicinity off Park Road	Cassville	02/26/85
Roaring River State Park Honeymoon Cabin	Cassville vicinity off Park Road	Cassville	02/26/85
Roaring River State Park Hotel	Cassville vicinity off Park Road	Cassville	02/26/85
Roaring River State Park Shelter Kitchen No. 2 and Rest Room	Cassville vicinity off Park Road	Cassville	02/26/85
Southwest Missouri Prehistoric Rock Shelter and Cave Sites Discontinuous Archeological District	Address restricted	n/a	10/24/91
Tom Town Historic District	Off CR W, S of Pleasant Ridge	Pleasant Ridge	12/15/89
Waldensain Church and Cemetery of Stone Prairie	Rt. 2	Monett	01/18/85
Wheaton Missouri and North Arkansas Railroad Depot	Junction of Main and Barnett Streets	Wheaton	02/10/00

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

Economic Resources: Major non-government employers in Barry County are provided in **Table 3.11.**

Table 3.11. Major Non-Government Employers in Barry County

Employer Name	Main Locations	Product or Service	Employees
EFCO Corp.	Monett	Building Materials	1,000 – 4,999
Jack Henry & Assoc. Inc.	Monett	Computer Programming Services	1,000 – 4,999
Tyson Foods Inc.	Monett	Poultry Processing	500 - 999
PlayPower	Monett	Playground and Recreational Equipment	500 - 999
George's Inc.	Cassville	Poultry Processing	500 - 999
Fasco Industries	Cassville	Motor and Generator Manufacturing	500 - 999

Source: Data Collection Questionnaires; local Economic Development Commissions, https://missouriebs.weebly.com/employers.html

Agriculture: Agriculture is a significant industry in Barry County with nearly 300,000 acres of farmland in 2017. **Table 3.12** proves a summary of the agriculture presence within Barry County.

Table 3.12. Agriculture in Barry County

	2017	% Change since 2012
Number of farms	1,392	-2
Land in farms (acres)	289,638	+8
Average size of farm (acres)	208	+11
Totals		
Market value of products sold	$403,071,000	+13
Government payments	$391,000	-55
Farm-related income	$2,535,000	-43
Total farm production expenses	$295,513,000	-5
Net cash farm income	$110,484,000	+113
Per farm average		
Market value of products sold	$289,562	+15
Government payments	$5,754	+22
Farm-related income	$6,434	-41
Total farm production expenses	$212,294	-3
Net cash farm income	$79,371	+118

Source: 2017 Census of Agriculture, https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Missouri/index.php

3.3 Land Use and Development

3.3.1 Development Since Previous Plan Update

Table 3.13 provides population growth statistics for participating cities in Barry County as well as the county as a whole.

Table 3.13. County Population Growth, 2010-2019

Jurisdiction	Total Population 2010	Total Population 2019	2010-2019 # Change	2000-2019 % Change
Barry County	35,753	35,530	-223	-0.6%
Cassville	3,309	3,267	-42	-1.3%
Exeter	1,831	1,728	-108	-5.9%
Monett	8,799	8,984	+185	+2.1%
Seligman	1,083	881	-202	-18.7%
Wheaton	1,055	810	-245	-23.2%
Totals	**51,830**	**51,200**	**-630**	**-1.2%**

Source: U.S. Bureau of the Census, Decennial Census, Annual Population Estimates, American Community Survey 5-year Estimates; 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 Barry County from 2010 to 2019. The totals for 2019 were taken from the American Community Survey 2019 estimates. It should be noted that there is a margin of error associated with these values.

Table 3.14. Change in Housing Units, 2010-2019

Jurisdiction	Housing Units 2010	Housing Units 2019	2010-2019 # Change	2000-2019 % Change
Barry County	17381	17630	+249	+1.4%
Cassville	1461	1333	-128	-8.7%
Exeter	820	725	-95	-11.6%
Monett	3565	3572	+7	+0.2%
Seligman	498	445	-50	-10.0%
Wheaton	484	423	-61	-12.6%
Totals	**24209**	**24128**	**-81**	**-.33%**

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

From 2010 to 2019, Barry County and the participating jurisdictions have seen a very slight population decline (-1.2%) and an even smaller decline in the total number of housing units (-.33%). The growth rate is not expected to change drastically in the near future. It should be noted that, while most jurisdictions saw a decline in population and housing units, Monett actually increased it's population by 2.1% during this time period.

Figures 3.2 and 3.3 are population density maps depicting block group population at the time of the 2010 census and the 2019 American Community Survey.

Figure 3.2. Barry County Population Density (2010)

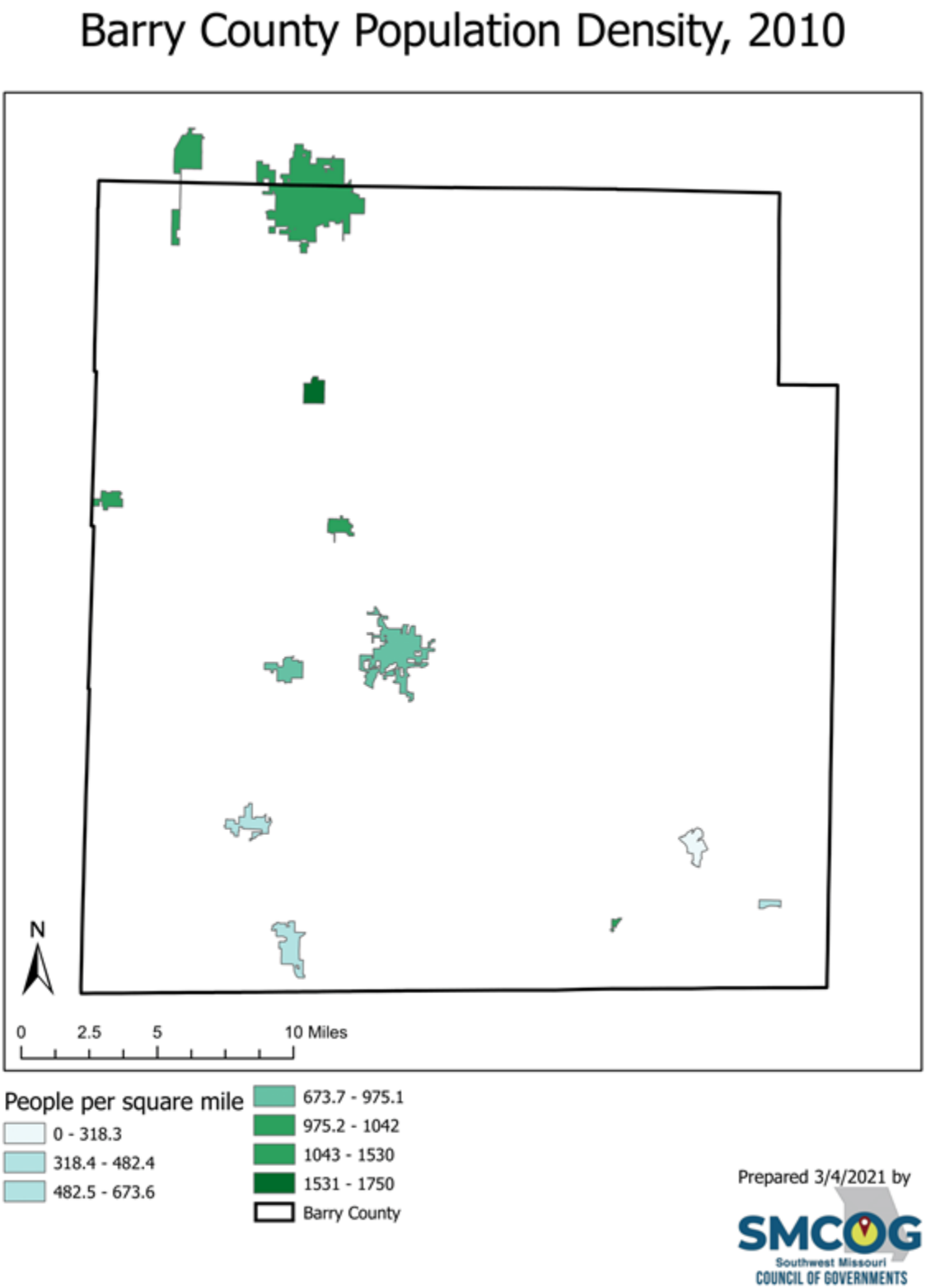
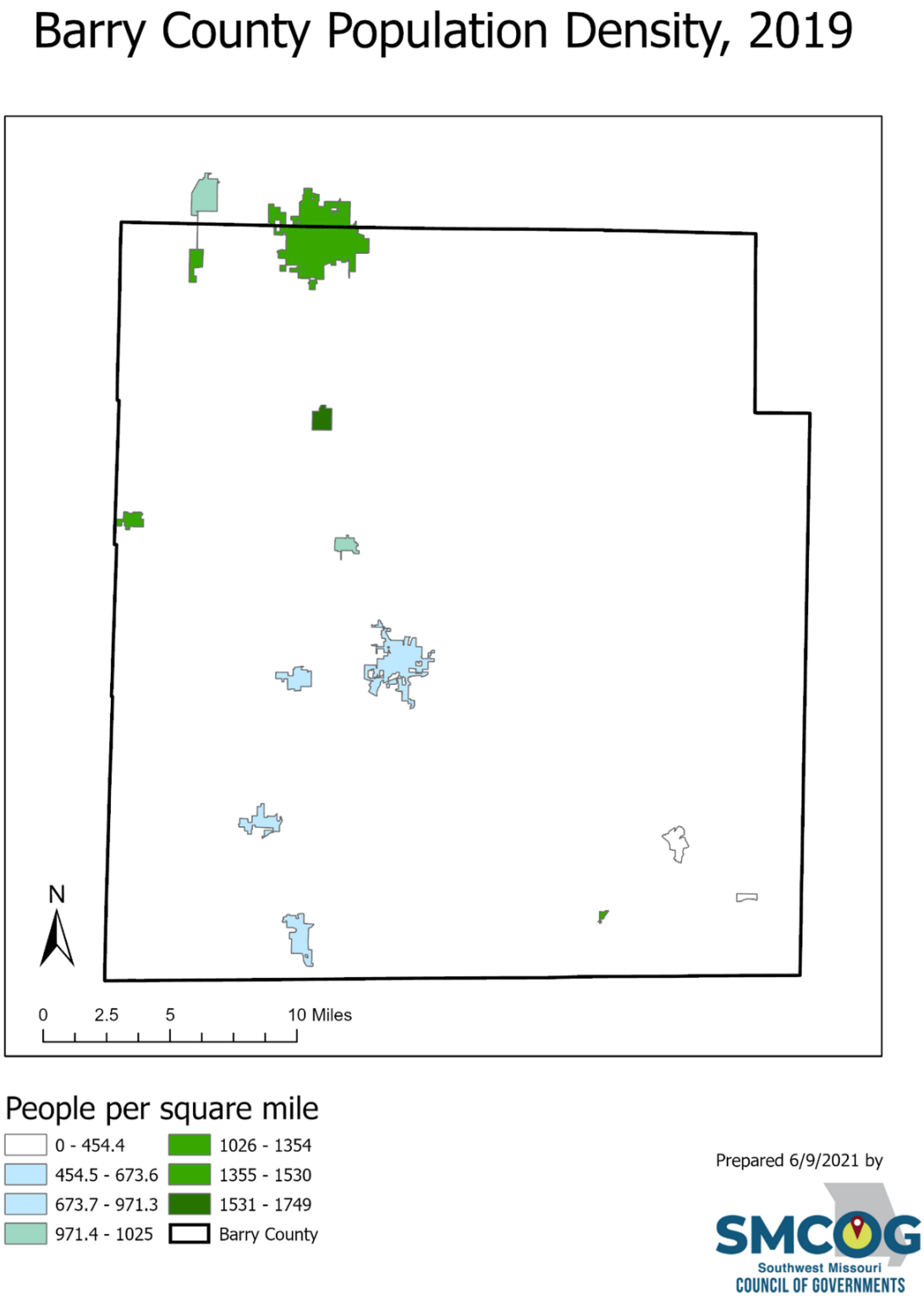


Figure 3.3. Barry County Population Density (2019)



Unincorporated Barry County

Barry County has ongoing action items to participate in various countywide hazard education programs.

City of Cassville

No major changes or projects in the last five years have been reported by the City of Cassville.

City of Exeter

A program to prevent roads and streets from flooding as well as mitigating flood waters from nearing houses is being implemented into Exeter. There is also an ongoing fire safety education program provided by the local fire department and fire chief.

City of Monett

Monett has various emergency preparedness/awareness EMA programs for schools and public meetings relating to hazard mitigation. They also recently received HMPG and CDBG awards for their Kelly Creek buyout / green space plan, completed in 2020.

City of Seligman

No major changes or projects in the last five years have been reported by the City of Seligman.

City of Wheaton

No major changes or projects in the last five years have been reported by the City of Wheaton.

Cassville R-IV School District

Cassville R-IV has recently built two FEMA shelters in the school district; one is located on each of the two school campuses for the district. A major mitigation project that addressed underground water issues which resulted in hydrostatic flooding in the building was completed, fixing the issue through the implementation of French drains and peer wells.

Crowder College – Cassville

The campus has emergency protocols in place along with emergency maps in the event of a disaster or critical situation. They also have back-up servers if they were to be damaged.

Exeter R-VI School District

French drains were added to the gymnasium to protect from flood damage.

Monett R-I School District

Monett R-I is currently in the process of applying for a FEMA shelter at the new middle school building.

Purdy R-II School District

Regular emergency drills and annual presentations by first responders and the fire department are practiced by Purdy R-II to educate and inform.

Shell Knob 78 School District

General safety drills are incorporated through the school resource office annually. Shell Knob 78's tornado shelter was also recently reinforced with 12 in concrete and ¼ in steel.

Southwest R-V School District

Hazardous situations are practiced in school so students are prepared in the event of a disaster. The staff members are also trained in procedures in these events.

Wheaton R-III School District

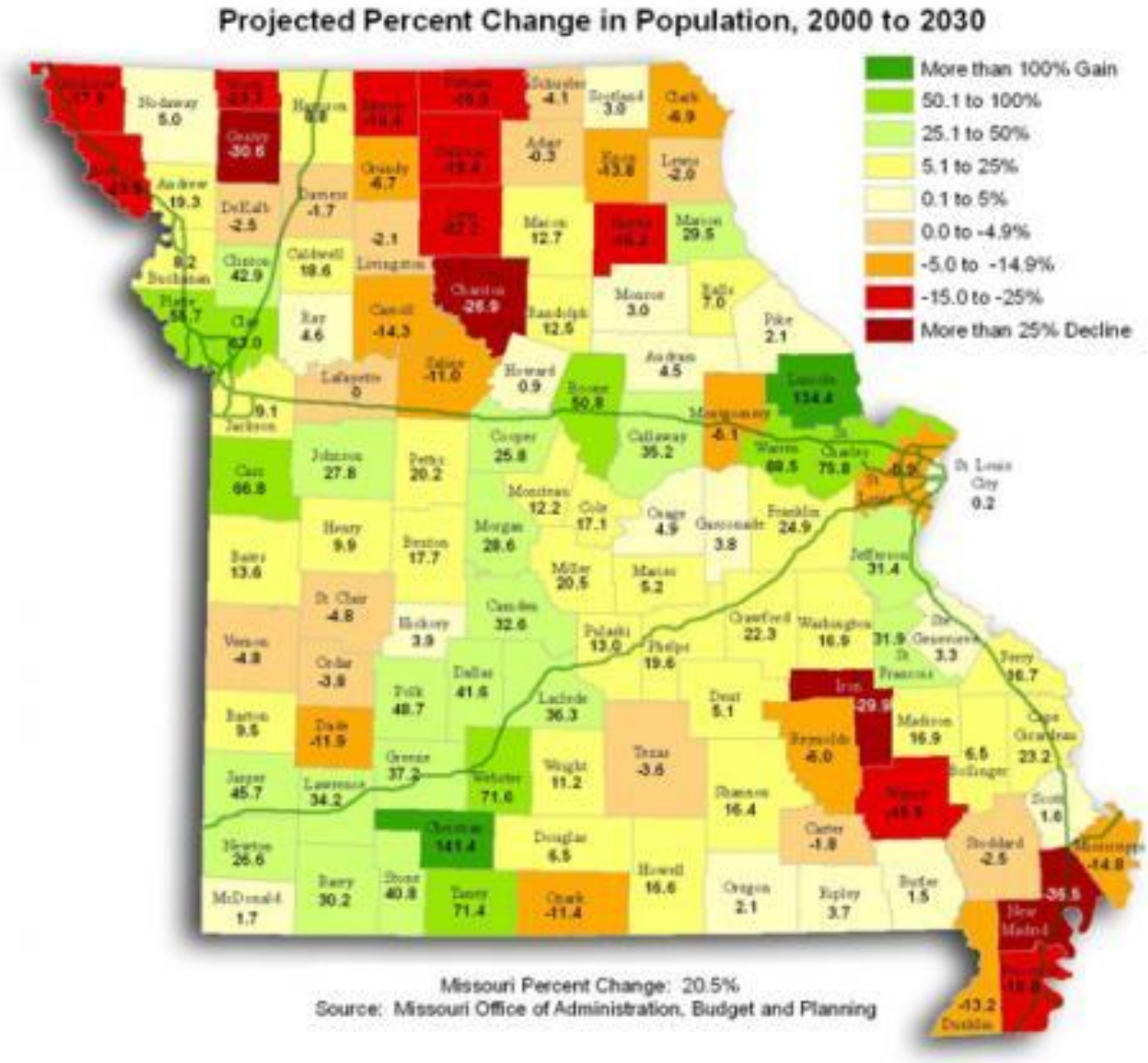
Training for faculty, staff, and students annually for hazards occur for emergency preparedness. The Junior High section of the Junior High/High School recently had new windows installed. The gymnasium

roof also recently had a section sealed to prevent leaking, as well as the addition of gutters to the roof to prevent further water problems.

3.3.2 Future Land Use and Development

Barry County is expected to see a population increase in the next decade. The Missouri Office of Administration, Budget, and Planning has projected that Barry County will see an overall 30.2% increase from 2000 to 2030. **Figure 3.4** shows the expected population change for each county in the state of Missouri.

Figure 3.4. Projected Percent Change in Population, 2000 to 2030



The remaining discussion in this section provides future growth and development information, where available, relative to each participating jurisdiction. Much of the information included is from the community data collection questionnaires, or where incomplete questionnaires were returned presumptions were made for future development based on past trends.

Unincorporated Barry County

No major future development at the county level was reported by Barry County.

City of Cassville

No major future development was noted by the City of Cassville.

City of Exeter

Exeter is working on the purchase and installation of new generators at wells at their wastewater treatment plant. Driveways, ditches, and carports over the UV installation are also planned.

City of Monett

Various electric infrastructure improvements across Monett including tying the Marshall Hill substation with Chappell Drive substation, putting Cox Monett Hospital on an independent circuit, improving capability on the south side of the city, and upgrading the north substation transformer are planned in the future. The addition of a new well and additional waterlines at Cox Monett and west are also planned.

City of Seligman

No major future development was noted by the City of Seligman.

City of Wheaton

No major future development was noted by the City of Wheaton.

Cassville R-IV School District

Cassville R-IV is planning on remodeling an older wing of the main campus, to become W.I.L.D. Academy.

Crowder College – Cassville

No major future development was noted by Crowder College – Cassville.

Exeter R-VI School District

No major future development was noted by the Exeter R-VI School District.

Monett R-I School District

Monett-RI plans on implementing a new 6th – 8th grade (Junior High) building. The estimated completion date is August 2022. It will also have a FEMA shelter.

Purdy R-II School District

No major future development was noted by the Purdy R-II School District.

Shell Knob 78 School District

No major future development was noted by the Shell Knob 78 School District.

Southwest R-V School District

Major district remodeling and renovation including new roofs, renovated parking lots, added drainage, as well as the installation of future HVAC units and constructions of new sports fields are possible and being considered by the school district.

Wheaton R-III School District

Wheaton R-III has applied for a BRIC grant in 2020 and is waiting to hear from FEMA and SEMA on selection of the district to receive the funds.

3.4 HAZARD PROFILES, VULNERABILITY, AND PROBLEM STATEMENTS

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

Hazard Profiles

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

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

- **Hazard Description:** This section consists of a general description of the hazard and the types of impacts it may have on a community or school/special district.
- **Geographic Location:** This section describes the geographic areas in the planning area that are affected by the hazard. Where applicable, maps will be used to indicate the specific locations of the planning area that are vulnerable to the subject hazard. For some hazards, the entire planning area is at risk.
- **Strength/Magnitude/Extent:** This includes information about the strength, magnitude, and extent of a hazard. For some hazards, this is accomplished with description of a value on an established scientific scale or measurement system, such as an EF2 tornado on the Enhanced Fujita Scale. This section should also include information on the typical or expected strength/magnitude/extent of the hazard in the planning area. Strength, magnitude, and extent can also include the speed of onset and the duration of hazard events. Describing the strength/magnitude/extent of a hazard is not the same as describing its potential impacts on a community. Strength/magnitude/extent defines the characteristics of the hazard regardless of the people and property it affects.
- **Previous Occurrences:** This section includes available information on historic incidents and their impacts. Historic event records form a solid basis for probability calculations.
- **Probability of Future Occurrence:** The frequency of recorded past events is used to estimate the likelihood of future occurrences. Probability can be determined by dividing the number of recorded events by the number of years of available data and multiplying by 100. This gives the percent chance of the event happening in any given year. For events occurring more than once annually, the probability should be reported as 100% in any given year, with a statement of the average number of events annually. For hazards such as drought that may have gradual onset and extended duration, probability can be based on the number of months in drought in a given time-period and expressed as the probability for any given month to be in drought.
- **Changing Future Conditions Considerations:** Changing future considerations are also considered, including the effects of long-term changes in weather patterns and climate on identified hazards.

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 should be based on the best available data, including data collected from the 2018 State Hazard Mitigation Plan.

The vulnerability assessments in this 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, the following sub-headings will be addressed:

- **Vulnerability Overview:** An overall summary of each jurisdiction's vulnerability to the identified hazards. The overall summary of vulnerability identifies structures, systems, populations, or other community assets as defined by the community that are susceptible to damage and loss for hazard events.

- **Potential Losses to Existing Development:** Includes the types and numbers of building and critical facilities

- **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 how 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 Barry 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 will conclude with a brief summary of the problems created by the hazard in Barry County, and possible ways to resolve those problems. Jurisdiction-specific information in those cases where the risk varies across Barry County is included.

3.4.1 Flooding (Riverine and Flash)

Hazard Profile

Hazard Description

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

Flooding caused by dam failure is discussed in Section 3.4.2. 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 the planning area.

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

Geographic Location

Riverine flooding is most likely to occur in the Special Flood Hazard Areas (SFHA) where the 100-year floodplain has been mapped. According to NCEI storm even data, there were a total of 51 flood events and 128 flash flood events from 2001 to 2020. These events are typically regional in nature and affect rivers, streams, and tributaries across a wide area. **Figures 3.5 through 3.9** are mapped SFHAs for participating communities and unincorporated Barry County.

Figure 3.5. Cassville SFHA

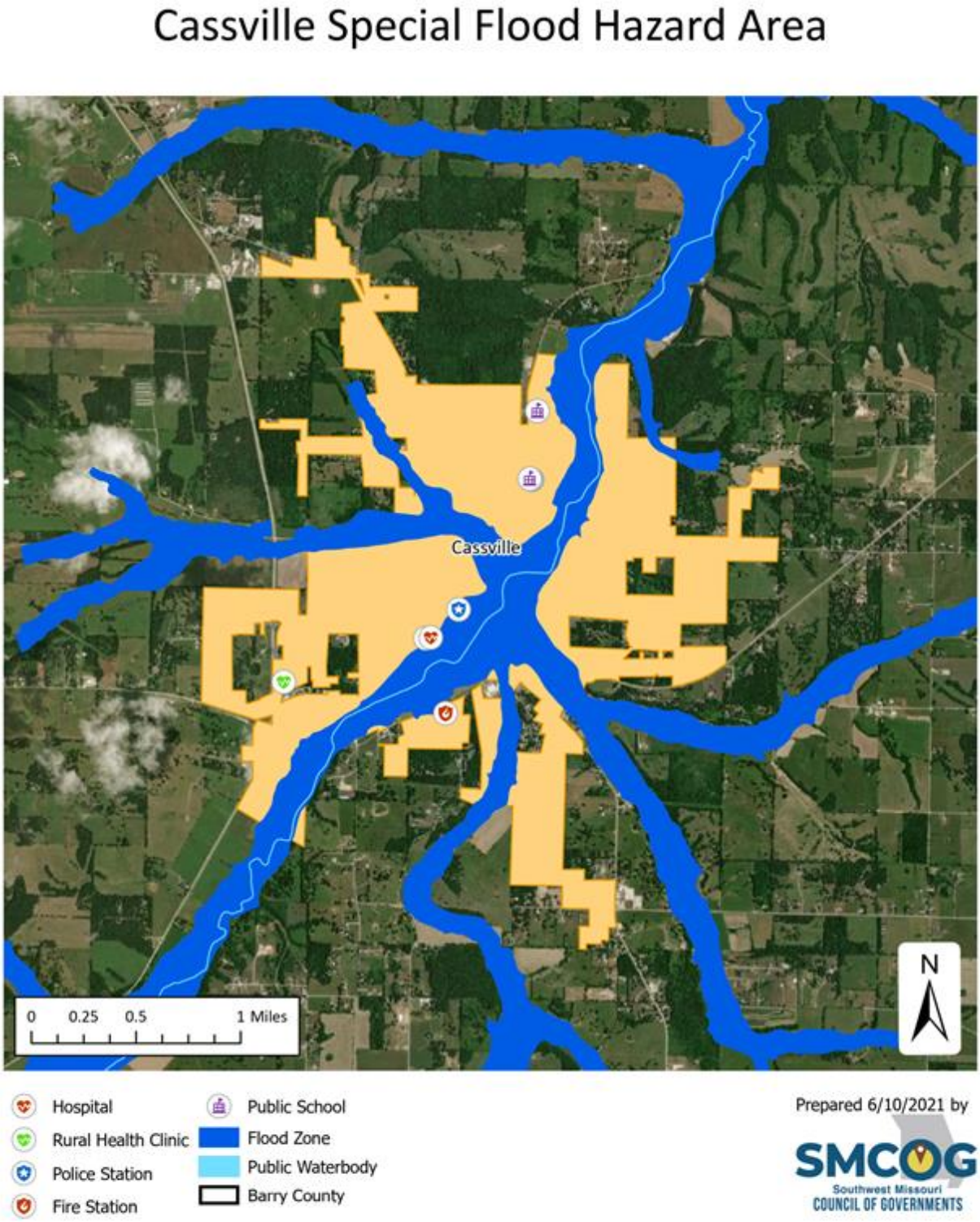


Figure 3.6. Exeter SFHA

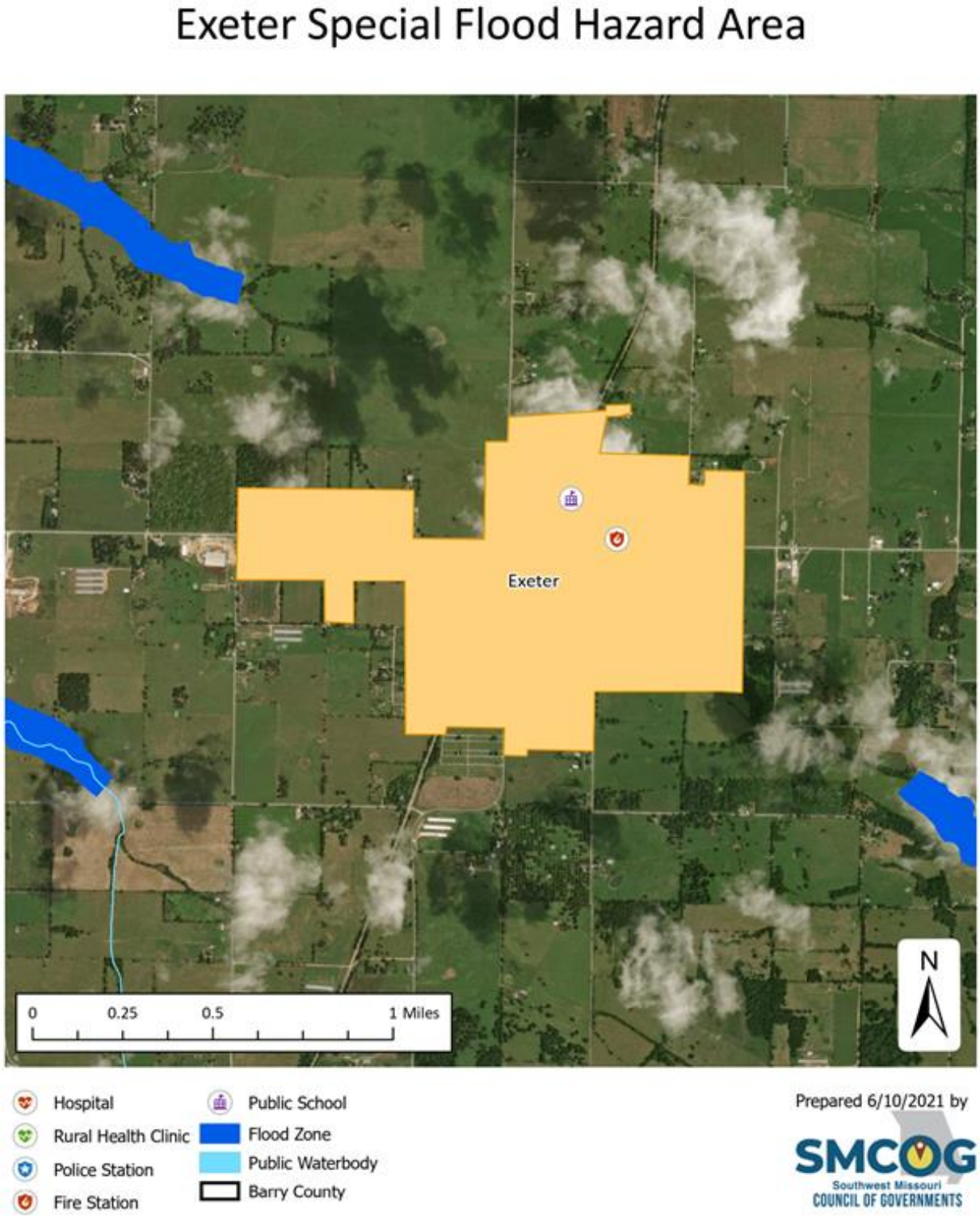


Figure 3.7. Monett SFHA

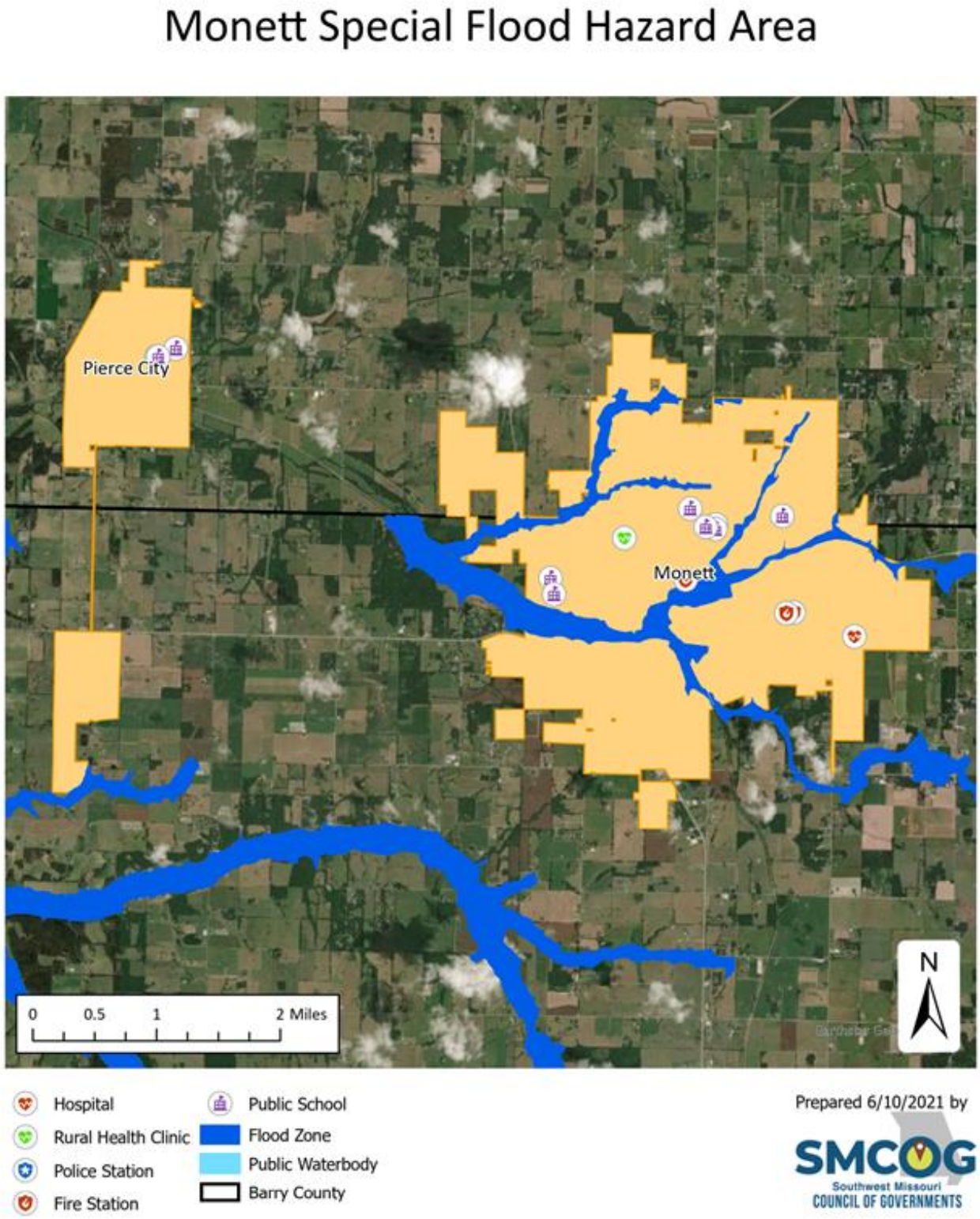


Figure 3.8. Seligman SFHA

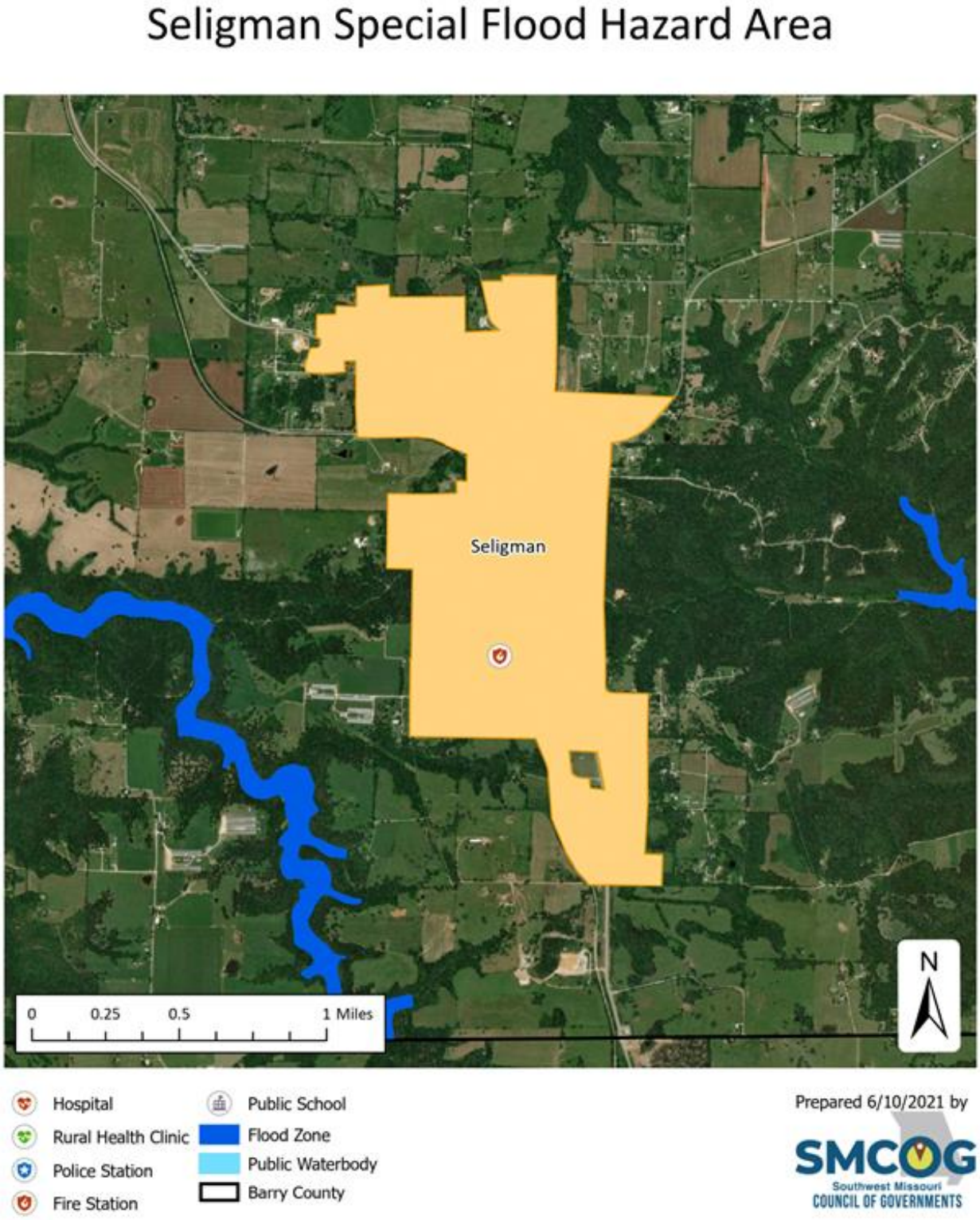
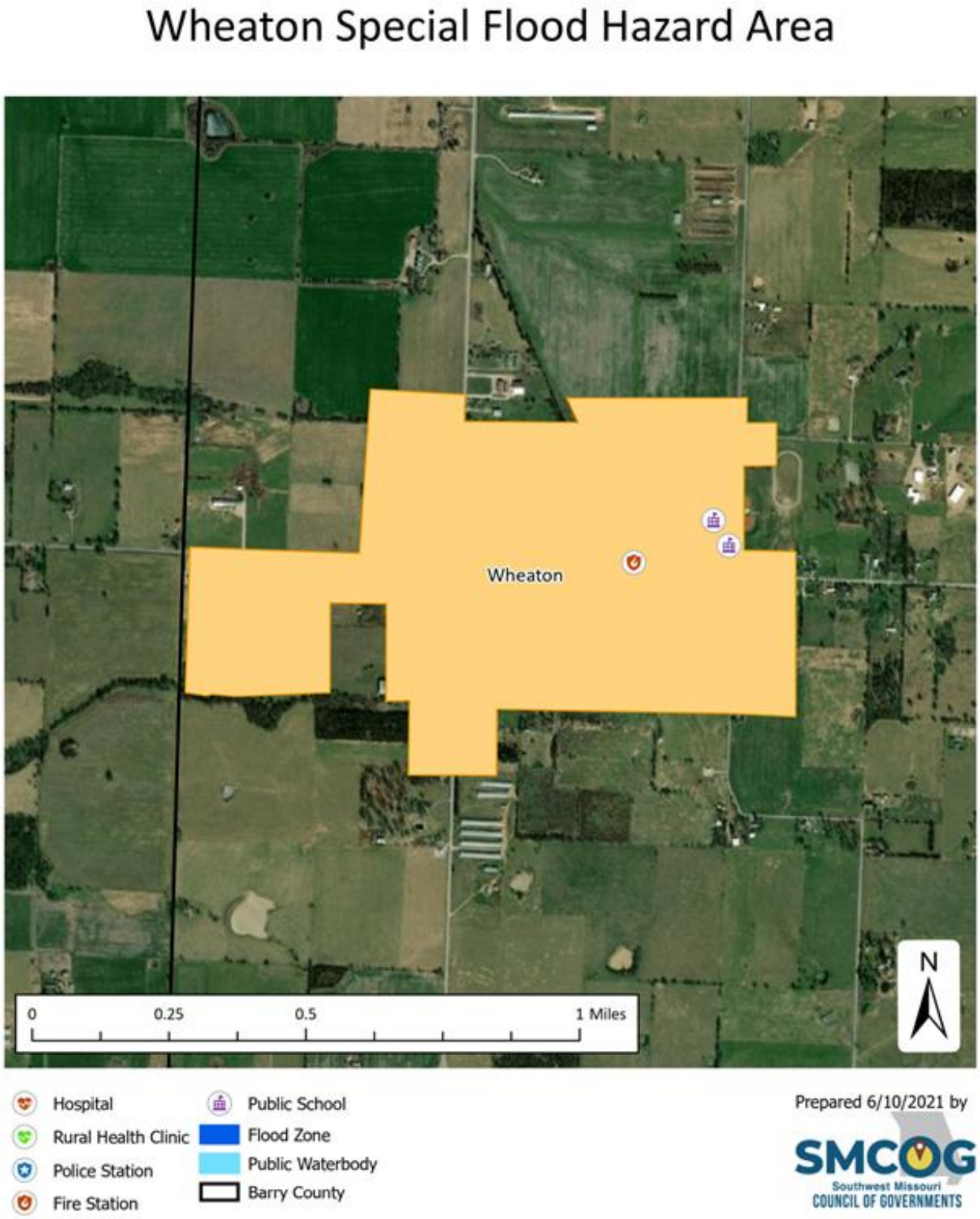


Figure 3.9. Wheaton SFHA



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 an 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 impassable. 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.

Table 3.15 shows all flood events within the county while **Table 3.16** shows all flash flood events.

Table 3.15. Barry County NCEI Flood Events by Location, 2001 - 2020

Location	# of Events
Unincorporated Barry County	45
Cassville	2
Monett	2
Purdy	1
Washburn	1
Total	**51**

Source: National Centers for Environmental Information

The NCEI 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. 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 3.16. Barry County NCEI Flash Flood Events by Location, 2001- 2020

Location	# of Events
Unincorporated Barry County	44
Butterfield	6
Cassville	41
Exeter	2
Monett	26
Purdy	2
Seligman	5
Washburn	1
Total	**128**

Source: National Centers for Environmental Information

Strength/Magnitude/Extent

Missouri has a long and active history of flooding over the past century, according to the 2018 State Hazard Mitigation Plan. Flooding along Missouri‘s major rivers generally results in slow-moving disasters. River crest levels are forecast several days in advance, allowing communities downstream sufficient time to take protective measures, such as sandbagging and evacuations. Nevertheless, floods exact a heavy toll in terms of human suffering and losses to public and private property. By contrast, flash flood events in recent years have caused a higher number of deaths and major property damage in many areas of Missouri.

According to the U.S. Geological Survey, two critical factors affect flooding due to rainfall: rainfall

duration and rainfall intensity – the rate at which it rains. These factors contribute to a flood's height, water velocity and other properties that reveal its magnitude.

National Flood Insurance Program (NFIP) Participation

Table 3.17 provides details on NFIP participating for communities in Barry County. **Table 3.18** shows the number of policies in force, amount of insurance in force, number of closed losses, and total payments, where applicable.

Table 3.17. NFIP Participation in Barry County

Community ID #	Community Name	NFIP Participant (Y/N/Sanctioned)	Current Effective Map Date	Regular-Emergency Program Entry Date
290021	Barry County	Sanctioned	08/16/06	08/16/1989
290022	City of Cassville	Sanctioned	08/16/06	05/02/1977
290590	City of Exeter	Y	(NSFHA)	08/24/1984
290023	City of Monett	Y	08/16/06	04/15/1981
n/a	City of Seligman	N	n/a	n/a
n/a	City of Wheaton	N	n/a	n/a

Source: NFIP Community Status Book, BureauNet, http://www.fema.gov/national-flood-insurance-program/national- flood-insurance-program-community-status-book;

Barry County and the City of Cassville are the only sanctioned communities participating in the Plan update. Barry County is a 3rd class county and does not have planning and zoning ordinances. As such, any addition of a flood plain ordinance would require a public vote. The Barry County Commission has discussed this topic on several occasions, and they have no interest in participation. The City of Cassville is financially unable to afford retrofitting all buildings in the floodplain to NFIP standards. However, as of June 2021 the city is actively working towards re-instatement.

Table 3.18. NFIP Policy and Claim Statistics as of June 2021

Community Name	Policies in Force	Insurance in Force	Closed Losses	Total Payments
City of Monett	13	$2,816,000.00	46	$1,990,693.64

Source: NFIP Community Status Book, BureauNet, http://bsa.nfipstat.fema.gov/reports/reports.html; *Closed Losses are those flood insurance claims that resulted in payment.

Repetitive Loss

Repetitive Loss Properties are those properties with at least two flood insurance payments of $1,000 or more in a 10-year period. According to the Flood Insurance Administration, jurisdictions included in the planning area have a combined total of seven repetitive loss properties. As of June 2021, zero properties have been mitigated.

Table 3.19. Barry County Repetitive Loss Properties

Jurisdiction	# of Properties	Type of Property	# Mitigated	Building Payments	Content Payments	Total Payments	Average Payment	# of Losses
Monett	7	unknown	0	$812,827.31	$1,083,814.71	$1,896,642.02	$86,211.00	22

Source: Flood Insurance Administration

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

been made with the cumulative amount of such claims exceeding the reported value of the property. According to the Flood Insurance Administration, there are two SRL properties in Monett. **Table 3.20** provides details.

Table 3.20. Barry County Severe Repetitive Loss Properties

Jurisdiction	# of Properties	Type of Property	# Mitigated	Building Payments	Content Payments	Total Payments	Average Payment	# of Losses
Monett	2	Unknown	0	$268,630.06	$407,717.75	$676,347.81	$56,362.32	12

Source: Flood Insurance Administration

Previous Occurrences

Table 3.21 and **Table 3.22** reflect storm event data for riverine flooding and flash flood events in Barry County since 2001. There were 52 riverine flood events and 128 flash flood events resulting in $11,903,000 in property damages.

Table 3.21. NCEI Barry County Riverine Flood Events Summary, 2001 - 2020

Year	# of Events	# of Deaths	# of Injuries	Property Damages	Crop Damages
2001	3	0	0	$0	$0
2002	2	0	0	$300,000	$0
2004	1	0	0	$10,000	$0
2005	3	0	0	$0	$0
2008	3	0	0	$0	$0
2009	4	0	0	$0	$0
2010	1	0	0	$0	$0
2013	5	0	0	$0	$0
2014	2	0	0	$0	$0
2015	7	0	0	$0	$0
2017	6	0	0	$0	$0
2018	7	0	0	$0	$0
2019	2	0	0	$0	$0
2020	6	0	0	$0	$0
Total	**52**	**0**	**0**	**$310,000**	$0

Source: NCEI, https://www.ncdc.noaa.gov/stormevents/

Table 3.22. NCEI Barry County Flash Flood Events Summary, 2001 - 2020

Year	# of Events	# of Deaths	# of Injuries	Property Damages	Crop Damages
2001	3	0	0	$150,000	$0
2002	2	0	0	$0	$0
2003	2	0	0	$0	$0
2004	9	0	0	$0	$0
2005	3	0	0	$0	$0
2006	4	0	0	$0	$0
2007	5	0	0	$0	$0
2008	7	0	0	$1,650,000	$0
2009	13	0	0	$10,000	$0
2010	4	0	0	$0	$0
2011	10	0	0	$1,000,000	$0
2013	7	0	0	$650,000	$0
2014	1	0	0	$0	$0
2015	24	0	0	$7,050,000	$0
2017	15	0	0	$1,010,000	$0
2019	10	0	0	$18,000	$0
2020	9	0	0	$0	$0

Total	**128**	**0**	**0**	**$11,593,000**	$0

Source: NCEI, https://www.ncdc.noaa.gov/stormevents/

Probability of Future Occurrence

There were a total of 180 flood events reported in Barry County from 2001 to 2020. Of the 180 total, 52 were riverine floods. In this 20-year time-period, there were six years without a riverine flood and eighteen years without any property or crop damage. This equates to a 70% probability for a riverine flood in any given year and a 10% probability that a damaging event will occur. Based on the number of events and years, the average number of riverine flood events is 2.9 per year and the average amount of damage caused is $15,500. It should be noted that the vast majority of damage ($300,000) was caused in one year (2002).

During the same time-period, there were 128 flash floods reported in the county. These floods occurred in 17 of the 20 years, giving an 85% probability of occurrence in any given year. Damages occurred in eight years, giving a 40% probability of occurrence in any given year. The average amount of flash floods per year was 6.4 and the average cost of damages was $579,650.

Changing Future Conditions Considerations

With changing climate conditions comes more uncertainty and less predictability for hazard events. An overall increasing global temperature is likely to lead to increased precipitation and intense rainstorms. Over the last fifty-years, the average annual precipitation in most of the Midwest has increased by 5-10%; however, rainfall during the four wettest days of the year has increased nearly 35%. The amount of water flowing in most streams during the worst flood of the year has increased by more than 20%.

The National Climate Assessment states that extreme rainfall events and flooding have increased in the last century and that those trends are expected to continue. Heavy rain events are likely to cause erosion, diminished water quality, and negative impacts on transportation, agriculture, human health, and infrastructure.

Vulnerability

Vulnerability Overview

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. Poor conditioned bridges identified in **Figure 3.1** show specific locations that might be more vulnerable to high- or fast-moving floods. 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. When sewer back-up occurs, this can result in costly clean-up for home and business owners as well as present a health hazard.

Potential Losses to Existing Development

Flood loss estimates were developed by selecting all parcels located in a floodplain. Building counts of the selected parcels were then sorted by participating jurisdictions and type. While some areas of the selected parcels may not be immediately adjacent to a floodplain, they have been included to take into account the potential damages from flash flooding. **Table 3.23** presents the building counts for each type of use within each participating municipality, as well as the unincorporated areas of Barry County.

Table 3.23. Building Counts by Jurisdiction

Jurisdiction	Residential	Commercial	Agriculture	Total
Unincorporated Barry County	8,499	608	13,366	22,473
City of Cassville	1,174	234	22	1,430
City of Exeter	286	30	59	375
City of Monett	1,921	414	23	2,358
City of Seligman	271	40	166	477
City of Wheaton	278	59	27	364
Total	**12,429**	**1,385**	**13,663**	**27,477**

The total exposure for structures and contents by building type and jurisdiction is provided in **Table 3.24**. Losses were estimated by adding a 5% damage factor to the total assessed value of structures in the jurisdiction.

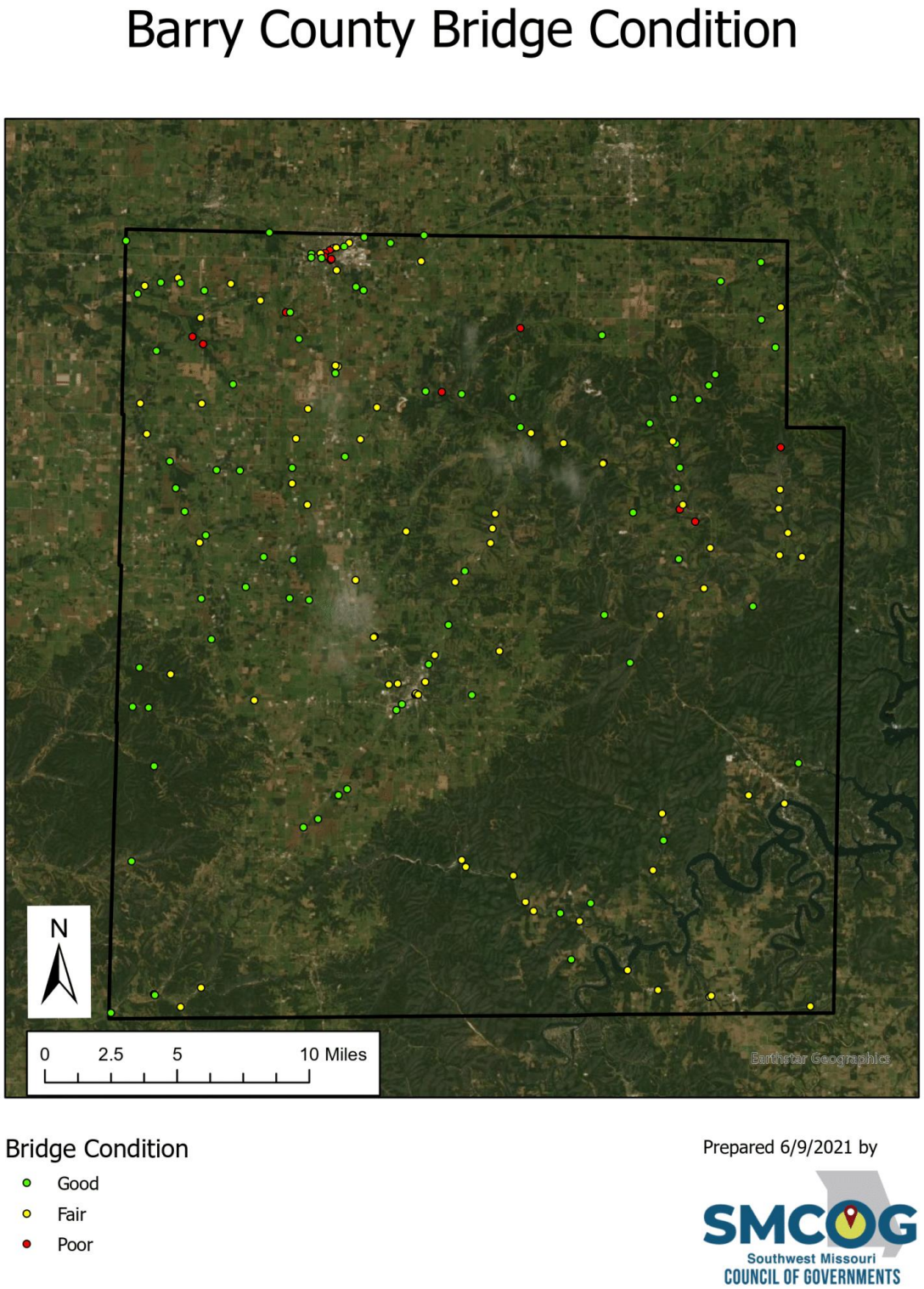
Table 3.24. Total Flood Exposure and Estimated Losses by Jurisdictions

Jurisdiction	Residential	Commercial	Agriculture	Total
Unincorporated Barry County	$5,636,195	$442,255	$75,215	$6,153,665
City of Cassville	$778,550	$170,210	$125	$948,885
City of Exeter	$189,665	$21,820	$330	$211,815
City of Monett	$1,273,930	$70,635	$130	$1,344,695
City of Seligman	$179,715	$29,095	$935	$209,745
City of Wheaton	$184,360	$42,915	$150	$227,425
Total	**$8,242,415**	**$776,930**	**$76,885**	**$9,096,230**

Low Water Crossings

Damage to low water crossings due to flooding is a significant problem for communities. **Figure 3.10** shows the locations and conditions of all crossings in Barry County. Many of these crossings are repeatedly damaged during heavy rain events and need substantial improvements or upgrades in order to increase resiliency towards flooding.

Figure 3.10. Barry County Low Water Crossings



Impact of Previous and Future Development

Future development could impact flooding in Barry County. 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. The only communities currently participating in the NFIP are Exeter and Monett.

Hazard Summary by Jurisdiction

All jurisdictions in the county are at risk of flood hazards. However, as demonstrated in **Table 3.23 and 3.24**, exposure of assets near SFHAs vary among jurisdictions. Based on **Figures 3.5 – 3.9** demonstrating the flood areas for each jurisdiction, Cassville and Monett would sustain the most damage, both to their cities as well as to critical and essential facilities.

Community Comments on Hazard

Six of the 175 residents who completed the online survey stated that they had been impacted by flooding. 70 of the respondents (40%) felt that flooding was “highly likely” to impact their community in the future. 127 of the respondents (73%) felt that flooding could have a “catastrophic” or “critical” impact, while only 48 (27%) felt that it could have a little to no impact. Overall, respondents were supportive of actions that targeted flood mitigation projects – “Flood protection is a priority,” said one respondent. However, despite the prevalence of flooding and the communities support of flood relief projects, there still exists strong opposition to participation in the NFIP.

Problem Statement

Floods are frequent events and have been listed in all 18 out of 26 presidential disaster declarations that have included Barry County dating back to 1974. From 2001 to 2020, flooding (both riverine and flash) caused nearly $12,000,000 in property damage. Luckily, there have been no reported injuries or deaths. Significant debris accumulation and damages at low water crossings are a regular occurrence due to flash flooding throughout the county.

The only communities in Barry County that participate in the NFIP are Monett and Exeter. These communities have passed floodplain management ordinances and have the ability to substantially regulate development in the floodplain. Their participation in the NFIP enables residents to purchase flood insurance. As of June 2021, Cassville is still working towards re-entry into the program. Street flooding in incorporated areas can be addressed through storm water management projects and enforcement of storm water management regulations, where applicable.

Several low water crossings at numerous locations throughout the county have been affected by floods and flash flooding. All warning signs and gauges should be installed and replaced at frequently flooded low water crossings to provide warning to motorists. Hazard awareness programs and education during and prior to flood events in the county broadcasted by the media can mitigate future risks to motorists at low water crossings.

3.4.2 Dam Failure

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:

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

According to the State Plan, Missouri has 5,113 total dams recording in the National Inventory of Dams. Dam owners are charge with the primary responsibility for the safe design, operation, and maintenance of their dams. They are also responsible for providing early warning of problems at the dam, for developing an effective emergency action plan, and for coordinating that plan with local officials.

Missouri's topography allows lakes to be built easily and inexpensively, contributing to the high number of dams. Despite the large number of total dams in the state, there are only 685 (about 13.4 percent) state regulated dams, with an additional 57 federally regulated dams. The remaining 4,371 dams are un-regulated.

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 Barry 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 3.25**. The downstream environment zone classification is also used to prescribe the frequency of inspection.

Table 3.25. MoDNR 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 yeas
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

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 3.26**, 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 3.26. 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: National Inventory of Dams

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

Geographic Location

Dams Located Within the Planning Area

There is only one dam located within Barry County according to both the MDNR and NID databases. Vollenweider Lake Dam is located just north of the city of Exeter. It is a privately owned dam built in 1980 with a height of 20 feet. The NID classification is Low Hazard and the MoDNR classification is Class III. More information on this dam can be found in **Table 3.27.**

Table 3.27. Dams in Barry County

Dam Name	Emergency Action Plan (EAP)AP	Dam Height (Ft)	Normal Storage (Acre-Ft)	Last Inspection Date	River	Nearest Downstream City	Distance To Nearest City (Miles)	Dam Owner
Vollenweider Lake Dam	Not required	20	86	-	TR – Flat Creek	Exeter	0.85	Fred Vollenweider

Sources: Missouri Department of Natural Resources, https://dnr.mo.gov/geology/wrc/dam-safety/damsinmissouri.htm and National Inventory of Dams, http://nid.usace.army.mil/cm_apex/f?p=838:12.

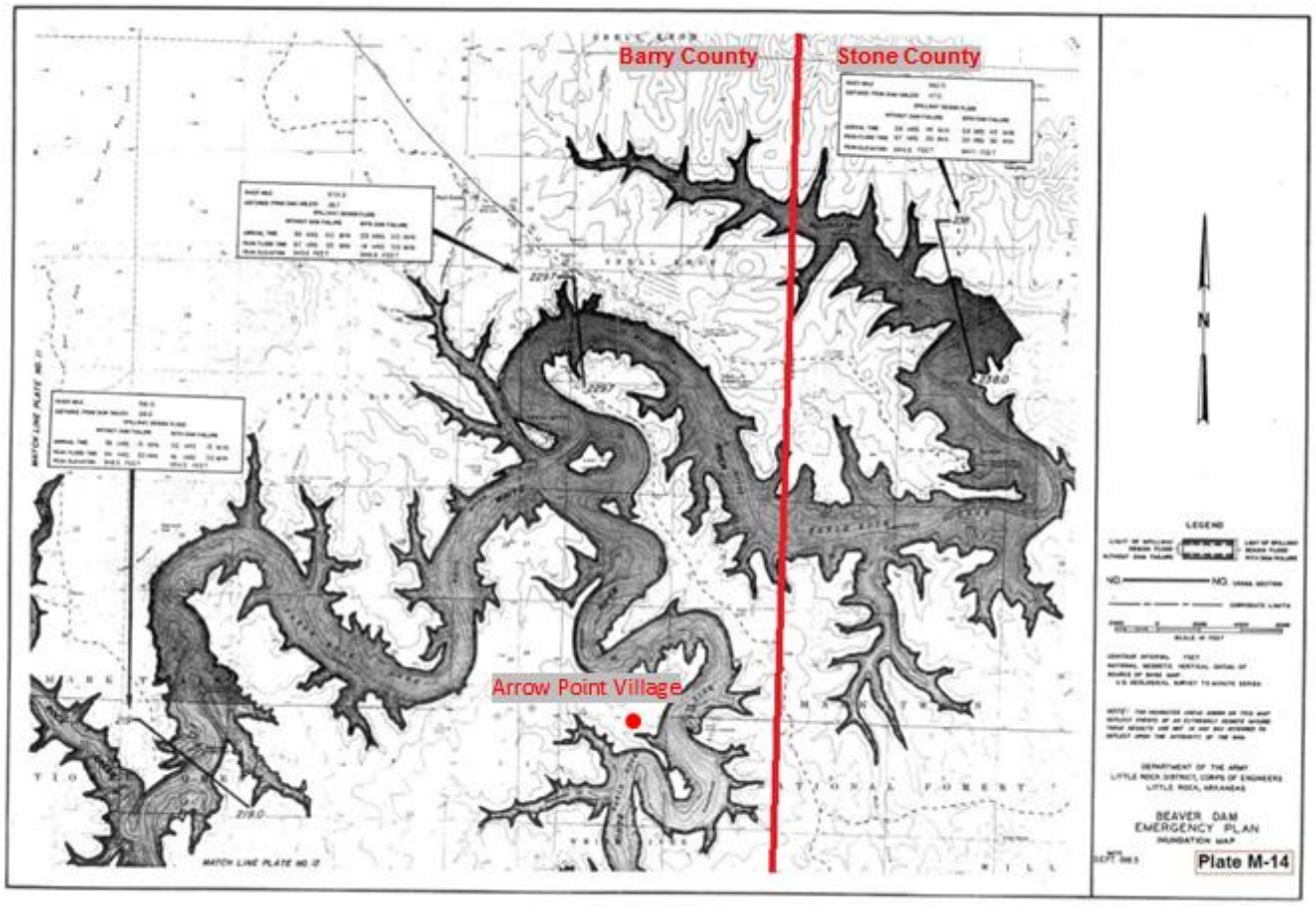
Figure 3.11. Dam Locations in Barry County

Upstream Dams Outside the Planning Area

The Beaver Lake Dam in Carroll County Arkansas on Beaver Lake is upstream from Table Rock Lake. A failure of this dam would impact unincorporated parts of Barry County. **Figure 3.12** shows the location of Beaver Lake Dam and **Figure 3.13** is an inundation map of Table Rock Lake.

Figure 3.12. Upstream Dams Outside Barry County

Figure 3.13. Inundation Map of Table Rock Lake



Strength/Magnitude/Extent

A failure of Beaver Lake Dam in Carroll County, Arkansas would put unincorporated parts of Barry County around Table Rock Lake at a risk of damage. Vollenweider Dam is considered a low-hazard class dam and would cause minimal damage in the event of a failure.

It can be stated that 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.

Previous Occurrences

According to the 2018 State Hazard Mitigation Plan, there are no recorded instances of dam failure within Barry County. From 1975 to 2016, there were 86 instances of dam failure statewide, with the vast majority occurring during the 1990s.

Probability of Future Occurrence

There are no records of damn failure in Barry 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 2018 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. Beaver Lake Dam was last inspected on 8/18/2016; however, a recent inspection of Vollenweider Dam cannot be determined.

Changing Future Conditions Considerations

According to the 2018 State Hazard Mitigation Plan, dam failure is tied to flooding and the increased pressure that flooding has on dams. Future condition projections imply an increase in precipitation and more extreme events, which may increase flood risk and put additional stress on dams.

Vulnerability

Vulnerability Overview

Vulnerability to dam failure in Barry County is limited to structures and critical infrastructure located in dam inundation zones. Vollenweider Dam is located west of Cassville in the unincorporated part of the county and is rated a low-hazard dam. A failure of this dam would likely result in minimal damage to the surrounding area, based on the time of the year and current conditions (recent rains, soil saturation, etc.). Beaver Lake Dam in Carroll County, Arkansas is located upstream on the White River that flows into Table Rock Lake and is rated as a high-hazard dam. Depending on the type/extent of a failure to this dam, the current Beaver and Table Rock Lake levels, and the location of structures, the impact could range from moderate to major. Beaver Lake Dam is a federally-regulated dam classified as high hazard potential.

Potential Losses to Existing Development

Because of the low number of dams in Barry County, the limited exposure of buildings, and the low hazard level of Vollenweider Lake Dam, the potential losses to existing development would be very limited.

Impact of Previous and Future Development

It is possible that future development will occur in the downstream environment of dams within the planning area; however, no major development is expected due to the slow growth of Barry County.

Hazard Summary by Jurisdiction

The unincorporated parts of Barry County immediately surrounding Vollenweider Dam are vulnerable to dam failure, as are certain parts of the southeastern section of the county downstream of Beaver Lake Dam.

Community Comments on Hazard

There were no responders to the community survey that indicated they had been affected by a dam failure. The public, perhaps rightfully so, does not view dam failure as a very important issue facing their communities. 91.4% of responders feel dam failure is unlikely, 66.9% are not at all concerned

about it impacting their community, and 90.2% feel it would have either limited or no impact.

Problem Statement

There are no dams in the county with a high hazard potential. However, Beaver Lake Dam, located in Arkansas and upstream of Table Rock Lake, is rated a high hazard dam. Inundation maps have been created for the dam and an emergency action plan has been developed. The dam is federally regulated and was last inspected in 2016. Although the probability of dam failure in the county is very low, the potential for damage remains.

Residents near a Class I or Class II hazard dams should become familiar with the dam's emergency action plans, if available. Emergency plans written for dams include procedures for notification and coordination with local law enforcement and other governmental agencies, information on the potential inundation area, plans for warning and evacuation, and procedures for making emergency repairs.

3.4.3 Earthquakes

Hazard Profile

Hazard Description

An earthquake is a sudden motion or trembling that is caused by a release of energy accumulated within or along the edge of the earth's tectonic plates. Earthquakes occur primarily along fault zones and tears in the earth's crust. Along these faults and tears in the crust, stresses can build until one side of the fault slips, generating compressive and shear energy that produces the shaking and damage to the built environment. 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).

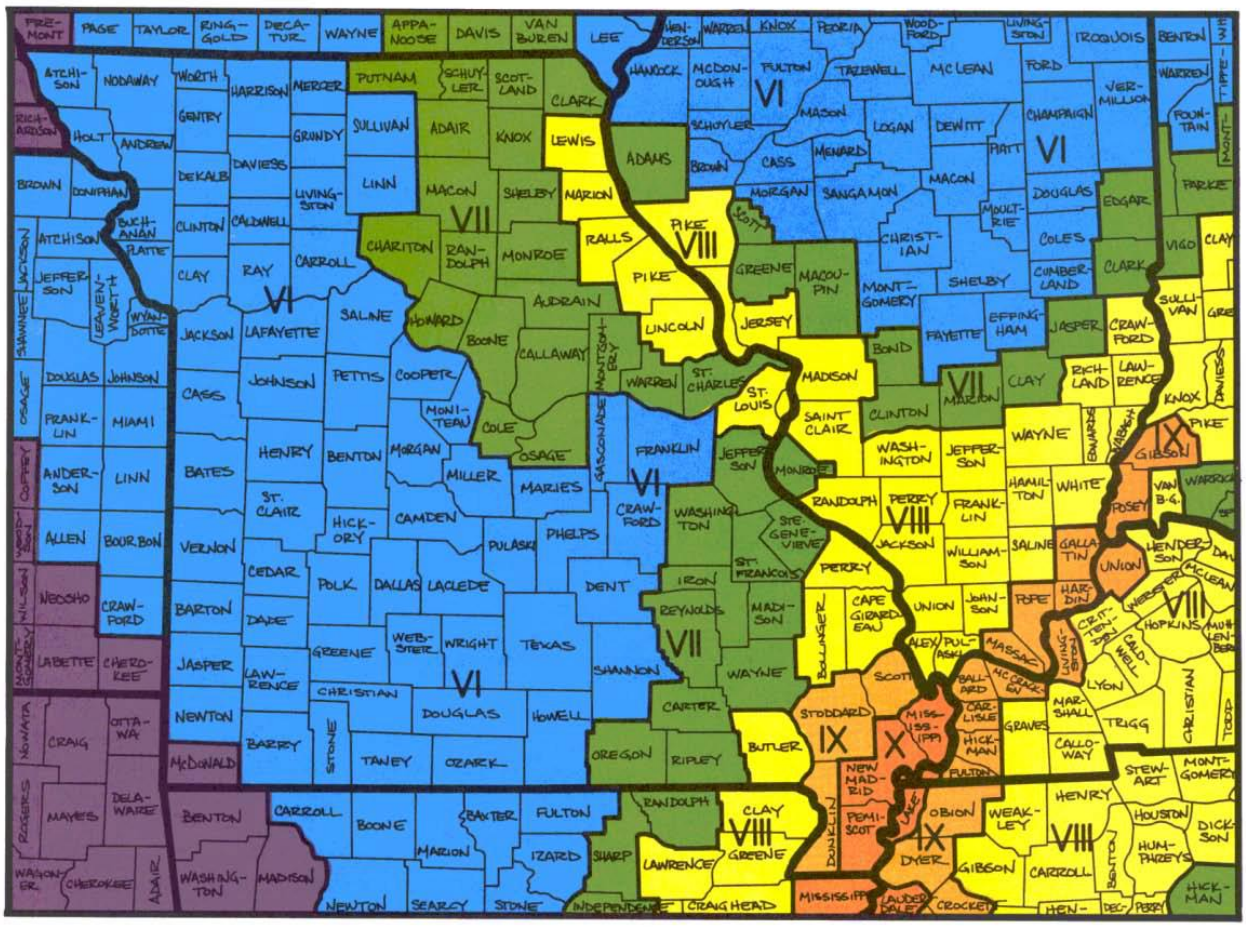
Geographic Location

The greatest hazard from earthquakes in Barry 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 Humbolt fault zone near the Nemeha Uplift is approximately 180 to 220 mile west of Barry County and produces lower magnitude seismic events.

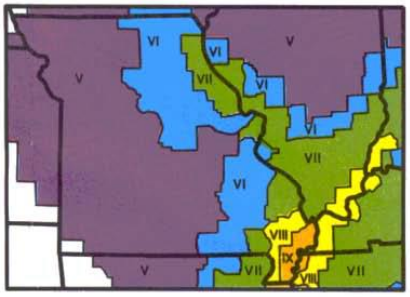
Figure 3.14 shows the highest projected Modified Mercalli intensities by county from a potential magnitude 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid Seismic Zone. The secondary maps in **Figure 3.14** also shows the same regional intensities for 6.7 and 8.6 earthquake, respectively. Barry County is located in zone VI for 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 3.14. Impact Zones for Earthquake Along the New Madrid Fault

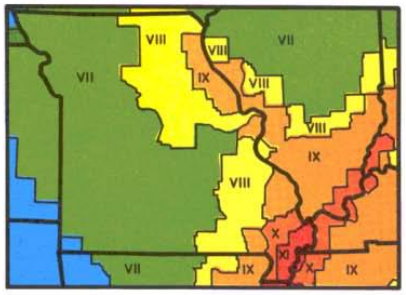


This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude – 7.6 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.



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.



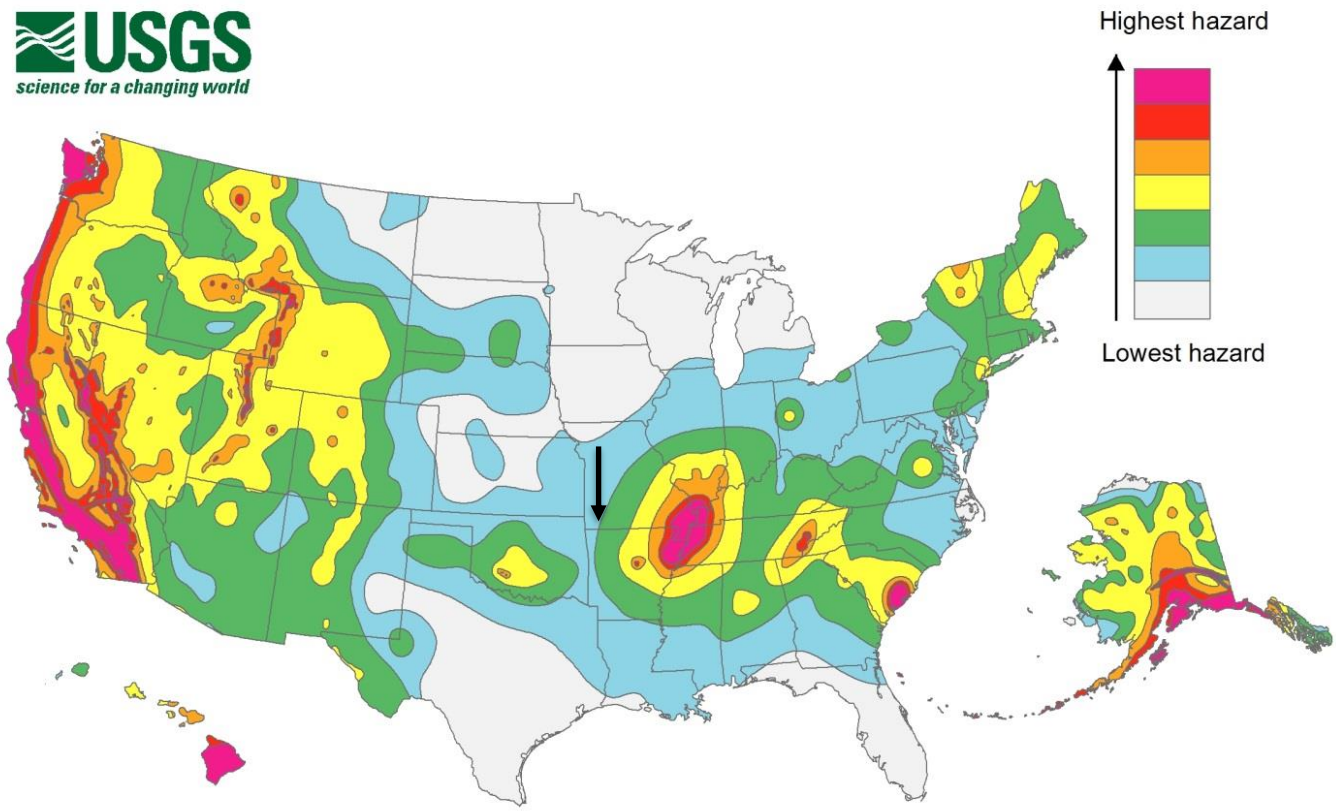
Source: https://sema.dps.mo.gov/docs/EQ_Map.pdf

The 2014 USGS National Seismic Hazard Maps display earthquake ground motions for various probability levels across the United States and are applied in seismic provisions of building codes, insurance rate structures, risk assessments, and other public policy. The update maps represent an

assessment of the best available science in earthquake hazards and incorporates new findings on earthquake ground shaking, faults, seismicity, and geodesy. The USGS National Seismic Hazard Mapping Project developed these maps by incorporating information on potential earthquakes and associated ground shaking obtained from interaction in science and engineering workshops involving hundreds of participants, review by several science organizations and state surveys, and advice from expert panels and Steering Committee.

Figure 3.15 illustrates seismicity in the United States. A black arrow shows the approximate location of Barry County.

Figure 3.15. United States Seismic Hazard Map



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

Strength/Magnitude/Extent

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

Richter Magnitude Scale

The Richter Magnitude Scale was developed in 1935 as a device to compare the size of earthquakes. The magnitude of an earthquake is measured using a logarithm of the maximum extent of waves recorded by seismographs. Adjustments are made to reflect the variation in the distance between the

various seismographs and the epicenter of the earthquakes. On the Richter Scale, magnitude is expressed in whole numbers and decimal fractions. For example, comparing a 5.3 and a 6.3 earthquake shows that the 6.3 quake is ten times bigger in magnitude. Each whole number increase in magnitude represents a tenfold increase in measured amplitude because of the logarithm. Each whole number step in the magnitude scale represents a release of approximately 31 times more energy.

Modified Mercalli Intensity Scale

The intensity of an earthquake is measured by the effect of the earthquake on the earth's surface. The intensity scale is based on the responses to the quake, such as people awakening, movement of furniture, damage to chimneys, etc. The intensity scale currently used in the United States is the Modified Mercalli (MM) Intensity Scale, shown below in **Table 3.28** 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 3.28. 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	Almost everyone feels movement. Most people are awakened; 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 crake; 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 is total, and nearly all works of construction are damaged greatly or destroyed.

	Objects are thrown into the air. The ground moves in waves or ripples. Large amounts of rock may move. Lakes are dammed, waterfalls formed, and rivers are deflected

Previous Occurrences

There is no historical record of an earthquake occurrence within Barry County. The southeastern portion of Missouri is most susceptible 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.

Probability of Future Occurrence

Without a historical record for earthquakes in Barry County it is not possible to calculate a precise probability of earthquake occurrence. The Center for Earthquake Research and Information (CERI) at the University of Memphis has computed conditional probabilities of a magnitude 6.0 earthquake in the New Madrid seismic zone. According to a fact sheet prepared by SEMA in 2003, the probability for a magnitude 6.0 to 7.5 or greater earthquake along the New Madrid Fault is 25 to 40 percent over the next 50 years. At the 25% level, the likelihood of an earthquake happening in a given year is 1.0%. At the 40% level, the likelihood of an earthquake happening in a given year is 1.6%.

Changing Future Conditions Considerations

Scientists are beginning to believe there may be a connection between changing climate conditions and earthquakes. Changing ice caps and sea-level redistribute weight over fault lines, which could potentially have an influence on earthquake occurrences. However, currently no studies quantify the relationship to a high level of detail, so recent earthquakes should not be linked with climate change. While not conclusive, early research suggests that more intense earthquakes and tsunamis may eventually be added to the adverse consequences that are caused by changing future conditions.

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 Barry 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 in the planning area. The total exposure for each jurisdiction was used to estimates losses due to a 7.6 earthquake along the New Madrid Fault. 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 3.29** summarizes the estimated losses for each jurisdiction.

Table 3.29. Estimated Potential Earthquake Losses

Jurisdiction	Potential Earthquake Losses
Unincorporated Barry County	$10,589,595
Cassville	$1,789,983
Exeter	$431,160
Monett	$2,922,475
Seligman	$406,408
Wheaton	$388,258

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. If future development follows building codes, it 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. Only the participating communities of Cassville and Monett enforce building code regulations.

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 county based on the percentage of structures built prior to 1939 – those with a higher percentage will be more at-risk than those with a lower percentage. **Table 3.30** shows the number and percentage of housing units built in 1939 or earlier.

Table 3.30. Percent of Housing Units Built in 1939 or Earlier

Jurisdiction	Built 1939 or earlier (#)	Built 1939 or earlier (%)
Barry County	1,796	10.2
Cassville	112	8.4
Exeter	31	8.4
Monett	505	14.1
Seligman	47	10.6
Wheaton	61	20.7

Source: US Census Bureau American Community Survey 5-Year Estimates

Unincorporated Barry County has the highest number of structures (1,796) built 1939 or earlier. However, Wheaton, Monett, and Seligman have the highest percentile risk of structures built 1939 or earlier, at 20,7%, 14.1%, and 10.6% respectively.

Community Comments on Hazard

None of the respondents to the community survey indicated that they had been personally impacted by an earthquake. 59% of responders felt that an earthquake would be unlikely, 77% were either not so concerned or not at all concerned about earthquake impact, and 76% thought that an earthquake would have limited to no impact on their community.

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. Wheaton, Monett, and Seligman would be most at risk if an earthquake were to hit, as they have the highest percentage of structures that were built 1939 or earlier, however the Unincorporated County would suffer the greatest number of damages to structures due

containing the highest number of structures built 1939 or earlier.

3.4.4 Land Subsidence/Sinkholes

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.

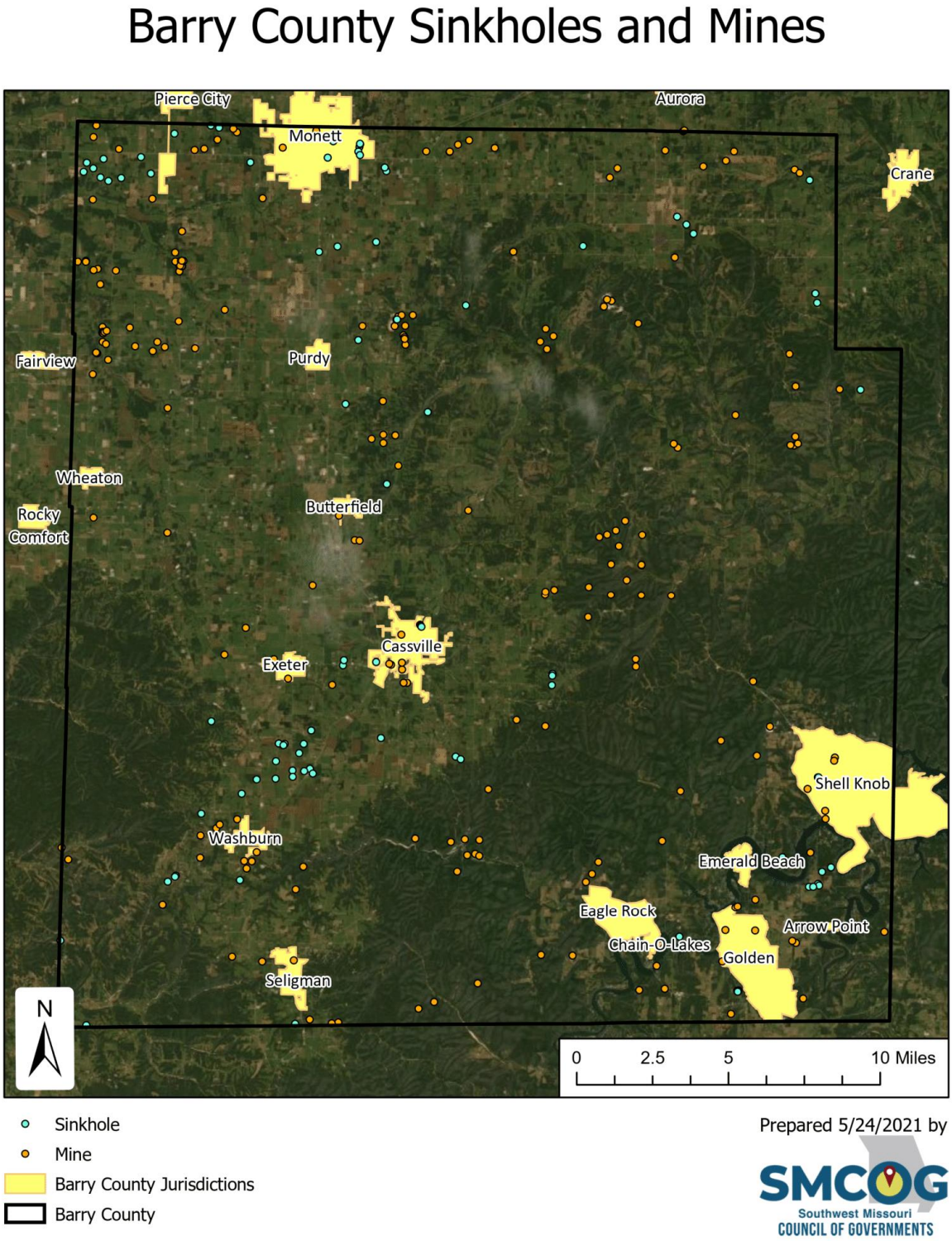
In the case of sinkholes, the rock below the surface is rock that has been dissolving by circulating groundwater. As the rock dissolves, spaces and caverns form, and ultimately the land above the spaces collapse. In Missouri, sinkhole problems are usually a result of surface materials above openings 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 is shape like shallow bowls or saucers whereas other have vertical walls. Some hold water and form natural ponds.

Geographic Location

According to spatial data from the Missouri Department of Natural Resources, 89 sinkhole formations have been identified in Barry County. The largest concentrations of sinkholes reside north of Washburn, west of Monett, and in the southeast portion of the county. Cassville and Monett both have multiple sinkholes within city limits. **Figure 3.16** shows the location of sinkholes as well as mines, occurrences, and prospects within Barry County.

Figure 3.16. Sinkholes and Mines, Occurrences, and Prospects in Barry County



Strength/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.

Previous Occurrences

As noted in the 2018 State Plan, sinkholes are a regular occurrence in Missouri, but rarely are the events of any significance. In 2018, an already existing sinkhole outside Exeter that had previously flooded a dirt road was reported on because the sinkhole began to dissolve and create a large crater.

Probability of Future Occurrence

There is currently no database regarding sinkhole occurrences in Barry County. Because of this, no official estimation can be made regarding the probability of future occurrences.

Changing Future Conditions Considerations

Changes in climate conditions could increase the number of sinkhole occurrences throughout Barry County. Drought periods can reduce groundwater levels, making the sediments within a sinkhole-prone hazard area dry and unstable. Severe storms triggered by drought could bring torrential rainfall that washes out the supporting sediments, undercutting the ground and creating conditions conducive to sinkhole formation.

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 sinkhole. 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. Existing structure data was also used to determine which parcels contained structures that fell within the sinkhole hazard-prone area. The data presented was extracted solely from these select parcels. The participating city jurisdictions that contain sinkhole hazard-prone areas within their boundaries are Cassville and Monet; all other sinkhole hazard-prone areas lie outside of city limits and fall under the jurisdiction of Barry County. **Table 3.31** provides the building county by type and by jurisdiction based on the results of the sinkhole analysis. **Table 3.32** depicts the estimated losses in each jurisdiction based on total exposure and a 0.5% damage factor.

Table 3.31. Sinkhole Exposure by Building Type

Jurisdiction	Residential	Commercial	Agricultural	Industrial	Building Count
Cassville	419	39	3	8	469
Exeter	0	0	0	0	0
Monett	690	208	15	6	919
Seligman	0	0	0	0	0
Wheaton	0	0	0	0	0
Unincorporated Barry County	2,562	276	786	45	3,669
Total	**3,671**	**523**	**804**	**59**	**5,057**

Table 3.32. Sinkhole Exposure and Estimated Losses by Jurisdiction

Jurisdiction	Residential	Commercial	Agricultural	Estimated Exposure	Estimated Loss
Cassville	$778,550	$170,210	$75,215	$1,023,975	$5,119.88
Exeter	$189,665	$21,820	$125	$211,610	$1,058.05
Monett	$1,273,930	$70,635	$330	$1,344,895	$6,724.48
Seligman	$179,715	$29,095	$130	$208,940	$1,044.70
Wheaton	$184,360	$42,915	$935	$228,210	$1,141.05
Unincorporated	$ 5,636,195	$442,255	$150	$6,078,600	$30,393.00
Total	**$8,242,415**	**$776,930**	**$76,885**	**$9,096,230**	**$45,481.15**

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 the vulnerability to this hazard. Population and development in these areas, especially in the cities of Cassville and Monett, as well as certain portions of the unincorporated county, 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 of existing or formation of new sinkholes.

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 and southwest portions. The cities of Cassville and Monett are the only participating city jurisdictions with existing structures that are at risk of sinkholes; however, much of the unincorporated county is largely at risk. It is unlikely that school and special districts will be affected by sinkholes due to the localized nature of their exposure; however, the Cassville school district is at an elevated risk due to the location of school facilities relative to hazard prone areas.

Community Comments on Hazard

Of the 24 responders that indicated they had been impacted by a disaster in the community survey, zero (0) of them indicated they had been affected by a sinkhole. It consistently scored in the bottom third of all hazards on all questions relating to likelihood of impact, level of concern, and magnitude of impact. Additionally, no responders mentioned sinkholes when asked to leave any other comments at the end of the survey.

Problem Statement

It is likely that more sinkholes will occur as development increases within the county. Sinkholes can be remediated with fill material. Once a sinkhole has been remediated, building 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. Jurisdictions may adopt regulations prohibiting construction at least 30 feet from known sinkholes. Undeveloped land that is in a sinkhole risk area can be used for park space or other recreational purposes. Additionally, jurisdictions can utilize public awareness campaigns about sinkholes and risks associated with developing in prone areas. Maps of sinkholes and prone areas should be available to members of the public.

3.4.5 Drought

Hazard Profile

Hazard Description

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

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

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

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

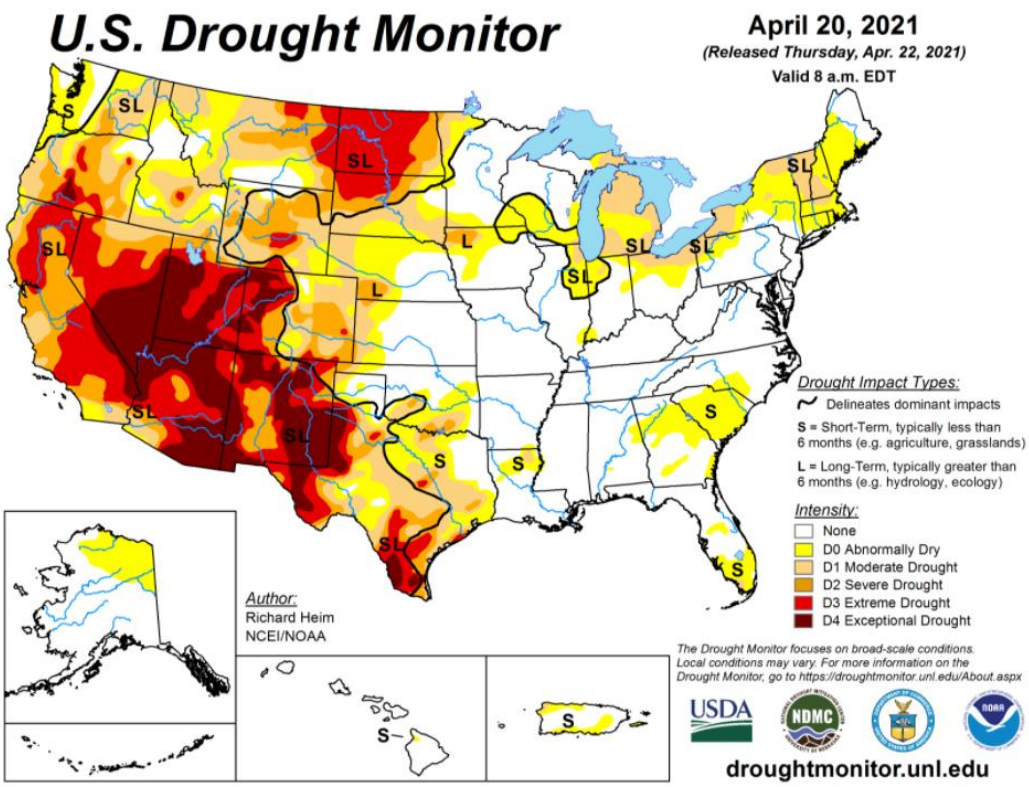
- Socioeconomic drought refers to when physical water shortage begins to affect people.

Geographic Location

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. Although areas in the western panhandle of the county are rated by the USDA Soil Survey as prime farmland, the majority of agricultural activity in the county is low-intensity livestock production. The lower density of low intensity livestock production in the county limits areas of extensive

agricultural land use in the county. All incorporated communities in the county rely on wells for 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.

Figure 3.17. U.S. Drought Monitor Map of Missouri, April 20 2021



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

Strength/Magnitude/Extent

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

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

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

Previous Occurrences

According to the NECI storm events database, there were a total of 18 drought events in Barry County from 2000 to 2019. Many of these were multiple reports from persistent drought events that lasted several months. The NCEI reports indicate that there were five distinct drought periods during this 20-year timeframe. **Table 3.33** provides a summary of these events.

Table 3.33. Previous Drought Occurrences 2000 – 2019

Drought Year	Months	Property Damage	Crop Damage
2000	August-September	$0	$0
2006	January-April	$0	$0
2011	July-November	$100,000	$10,000,000
2012	July-December	$2,100,000	$7,580,000
2013	January	$0	$0

Source: NCEI Storm Events Database https://www.ncdc.noaa.gov/stormevents/

According to the USDA cause of loss historical data files, there were 27 insurance payments for crop loss over the past four years. **Table 3.34** provides details on past insurance payments.

Table 3.34. Insurance Payments by Year Because of Drought

Year	Insurance Payments	Total Cost
2020	12	$649,927.00
2019	0	$0.00
2018	16	$1,330,511.74
2017	2	$21,318.00

Probability of Future Occurrence

Over the 20-year record period, Barry County was in a drought for 20 months. There is a total of 240 months in the record period. Based on the number of months of drought and the total number of months in the record period, there is an 8.3% probability of drought occurrence in the county in any given month. Although drought is not predictable, long-range outlooks and predicted impacts of climate change could indicate an increased chance of drought persistence and severity.

Changing Future Conditions Considerations

Drought frequently affects Missouri, including Barry County. Increasing temperatures due to a changing climate will inevitably accelerate evaporation rates and increase the frequency of droughts. It can be expected that rivers and groundwater reserves will experience significant reductions in available water with the increasing severity and frequency of droughts. It may be necessary in the future to restrict water usage in Barry County, which would mainly affect the county's agriculture industry and would diminish residents' quality of life.

Vulnerability

Vulnerability Overview

Southwest Missouri has moderate drought susceptibility. Groundwater resources are adequate to meet domestic and municipal water needs, but due to required well depths, irrigation wells are very expensive. The topography is generally unsuitable for row-crop irrigation. During extended time periods without precipitation, municipal water sources may be at risk for contamination as the concentration of natural minerals, such as lead, will increase with low water levels.

Potential Losses to Existing Development

The National Drought Monitor Center at the University of Nebraska at Lincoln summarized the potential impacts of drought as follows: Drought can create economic impacts on agriculture and related sectors, including forestry and fisheries, because of the reliance of these sectors on surface and subsurface water supplies. In addition to losses in yields in crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. 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.

According to data from the USDA Risk Management Agency, there was $2,001,756.74 in insured crop loss payments in Barry County in the years of 2017-2020. Therefore, it is probable that future droughts will result in crop losses. There are no anticipated structural losses.

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 result in increased demand for treated water, adding additional strain on water supply systems.

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. Although communities with wells 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 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. Special Districts such as the Central Crossing Fire District would feel impacts in the form of increased risk for wildfire and reduced fire-fighting water sources. Districts currently making improvements to water systems and containing water-based industries, such as Monett, who is working to add a new well to the city improvements as well as adding in new water lines across the city, may also be disproportionately affected by a drought.

Community Comments on Hazard

One respondent noted that they had been affected by a drought. The majority of respondents noted that drought was either only an occasional event (34.9%) or likely (34.3%) to occur. 18 (10.3%) respondents felt that drought might have a catastrophic impact, while 82 (46.9%) felt it would have a critical impact on their community. The majority of respondents were only somewhat concerned that a drought might impact their community.

Problem Statement

Although drought most likely will not cause structural damage, the impact is greatest on the agriculture sector and, if persistent enough, can cause reductions in groundwater and water shortages in communities that provide potable water services. Potential actions to mitigate the impact of drought would be for communities to develop public information campaigns regarding water conservation techniques and measures and provide notification mechanisms for community members to know when

drought conditions may occur. Some methods may include restricting 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 as well. Additionally, Barry County should encourage the use of drought-resistant farming practices to help reduce the negative impacts on crops and municipal drinking water supplies.

3.4.6 Extreme Temperatures

Hazard Profile

Hazard Description

Extreme temperature events, both hot and cold, can impact human health and mortality, natural ecosystems, agriculture and other economic sectors. According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Ambient air temperature is one component of heat conditions, with relative humidity being the other. The relationship of these factors creates what is known as the apparent temperature. The Heat Index chart shown in **Figure 3.18** uses both factors to produce a guide for the apparent temperature or relative intensity of heat conditions.

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.

Geographic Location

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

Strength/Magnitude/Extent

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

Figure 3.18. Heat Index (HI) Chart

NWS Heat Index

Temperature (°F)

Relative Humidity (%)	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

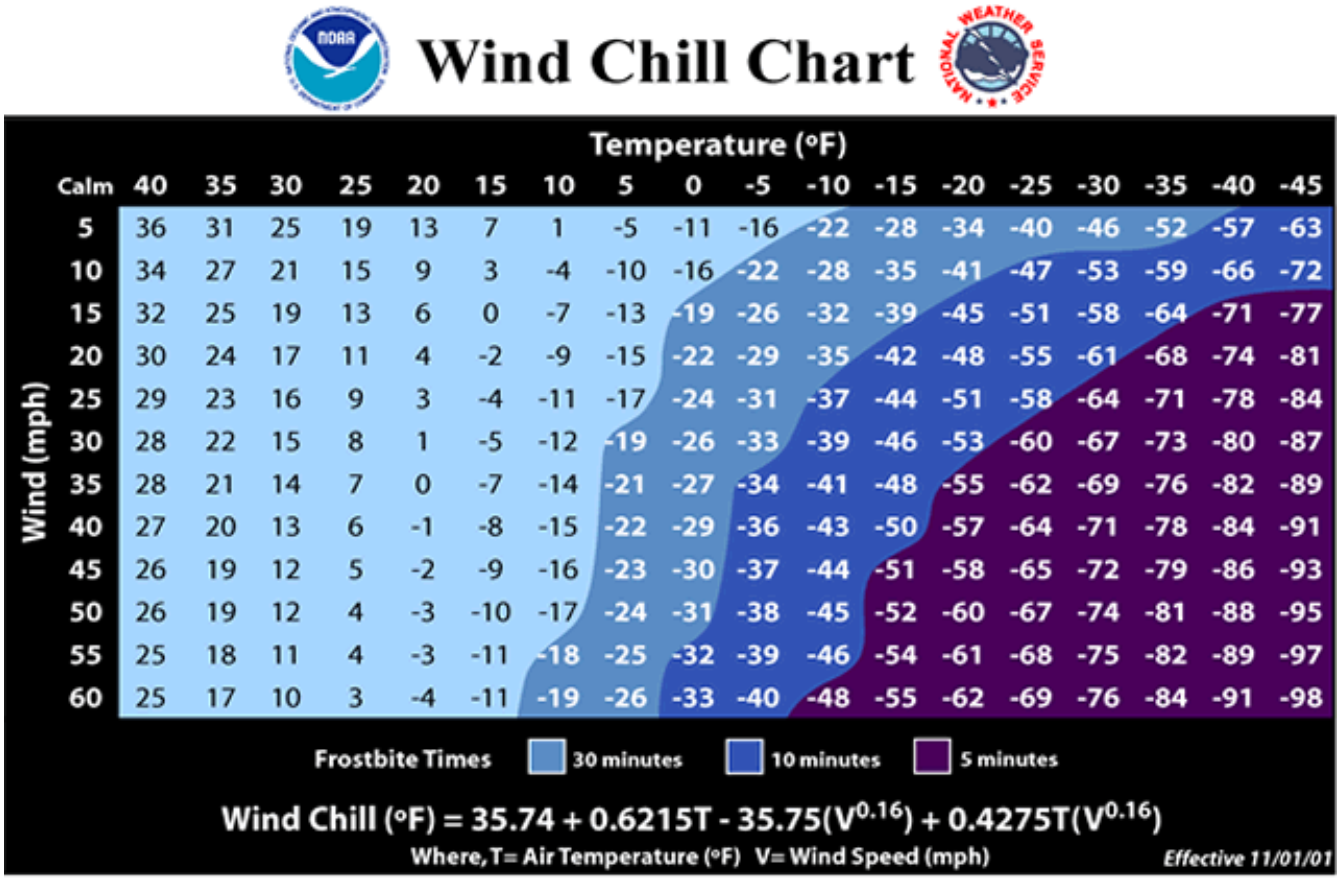
Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity

Caution | Extreme Caution | Danger | Extreme Danger

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

The NWS Wind Chill Temperature (WCT) index uses advances in science, technology, and computer modeling to provide an accurate, understandable, and useful formula for calculating the dangers from winter winds and freezing temperatures. **Figure 3.19** below presents wind chill temperatures which are based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature.

Figure 3.19. Wind Chill Chart



Wind Chill Chart

Wind (mph)	Temperature (°F)																	
Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes, 10 minutes, 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

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

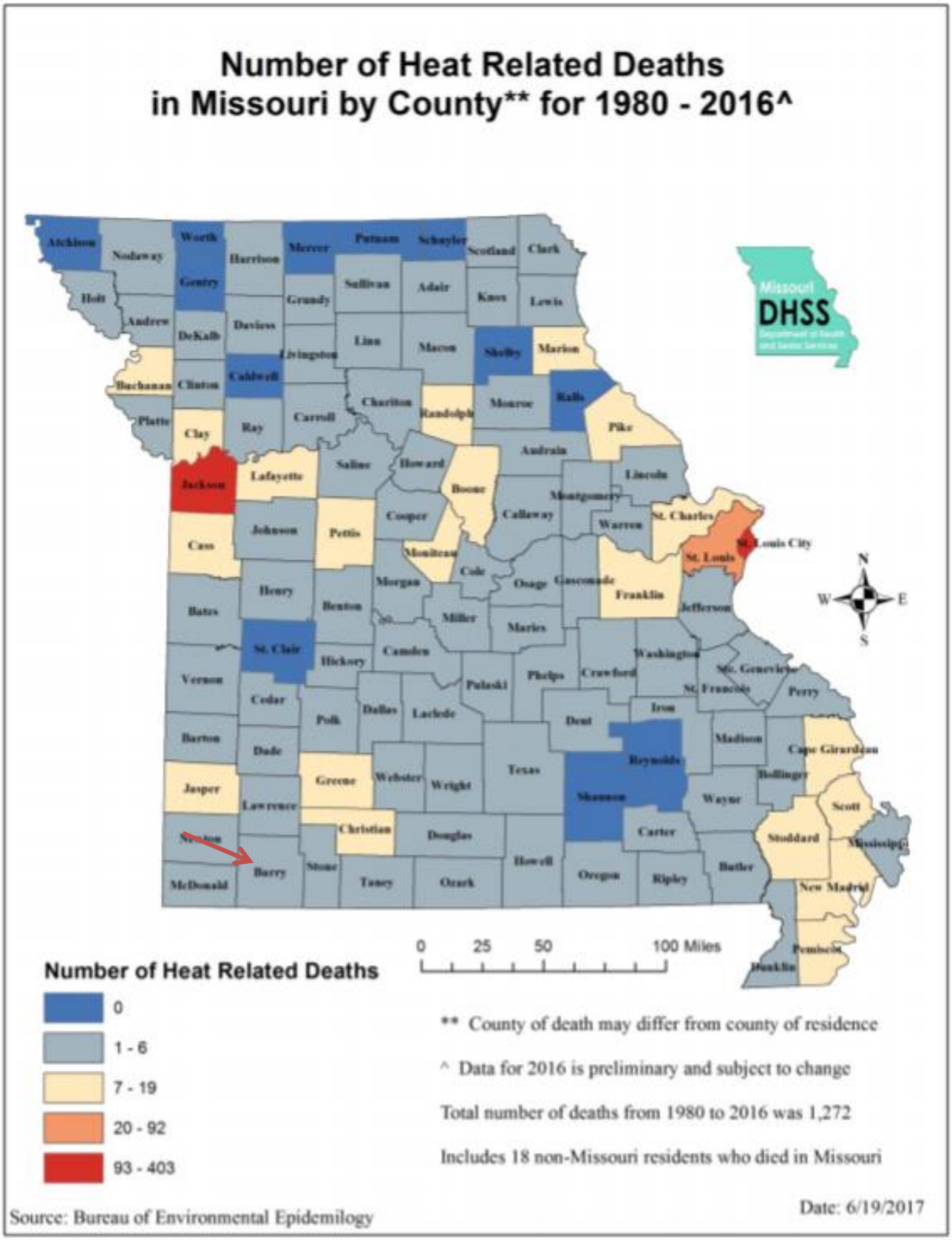
Previous Occurrences

There are seven (7) recorded extreme heat events in the National Centers for Environmental Information (NCEI) database from 2000 to 2019 for Barry County. There were zero deaths and injuries, as well as no property and crop damage associated with these events in the NCEI data for Barry County. The event narratives describe fatalities that occurred during regional multi-county heat events for other nearby counties as well. Extreme heat events in Barry County were recorded in consecutive months in three separate years from 2000 to 2019. The months for each year are summarized as follows:

- **2000**: August and September
- **2001**: July and August
- **2012**: June, July, and August

Figure 3.20 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 six (6) heat related fatalities in Barry County from 1980 to 2016.

Figure 3.20. Heat Related Deaths in Missouri 1980 - 2016



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

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 2010 to 2020 were $311,560.24. Extreme heat can also strain electricity delivery infrastructure overloaded during peak use of air conditioning during extreme heat events. Another type of infrastructure damage from extreme heat is road damage. When asphalt is exposed to prolonged extreme heat, it can cause buckling of asphalt-paved roads, driveways, and parking lots.

From 1988-2011, there were 3,496 fatalities in the U.S. attributed to summer heat. This translates to an annual national average of 146 deaths. The National Weather Service stated that among natural hazards, no other natural disaster—not lightning, hurricanes, tornadoes, floods, or earthquakes—causes more deaths.

NCEI data lists 2 instances of extreme cold/wind chill from 1999 to 2019, once on December 12th, 2000, and the other on January 1st, 2001. No recorded deaths or injuries occurred from either event. The event on December 12th, 2000 led to numerous water mains breaking, roof leakage, and hazardous roadways. In Strafford, a water main in a high school gymnasium caused considerable damage to school ceiling tiles, light fixtures and the gym floor. Hay supplies also decreased due to persistent ice- and snow-covered fields. Livestock were also affected, and some died.

Probability of Future Occurrence

There were three (3) years with extreme heat events in a 20-year span in Barry County. As a result, there is a 15% chance that an extreme temperature event will occur in a given year. There are limitations to the accuracy of this projection as events could go unreported to the NCEI or fail to meet a consecutive occurrence threshold to be considered an event.

There were two periods of extreme cold/wind chill in Barry County over 20 years, which makes the probability of extreme cold/wind chill occurring in any given year 10%.

The events recorded in the NCEI database describe extreme heat as prolonged periods where temperatures rose above at least 10° above normal for at least 12 consecutive days, and extreme cold as prolonged periods where the temperature was at least 10° below normal for at least 12 consecutive days. Heat and cold advisories and warnings are issued for shorter periods of extreme heat and cold nearly every year and may not meet the threshold for consecutive days in the NCEI database. This data limitation indicates that extreme temperature events may be underreported in the NCEI.

Changing Future Conditions Considerations

Under a higher emissions pathway, historically unprecedented warming is projected by the end of the century. Even under a pathway of lower greenhouse gas emissions, average annual temperatures are projected to most likely exceed historical record levels by the middle of the 21st century. For example, in southern Missouri, the annual maximum number of consecutive days with temperatures exceeding 95 degrees F is projected to increase by up to 20 days. Temperature increases will cause future heat waves to be more intense, a concern for this region which already experiences hot and humid conditions. If the warming trend conditions, future heat waves are likely to be more intense, and cold wave intensity is projected to decrease.

The impacts of extreme heat events are experienced most acutely by the elderly and other vulnerable populations. Higher demand for electricity as people try to keep cool amplifies stress on power systems and may lead to an increase in the number of power outages. Atmospheric concentrations of ozone occur at higher air temperatures, resulting in poorer air quality, while harmful algal blooms flourish in warmer water temperatures, resulting in poorer water quality.

Mitigation against the impacts of future temperature increase may include increasing education on heat stress prevention, organizing cooling centers, allocating additional funding to repair and maintain roads damaged by buckling and potholes, and reducing nutrient runoff that contributes to algal blooms. Local governments should also prepare for increased demand on public recreational facilities, utility systems, and healthcare centers. Improving energy efficiency in public buildings will also present an increasingly valuable savings potential.

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. 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 3.355 lists typical symptoms and health impacts due to exposure to extreme heat.

Table 3.35. Typical Health Impacts of Extreme Heat

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

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

Potential Losses to Existing Development

Over a 10-year period Barry County experienced 15 heat related events which damaged crops. This damage which amassed $311,560.24, translating to an average of $31,156.02 in damage per year over another 10-year period if similar events are to occur. According to the NCEI disaster database, in a 20-year period (2001-2020) Barry County experienced no deaths or property damage from extreme heat.

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. Monett has the highest number of at-risk age groups (under 5 years of age and 65 years and older) of any jurisdiction in the county (when not taking into account the unincorporated portion). Because of Barry County's rising population, it is important to consider infrastructure changes that may be needed to accommodate this change.

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 2010 census 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 3.36** 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.

Table 3.36. Barry County Population Under Age 5 and Over Age 65

Jurisdiction	Population under 5 years	Population 65 years and over
Unincorporated Barry County	2,053	7,183
Cassville	399	663
Exeter	50	291
Monett	634	1,233
Seligman	41	81
Wheaton	39	184

Source: 2019 American Community Survey

Schools in the county have proper air-conditioning and heating and follow proper procedures in the event of extreme temperatures. However, daycare and eldercare facilities may be at risk of heat related injuries if facilities are not properly cooled.

Community Comments on Hazard

None of the 453 residents who completed the online survey stated that they had been impacted by extreme heat. 66 of the respondents (37.7%) felt that extreme temperatures was highly likely to impact their community in the future. 67 (42.9%) respondents felt that extreme temperatures would have a limited impact, though 82 (45.7%) felt extreme temperatures would have a critical impact. Respondents were mostly only somewhat concerned with how extreme heat would impact their community.

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 temperatures due to a lack of air conditioning or heating in their homes. Institutionalized populations, such as those living in nursing homes, become more vulnerable to extreme temperatures due to power outages.

To help reduce the risk of death, heating and cooling centers should be promoted and known 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.

3.4.7 Severe Thunderstorms Including High Winds, Hail, and Lightning

Hazard Profile

Hazard Description

Thunderstorms

A thunderstorm is defined as a storm that contains lightning and thunder which is caused by unstable atmospheric conditions. When cold upper air sinks and warm moist air rises, storm clouds or 'thunderheads' develop resulting in thunderstorms. This can occur singularly, as well as in clusters or lines. The National Weather Service defines a thunderstorm as "severe" if it includes hail that is one inch or more, or wind gusts that are at 58 miles per hour or higher. At any given moment across the world, there are about 1,800 thunderstorms occurring. Severe thunderstorms most often occur in Missouri in the spring and summer, during the afternoon and evenings, but can occur at any time. Other hazards associated with thunderstorms are heavy rains resulting in flooding (discussed separately in **Section 3.4.1)** and tornadoes (discussed separately in **Section 3.4.9**).

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.

Lightning

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

Hail

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

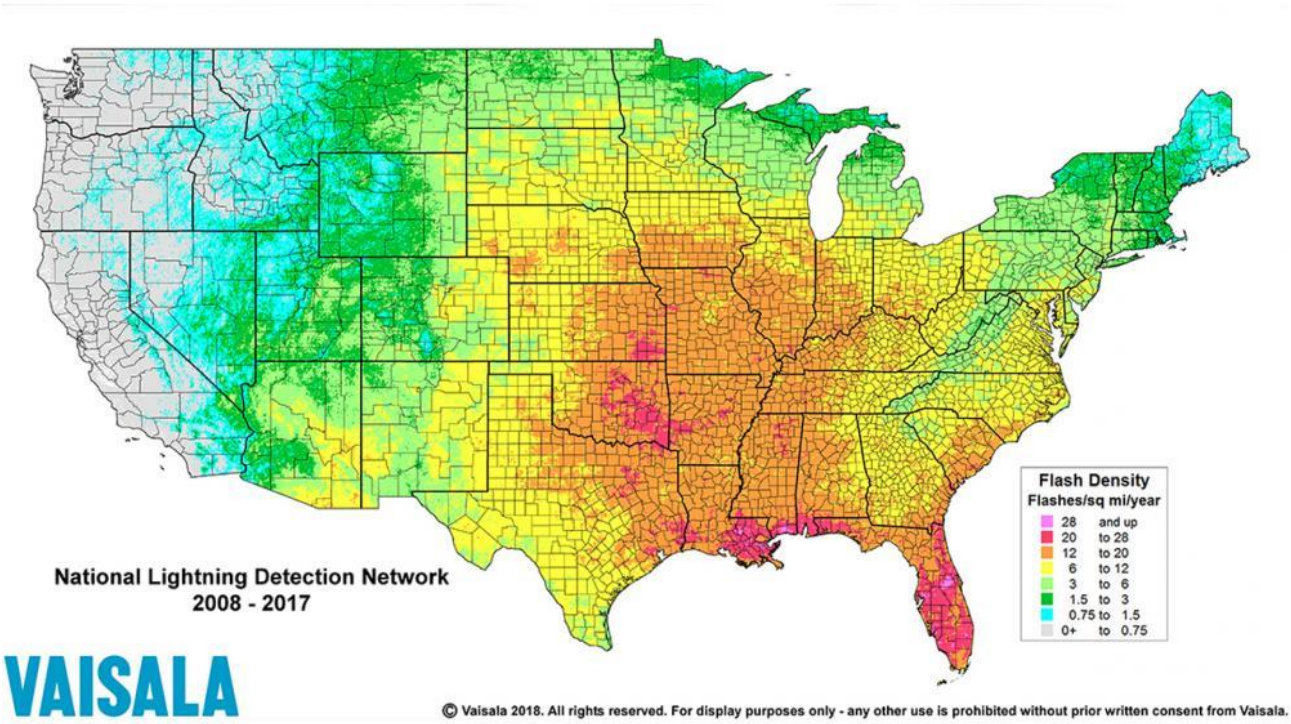
At the time when the updraft can no longer support the hailstone, it will fall down to the earth. For example, a ¼" diameter or pea sized hail requires updrafts of 24 miles per hour, while a 2 ¾" diameter or baseball sized hail requires an updraft of 81 miles per hour. According to the NOAA, the largest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

Geographic Location

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

Figure 3.21 shows lightning frequency in the United States. Barry County is located in an area with an average flash density between 12 and 20.

Figure 3.21. Location and Frequency of Lightning in Missouri



Source: National Weather Service, https://www.vaisala.com/en/product/1256

Figure 3.22 shows wind zones in the United States. Barry County lies in Zone IV, the zone with the highest possible wind speeds in the country.

Figure 3.22. Wind Zones in the United States

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

Strength/Magnitude/Extent

Based on information provided by the Tornado and Storm Research Organization (TORRO), **Table 3.37** below describes typical damage impacts of the various sizes of hail.

Table 3.37. 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

Intensity Category	Diameter (mm)	Diameter (inches)	Size Description	Typical Damage Impacts
Super Hailstorms	>100	4.0+	Melon	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

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

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

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

Previous Occurrences

Thunderstorm Winds

Table 3.38. NCEI Thunderstorm Wind Events in Barry County 2010-2020

Location	# of Events	Deaths	Injuries	Property Damage	Crop Damage
Unincorporated Barry County	42	0	0	$308,500	$0
Cassville	10	0	0	$33,000	$0
Exeter	1	0	0	$2,000	$0
Monett	18	0	0	$109,000	$0
Seligman	4	0	0	$4,000	$0
Wheaton	2	0	0	$10,000	$0
Total	**77**	**0**	**0**	**$466,500**	**$0**

Source: NCEI Storm Events Database https://www.ncdc.noaa.gov/stormevents/

High Winds

Table 3.39. NCEI High Wind Events in Barry County 2010-2020

Location	# of Events	Deaths	Injuries	Property Damage	Crop Damage
Unincorporated Barry County	3	0	0	$14,000	$0
Cassville	0	0	0	$0	$0
Exeter	0	0	0	$0	$0
Monett	0	0	0	$0	$0
Seligman	0	0	0	$0	$0
Wheaton	0	0	0	$0	$0
Total	**3**	**0**	**0**	**$14,000**	**$0**

Source: NCEI Storm Events Database https://www.ncdc.noaa.gov/stormevents/

Lightning

Table 3.40. NCEI Lightning Events in Barry County 2010-2020

Location	# of Events	Deaths	Injuries	Property Damage	Crop Damage
Unincorporated Barry County	1	1	0	$5,000	$0
Cassville	0	0	0	$0	$0
Exeter	0	0	0	$0	$0
Monett	0	0	0	$0	$0
Seligman	0	0	0	$0	$0
Wheaton	1	0	0	$5,000	$0
Total	**2**	**1**	**0**	**$10,000**	**$0**

Source: NCEI Storm Events Database https://www.ncdc.noaa.gov/stormevents/

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

Hail

Table 3.41. NCEI Hail Events in Barry County 2010-2020

Location	# of Events	Deaths	Injuries	Property Damage	Crop Damage
Unincorporated Barry County	26	0	0	$100,000	$0
Cassville	15	0	0	$25,000	$0
Exeter	3	0	0	$10,000	$0
Monett	17	0	0	$875,000	$0
Seligman	3	0	0	$0	$0
Wheaton	4	0	0	$0	$0
Total	**68**	**0**	**0**	**$1,010,000**	**$0**

Source: NCEI Storm Events Database https://www.ncdc.noaa.gov/stormevents/

The tables below **(Table 3.42 though Table 3.44)** summarize past crop damages as indicated by crop insurance claims. The tables illustrate the magnitude of the impact on the planning area's agricultural economy. It should be noted that there were no recorded instances of claims caused by high winds or hail. In addition, lightning is categorized in the same category as snow ("Other"), so it is impossible to accurately calculate that total.

Table 3.42. Crop Insurance Claims Paid in Barry County from Thunderstorms, 2010-2020

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2010	All Other Crops	Excess Moisture/Precipitation/Rain	$9,601.00
2011	Corn, All Other Crops	Excess Moisture/Precipitation/Rain	$26,220.80
2012	Corn	Excess Moisture/Precipitation/Rain	$5,648.00
2013	Corn, Soybeans	Excess Moisture/Precipitation/Rain	$217,205.86
2014	Wheat, Corn, Soybeans	Excess Moisture/Precipitation/Rain	$37,513.00
2015	Wheat, Corn	Excess Moisture/Precipitation/Rain	$201,055.00
2016	Wheat, Corn	Excess Moisture/Precipitation/Rain	$9,561.00
2017	Corn, Grain Sorghum, Soybeans	Excess Moisture/Precipitation/Rain	$12,852.00
2018	Corn, Soybeans	Excess Moisture/Precipitation/Rain	$81,721.00
2019	Wheat, Corn,	Excess Moisture/Precipitation/Rain	$222,369.00

	Soybeans		
2020	Wheat, Corn, Soybeans	Excess Moisture/Precipitation/Rain	$92,646.00
Total			**$916,392.66**

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

Table 3.43. Crop Insurance Claims Paid in Barry County from High Winds, 2010-2020

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2014	Corn	Wind/Excess Wind	$4,682.00
2016	Corn	Wind/Excess Wind	$2,627.00
Total			**$7,309.00**

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

Table 3.44. Crop Insurance Claims Paid in Barry County from Hail, 2010-2020

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2013	Corn	Hail	$41,934.00
Total			**$41,934.00**

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

Probability of Future Occurrence

Thunderstorm Winds

There were 77 thunderstorm wind events that occurred in Barry County from 2010 to 2020 reported to the NCEI. This is an average of seven events per year. This has resulted in a total count over the period for $466,500 in property damages.

High Winds

There are three reported high wind events that occurred in Barry County from 2010 to 2020. This accounts for a 30% chance of a high wind event (large enough to constitute reporting) occurring in any given year. The events accounted for $14,000 in property damages.

Lightning

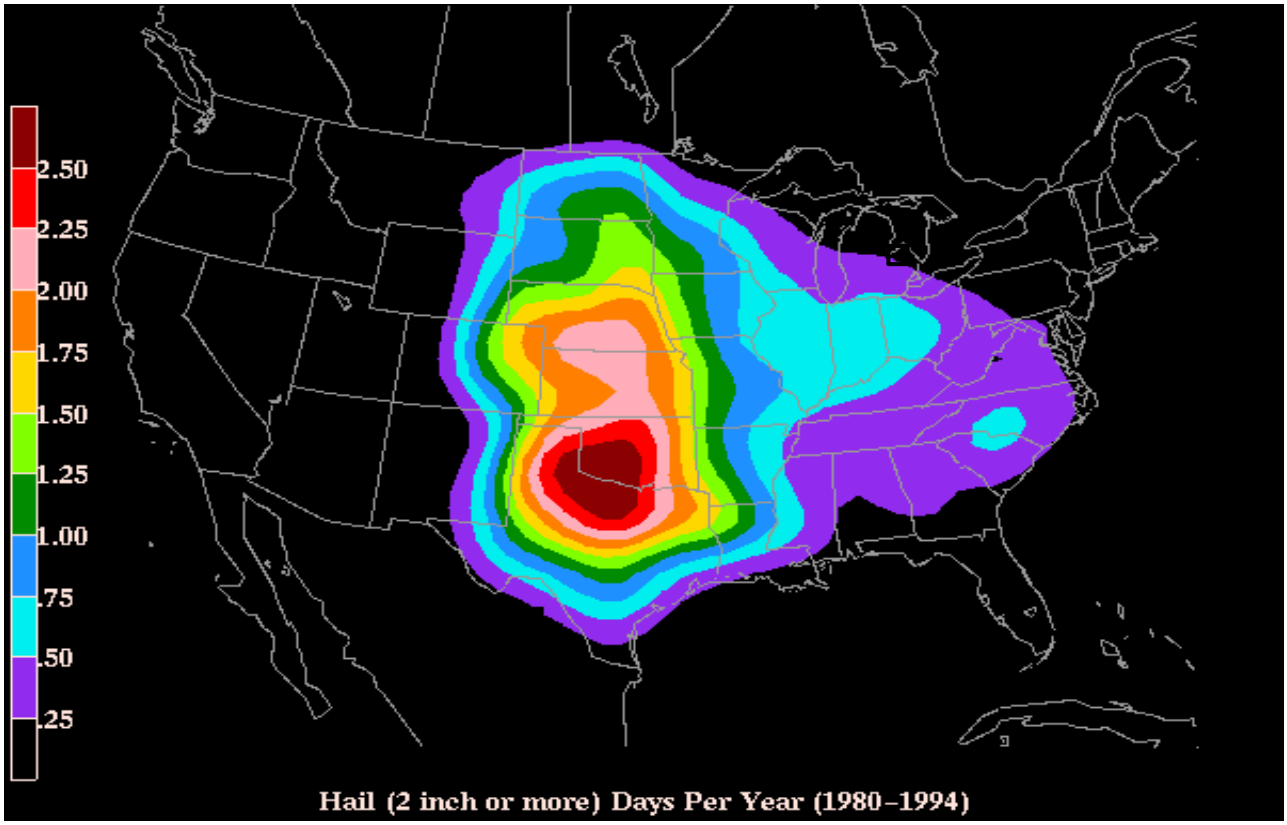
Two lightning events occurred in Barry County from 2010 to 2020. Each event caused $5,000 in property damage. It should be noted that limitations to the use of NCEI reported lightning events include the fact that only lightning events that result in fatality, injury, and/or property and crop damage are in the NCEI.

Hail

There were a total of 68 hail events reported in Barry County during the time frame. This is an average of 6.2 events per year. Monett accounted for 87% of the total property damage. Hail was the most damaging disaster, resulting in $1,010,000 in property damages over the period.

Figure 3.23 is 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.

Figure 3.23. Annual Hailstorm Probability (2" diameter or larger), U 1980- 1994



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

Changing Future Conditions Considerations

Increases in temperature and more frequent droughts will accelerate the evaporation of water into the atmosphere, which will produce higher water concentrations. Elevated levels of moisture raise the likelihood of severe thunderstorms and tornadoes. Lives and property are endangered when the risk of these events increases, especially in jurisdictions that do not have a community safe room or the funds to construct one. This kind of event also possesses the threat of increasing the magnitude and frequency of other hazard events like riverine flooding, sinkhole occurrence, and flash flooding, putting residents in even greater danger.

Vulnerability

Vulnerability Overview

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

In general, assets in the County vulnerable to thunderstorms with lightning, high winds, and hail include people, crops, vehicles, and built structures. Although this hazard results in high annual losses, private property insurance and crop insurance usually cover the majority of losses. Considering insurance coverage as a recovery capability, the overall impact on jurisdictions is reduced.

Most lightning damages occur to electronic equipment located inside buildings, but structural damage can also occur when a lightning strike causes a building fire. Additionally, 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.

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 can damage critical facilities, schools, local governments, and private property. Potential annual losses throughout Barry County are:
Thunderstorm – $42,409
Heavy Winds – $1,273
Lightning – $909
Hail – $91,818

It should be noted that 79% of the total property damage caused by hail occurred in one event in Monett in 2015. If you remove that one damaging event, the annual loss for Hail in Barry is significantly lower ($19,090).

Impact of Previous and Future Development

Development and population growth within Unincorporated Barry County, as well as in specific jurisdictions, including school and special districts, results in the increase of population and buildings. Development occurring in these areas will result in more exposure that is vulnerable to damages from thunderstorms, heavy winds, lightning, and precipitation.

Hazard Summary by Jurisdiction

Although Thunderstorms, heavy winds, lightning, and hail events are area-wide, communities with a greater percentage of structures built prior to 1939 are considered to be more vulnerable. According to the 2019 American Community Survey, 4% of Barry County's 13,645 occupied housing units were built prior to 1939, 0% for Cassville, 0.6% for Exeter, 6% for Monett, 7% for Seligman, and 12% for Wheaton. New construction and population growth will increase the exposure and risk to this hazard; however, the communities in Barry County with building codes – Cassville and Monett - will assist in mitigating the effects of strong storms.

Community Comments on Hazard

Three of the residents who completed the online survey stated that they had been impact by severe thunderstorms (one from lightning damage, one from severe a thunderstorm/hail event, and one from hail). 64% of the responders felt that severe thunderstorms were highly likely to impact their community in the future, while 49.8% were very or extremely concerned about the impact it could have on their community. 61.7% of responders viewed this hazard as having a critical or catastrophic impact.

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 (one hail event in 2015 caused $800,000 in property damage, including extensive damage to multiple car dealerships). People are also at risk to injury and death during high wind and lightning events. Crop insurance mitigates the risk to farmers and the agriculture sector within the county. Lightning events have caused structural fires, can strike electrical utilities leading to power outages, or strike municipal water systems causing water supply 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. The purchasing and installation of NOAA weather radios in schools, government buildings and public areas may assist in providing early warning to allow for public to seek shelter during high wind events. Education and hazard awareness programs in public schools would also increase public safety in the event of severe thunderstorms. Additionally, school systems with existing alert systems may utilize for severe weather notifications and the County may investigate a county-wide alert system to provide important severe weather information.

3.4.8 Severe Winter Weather

Hazard Profile

Hazard Description

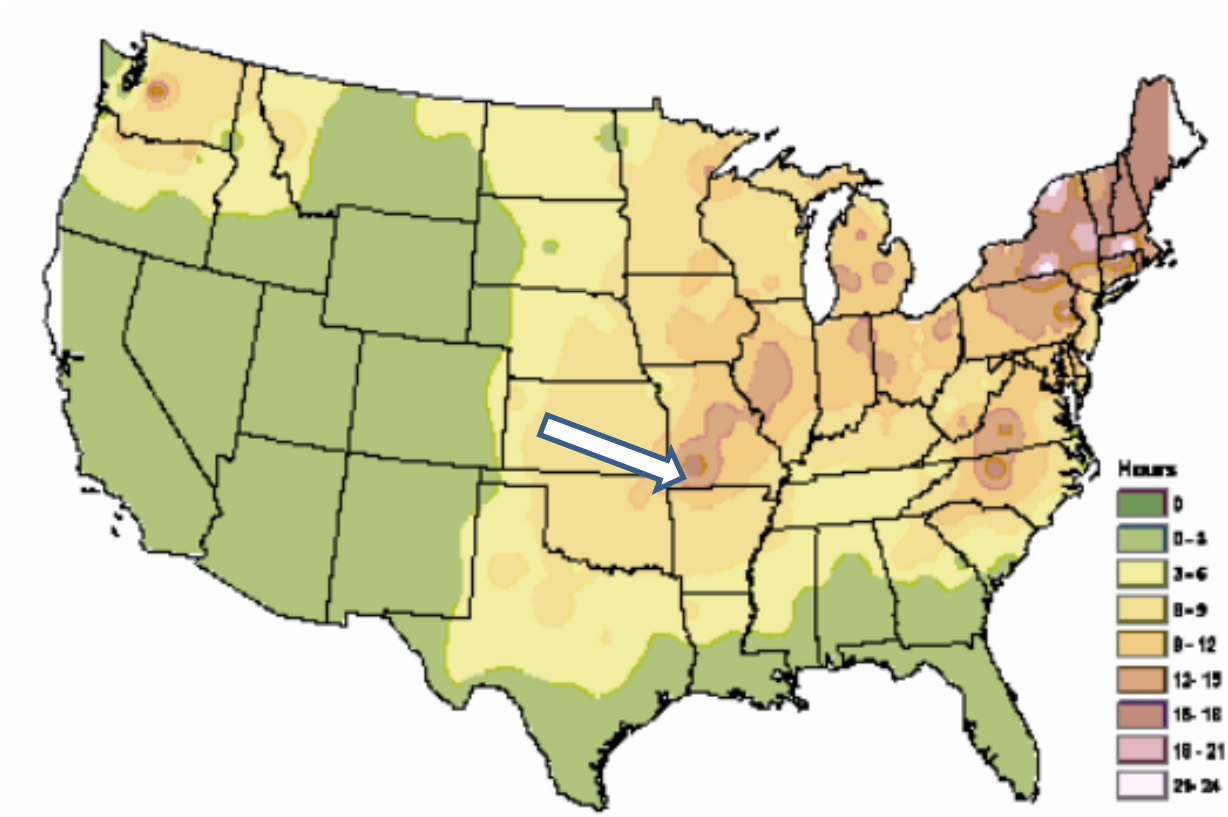
A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall, and cold temperatures. The National Weather Service describes different types of winter storm events as follows.

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

Geographic Location

The entire county is vulnerable to heavy snow, ice, extreme cold temperatures and freezing rain. **Figure 3.24** depicts the average number of hours per year with freezing rain. Barry County is located within a zone that can expect 12-18 hours of freezing rain per year.

Figure 3.24. NWS Statewide Average Number of Hours per Year with Freezing Rain



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

Strength/Magnitude/Extent

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

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

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

- Wind Chill Warning -- Wind chill temperatures of -35 degrees F or lower are expected. This is a life-threatening situation.

Previous Occurrences

Table 3.45 includes NCEI reported winter events and damages for at least the past 20 years.

Table 3.45. NCEI Barry County Winter Weather Events Summary, 2001-2020

Type of Event	Inclusive Dates	Magnitude	# of Injuries	Property Damages	Crop Damages
Blizzard	(02/01/2011)	-	0	$0	$0
Extreme Cold/Wind Chill	(01/01/2001)	-	0	$0	$25,000
Heavy Snow	(12/10/2003), (03/04/2008)	-	0	$0	$0
Ice Storm	(01/12/2007), (02/11/2008), (02/21/2008), (01/26/2009)	-	0	$4,000,000	$0
Sleet	-	-	-	-	-
Winter Storm	(03/02/2002), (12/04/2002), (12/24/2002), (02/23/2003), (02/05/2004), (11/30/2006), (01/20/2007), (01/31/2008), (01/28/2010), (03/20/2010), (02/01/2011), (02/21/2013), (12/05/2013), (12/20/2013), (03/02/2014), (02/15/2015), (02/20/2015)	-	0	$0	$0
Winter Weather	(02/10/2018), (12/16/2019), (02/05/2020), (12/13/2020), (12/31/2020)	-	0	$0	$0

Source: NCEI, Storm Events Database | National Centers for Environmental Information (noaa.gov) data accessed (05/17/2021)

During this time frame, the most notable severe winter weather event occurred in January of 2007. Several counties in Southwest Missouri, mainly along the I-44 corridor, suffered ice accumulation of up to 2.5 inches. This disaster caused catastrophic tree damages and power outages lasting weeks in many areas as well as several indirect deaths as a result of the dangerous elements. This event warranted a FEMA disaster declaration and resulted in a Public Assistance grant of $106,468,427.80 for the impacted counties in Missouri (FEMA.gov).

Winter storms, cold, frost and freeze take a toll on crop production in the planning area. **Table 3.46** shows the USDA's Risk Management Agency payments for insured crop losses in Barry County as a result of cold conditions and snow from 2010-2020.

Table 3.46. Crop Insurance Claims Paid in Barry County as a Result of Cold Conditions and Snow 2010-2020

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid ($)
2012	Wheat	Freeze	$7,173.00
2017	Soybeans	Freeze	$11,109.00
2018	Wheat	Freeze	$12,040.00
2018	Soybeans	Cold Wet Weather	$64,292.00
2019	Soybeans	Frost	$5,395.00
Total			**$100,009.00**

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

Probability of Future Occurrence

Since one storm generally includes multiple types of winter weather events, the probability of future occurrence is calculated through the combination of these events. Thirty winter weather events occurred in Barry County from 2010 to 2020. This equates to an average of 2.7 events occurring in any given year.

Changing Future Conditions Considerations

Shorter overall winter seasons and fewer days of extreme cold may have both positive and negative indirect impacts. Warmer winter temperatures may result in changing distributions of native plant and animal species and/or an increase in pests and non-native species. Warmer winter temperatures will result in a reduction of lake ice cover. Reduced lake ice cover impacts aquatic ecosystems by raising water temperatures. Water temperature is linked to dissolved oxygen levels and many other environmental parameters that affect fish, plant, and other animal populations. A lack of ice cover also leaves lakes exposed to wind and evaporation during a time of year when they are normally protected.

As both temperature and precipitation increase during the winter months, freezing rain will be more likely. Additional wintertime precipitation in any form will contribute to saturation and increase the risk and/or severity of spring flooding. A greater proportion of wintertime precipitation may fall as rain rather than snow.

Vulnerability

Vulnerability Overview

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

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

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.

In the 2018 State Plan, the five factors were considered in determining overall severe winter storm vulnerability were as follows: housing density, building exposure, social vulnerability, likelihood of occurrence, and average annual property loss. 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. Barry County received a vulnerability rating for each criterion as follows: Housing Density Rating: low, Building Exposure: low-medium, Social Vulnerability: medium, Likelihood of Occurrence: low-medium, Average Annual Property Loss: low-medium. This equates to an overall vulnerability rating of low.

Potential Losses to Existing Development

From 2001 to 2020, Barry County sustained a total of $4,000,000 in property damage due to winter weather. This damage equates to an average of $200,000 per year. However, all $4,000,000 in damages occurred during the 2007 ice storm that affected multiples counties in Missouri. Barry County also suffered a loss of $109,000.00 in crop damage due to cold conditions and snow.

Impact of Previous and Future Development

Increased development and any resulting increases in population will increase exposure to damage from severe winter weather. Future commercial development can expect functional downtime and decreased revenues during periods of severe winter weather. Future construction of facilities that will serve vulnerable populations will need to be prepared for extreme weather conditions. 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. Any increase in agriculture crop production will also increase the risk of exposure

Hazard Summary by Jurisdiction

Special road districts may be affected by this, as their workload will increase as they try to help clean up highways and areas of the city. Actions taken to improve road work will be halted as attention is shifted towards cleaning up the roads. In addition, houses which are vulnerable to power outages may resort to fuel heaters due to the extreme cold. People 65 and over and those living below the poverty level have an increased vulnerability to severe winter weather. **Table 3.47** includes information on populations over 65 and the percent of people living below the poverty level.

Table 3.47. Population Over 65 and Percent Living Below the Poverty Level

Jurisdiction	% of people living below poverty level	Population over 65 (total)	Population over 65 (percent)
Barry County	21.1%	6,984	20.0%
City of Cassville	32.0%	574	18.6%
City of Exeter	14.7%	136	16.8%
City of Monett	24.3%	1,123	12.7%
City of Seligman	46.3%	81	9.3%
City of Wheaton	28.4%	109	18.8%

Source: 2019 American Community Survey Five-Year Estimates

Community Comments on Hazard

1 respondent noted they were personally affected by severe winter weather. 54 of the respondents (30.9%) felt that severe winter weather was highly likely to impact their community in the future. 15 respondents believed that severe winter weather would have a catastrophic impact, while 89 respondents believed that it would have a critical impact. The majority of residents were only somewhat considered about severe winter weather impacting their communities in the future.

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.

Organizing outreach to at-risk populations, including establishing and promoting accessible heating and cooling centers can help reduce the potential exposure to harsh winter weather. Additionally, identifying debris disposal and burning locations can assist in facilitating recovery efforts after a significant winter storm or ice incident. An automated alert system could also be utilized to notify residents of incoming winter weather and warming locations in the community.

3.4.9 Tornado

Hazard Profile

Hazard Description

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

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

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

funnel officially becomes a tornado.

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

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

Geographic Location

There are no specific likely locations for future occurrences as the threat from this hazard is countywide.

Strength/Magnitude/Extent

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

Tornado magnitude is classified according to the EF- Scale (or the Enhance Fujita Scale, based on the original Fujita Scale developed by Dr. Theodore Fujita, a renowned severe storm researcher). The EF-Scale (see **Table 3.48**) attempts to rank tornadoes according to wind speed based on the damage caused. This update to the original F Scale was implemented in the U.S. on February 1, 2007.

Table 3.48. 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 Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

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

The wind speeds for the EF scale and damage descriptions are based on information on the NOAA Storm Prediction Center as listed in **Table 3.49**. The damage descriptions are summaries. For the actual EF scale it is necessary to look up the damage indicator (type of structure damaged) and refer to the degrees of damage associated with that indicator. Information on the Enhanced Fujita Scale's damage indicators and degrees or damage is located online at www.spc.noaa.gov/efscale/ef-scale.html.

Table 3.49. 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

Table 3.50 includes NCEI reported tornado events and damages since 1993 in the planning area. Prior to that date, only highly destructive tornadoes were recorded. There are limitations to the use of NCEI tornado data that must be noted. A tornado that crosses a county line or state line is considered a separate segment for the purposes of reporting to the NCEI. 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 this it is considered a separate tornado.

Table 3.50. Recorded Tornadoes in Barry County, 1993 – Present

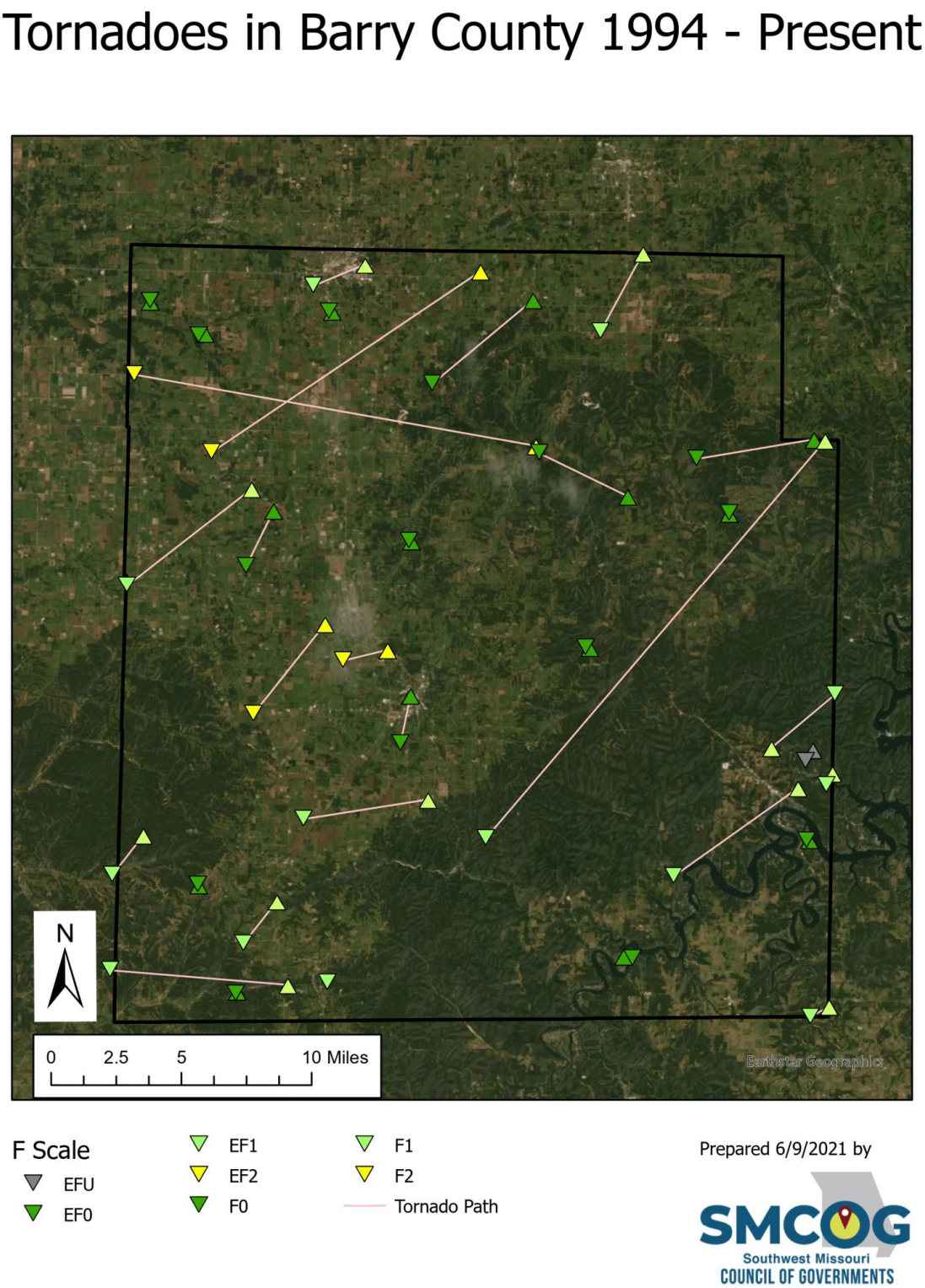
Date	Beginning Location	Ending Location	Length (miles)	Width (yards)	F/EF Rating	Death	Injury	Property Damage	Crop Damages
04/11/1994	Seligman	Seligman	2.8	50	F1	1	0	$50,000	$500
06/08/1995	Seligman	Eagle Rock	12	250	F1	0	3	$100,000	$0
11/23/2001	Exeter	Exeter	4	440	F2	0	3	$1,000,000	$500,000
12/17/2002	Monett	Monett	.5	20	F0	0	0	$0	$0
05/26/2006	Jenkins	Jenkins	1	100	F1	0	0	$0	$0
01/07/2008	Pioneer	Pleasant Ridge	12.43	200	EF2	0	0	$500,000	$0
01/07/2008	Mayflower	Washburn	1.94	100	EF1	0	0	$0	$0
01/07/2008	Mayflower	Mayflower	0.12	20	EF0	0	0	$0	$0
01/08/2008	Wayne	Cassville	4.83	100	EF1	0	0	$300,000	$0

01/08/2008	Wheelerville	Wheelerville	4.95	200	EF0	0	0	$0	$0
05/10/2008	Pioneer	McDowell	15.62	200	EF2	1	0	$10,000,000	$0
05/10/2008	McDowell	Jenkins	3.77	800	EF0	0	0	$0	$0
09/02/2008	Eagle Rock	Eagle Rock	.35	75	EF0	0	0	$5,000	$0
11/06/2008	Cato	Shell Knob	5.85	100	EF1	0	0	$40,000	$0
12/27/2008	Pulaskifield	Pulaskifield	0.27	25	EF0	0	0	$5,000	$0
05/13/2010	Monett	Monett Airport	2.16	200	EF1	0	0	$500,000	$0
09/18/2011	Washburn	Washburn	0.03	10	EF0	0	0	$0	$0
02/29/2012	Exeter	Cassville	1.7	400	EF2	1	4	$575,000	$0
05/20/2013	Shell Knob	Shell Knob	0.53	200	EF1	0	0	$50,000	$0
05/08/2014	Ridgley	Purdy	2.93	50	EF0	0	0	$10,000	$0
04/02/2015	Mayflower	Seligman	6.83	100	EF1	0	0	$10,000	$0
03/23/2016	Flat Creek	Shell Knob	3.17	200	EF1	0	0	$0	$0
03/09/2017	Butterfield	Butterfield	0.1	100	EF0	0	0	$25,000	$0
03/09/2017	Halley	Halley	0.1	100	EF0	0	0	$0	$0
04/04/2017	Washburn	Washburn	1.5	200	EF1	0	0	$15,000	$0
04/26/2017	Golden	Golden	0.8	100	EF1	0	0	$75,000	$0
05/19/2017	Shell Knob	Shell Knob	0.12	100	EF0	0	0	$50,000	$0
08/19/2018	Pleasant Ridge	Pleasant Ridge	3.44	100	EF1	0	0	$20,000	$0
12/01/2018	Wightman	Wightman	0.12	50	EF0	0	0	$90,000	$0
04/30/2019	Wheaton	Purdy	6.06	880	EF1	0	0	$600,000	$0
04/30/2019	East Purdy	Pleasant Ridge	5.03	200	EF0	0	0	$35,000	$0
04/30/2019	Shell Knob	Shell Knob	0.53	50	EFU	0	0	$0	$0
04/30/2019	Cassville	Cassville	1.9	75	EF0	0	0	$8,000	$0
Total						**3**	**10**	**$14,063,000**	**$500,500**

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

Figure 3.25 shows the historic tornado paths in Barry County.

Figure 3.25. Barry County Map of Historic Tornado Events



Probability of Future Occurrence

Over the 20-year period from 2000 to 2019, there were a total of 31 tornadoes record in Barry County. Although there were six years where no tornadoes were reported, certain years experienced multiple tornadoes. This gives us a 100% chance for a tornado to occur in any given year and an average of 1.55 tornadoes per year. Of the 31 total tornadoes, 21 caused $13,913,000 in property damage, which is an average of $622,523 each.

Changing Future Conditions Considerations

Scientists do not know how the frequency and severity of tornadoes will change. Research published in 2015 suggests that changes in heat and moisture content in the atmosphere, brought on by a warming world, could be playing a role in making tornado outbreaks more common and severe in the U.S. The research concluded that the number of days with large outbreaks have been increasing since the 1950s and that densely concentrated tornado outbreaks are on the rise. It is notable that the research shows that the area of tornado activity is not expanding, but rather the areas already subject to tornado activity are seeing the more densely packed tornadoes. Because Missouri experiences on average around 39.6 tornadoes a year, such research is closely followed by meteorologists in the state.

Vulnerability

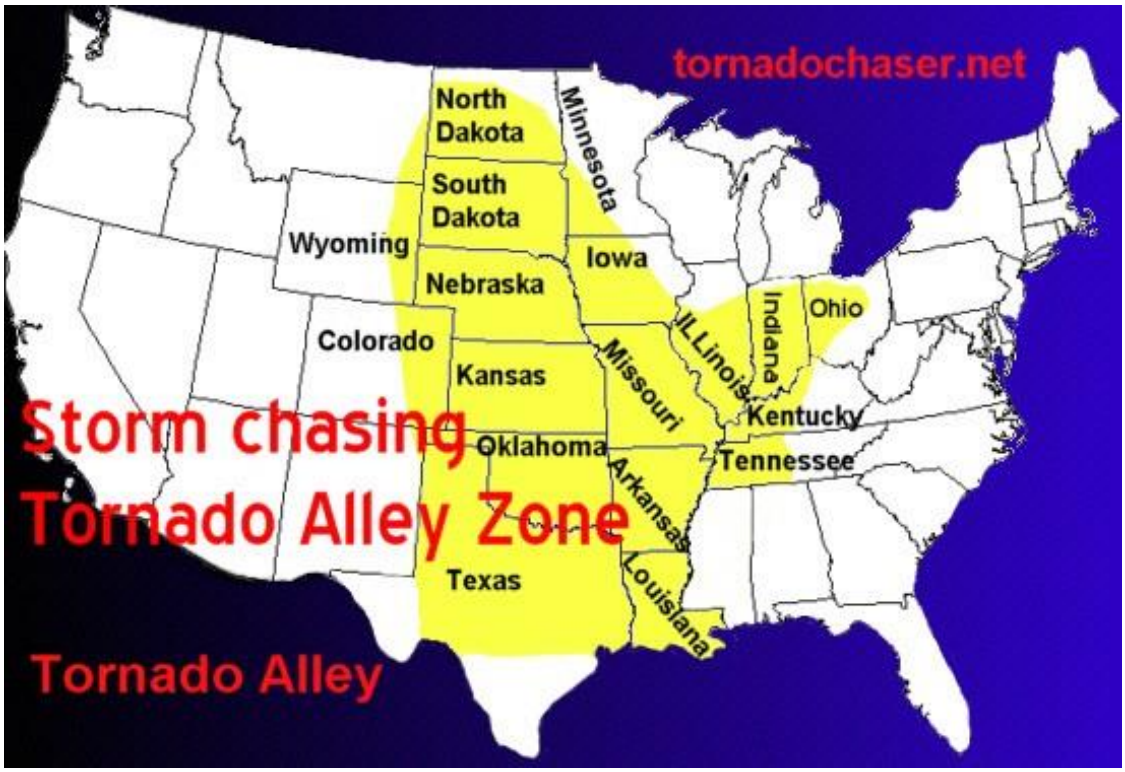
Vulnerability Overview

According to the 2018 State Plan, the following six factors were considered in determining overall tornado vulnerability: building exposure, population density, social vulnerability, percentage of mobile homes, likelihood of occurrence, and annual property loss. The state ranked each of these criteria using a scale from one to five, one being lowest and five being the highest, ranking each county's vulnerability to tornadoes.

Barry County received the following vulnerability rating for each factor: building exposure – low medium (2), population density – low (1), social vulnerability – medium (3), percentage of mobile homes – medium high (4), likelihood of occurrence – high (5), and annual property loss – high (2). This equates to an overall vulnerability rating of High.

Figure 3.26 illustrates areas where dangerous tornadoes historically have occurred.

Figure 3.26. Tornado Alley in the U.S.



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

Potential Losses to Existing Development

From 1993-2019, a period of 28 years a total of $14,563,500 worth of damage occurred in Barry County. Out of the 33 tornadoes, 23 were damaging, equating to an 70% probability of a damaging event occurring and an average potential damage of $520,125 per year. Of the 33 reported tornados, 12% were EF2/F2, 42% were EF/F1, and the remaining 46% were EF/F0 on the Fujita Scale. Potential losses for each jurisdiction were estimated based on the total exposure with applied damage factor of 1%, an estimate of the average damage a tornado could cause in a community. **Table 3.51** provides estimates for total losses by jurisdiction.

Table 3.51. Estimated Potential Tornado Losses by Jurisdiction

Jurisdiction	Total Exposure	Estimated Losses
Unincorporated Barry County	$2,117,919,000	$21,179,190
City of Cassville	$357,996,500	$3,579,965
City of Exeter	$86,232,000	$862,320
City of Monett	$584,495,000	$5,844,950
City of Seligman	$81,281,500	$812,815
City of Wheaton	$77,651,500	$776,515
Total	**$3,340,167,500**	**$33,401,675**

Impact of Previous and Future Development

Barry County does not have a large rate of growth relative to the rest of Missouri.. Development across the county and within incorporated jurisdictions increases the potential for losses. During the 28-year period, the average annual losses countywide were $520,125. This indicates the potential future losses if the current development were to remain, with no additional development. Future development and population increases will increase exposure to damage. It is anticipated that some communities may

experience new development, but those communities that enforce building codes – Cassville and Monett - may help reduce the risk of building damage.

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. This means that Wheaton, Monett, and Seligman are the most vulnerable of the jurisdictions in Barry County.

Community Comments on Hazard

Of the 24 responders that indicated they had been impacted by a disaster, 12 of them noted they had been affected by a tornado. 44.6% of responders felt that tornados are highly likely to impact their community, while only 1.7% felt they are unlikely. 62% of responders are either very concerned or extremely concerned about tornadoes. Finally, 52% of responders felt that a tornado could have a catastrophic impact on their community. Responders were very supportive of tornado mitigation projects.

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 50 miles long. From 2000 to 2019, tornado events in Barry County have resulted in three deaths, ten injuries, and $13,913,000 in property damage. Information in the 2018 State Plan indicates that Barry County has a high vulnerability to tornados.

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 can mitigate injury and loss of life. 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. Promoting the installation of NOAA weather radios, and additional warnings and alerts systems such as Swift 911 or Nixle, will also provide the public and schools more time to take cover during tornado.

3.4.10 Wildfire

Hazard Profile

Hazard Description

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

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

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

Geographic Location

Damages due to wildfires are 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 3.27** shows the WUI of Barry County and **Figure 3.28** shows the risk assessment of the county.

Figure 3.27. Barry County Wildland Intermix and Wildfire Prone Areas

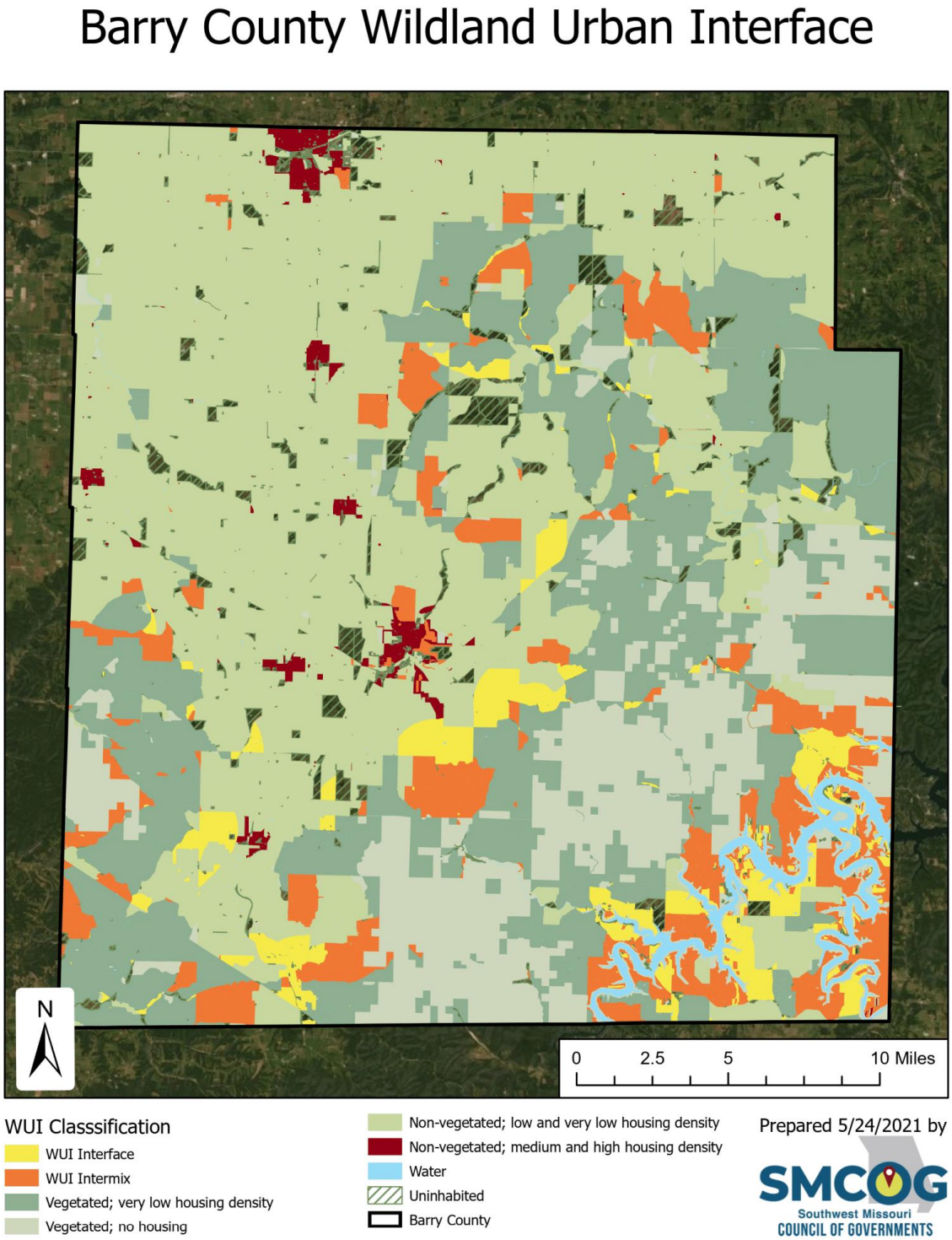
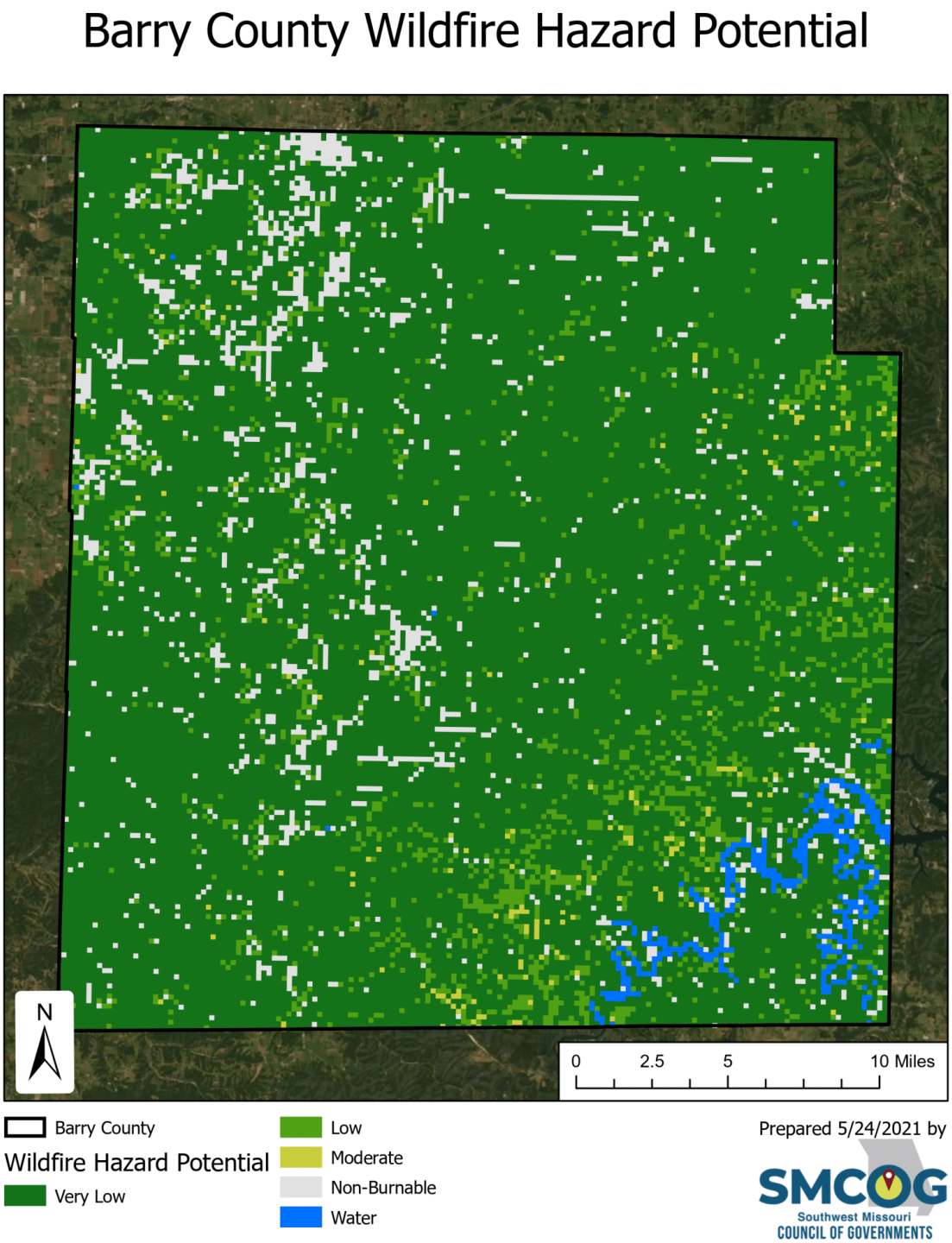


Figure 3.28. Barry County Wildfire Hazard Potential



Strength/Magnitude/Extent

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

Wildland fires in Missouri have been mostly a result of human activity rather than lightning or some other natural event. Wildfires in Missouri are usually surface fires, burning 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 large fire storms.

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

Often wildfires in Missouri go unnoticed by the 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.

Previous Occurrences

According to the Missouri Department of Conservation (MDC) Wildfire Data, there were a total of 697 wildfires in Barry County from 2011 to 2020. 7,132 acres were burned, 370 buildings were threatened, 22 buildings were damaged, and 17 buildings were destroyed. The most damage occurred in 2012, which accounted for 16% of the total wildfires, 41% of the total acres burned, and 30% of all buildings threatened, damaged, and destroyed. **Table 3.52** shows MDC wildfire statistics by year.

Table 3.52. Barry County Wildfires 2011-2020

Year	Number of Wildfires	Buildings Destroyed	Buildings Damaged	Buildings Threatened	Acres Burned
2011	75	2	4	46	991
2012	109	4	3	114	2,959
2013	59	0	1	18	334
2014	79	2	2	21	348
2015	87	1	2	28	330
2016	129	1	1	36	1,249
2017	54	2	2	44	252
2018	47	0	1	17	258
2019	24	2	4	21	163
2020	34	3	2	25	248
Total	**697**	**17**	**22**	**370**	**7,132**

Source: Missouri Department of Conversation: MDC Wildfire Reporting (mo.gov). Accessed 6/9/2021.

No schools or special districts in Barry County reported any fire incidents that impacted their facilities.

Probability of Future Occurrence

There were a total of 697 reported wildfires from 2011 to 2020, with several events taking place each year. This equates to a 100% probability of wildfire events in Barry County in any given year, with an average of 69.7 events per year.

Changing Future Conditions Considerations

Higher temperatures and changes in rainfall are unlikely to substantially reduce forest cover in Missouri, although the composition of trees in the forests may change. More droughts would reduce forest productivity, and changing future conditions are also likely to increase the damage from insects and diseases. But longer growing seasons and increased carbon dioxide concentrations could more than offset the losses from those factors. Forests cover about one-third of the state, dominated by oak and hickory trees. As the climate changes, the abundance of pines in Missouri's forests is likely to increase, while the population of hickory trees is likely to decrease 0.

Higher temperatures will also reduce the number of days prescribed burning can be performed. Reduction of prescribed burning will allow for growth of understory vegetation – providing fuel for destructive wildfires. Drought is also anticipated to increase in frequency and intensity during summer months under projected future scenarios. Drought can lead to dead or dying vegetation and landscaping material close to structures which creates fodder for wildfires within both the urban and rural settings.

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

Based on historical data, we can estimate that, on average, 3.9 buildings are destroyed or damaged per year in Barry County due to wildfires, while 37 buildings are threatened and 713 acres of land are burned.

Impact of Previous and Future Development

It is anticipated that there will be limited future development in WUI areas throughout the unincorporated parts 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 can be mitigated by development regulations reducing the risk of potential wildfires.

Hazard Summary by Jurisdiction

There are few areas of moderate risk that fall within jurisdictional boundaries; many areas at risk are under the jurisdiction of Unincorporated Barry County. Jurisdictional areas are at a range from very low to low risk to wildfires. Much of the county consists of grasslands, however, and lower risk areas could quickly become dangerous in the event of a wildfire.

This hazard is the primary focus of participating special fire districts in the county. The Central Crossing Fire Protection District is the only participating fire districts. As not all local jurisdictions have municipal fire departments, the special fire districts are important to all communities for protection against wildfire and assisting in reducing exposure to wildfire risk.

Table 3.53 summarizes the structure exposure for Barry County and the participating cities. Structure counts and exposure values were derived by overlaying parcel data from the Barry County Assessor with the WUI data. The exposure amount indicates the dollar amount of assets at risk and the variability of vulnerability from place to place.

Table 3.53. Wildfire Structure Exposure by Jurisdiction

Jurisdiction	Residential Buildings	Commercial Buildings	Agriculture Buildings	Total Exposure
Unincorporated Barry County	$202,265,230	$21,768,285	$2,727,785	$226,761,300
Cassville	$11,832,300	$15,300	$0	$11,847,600
Exeter	$0	$0	$0	$0
Monett	$2,571,000	$0	$20,600	$2,591,600
Seligman	$13,000,637	$3,723,463	$100,000	$16,824,100
Wheaton	$0	$0	$0	$0
Total	**$202,265,230**	**$21,768,285**	**$2,727,785**	**$226,761,300**

Source: Barry County Parcel Data

Community Comments on Hazard

Four of the respondents responded they had been personally affected by wildfires. 74 of respondents (42.3%) felt that a wildfire affecting their community was unlikely. 56% of the respondents felt there would be limited or no impact if a wildfire were to occur in their community. 107 of the respondents were either not at all or not so concerned about wildfires affecting their community.

Problem Statement

Wildfire occurrences are very frequent within Barry 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 3.53** indicates that the participating jurisdictions of Barry County, Cassville, Monett, and Seligman have the highest structure exposure. Cities may adopt landscape ordinances that include fire safe landscape design requirements in these areas. They may also adopt building codes or design requirements that encourage non-combustible materials for new construction.

The unincorporated part of the county has the highest risk and exposure to wildfires. County officials and fire departments can implement burn restrictions during weather conditions conducive to the spread of wildfire. Additionally, understanding highest risk locations and developing safe evacuation routes that members of the public are aware can reduce the risk of loss of life or injury.

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 risk assessment. The mitigation strategy was developed through a collaborative group process. The process included review of 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

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 Barry County's existing hazard mitigation plan approved by FEMA on November 23, 2016. Therefore, the goals from the 2016 Barry 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 2018 State Hazard Mitigation Plan goals were reviewed. The MPC also reviewed the goals from current surrounding county plans.

In the 2016 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 2016 Plan but has chosen to remove specific objectives related to said goals to avoid over-complication. The plan update goals are as follows:

Goal 1: Protect the lives and livelihoods of all citizens.
Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy.
Goal 3: Ensure continued operation of government, emergency functions and critical infrastructure in a disaster.

4.2 Identification and Analysis of Mitigation Actions

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

The plan includes a mitigation strategy that 1) analyzes actions and/or projects that the jurisdiction considered to reduce the impacts of hazards identified in the risk assessment, and 2) identifies the actions and/or projects that the jurisdiction intends to implement. Each jurisdiction has considered actions that reduce risk to existing buildings and infrastructure, as well as limiting risk to future development and redevelopment. These actions fall under several categories: prevention, structure and infrastructure projects, natural systems protection, emergency services, and education and outreach. The mitigation plan may include non-mitigation actions, such as actions that are emergency response or operational preparedness in nature.

During the second MPC meeting, the results of the risk assessment update were provided to the MPC members for review and the key issues were identified for specific hazards. Changes in risk since adoption of the previously approved plan were discussed. Actions from the previous plan included completed actions, on-going actions, and actions upon which progress had not been made. The MPC discussed SEMA's identified funding priorities and the types of mitigation actions generally recognized by FEMA.

The MPC included problem statements in the plan update at the end of each hazard profile. The problem statements summarize the risk to the planning area presented by each hazard and include possible methods to reduce that risk. Use of the problem statements allowed the MPC to recognize new and innovative strategies for mitigate risks in the planning area.

The focus of Meeting #4 was to update the mitigation strategy. For a comprehensive range of mitigation actions to consider, the MPC reviewed the following information during Meeting #4:

- A list of actions proposed in the previous mitigation plan, the current State Plan, and approved plans in surrounding counties,
- Key issues from the risk assessments, including the problem statements concluding each hazard profile and vulnerability analysis,
- State priorities established for HMA grants, and
- Public input during meetings, responses to data collection questionnaires, and other efforts to involve the public in the plan development process.

For Meeting #4, individual jurisdictions, including school and special districts, developed final mitigation actions. They were encouraged to review the details of the risk assessment vulnerability analysis specific to their jurisdiction. They were also provided a link to the FEMA's publication, Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (January 2013). This document was developed by FEMA as a resource for identification of a range of potential mitigation actions for reducing risk to natural hazards and disasters.

The MPC reviewed the actions from the previously approved plan for progress made since the plan had been adopted. The list of previous actions was included in the data collection questionnaire for each jurisdiction. 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;
- Ongoing, with a description of the progress made to date; or
- Not Yet Started, with a discussion of the reasons for lack of progress.

During meeting #4, discussion of action modification occurred in order to make actions SMART: specific, measurable, achievable, relevant, and time-bound. SMCOG staff provided some recommended altered language for some items and general discussion.

Additionally, the future inclusion of each mitigation action in the plan update was identified as either keep, delete, or modify. Based on the status updates, there were 9 completed actions, 55 continuing actions (either ongoing or modified), and 106 deleted actions.

Table 4.1 provides a summary of the action statuses for each jurisdiction.

Table 4.1. Action Status Summary

Jurisdiction	Completed Actions	Continuing Actions (ongoing or modified)	Deleted Actions
Barry County	0	7	14
City of Cassville	2	0	17
City of Exeter	1	7	6
City of Monett	0	12	7
City of Seligman	0	10	5
City of Wheaton	1	3	9
Cassville R-IV	1	5	6
Crowder College – Cassville	-	-	-
Exeter R-VI	0	3	8
Monett R-I	2	1	9
Purdy R-II	2	2	6
Shell Knob 78	-	-	-
Southwest R-V	0	2	10
Wheaton R-III	0	3	9
Barry-Lawrence Ambulance	-	-	-
Total	**9**	**55**	**106**

*Crowder College – Cassville, Shell Knob 78, and the Barry Lawrence Ambulance District were not participants in the previous plan and thus did not have any previous actions.

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

Completed Actions	Actions Description	Completion Details (date, amount, funding source)
City of Cassville 1.3.5	**Safe room construction** - Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	n/a
City of Cassville 2.2.6	**Building codes** - Adopt and/or update appropriate building codes.	n/a
City of Exeter 3.2.3	**Water conservation** - Develop an ordinance to restrict the use of public water resources for non-essential usage,	Ordinance 121008

	such as landscaping, washing cars, filling swimming pools, etc.	
City of Wheaton 2.2.6	**Building codes** - Adopt and/or update appropriate building codes.	Building code is in place
Cassville R-IV 1.3.5	**Safe room construction** - Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	Two large saferooms k-8 campus, high school
Monett R-1.3.2	**Safe refuge area plan** - Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 Selecting Refuge Areas in Buildings, in schools, large facilities and other establishments serving the public.	Created a "Do you know where to go?" document. It is on the district website
Monett R-I 1.3.3	**Protective filming and blast proof doors** - Retrofit doors to all vulnerable facilities with metal doors, or place protective film on glass doors and windows.	Protective film was placed on school doors
Purdy R-II 1.3.2	**Safe refuge area plan** - Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 Selecting Refuge Areas in Buildings, in schools, large facilities and other establishments serving the public.	n/a
Purdy R-II 1.3.5	**Safe room construction** - Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	District wide safe room completed
Deleted Actions	**Action Description**	**Reason for Deletion**
Barry County 1.1.5	**Firewise community USA** – participate in the Firewise Community USA Recognition Program	Fire districts are in charge of this now
Barry County 1.2.2	**Low water crossing marking** - Install, replace and maintain low water markings and gauges in flood prone areas.	Road districts are in charge of this now
Barry County 1.3.2	**Safe refuge area plan** - Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 Selecting Refuge Areas in Buildings, in schools, large facilities and other establishments serving the public.	Municipalities are in charge of this now
Barry County 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
Barry County 1.3.5	**Safe room construction** - Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	Municipalities are working on this now
Barry County 2.1.2	**Low water crossing improvements** – replace and improve low water crossings where identified as effective	Road districts are in charge of this now
Barry County 2.2.2	**Green infrastructure** - 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.	n/a
Barry County 2.2.3	**Stream and river improvements** - 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.	n/a
Barry County 2.2.4	**Stream buffer ordinance** - Adopt ordinance to create buffer zones along streams to protect water resources and limit flood impacts to potential future development	Municipalities are in charge of this now
Barry County 2.2.6	**Building codes** - Adopt and/or update appropriate building codes.	n/a
Barry County 2.2.7	**Open space plan** – develop an open space acquisition, reuse, and preservation plan targeting hazard prone areas	n/a

Barry County 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	n/a
Barry County 3.2.2	**Burn bans** - Implement burn restrictions during time of weather conditions conducive to the spread of wildfire.	n/a
Barry County 3.2.3	**Water conservation** - Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.	Municipalities and SW water district are in charge of this now
City of Cassville 1.1.1	**Awareness Program** – create a countywide natural hazard education and awareness program	n/a
City of Cassville 1.1.2	**Flood insurance awareness** – promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	n/a
City of Cassville 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	n/a
City of Cassville 1.1.4	**Citizen preparedness** - Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	n/a
City of Cassville 1.1.5	**Firewise community USA** – participate in the Firewise Community USA Recognition Program	n/a
City of Cassville 1.3.2	**Safe refuge area plan** - Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 Selecting Refuge Areas in Buildings, in schools, large facilities and other establishments serving the public.	n/a
City of Cassville 1.3.3	**Protective filming and blast proof doors** - Retrofit doors to all vulnerable facilities with metal doors, or place protective film on glass doors and windows.	n/a
City of Cassville 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
City of Cassville 2.1.3	**Hazard area property protection –** acquire, elevate, or flood-proof properties and critical infrastructure within flood hazard areas	n/a
City of Cassville 2.2.2	**Green infrastructure** - 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.	n/a
City of Cassville 2.2.3	**Stream and river improvements** - 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.	n/a
City of Cassville 2.2.4	**Stream buffer ordinance** - Adopt ordinance to create buffer zones along streams to protect water resources and limit flood impacts to potential future development	n/a
City of Cassville 2.2.7	**Open space plan** – develop an open space acquisition, reuse, and preservation plan targeting hazard prone areas	n/a
City of Cassville 3.1.1	**NIMS training** - All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	n/a
City of Cassville 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	n/a
City of Cassville 3.2.2	**Burn bans** - Implement burn restrictions during time of weather conditions conducive to the spread of wildfire.	n/a
City of Cassville 3.2.3	**Water conservation** - Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools,	n/a

	etc.	
City of Exeter 1.1.1	**Awareness Program** – create a countywide natural hazard education and awareness program	Shifted interest
City of Exeter 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	Shifted focus
City of Exeter 1.3.3	**Protective filming and blast proof doors** - Retrofit doors to all vulnerable facilities with metal doors, or place protective film on glass doors and windows.	Shifted focus
City of Exeter 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	Shifted focus, no facility
City of Exeter 1.3.5	**Safe room construction -** Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	Focusing on a similar action
City of Exeter 2.2.6	**Building codes** - Adopt and/or update appropriate building codes.	We don't have building codes
City of Exeter 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	Another organization manages this
City of Monett 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	n/a
City of Monett 1.1.5	**Firewise community USA** – participate in the Firewise Community USA Recognition Program	n/a
City of Monett 1.3.3	**Protective filming and blast proof doors** - Retrofit doors to all vulnerable facilities with metal doors, or place protective film on glass doors and windows.	n/a
City of Monett 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
City of Monett 2.2.2	**Green infrastructure** - 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.	n/a
City of Monett 2.2.3	**Stream and river improvements** - 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.	Does not apply to the city
City of Monett 2.2.4	**Stream buffer ordinance** - Adopt ordinance to create buffer zones along streams to protect water resources and limit flood impacts to potential future development	Does not apply to the city
City of Monett 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	n/a
City of Seligman 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	n/a
City of Seligman 1.1.5	**Firewise community USA** – participate in the Firewise Community USA Recognition Program	n/a
City of Seligman 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
City of Seligman 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	n/a
City of Seligman 3.2.3	**Water conservation** - Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools,	n/a

	etc.	
City of Wheaton 1.1.2	**Flood insurance awareness** – promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	n/a
City of Wheaton 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	n/a
City of Wheaton 1.1.4	**Citizen preparedness** - Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	n/a
City of Wheaton 1.3.1	**Safe room construction** - Integrate safe room construction in new community buildings, schools, large facilities, and other establishments serving the public in areas of population concentration where feasible.	n/a
City of Wheaton 1.3.3	**Protective filming and blast proof doors** - Retrofit doors to all vulnerable facilities with metal doors, or place protective film on glass doors and windows.	n/a
City of Wheaton 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
City of Wheaton 1.3.5	**Safe room construction** - Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	n/a
Cassville R-IV 1.1.1	**Awareness Program** – create a countywide natural hazard education and awareness program	Not relevant anymore
Cassville R-IV 1.1.2	**Flood insurance awareness** – promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	Not relevant anymore
Cassville R-IV 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	Not relevant anymore
Cassville R-IV 1.1.4	**Citizen preparedness** - Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	Not relevant anymore
Cassville R-IV 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	Not relevant anymore
Cassville R-IV 1.3.5	**Safe room construction** - Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	Not relevant anymore
Cassville R-IV 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	Not relevant anymore
Exeter R-VI 1.1.1	**Awareness Program** – create a countywide natural hazard education and awareness program	n/a
Exeter R-VI 1.1.2	**Flood insurance awareness** – promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	n/a
Exeter R-VI 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	n/a
Exeter R-VI 1.1.4	**Citizen preparedness** - Increase, promote, establish, and maintain participation in citizen preparedness activities,	n/a

	such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	
Exeter R-VI 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
Exeter R-VI 2.2.6	**Building codes** - Adopt and/or update appropriate building codes.	n/a
Exeter R-VI 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	n/a
Exeter R-VI 3.2.3	**Water conservation** - Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.	n/a
Monett R-I 1.1.1	**Awareness Program** – create a countywide natural hazard education and awareness program	n/a
Monett R-I 1.1.2	**Flood insurance awareness** – promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	n/a
Monett R-I 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	n/a
Monett R-I 1.1.4	**Citizen preparedness** - Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	n/a
Monett R-I 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
Monett R-I 1.3.5	**Safe room construction** - Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	n/a
Monett R-I 2.2.6	**Building codes** - Adopt and/or update appropriate building codes.	n/a
Monett R-I 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	n/a
Monett R-I 3.2.3	**Water conservation** - Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.	n/a
Purdy R-II 1.1.2	**Flood insurance awareness** – promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	n/a
Purdy R-II 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	n/a
Purdy R-II 1.1.4	**Citizen preparedness** - Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	n/a
Purdy R-II 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
Purdy R-II 2.2.6	**Building codes** - Adopt and/or update appropriate building codes.	n/a
Purdy R-II 3.1.1	**NIMS training** - All elected officials, public administrators,	n/a

	community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	
Purdy R-II 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	n/a
Purdy R-II 3.2.3	**Water conservation** - Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.	n/a
Southwest R-V 1.1.1	**Awareness Program** – create a countywide natural hazard education and awareness program	n/a
Southwest R-V 1.1.2	**Flood insurance awareness** – promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	n/a
Southwest R-V 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	n/a
Southwest R-V 1.1.4	**Citizen preparedness** - Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	n/a
Southwest R-V 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
Southwest R-V 1.3.5	**Safe room construction** - Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	n/a
Southwest R-V 2.2.6	**Building codes** - Adopt and/or update appropriate building codes.	n/a
Southwest R-V 3.1.1	**NIMS training** - All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	n/a
Southwest R-V 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	n/a
Southwest R-V 3.2.3	**Water conservation** - Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.	n/a
Wheaton R-III 1.1.1	**Awareness Program** – create a countywide natural hazard education and awareness program	n/a
Wheaton R-III 1.1.2	**Flood insurance awareness** – promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	n/a
Wheaton R-III 1.1.3	**Sinkhole Awareness program** - Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	n/a
Wheaton R-III 1.1.4	**Citizen preparedness** - Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	n/a
Wheaton R-III 1.3.4	**Community extreme temperature refuge areas** - Identify and designate heating and cooling refuge areas in community buildings, and make these locations available to the public during extreme temperature events.	n/a
Wheaton R-III 1.3.5	**Safe room construction** - Provide information on construction plans and cost estimates for building safe	New action as added for safe room construction

	rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available.	
Wheaton R-III 2.2.6	**Building codes** - Adopt and/or update appropriate building codes.	n/a
Wheaton R-III 3.2.1	**Vegetation maintenance** - Enhance strategies and coordinate with utility providers to manage encroachment of vegetation in easements and rights of way.	n/a
Wheaton R-III 3.2.3	**Water conservation** - Develop an ordinance to restrict the use of public water resources for non-essential usage, such as landscaping, washing cars, filling swimming pools, etc.	n/a

Source: Previously approved County Hazard Mitigation Plan; Data Collection Questionnaires.

Many jurisdictions found that actions were still relevant and would be ongoing. Many of the continuing actions were re-worded for the update and are noted as “revised, continuing” on the action sheets. The actions listed in Table 4.1 and Table 4.2 are numbered according to the 2014 Plan and are not consistent with the new numbering in this plan

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 or within their organization to finalize the actions to be submitted for the updated mitigation strategy. 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 2018 Missouri State Hazard Mitigation Plan. For each action, the plan sets forth a narrative describing the types of benefits that could be realized from action implementation. The cost was estimated as closely as possible, with further refinement to be supplied as project development occurs.

FEMA’s STAPLEE methodology was used to assess the costs and benefits, overall feasibility of mitigation actions, and other issues impacting project. During the prioritization process, the jurisdictions used worksheets to assign scores. The worksheets posed questions based on the STAPLEE elements as well as the potential mitigation effectiveness of each action. Scores were based on the responses to the questions as follows:

Definitely YES = 3 points
Maybe YES = 2 points
Probably NO = 1 points
Definitely NO = 0 points

The following questions were asked for each proposed action:

S: Is the action socially acceptable?
T: Is the action technically feasible and potentially successful?
A: Does the jurisdiction have the administrative capability to successfully implement this action?
P: Is the action politically acceptable?
L: Does the jurisdiction have the legal authority to implement the action?

E: Is the action economically beneficial?
E: Will the project have an environmental impact that is either beneficial or neutral? (score “3” if positive and “2” if neutral)

Will the implemented action result in lives saved?
Will the implanted action result in a reduction of disaster damage?

The final scores are listed below in the analysis of each action. The worksheets are attached to this plan as Appendix B. 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.** Actions that scored in the low priority were not omitted from the plan; however, other actions that showed a higher score would be given priority.

Figure 4.1. Blank STAPLEE Worksheet

STAPLEE Worksheet		
Name of Jurisdiction:		
Action or Project		
Action/Project Number:	Insert a unique action number for this action for future tracking purposes. This can be a combination of the jurisdiction name, followed by the goal number and action number (i.e. Joplin1.1)	
Name of Action or Project:		
Mitigation Category:	Prevention; Structure and Infrastructure Projects; Natural Systems Protection; Education and Outreach; Emergency Services	
STAPLEE Criteria **Evaluation Rating** Definitely YES = 3 Maybe YES = 2 Probably NO = 1 Definitely NO = 0		**Score**
S: Is it **Socially** Acceptable		
T: Is it **Technically** feasible and potentially successful?		
A: Does the jurisdiction have the **Administrative** capacity to execute this action?		
P: Is it **Politically** acceptable?		
L: Is there **Legal** authority to implement?		
E: Is it **Economically** beneficial?		
E: Will the project have either a neutral or positive impact on the natural **Environment**?		
Will historic structures be saved or protected?		
Could it be implemented quickly?		
STAPLEE SCORE		
Mitigation Effectiveness Criteria	**Evaluation Rating**	**Score**
Will the implemented action result in lives saved?	Assign from 5-10 points based on the likelihood that lives will be saved.	
Will the implemented action result in a reduction of disaster damages?	Assign from 5-10 points based on the relative reduction of disaster damages.	
MITIGATION EFFECTIVENESS SCORE		
TOTAL SCORE **(STAPLEE + Mitigation Effectiveness)**		

☐ **High Priority (30+ points)**	☐ **Medium Priority (25 - 29 points)**	☐ **Low Priority (<25 points)**

Completed by
(Name, Title, Phone Number) _____

In addition to the STAPLEE cost benefit review prioritization, an implementation plan for each action was discussed. An action worksheet was used to develop the implementation plan. The action worksheet format is shown in **Figure 4.2.**

Figure 4.2. Blank Action Worksheet

Action Worksheet	
Name of Jurisdiction:	
Risk / Vulnerability	
Hazard(s) Addressed:	List the hazard or hazards that will be addressed by this action
Problem being Mitigated:	Provide a brief description of the problem that the action will address. Utilize the problem statement developed in the risk assessment.
Action or Project	
Applicable Goal Statement:	Choose the goal statement that applies to this action
Action/Project Number:	Insert a unique action number for this action for future tracking purposes. This can be a combination of the jurisdiction name, followed by the goal number and action number (i.e. Joplin1.1)
Name of Action or Project:	
Mitigation Category:	Prevention; Structure and Infrastructure Projects; Natural Systems Protection; Education and Outreach; Emergency Services
Action or Project Description:	Describe the action or project.
Estimated Cost:	Provide an estimate of the cost to implement this action. This can be accomplished with a range of estimated costs.
Benefits:	Provide a narrative describing the losses that will be avoided by implementing this action. If dollar amounts of avoided losses are known, include them as well.
Plan for Implementation	
Responsible Organization/Department:	Which organization will be responsible for tracking this action? Be specific to include the specific department or position within a department.
Supporting Organization/Department:	Which organization/department will assist in implementation of this action?
Action/Project Priority:	
Timeline for Completion:	How many months/years to complete.
Potential Fund Sources:	List specific funding sources that may be used to pay for the implementation of the action.
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Indicate status as New, Continuing Not Started, or Continuing in Progress)
Report of Progress:	For Continuing actions only, indicate the report on progress. If the action is not started, indicate any barriers encountered to initiate the action. If the action is in progress, indicate the activity that has occurred to date.

4.3.1 Goal 1: Protect the lives and livelihoods of all citizens

Action Worksheet	
Name of Jurisdiction:	Barry County
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited public awareness of hazard vulnerability and mitigation measures
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Barry County 1.1
Name of Action or Project:	Awareness Program
Mitigation Category:	Education and Outreach
Action or Project Description:	Create a countywide natural hazard education and awareness program
Estimated Cost:	$0-500
Benefits:	Reduction of loss of life, injury, and property damage during hazard events
Plan for Implementation	
Responsible Organization/Department:	Barry County Emergency Management
Supporting Organization/Department:	County Clerk
Action/Project Priority:	36
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	Barry County HMP update

Action Worksheet	
Name of Jurisdiction:	Barry County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Limited public awareness for how homeowners can financially protect their property from flood damage
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Barry County 1.2
Name of Action or Project:	Flood Insurance Awareness
Mitigation Category:	Education and Outreach
Action or Project Description:	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation
Estimated Cost:	$0-500
Benefits:	Increased financial protection for homeowners
Plan for Implementation	
Responsible Organization/Department:	Barry County Emergency Management
Supporting Organization/Department:	County Clerk
Action/Project Priority:	35
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Flood maps
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Barry County
Risk / Vulnerability	
Hazard(s) Addressed:	Sinkholes
Problem being Mitigated:	Limited public awareness of homeowners and businesses to sinkhole loss policies
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Barry County 1.3
Name of Action or Project:	Sinkhole Awareness Program
Mitigation Category:	Education and Outreach
Action or Project Description:	Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas..
Estimated Cost:	$0-500
Benefits:	Increased financial protection to homeowners and businesses
Plan for Implementation	
Responsible Organization/Department:	Barry County Emergency Management
Supporting Organization/Department:	County Clerk
Action/Project Priority:	34
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency plan, LEPC
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Barry County
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Lack of public participation and limited response efficiency to the mitigation of natural hazards
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Barry County 1.4
Name of Action or Project:	Citizen Preparedness
Mitigation Category:	Education and Outreach
Action or Project Description:	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Estimated Cost:	$0-1000
Benefits:	Increased awareness and participation in mitigation strategies in the county
Plan for Implementation	
Responsible Organization/Department:	Barry County EMD
Supporting Organization/Department:	County Clerk
Action/Project Priority:	34
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Barry County
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	Damage to property and potential injury/loss of life from tornadoes and severe thunderstorms
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Barry County 1.5
Name of Action or Project:	Storm proof doors and windows
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Replace current doors and windows to all vulnerable facilities with storm proof alternatives
Estimated Cost:	$10,000-50,000 per structure
Benefits:	Reduce damage to windows and contents of buildings, as well as reduce the chance of injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	County Commission
Supporting Organization/Department:	Barry County EMD
Action/Project Priority:	28
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	City of Cassville
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	No safe place to shelter during severe weather conditions
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Cassville 1.1
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Construct a safe room on the south end of town
Estimated Cost:	$40-50k
Benefits:	Safe place to shelter during severe weather. Mitigate injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Public works
Supporting Organization/Department:	City administrator
Action/Project Priority:	26
Timeline for Completion:	3 years
Potential Fund Sources:	Local funding, HMGP, USDA grant
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, grant writing, capital improvement plan, emergency management plan
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	City of Exeter
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited public awareness of hazard vulnerability and mitigation measures
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Exeter 1.1
Name of Action or Project:	Awareness Program
Mitigation Category:	Education and Outreach
Action or Project Description:	Create a countywide natural hazard education and awareness program
Estimated Cost:	$0-500
Benefits:	Reduction of loss of life, injury, and property damage during hazard events
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	City Administration
Action/Project Priority:	34
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing no progress
Report of Progress:	No progress

Action Worksheet	
Name of Jurisdiction:	City of Exeter
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Limited public awareness for how homeowners can financially protect their property from flood damage
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Exeter 1.2
Name of Action or Project:	Flood Insurance Awareness
Mitigation Category:	Education and Outreach
Action or Project Description:	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation
Estimated Cost:	$0-500
Benefits:	Increased financial protection for homeowners
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	NFIP Administrator
Action/Project Priority:	29
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	NFIP Ordinance
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	Virtual meetings with SEMA

Action Worksheet	
Name of Jurisdiction:	City of Exeter
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Lack of public participation and limited response efficiency to the mitigation of natural hazards
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Exeter 1.3
Name of Action or Project:	Citizen Preparedness
Mitigation Category:	Education and Outreach
Action or Project Description:	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Estimated Cost:	$0-1000
Benefits:	Increased awareness and participation in mitigation strategies in the county
Plan for Implementation	
Responsible Organization/Department:	Chief of Police
Supporting Organization/Department:	Exeter Police Department
Action/Project Priority:	29
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	Neighborhood watch Facebook page, reporting page from concerned citizens

Action Worksheet	
Name of Jurisdiction:	City of Exeter
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado
Problem being Mitigated:	No safe place to shelter during tornado events
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Exeter 1.4
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Integrate safe room construction in new community buildings, schools, large facilities, and other establishments serving the public in areas of population concentration where feasible
Estimated Cost:	$700,000
Benefits:	Safe place to shelter during tornado events to prevent loss of life and injury
Plan for Implementation	
Responsible Organization/Department:	City Clerk/Mayor
Supporting Organization/Department:	FEMA/SEMA
Action/Project Priority:	34
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, CDBG, USDA grants, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	In the early stage of doing initial research

Action Worksheet	
Name of Jurisdiction:	City of Exeter
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorm
Problem being Mitigated:	Injury and loss of life during hazard events
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	City of Exeter 1.5
Name of Action or Project:	Safe refuge area plan
Mitigation Category:	Education and Outreach
Action or Project Description:	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings
Estimated Cost:	$0-500
Benefits:	The public will know where to shelter during hazard events
Plan for Implementation	
Responsible Organization/Department:	City administration
Supporting Organization/Department:	FEMA, Exeter School District
Action/Project Priority:	29
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	Discussion with school district in process

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited public awareness of hazard vulnerability and mitigation measures
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Monett 1.1
Name of Action or Project:	Awareness Program
Mitigation Category:	Education and Outreach
Action or Project Description:	Create a countywide natural hazard education and awareness program
Estimated Cost:	$0-500
Benefits:	Reduction of loss of life, injury, and property damage during hazard events
Plan for Implementation	
Responsible Organization/Department:	City of Monett Emergency Management Office
Supporting Organization/Department:	City of Monett 911 Communications, City of Monett Fire Department, City of Monett Police Department
Action/Project Priority:	40
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency management plan, HMP
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	Have promoted awareness locally through creation of green spaces as a result of the Kelly Creek buyout (HMPG). County-side will require some guidance from county leaders.

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Limited public awareness for how homeowners can financially protect their property from flood damage
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Monett 1.2
Name of Action or Project:	Flood Insurance Awareness
Mitigation Category:	Education and Outreach
Action or Project Description:	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation
Estimated Cost:	$0-500
Benefits:	Increased financial protection for homeowners
Plan for Implementation	
Responsible Organization/Department:	City of Monett Emergency Management Office
Supporting Organization/Department:	City of Monett Fire Department
Action/Project Priority:	327
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	NFIP Regulations, flood insurance maps
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	City of Monett has participated in NFIP since its inception. City of Monett recently completed a HMPG project resulting in the acquisition of three properties that were repeated affected by flooding.

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Lack of public participation and limited response efficiency to the mitigation of natural hazards
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Monett 1.3
Name of Action or Project:	Citizen Preparedness
Mitigation Category:	Education and Outreach
Action or Project Description:	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Estimated Cost:	$0-1000
Benefits:	Increased awareness and participation in mitigation strategies in the county
Plan for Implementation	
Responsible Organization/Department:	City of Monett Emergency Management Office
Supporting Organization/Department:	City Clerk
Action/Project Priority:	40
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	City of Monett as participated in the reviving of the Lawrence County CERT. There is an active organization of amateur radio professionals within our city. Additionally, the COAD has become active during the COVID response.

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorm
Problem being Mitigated:	Injury and loss of life during hazard events
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	City of Monett 1.4
Name of Action or Project:	Safe refuge area plan
Mitigation Category:	Education and Outreach
Action or Project Description:	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings
Estimated Cost:	$0-500
Benefits:	The public will know where to shelter during hazard events
Plan for Implementation	
Responsible Organization/Department:	City of Monett Emergency Management Office
Supporting Organization/Department:	City clerk
Action/Project Priority:	35
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, comp plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	City of Monett has updated the available refuge/ FEMA shelter and made available to the public through local media and social media platforms as well as providing the list to the 9-1-1 center.

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado
Problem being Mitigated:	Lack of public knowledge regarding safe rooms
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Monett 1.5
Name of Action or Project:	Safe room construction
Mitigation Category:	Education and outreach
Action or Project Description:	Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available
Estimated Cost:	$0
Benefits:	Citizens and businesses will have better knowledge on how to construct and finance their own FEMA safe rooms that will mitigate the loss of life
Plan for Implementation	
Responsible Organization/Department:	City of Monett Emergency Management Office
Supporting Organization/Department:	City of Monett Fire Department, City of Monett Police Department
Action/Project Priority:	37
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	City of Monett school district has completed an additional FEMA shelter and is planning an additional shelter at this time.

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited public awareness of hazard vulnerability and mitigation measures
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Seligman 1.1
Name of Action or Project:	Awareness Program
Mitigation Category:	Education and Outreach
Action or Project Description:	Create a countywide natural hazard education and awareness program
Estimated Cost:	$0-500
Benefits:	Reduction of loss of life, injury, and property damage during hazard events
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	City Admin/City Utilities
Action/Project Priority:	30
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	Contacting local cities on getting ideas on how we can be on the same page when it comes to creating a countywide program and providing similar information.

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Limited public awareness for how homeowners can financially protect their property from flood damage
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Seligman 1.2
Name of Action or Project:	Flood Insurance Awareness
Mitigation Category:	Education and Outreach
Action or Project Description:	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation
Estimated Cost:	$0-500
Benefits:	Increased financial protection for homeowners
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	City Admin/City Utilities
Action/Project Priority:	35
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	Provide pamphlets regarding flooding awareness and contact information at city hall.

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Lack of public participation and limited response efficiency to the mitigation of natural hazards
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Seligman 1.3
Name of Action or Project:	Citizen Preparedness
Mitigation Category:	Education and Outreach
Action or Project Description:	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.
Estimated Cost:	$0-1000
Benefits:	Increased awareness and participation in mitigation strategies in the county
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	City Admin/ Seligman Police Dept.
Action/Project Priority:	35
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	Having a sit down with our chief of police (Kevin Phillips) and discuss the steps to starting a neighborhood watch. I spoke with our fire chief (Bobby Beaver), and he stated we have access to Fire Corps if needed.

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado
Problem being Mitigated:	No safe place to shelter during tornado events
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Seligman 1.4
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Integrate safe room construction in new community buildings, schools, large facilities, and other establishments serving the public in areas of population concentration where feasible
Estimated Cost:	$700,000
Benefits:	Safe place to shelter during tornado events to prevent loss of life and injury
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	City Admin/City Utilities
Action/Project Priority:	37
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, CDBG, USDA grants, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Budgeting, capital improvement plan, comp plan, emergency plan, critical facilities plan, building codes, grant writing/application,
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	Further research on what steps need to be taken to start the process.

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorm
Problem being Mitigated:	Injury and loss of life during hazard events
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	City of Seligman 1.5
Name of Action or Project:	Safe refuge area plan
Mitigation Category:	Education and Outreach
Action or Project Description:	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings
Estimated Cost:	$0-500
Benefits:	The public will know where to shelter during hazard events
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	City Admin/City Utilities
Action/Project Priority:	36
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	Provide information at city hall on the local shelters near Seligman and what to do if caught in a severe thunderstorm/tornado situation.

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	Damage to property and potential injury/loss of life from tornadoes and severe thunderstorms
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Seligman 1.6
Name of Action or Project:	Storm proof doors and windows
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Replace current doors and windows to all vulnerable facilities with storm proof alternatives
Estimated Cost:	$10,000-50,000 per structure
Benefits:	Reduce damage to windows and contents of buildings, as well as reduce the chance of injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	City Admin/City Utilities (Maintenance)
Action/Project Priority:	30
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado
Problem being Mitigated:	Lack of public knowledge regarding safe rooms
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Seligman 1.7
Name of Action or Project:	Safe room construction
Mitigation Category:	Education and outreach
Action or Project Description:	Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available
Estimated Cost:	$0
Benefits:	Citizens and businesses will have better knowledge on how to construct and finance their own FEMA safe rooms that will mitigate the loss of life
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	City Admin/City Utilities
Action/Project Priority:	37
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	Provide pamphlets in city hall for anyone wanting further information.

Action Worksheet	
Name of Jurisdiction:	City of Wheaton
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorm
Problem being Mitigated:	Injury and loss of life during hazard events
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	City of Wheaton 1.1
Name of Action or Project:	Safe refuge area plan
Mitigation Category:	Education and Outreach
Action or Project Description:	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings
Estimated Cost:	$0-500
Benefits:	The public will know where to shelter during hazard events
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	Utilities
Action/Project Priority:	39
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan
Progress Report	
Action Status:	Continuing no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	City of Wheaton
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme temperatures
Problem being Mitigated:	Limited knowledge of residents regarding extreme temperature risks
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	City of Wheaton 1.2
Name of Action or Project:	Extreme temperature risk and safety
Mitigation Category:	Education and Outreach
Action or Project Description:	Create a handout to mail to residents with information regarding extreme temperature risk and safety
Estimated Cost:	$0-200
Benefits:	The public will have a better understanding of the risks associated with extreme temperatures
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	Utilities
Action/Project Priority:	38
Timeline for Completion:	1 year
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	City of Wheaton
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	No safe place to shelter during severe weather conditions
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	City of Wheaton 1.3
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Integrate safe room construction in new community buildings
Estimated Cost:	$40-50k
Benefits:	Safe place to shelter during severe weather. Mitigate injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	City administration
Supporting Organization/Department:	City clerk
Action/Project Priority:	26
Timeline for Completion:	3 years
Potential Fund Sources:	Local funding, HMGP, USDA grant
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Cassville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorm
Problem being Mitigated:	Injury and loss of life during hazard events
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	Cassville R-IV 1.1
Name of Action or Project:	Safe refuge area plan
Mitigation Category:	Education and Outreach
Action or Project Description:	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings
Estimated Cost:	$0-500
Benefits:	The public will know where to shelter during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	31
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, school emergency plan
Progress Report	
Action Status:	Continuing no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Cassville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	Damage to property and potential injury/loss of life from tornadoes and severe thunderstorms
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Cassville R-IV 1.2
Name of Action or Project:	Storm proof doors and windows
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Replace current doors and windows to all vulnerable facilities with storm proof alternatives
Estimated Cost:	$10,000-50,000 per structure
Benefits:	Reduce damage to windows and contents of buildings, as well as reduce the chance of injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	29
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Crowder College - Cassville
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado
Problem being Mitigated:	Lack of safe place to shelter during tornado and high wind events
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	Crowder College – Cassville 1.1
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and infrastructure projects
Action or Project Description:	Purchase a FEMA approved safe room for the campus
Estimated Cost:	$240,000 - $375,000
Benefits:	Safe place to shelter during tornado events
Plan for Implementation	
Responsible Organization/Department:	Crowder College/ Office of Vice President of Finance
Supporting Organization/Department:	Crowder College/ Director of Cassville Campus, Paragon Architecture, and building contractor.
Action/Project Priority:	42
Timeline for Completion:	18-24 months
Potential Fund Sources:	Local funding, HMGP, USDA rural development
Local Planning Mechanisms to be Used in Implementation, if any:	Comprehensive building plan, Cassville City building codes, safe room standard building codes
Progress Report	
Action Status:	New
Report of Progress:	Architectural drawing completed

Action Worksheet	
Name of Jurisdiction:	Exeter R-VI
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorm
Problem being Mitigated:	Injury and loss of life during hazard events
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	Exeter R-VI 1.1
Name of Action or Project:	Safe refuge area plan
Mitigation Category:	Education and Outreach
Action or Project Description:	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings
Estimated Cost:	$0-500
Benefits:	The public will know where to shelter during hazard events
Plan for Implementation	
Responsible Organization/Department:	Exeter R6 school's administrative team
Supporting Organization/Department:	Exeter School's staff and maintenance crew
Action/Project Priority:	36
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	The district Emergency plans that are posted in each room. This allows all employees and guests to have access to emergency maps and procedures of the buildings.
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	The progress so far is in improving the area used for safe refuge by removing unnecessary items in the room and increasing access to the safe refuge area.

Action Worksheet	
Name of Jurisdiction:	Exeter R-VI
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	Damage to property and potential injury/loss of life from tornadoes and severe thunderstorms
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Exeter R-VI 1.2
Name of Action or Project:	Storm proof doors and windows
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Replace current doors and windows to all vulnerable facilities with storm proof alternatives
Estimated Cost:	$10,000-50,000 per structure
Benefits:	Reduce damage to windows and contents of buildings, as well as reduce the chance of injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Exeter Schools Grounds/ Maintenance
Supporting Organization/Department:	Exeter School Superintendent
Action/Project Priority:	36
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	Needs assessment has been completed. Some windows and doors have been replaced and others have been repaired.

Action Worksheet	
Name of Jurisdiction:	Exeter R-VI
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado
Problem being Mitigated:	No safe place to shelter during tornado events
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Exeter R-VI 1.3
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Build a safe room on the school campus
Estimated Cost:	$700,000
Benefits:	Safe place to shelter during tornado events to prevent loss of life and injury
Plan for Implementation	
Responsible Organization/Department:	Exeter Schools Superintendent
Supporting Organization/Department:	Exeter School Maintenance
Action/Project Priority:	36
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, CDBG, USDA grants, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	none
Progress Report	
Action Status:	new
Report of Progress:	Not in the process of building at this time

Action Worksheet	
Name of Jurisdiction:	Monett R-I
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado
Problem being Mitigated:	No safe place to shelter during tornado events
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Monett R-I 1.1
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Construct a FEMA approved shelter at the middle school campus. Currently in the application process
Estimated Cost:	$700,000
Benefits:	Safe place to shelter during tornado events to prevent loss of life and injury
Plan for Implementation	
Responsible Organization/Department:	Superintendent of Schools
Supporting Organization/Department:	Monett Schools Operations Department- Director of Operations
Action/Project Priority:	44
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, CDBG, USDA grants, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	District Long Range Facility Plan- Sapp Design
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	Construction has begun. This will be a two year construction process due to material shortages.

Action Worksheet	
Name of Jurisdiction:	Purdy R-II
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited public awareness of hazard vulnerability and mitigation measures
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Purdy R-II 1.1
Name of Action or Project:	Awareness Program
Mitigation Category:	Education and Outreach
Action or Project Description:	Create a countywide natural hazard education and awareness program
Estimated Cost:	$0-500
Benefits:	Reduction of loss of life, injury, and property damage during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	maintenance
Action/Project Priority:	27
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Master plan, school emergency plan
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Purdy R-II
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	Damage to property and potential injury/loss of life from tornadoes and severe thunderstorms
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Purdy R-II 1.2
Name of Action or Project:	Storm proof doors and windows
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Replace current doors and windows to all vulnerable facilities with storm proof alternatives
Estimated Cost:	$10,000-50,000 per structure
Benefits:	Reduce damage to windows and contents of buildings, as well as reduce the chance of injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	33
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan, master plan
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Shell Knob 78
Risk / Vulnerability	
Hazard(s) Addressed:	Severe thunderstorms, tornadoes
Problem being Mitigated:	Loss of power caused by a tornado or severe thunderstorm
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	Shell Knob 78 1.1
Name of Action or Project:	Generator
Mitigation Category:	Prevention, structure and infrastructure projects
Action or Project Description:	Purchase a generator to prevent disruption of services due to severe weather conditions
Estimated Cost:	$4,000 - $8,000
Benefits:	Prevents complete loss of power. Ensures heating/air conditioning stays active. Prevents food from spoiling
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	42
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP funds
Local Planning Mechanisms to be Used in Implementation, if any:	Capital improvement plan, master plan, grant writing, local budgeting
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Shell Knob 78
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorms
Problem being Mitigated:	Lack of proper notification system
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	Shell Knob 78 1.2
Name of Action or Project:	Tornado alert system
Mitigation Category:	Structure and infrastructure projects
Action or Project Description:	Purchase a building-wide tornado alert system with strobe lights in the gym and music room
Estimated Cost:	$2,000 - $5,000
Benefits:	A proper alert system will warn students, faculty, and staff when dangerous weather is approaching
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	38
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP funds
Local Planning Mechanisms to be Used in Implementation, if any:	Capital improvement plan, critical facilities plan, grant writing
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Shell Knob 78
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorms
Problem being Mitigated:	No safe place to shelter during severe weather conditions
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	Shell Knob 78 1.3
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and infrastructure projects
Action or Project Description:	Construct a FEMA approved safe room on the school campus
Estimated Cost:	$50,000-70,000
Benefits:	Safe place to shelter during severe weather conditions. Mitigate the risk of injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	38
Timeline for Completion:	2-3 years
Potential Fund Sources:	Local funding, HMGP funds
Local Planning Mechanisms to be Used in Implementation, if any:	Capital improvement plan, master plan, building codes, critical facilities plan
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Southwest R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorm
Problem being Mitigated:	Injury and loss of life during hazard events
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	Southwest R-V 1.1
Name of Action or Project:	Safe refuge area plan
Mitigation Category:	Education and Outreach
Action or Project Description:	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings
Estimated Cost:	$0-500
Benefits:	Students, faculty, and staff will know where to shelter during hazard events
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	27
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Southwest R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	Damage to property and potential injury/loss of life from tornadoes and severe thunderstorms
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Southwest R-V 1.2
Name of Action or Project:	Storm proof doors and windows
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Replace current doors and windows to all vulnerable facilities with storm proof alternatives
Estimated Cost:	$10,000-50,000 per structure
Benefits:	Reduce damage to windows and contents of buildings, as well as reduce the chance of injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	23
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Southwest R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorms
Problem being Mitigated:	No safe place to shelter during severe weather conditions
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Southwest R-V 1.3
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and infrastructure projects
Action or Project Description:	Construct a safe room on the school campus
Estimated Cost:	$50,000 - $100,000
Benefits:	Safe place to shelter during severe weather. Mitigate injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	27
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP, USDA grants
Local Planning Mechanisms to be Used in Implementation, if any:	Capital improvement plan, local budgeting and fundraiser, master plan, building plan, emergency plan
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Wheaton R-III
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, severe thunderstorm
Problem being Mitigated:	Injury and loss of life during hazard events
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	Wheaton R-III 1.1
Name of Action or Project:	Safe refuge area plan
Mitigation Category:	Education and Outreach
Action or Project Description:	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings
Estimated Cost:	$0-500
Benefits:	The public will know where to shelter during hazard events
Plan for Implementation	
Responsible Organization/Department:	Superintendent
Supporting Organization/Department:	Building level principals, Bldgs & Grounds director
Action/Project Priority:	45
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	District Emergency plans, safety evaluation from American Mobile Training Solutions (AMTS)
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	In Progress, waiting on evaluation from AMTS

Action Worksheet	
Name of Jurisdiction:	Wheaton R-III
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	Damage to property and potential injury/loss of life from tornadoes and severe thunderstorms
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Wheaton R-III 1.2
Name of Action or Project:	Storm proof doors and windows
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Replace current doors and windows to all vulnerable facilities with storm proof alternatives
Estimated Cost:	$10,000-50,000 per structure
Benefits:	Reduce damage to windows and contents of buildings, as well as reduce the chance of injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Superintendent
Supporting Organization/Department:	Buildings and grounds director
Action/Project Priority:	42
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	In Progress. Some doors have been replaced with FRP doors and elementary windows being replaced the summer (2021). Barrier: Funds

Action Worksheet	
Name of Jurisdiction:	Wheaton R-III
Risk / Vulnerability	
Hazard(s) Addressed:	Tornadoes, severe thunderstorms
Problem being Mitigated:	No safe place to shelter during severe weather conditions
Action or Project	
Applicable Goal Statement:	Goal 1: Protect the lives and livelihoods of all citizens
Action/Project Number:	Wheaton R-III 1.3
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Construct a new safe room on the school campus. Already applied for a FEMA BRIC grant. Waiting to hear from FEMA if we are selected
Estimated Cost:	2.2 million
Benefits:	Safe place to shelter during severe weather. Mitigate injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Superintendent
Supporting Organization/Department:	Buildings and grounds director
Action/Project Priority:	44
Timeline for Completion:	1 year
Potential Fund Sources:	Local funding, HMGP, BRIC
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan
Progress Report	
Action Status:	New
Report of Progress:	Applied for BRIC grant (90/10). District has the funding from a passed Bond Issue in 2016 but waiting to be selected from FEMA/SEMA. SEMA did pass the district on to FEMA this past year. We are still waiting to hear if selected for funding.

Action Worksheet	
Name of Jurisdiction:	Barry Lawrence Ambulance District
Risk / Vulnerability	
Hazard(s) Addressed:	Severe thunderstorm, tornadoes
Problem being Mitigated:	No safe place to shelter during severe weather conditions
Action or Project	
Applicable Goal Statement:	Goal 1: protect the lives and livelihoods of all citizens
Action/Project Number:	Barry Lawrence Ambulance District 1.1
Name of Action or Project:	Safe room construction
Mitigation Category:	Structure and infrastructure projects
Action or Project Description:	Construct a FEMA approved safe room
Estimated Cost:	$775,000
Benefits:	Safe place to shelter during severe weather. Mitigate injury and loss of life
Plan for Implementation	
Responsible Organization/Department:	Barry Lawrence County Ambulance District Board of Directors
Supporting Organization/Department:	Barry County Emergency Management
Action/Project Priority:	41
Timeline for Completion:	5 years
Potential Fund Sources:	Local funding, HMGP, USDA grants
Local Planning Mechanisms to be Used in Implementation, if any:	Local City of Monett Building codes and LEOP
Progress Report	
Action Status:	New
Report of Progress:	n/a

4.3.2 Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy

Action Worksheet	
Name of Jurisdiction:	Barry County
Risk / Vulnerability	
Hazard(s) Addressed:	Dam failure
Problem being Mitigated:	Limited communication regarding Beaver Dam
Action or Project	
Applicable Goal Statement:	Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	Barry County 2.1
Name of Action or Project:	Communication regarding Beaver Dam
Mitigation Category:	Education and Outreach
Action or Project Description:	Maintain communications with the U.S. Army Corps of Engineers regarding dam safety status and water levels for Beaver Dam in Arkansas.
Estimated Cost:	$0
Benefits:	Up to date knowledge about the status of Beaver Dam
Plan for Implementation	
Responsible Organization/Department:	Barry County EMD
Supporting Organization/Department:	US Army Corps of Engineers
Action/Project Priority:	36
Timeline for Completion:	Annual review
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Inundation maps
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	EMD contacts the US Army Corps of Engineers twice a year on the status of the dam

Action Worksheet	
Name of Jurisdiction:	City of Cassville
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Damage to property from flooding
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	City of Cassville 2.1
Name of Action or Project:	NFIP participation
Mitigation Category:	Prevention
Action or Project Description:	Work towards re-entry into the NFIP
Estimated Cost:	Can be accomplished with current staff and budget levels
Benefits:	Reduced property damage from flooding
Plan for Implementation	
Responsible Organization/Department:	Public works
Supporting Organization/Department:	City administration
Action/Project Priority:	23
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funds
Local Planning Mechanisms to be Used in Implementation, if any:	NFIP regulations
Progress Report	
Action Status:	new
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	City of Exeter
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Damage to property and infrastructure in flood hazard areas
Action or Project	
Applicable Goal Statement:	Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	City of Exeter 2.1
Name of Action or Project:	Hazard area property protection
Mitigation Category:	Prevention
Action or Project Description:	Acquire, elevate, or flood-proof properties and critical infrastructure within flood hazard areas
Estimated Cost:	$10,000-150,000
Benefits:	Less damage to properties in existing flood hazard zones or removing properties completely from hazard zones to reduce overall damage. Future loss avoidance
Plan for Implementation	
Responsible Organization/Department:	City administration
Supporting Organization/Department:	NFIP administrator
Action/Project Priority:	19
Timeline for Completion:	3-5 years
Potential Fund Sources:	Local funding, HMGP, CDBG
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	Still in the early discussion stage

Action Worksheet	
Name of Jurisdiction:	City of Exeter
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Damage to property from flooding
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	City of Exeter 2.2
Name of Action or Project:	NFIP participation
Mitigation Category:	Prevention
Action or Project Description:	Enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SFHAs), floodplain identification, and mapping (including local requests for maps)
Estimated Cost:	$0, can be completed with current staff and budget
Benefits:	Reduced property damage from flooding
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	NFIP administrator
Action/Project Priority:	35
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funds
Local Planning Mechanisms to be Used in Implementation, if any:	NFIP Ordinance
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	Enforcement in place, has not been needed yet

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Damage to property and infrastructure in flood hazard areas
Action or Project	
Applicable Goal Statement:	Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	City of Monett 2.1
Name of Action or Project:	Hazard area property protection
Mitigation Category:	Prevention
Action or Project Description:	Acquire, elevate, or flood-proof properties and critical infrastructure within flood hazard areas
Estimated Cost:	$10,000-150,000
Benefits:	Less damage to properties in existing flood hazard zones or removing properties completely from hazard zones to reduce overall damage. Future loss avoidance
Plan for Implementation	
Responsible Organization/Department:	City of Monett Emergency Management Office
Supporting Organization/Department:	City of Monett Fire Department, City of Monett Public Works
Action/Project Priority:	36
Timeline for Completion:	3-5 years
Potential Fund Sources:	Local funding, HMGP, CDBG
Local Planning Mechanisms to be Used in Implementation, if any:	NFIP regulations, comp plan
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	City of Monett completed a HMPG award in 2021 that resulted in the acquisition of three properties and the creation of green space in the downtown area.

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Damage to property from flooding
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	City of Monett 2.2
Name of Action or Project:	NFIP participation
Mitigation Category:	Prevention
Action or Project Description:	Enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SFHAs), floodplain identification, and mapping (including local requests for maps)
Estimated Cost:	$0, can be completed with current staff and budget
Benefits:	Reduced property damage from flooding
Plan for Implementation	
Responsible Organization/Department:	City of Monett Emergency Management Office
Supporting Organization/Department:	NFIP Administrator
Action/Project Priority:	40
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funds
Local Planning Mechanisms to be Used in Implementation, if any:	NFIP regulations, SFHA maps, flood insurance maps
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	The City of Monett has participated in the NFIP since its inception. Additionally, the City of Monett has an assigned Flood Plain manager.

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake, flooding, tornado, severe thunderstorm
Problem being Mitigated:	Out of date or non-existent building codes
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	City of Monett 2.3
Name of Action or Project:	Building codes
Mitigation Category:	Prevention
Action or Project Description:	Adopt and/or update appropriate building codes
Estimated Cost:	$0-1,000
Benefits:	Protect properties from natural hazards, reducing damage costs
Plan for Implementation	
Responsible Organization/Department:	City of Monett Building and Zoning
Supporting Organization/Department:	City of Monett Emergency Management
Action/Project Priority:	35
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Building codes, comp plan
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	The City of Monett continues to actively review building codes and update as need to the meet recommendations as provide by the IBC. Codes were updated in 2021.

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Excess water runoff
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	City of Monett 2.4
Name of Action or Project:	Open space plan
Mitigation Category:	Natural systems protection
Action or Project Description:	Develop an open space acquisition, reuse, and preservation plan targeting hazard prone areas
Estimated Cost:	$5,000 - $10,000
Benefits:	Establish more green space. This will provide aesthetic benefits and help reduce storm water runoff
Plan for Implementation	
Responsible Organization/Department:	City of Monett Emergency Management Office
Supporting Organization/Department:	City Administration
Action/Project Priority:	32
Timeline for Completion:	6 months to 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	City ordinances, NFIP regulations, land use plan
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	City of Monett is developing open space plans in flood prone areas. Recently completed an open pavilion for use by citizens. Currently developing plans for a dog park and walking trails.

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake, flooding, tornado, severe thunderstorm
Problem being Mitigated:	Out of date or non-existent building codes
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	City of Seligman 2.1
Name of Action or Project:	Building codes
Mitigation Category:	Prevention
Action or Project Description:	Adopt and/or update appropriate building codes
Estimated Cost:	$0-1,000
Benefits:	Protect properties from natural hazards, reducing damage costs
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	City Admin/City Utilities
Action/Project Priority:	36
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Comp plan, building codes
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	Go through our city building codes and see what needs updated.

Action Worksheet	
Name of Jurisdiction:	Cassville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake, flooding, tornado, severe thunderstorm
Problem being Mitigated:	Out of date or non-existent building codes
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	Cassville R-IV 2.1
Name of Action or Project:	Building codes
Mitigation Category:	Prevention
Action or Project Description:	Adopt and/or update appropriate building codes
Estimated Cost:	$0-1,000
Benefits:	Protect properties from natural hazards, reducing damage costs
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	20
Timeline for Completion:	6 months – 1 year
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	n/a
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Crowder College - Cassville
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme temperatures
Problem being Mitigated:	Damage to the campus caused by freezing and expanding of ground water not draining properly and extreme cold for prolonged periods
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	Crowder College – Cassville 2.1
Name of Action or Project:	Campus drainage system
Mitigation Category:	Structure and infrastructure projects
Action or Project Description:	Install a drainage system below the facility and sidewalks to reduce water buildup and improve drainage of rain and snow melt
Estimated Cost:	$ 8,000 to $ 15,000
Benefits:	Mitigate the chance of damage to the campus caused by groundwater freezing and heaving under the structure causing foundation and structural damage.
Plan for Implementation	
Responsible Organization/Department:	Crowder College/ Director of Maintenance
Supporting Organization/Department:	Crowder College/ Director of Cassville Campus
Action/Project Priority:	36
Timeline for Completion:	1 month to 3 months
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Cassville City building codes, facility plans, scheduling based on semester schedules.
Progress Report	
Action Status:	New
Report of Progress:	Evaluated by maintenance, no work started.

Action Worksheet	
Name of Jurisdiction:	Monett R-I
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme temperatures
Problem being Mitigated:	Damage to pipes caused by extreme temperatures
Action or Project	
Applicable Goal Statement:	Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	Monett R-I 2.1
Name of Action or Project:	Building insulation
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Add building insulation to prevent frozen pipes and the possibility of pipes bursting during severe temperatures
Estimated Cost:	$5000-$10000
Benefits:	Mitigate future damages to pipes
Plan for Implementation	
Responsible Organization/Department:	Monett Schools Operations Department
Supporting Organization/Department:	Administration
Action/Project Priority:	38
Timeline for Completion:	6 months
Potential Fund Sources:	Local funding, CDBG, USDA grants, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Monett Schools Operations Planning
Progress Report	
Action Status:	new
Report of Progress:	In progress.

Action Worksheet	
Name of Jurisdiction:	Monett R-I
Risk / Vulnerability	
Hazard(s) Addressed:	Severe thunderstorms
Problem being Mitigated:	Damage to building caused by falling trees during severe thunderstorms
Action or Project	
Applicable Goal Statement:	Goal 2: Reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	Monett R-I 2.2
Name of Action or Project:	Vegetation maintenance
Mitigation Category:	Prevention
Action or Project Description:	Prune trees around building in order to prevent damage from extreme weather. Purchasing a new boom lift may be necessary
Estimated Cost:	$10000-$15000
Benefits:	Prevent future damage to building
Plan for Implementation	
Responsible Organization/Department:	Monett Schools Operations Department
Supporting Organization/Department:	Administration
Action/Project Priority:	42
Timeline for Completion:	12 months
Potential Fund Sources:	Local funding, CDBG, USDA grants, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Monett Schools Operations Planning
Progress Report	
Action Status:	new
Report of Progress:	In progress.

Action Worksheet	
Name of Jurisdiction:	Southwest R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Damage to school campus caused by flooding
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	Southwest R-V 2.1
Name of Action or Project:	Campus flooding
Mitigation Category:	Structure and infrastructure projects
Action or Project Description:	Address flooding on the athletic fields, high school parking lot, and around the Lower Elementary School. Consider elevating surfaces, improving drainage, and other flood control measures
Estimated Cost:	$20,000 - $40,000
Benefits:	Mitigate future damage to campus facilities caused by flooding
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	36
Timeline for Completion:	1-2 years
Potential Fund Sources:	Local funding, HMGP, USDA grants
Local Planning Mechanisms to be Used in Implementation, if any:	Master plan, capital improvement plan, budgeting, emergency plan, building plans
Progress Report	
Action Status:	New
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Wheaton R-III
Risk / Vulnerability	
Hazard(s) Addressed:	Severe thunderstorm, tornadoes
Problem being Mitigated:	No backup source of power if main power is knocked out
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	Wheaton R-III 2.1
Name of Action or Project:	Generator
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Purchase a generator to prevent disruption of services due to severe weather
Estimated Cost:	5,000.00
Benefits:	Prevent complete loss of power. Prevent food from spoiling
Plan for Implementation	
Responsible Organization/Department:	Superintendent
Supporting Organization/Department:	Buildings and grounds director
Action/Project Priority:	40
Timeline for Completion:	1 year
Potential Fund Sources:	Local funding, HMGP, BRIC
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan
Progress Report	
Action Status:	New
Report of Progress:	Waiting on FEMA BRIC grant selection. Barrier: Funding

Action Worksheet	
Name of Jurisdiction:	Wheaton R-III
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Damage to campus buildings caused by flooding
Action or Project	
Applicable Goal Statement:	Goal 2: reduce the potential impact of natural disasters to property, infrastructure, and the local economy
Action/Project Number:	Wheaton R-III 2.2
Name of Action or Project:	Campus flood prevention
Mitigation Category:	Prevention, structure and infrastructure projects
Action or Project Description:	Improve drainage on school campus near building entrances
Estimated Cost:	$8,000
Benefits:	Mitigate damage caused by flooding
Plan for Implementation	
Responsible Organization/Department:	Superintendent
Supporting Organization/Department:	Buildings and grounds director
Action/Project Priority:	38
Timeline for Completion:	1 year
Potential Fund Sources:	Local funding, HMGP, FMA
Local Planning Mechanisms to be Used in Implementation, if any:	Critical facilities plan, capital improvement plan
Progress Report	
Action Status:	New
Report of Progress:	Waiting on FEMA BRIC grant notification. Barrier: funding

4.3.3 Goal 3: Ensure continued operation of government, emergency functions and critical infrastructure in a disaster.

Action Worksheet	
Name of Jurisdiction:	Barry County
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited efficiency of public officials to respond to natural hazard events
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	Barry County 3.1
Name of Action or Project:	NIMS training
Mitigation Category:	Education and Outreach; Emergency Services
Action or Project Description:	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.
Estimated Cost:	$0-100
Benefits:	Officials will be better prepared in the event of a natural disaster; increased community resilience
Plan for Implementation	
Responsible Organization/Department:	Barry County EMA
Supporting Organization/Department:	County Commission
Action/Project Priority:	31
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency operations plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	New staff are encourages to undergo training

Action Worksheet	
Name of Jurisdiction:	City of Exeter
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited efficiency of public officials to respond to natural hazard events
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	City of Exeter 3.1
Name of Action or Project:	NIMS training
Mitigation Category:	Education and Outreach; Emergency Services
Action or Project Description:	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.
Estimated Cost:	$0-100
Benefits:	Officials will be better prepared in the event of a natural disaster; increased community resilience
Plan for Implementation	
Responsible Organization/Department:	Fire department
Supporting Organization/Department:	Fist responders
Action/Project Priority:	37
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency operations plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	New staff receive training

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited efficiency of public officials to respond to natural hazard events
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	City of Monett 3.1
Name of Action or Project:	NIMS training
Mitigation Category:	Education and Outreach; Emergency Services
Action or Project Description:	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.
Estimated Cost:	$0-100
Benefits:	Officials will be better prepared in the event of a natural disaster; increased community resilience
Plan for Implementation	
Responsible Organization/Department:	City of Monett Emergency Management Office
Supporting Organization/Department:	City Clerk
Action/Project Priority:	37
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency operations plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	Require training for all 911 Communications and Emergency Management personnel. Promoting NIMS to all city employees to complete.

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfires
Problem being Mitigated:	Wildfires caused by fires not properly controlled
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	City of Monett 3.2
Name of Action or Project:	Burn bans
Mitigation Category:	Prevention
Action or Project Description:	Implement burn restrictions during time of weather conditions conductive to the spread of wildfires
Estimated Cost:	$0 - $10,000
Benefits:	Reduction of avoidable wildfires caused by human error will reduce damage to properties
Plan for Implementation	
Responsible Organization/Department:	City of Monett Fire Department
Supporting Organization/Department:	City of Monett Emergency Management Office
Action/Project Priority:	42
Timeline for Completion:	6 to 18 months
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	City ordinances
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	City of Monett fire personnel participate in county-wide meetings to assist in developing burn ban information for citizens.

Action Worksheet	
Name of Jurisdiction:	City of Monett
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Shortage of water due to excess use of water during drought
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	City of Monett 3.3
Name of Action or Project:	Water conservation
Mitigation Category:	Prevention, natural systems protection
Action or Project Description:	Develop and ordinance to restrict the use of public water resources for non-essential uses such as landscaping, washing cars, filling swimming pools, etc during drought conditions
Estimated Cost:	$0
Benefits:	Community resilience. Conservation of water during drought conditions
Plan for Implementation	
Responsible Organization/Department:	City of Monett Public Works
Supporting Organization/Department:	City of Monett Emergency Management Office
Action/Project Priority:	39
Timeline for Completion:	6 to 18 months
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	City ordinances
Progress Report	
Action Status:	Continuing in progress
Report of Progress:	City of Monett utility supervisors participate in regional planning sessions to develop water conservation plans and are working on updating policies to meet these standards.

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited efficiency of public officials to respond to natural hazard events
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	City of Seligman 3.1
Name of Action or Project:	NIMS training
Mitigation Category:	Education and Outreach; Emergency Services
Action or Project Description:	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.
Estimated Cost:	$0-100
Benefits:	Officials will be better prepared in the event of a natural disaster; increased community resilience
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	City Admin/City Utilities
Action/Project Priority:	34
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency operations plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	New staff are encouraged to receive training

Action Worksheet	
Name of Jurisdiction:	City of Seligman
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfires
Problem being Mitigated:	Wildfires caused by fires not properly controlled
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	City of Seligman 3.2
Name of Action or Project:	Burn bans
Mitigation Category:	Prevention
Action or Project Description:	Implement burn restrictions during time of weather conditions conductive to the spread of wildfires
Estimated Cost:	$0 - $10,000
Benefits:	Reduction of avoidable wildfires caused by human error will reduce damage to properties
Plan for Implementation	
Responsible Organization/Department:	City Admin/Sarah Kissinger
Supporting Organization/Department:	Fire Department/ City Admin
Action/Project Priority:	37
Timeline for Completion:	6 to 18 months
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	City ordinances
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	I plan to get in contact with our fire chief (Bobby Beaver) on what a good plan we could start on informing people in and around Seligman area.

Action Worksheet	
Name of Jurisdiction:	City of Wheaton
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited efficiency of public officials to respond to natural hazard events
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	City of Wheaton 3.1
Name of Action or Project:	NIMS training
Mitigation Category:	Education and Outreach; Emergency Services
Action or Project Description:	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.
Estimated Cost:	$0-100
Benefits:	Officials will be better prepared in the event of a natural disaster; increased community resilience
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	Utilities
Action/Project Priority:	31
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency operations plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	City Clerk has made council members aware that training will be done in the near future

Action Worksheet	
Name of Jurisdiction:	Cassville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited efficiency of public officials to respond to natural hazard events
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	Cassville R-IV 3.1
Name of Action or Project:	NIMS training
Mitigation Category:	Education and Outreach; Emergency Services
Action or Project Description:	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.
Estimated Cost:	$0-100
Benefits:	Officials will be better prepared in the event of a natural disaster; increased community resilience
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	34
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency operations plan
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Cassville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Shortage of water due to excess use of water during drought
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	Cassville R-IV 3.2
Name of Action or Project:	Water conservation
Mitigation Category:	Prevention, natural systems protection
Action or Project Description:	Develop a policy to limit water use on athletic fields and turf maintenance during drought conditions
Estimated Cost:	$0
Benefits:	Community resilience. Conservation of water during drought conditions
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	Maintenance
Action/Project Priority:	25
Timeline for Completion:	6 to 18 months
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency operations plan, critical facilities plan
Progress Report	
Action Status:	Continuing, no progress
Report of Progress:	n/a

Action Worksheet	
Name of Jurisdiction:	Exeter R-VI
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited efficiency of public officials to respond to natural hazard events
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	Exeter R-VI 3.1
Name of Action or Project:	NIMS training
Mitigation Category:	Education and Outreach; Emergency Services
Action or Project Description:	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.
Estimated Cost:	$0-100
Benefits:	Officials will be better prepared in the event of a natural disaster; increased community resilience
Plan for Implementation	
Responsible Organization/Department:	Exeter School District
Supporting Organization/Department:	Local agencies to prepare for emergencies
Action/Project Priority:	25
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency operations plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	Review plan and discuss with all stakeholders for improvement

Action Worksheet	
Name of Jurisdiction:	Monett R-I
Risk / Vulnerability	
Hazard(s) Addressed:	All
Problem being Mitigated:	Limited efficiency of public officials to respond to natural hazard events
Action or Project	
Applicable Goal Statement:	Goal 3: ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	Monett R-I 3.1
Name of Action or Project:	NIMS training
Mitigation Category:	Education and Outreach; Emergency Services
Action or Project Description:	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.
Estimated Cost:	$0-100
Benefits:	Officials will be better prepared in the event of a natural disaster; increased community resilience
Plan for Implementation	
Responsible Organization/Department:	Superintendent Office
Supporting Organization/Department:	Monett Police Department
Action/Project Priority:	30
Timeline for Completion:	Ongoing
Potential Fund Sources:	Local funding
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency operations plan
Progress Report	
Action Status:	Continuing in Progress
Report of Progress:	In progress.

Action Worksheet	
Name of Jurisdiction:	Barry Lawrence Ambulance District
Risk / Vulnerability	
Hazard(s) Addressed:	Severe thunderstorm, tornadoes
Problem being Mitigated:	The district does not have a generator to support functions of the station if electricity is lost. The ambulances are required to be plugged in or left running so the essential life-saving equipment will remain charged and ready for use
Action or Project	
Applicable Goal Statement:	Goal 3: Ensure continued operation of government, emergency functions, and critical infrastructure in a disaster
Action/Project Number:	Barry Lawrence Ambulance District 3.1
Name of Action or Project:	Generator
Mitigation Category:	Structure and infrastructure projects
Action or Project Description:	Purchase a generator to support functions of the station if power is lost
Estimated Cost:	$20,000
Benefits:	Ensure continued operations of the facility if power is lost
Plan for Implementation	
Responsible Organization/Department:	Barry Lawrence County Ambulance District Board of Directors
Supporting Organization/Department:	Barry County Emergency Management
Action/Project Priority:	40
Timeline for Completion:	5 years
Potential Fund Sources:	Local funding, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Local City of Monett Building codes and LEOP
Progress Report	
Action Status:	New
Report of Progress:	

Table 4.3. Mitigation Action Matrix

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
	Prevention Public Education							
2.1	Work towards re-entry into the NFIP	City of Cassville	23	2	Flooding			X
2.1	Acquire, elevate, or flood-proof properties and critical infrastructure within flood hazard areas	City of Exeter	19	2	Flooding	X		X
2.2	Enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SFHAs), floodplain identification, and mapping (including local requests for maps)	City of Exeter	35	2	Flooding	X	X	X
2.1	Acquire, elevate, or flood-proof properties and critical infrastructure within flood hazard areas	City of Monett	36	2	Flooding			X
2.2	Enforce floodplain management requirements, including regulating all new and substantially improved construction in the Special Flood Hazard Areas (SFHAs), floodplain identification, and mapping (including local requests for maps)	City of Monett	40	2	Flooding	X	X	X
2.3	Adopt and/or update appropriate building codes	City of Monett	35	2	Earthquake, flooding, tornado, severe thunderstorm	X	X	
3.2	Implement burn restrictions during time of weather conditions conductive to the spread of wildfires	City of Monett	42	3	Wildfires			
2.1	Adopt and/or update appropriate building codes	City of Seligman	36	2	Earthquake, flooding, tornado, severe thunderstorm	X	X	
3.2	Implement burn restrictions during time of weather conditions conductive to the spread of wildfires	City of Seligman	37	3	Wildfires			
1.3	Adopt and/or update appropriate building codes	Cassville R-IV	20	1	Earthquake, flooding, tornado, severe thunderstorm	X	X	
2.2	Prune trees around building in order to prevent damage from extreme weather. Purchasing a new boom lift may be necessary	Monett R-I	42	2	Severe thunderstorm			

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
2.2	Improve drainage on school campus near building entrances	Wheaton R-III	38	2	Flooding			
	Structure and Infrastructure Projects							
1.5	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Barry County	28	1	Tornado, severe thunderstorms	X		
1.1	Construct a safe room on the south end of town	City of Cassville	26	1	Tornado, severe thunderstorms		X	
1.4	Integrate safe room construction in new community buildings, schools, large facilities, and other establishments serving the public in areas of population concentration where feasible	City of Exeter	34	1	Tornado	X	X	
1.4	Integrate safe room construction in new community buildings, schools, large facilities, and other establishments serving the public in areas of population concentration where feasible	City of Seligman	37	1	Tornado	X	X	
1.6	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	City of Seligman	30	1	Tornado, severe thunderstorm	X		
1.3	Integrate safe room construction in community buildings	City of Wheaton	30	1	Tornado, severe thunderstorm		X	
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Cassville R-IV	29	1	Tornado, severe thunderstorm	X		
1.1	Purchase a FEMA approved safe room for the campus	Crowder College – Cassville	42	1	Tornado	X	X	
1.2	Install a drainage system below the facility and sidewalks to reduce water buildup and improve drainage of rain and snow melt	Crowder College – Cassville	36	1	Extreme temperatures	X		
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Exeter R-VI	36	1	Tornado, severe thunderstorm	X		
1.3	Build a safe room on the school campus	Exeter R-VI	36	1	Tornado	X	X	
1.1	Construct a FEMA approved shelter at the middle school campus. Currently in the application process	Monett R-I	44	1	Tornado	X	X	

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
1.2	Add building insulation to prevent frozen pipes and the possibility of pipes bursting during severe temperatures	Monett R-I	38	1	Extreme temperature	X		
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Purdy R-II	33	1	Tornado, severe thunderstorms	X		
1.1	Purchase a generator to prevent disruption of services due to severe weather conditions	Shell Knob 78	42	1	Tornado, severe thunderstorm	X		
1.2	Purchase a building-wide tornado alert system with strobe lights in the gym and music room	Shell Knob 78	38	1	Tornado, severe thunderstorm	X		
1.3	Construct a FEMA approved safe room on the school campus	Shell Knob 78	38	1	Tornado, severe thunderstorm	X		
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Southwest R-V	23	1	Tornado, severe thunderstorms	X		
1.3	Construct a safe room on the school campus	Southwest R-V	27	1	Tornado, severe thunderstorm	X		
2.1	Address flooding on the athletic fields, high school parking lot, and around the Lower Elementary School. Consider elevating surfaces, improving drainage, and other flood control measures	Southwest R-V	36	2	Flooding	X	X	
1.2	Replace current doors and windows to all vulnerable facilities with storm proof alternatives	Wheaton R-III	42	1	Tornado, severe thunderstorm	X		
1.3	Construct a new safe room on the school campus. Already applied for a FEMA BRIC grant. Waiting to hear from FEMA if we are selected	Wheaton R-III	44	1	Tornado, severe thunderstorm	X		
2.1	Purchase a generator to prevent disruption of services due to severe weather	Wheaton R-III	40	2	Severe thunderstorm, tornado	X	X	
3.1	Purchase a generator to support functions of the station if power is lost	Barry Lawrence Ambulance District	40	3	Severe thunderstorm, tornado	X	X	
3.2	Construct a FEMA approved safe room	Barry Lawrence Ambulance District	41	3	Severe thunderstorm, tornado	X	X	
	Natural Systems Protection							

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
2.4	Develop an open space acquisition, reuse, and preservation plan targeting hazard prone areas	City of Monett	32	2	Flooding			X
3.3	Develop and ordinance to restrict the use of public water resources for non-essential uses such as landscaping, washing cars, filling swimming pools, etc during drought conditions	City of Monett	39	3	Drought			
3.2	Develop a policy to limit water use on athletic fields and turf maintenance during drought conditions	Cassville R-IV	25	3	Drought			
	Emergency Services							
	Education and Outreach							
1.1	Create a countywide natural hazard education and awareness program	Barry County	36	1	All			
1.2	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	Barry County	35	1	Flooding			
1.3	Educate homeowners and businesses about the Missouri FAIR plan sinkhole loss policies for dwellings in hazard prone areas.	Barry County	34	1	Land subsidence/sinkholes			
1.4	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	Barry County	34	1	All			
2.1	Maintain communications with the U.S. Army Corps of Engineers regarding dam safety status and water levels for Beaver Dam in Arkansas.	Barry County	36	2	Dam failure			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	Barry County	31	3	All			
1.1	Create a countywide natural hazard education and awareness program	City of Exeter	34	1	All			
1.2	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	City of Exeter	29	1	Flooding			X

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
1.3	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	City of Exeter	29	1	All			
1.5	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	City of Exeter	29	1	Tornado, severe thunderstorm	X	X	
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	City of Exeter	37	3	All			
1.1	Create a countywide natural hazard education and awareness program	City of Monett	40	1	All			
1.2	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	City of Monett	32	1	Flooding			X
1.3	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	City of Monett	40	1	All			
1.4	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	City of Monett	35	1	Tornado, severe thunderstorms	X		
1.5	Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available	City of Monett	37	1	Tornado			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	City of Monett	37	3	All			
1.1	Create a countywide natural hazard education and awareness program	City of Seligman	30	1	All			

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
1.2	Promote education, research outreach, and development of programs to improve knowledge and awareness among citizens and industry about hazard mitigation	City of Seligman	35	1	Flooding			
1.3	Increase, promote, establish, and maintain participation in citizen preparedness activities, such as; Citizen Corps, CERT, COAD, Neighborhood Watch, Fire Corps, Amateur Radio, etc.	City of Seligman	35	1	All			
1.5	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	City of Seligman	36	1	Tornado, severe thunderstorm	X		
1.7	Provide information on construction plans and cost estimates for building safe rooms in homes or small businesses and cost estimates for construction by making FEMA publication 320 easily available	City of Seligman	37	1	Tornado		X	
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	City of Seligman	34	3	All			
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	City of Wheaton	39	1	Tornado, severe thunderstorm			
1.2	Create a handout to mail to residents with information regarding extreme temperature risk and safety	City of Wheaton	38	1	Extreme temperatures			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	City of Wheaton	31	3	All			
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	Cassville R-IV	31	1	Tornado, severe thunderstorms			

#	Action	Jurisdiction	Priority	Goal Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	Cassville R-IV	34	3	All			
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	Exeter R-VI	36	1	Tornado, severe thunderstorm			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	Exeter R-VI	25	3	All			
3.1	All elected officials, public administrators, community stakeholders and responders will participate in National Incident Management System (NIMS) training and compliance programs.	Monett R-I	30	3	All			
1.1	Create a countywide natural hazard education and awareness program	Purdy R-II	27	1	All			
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	Southwest R-V	27	1	Tornado, severe thunderstorm	X		
1.1	Create and update tornado/severe storm plans and identify refuge areas that comply with FEMA publication 431 – Selecting Refuge Ares in Buildings	Wheaton R-III	45	1	Tornado, severe thunderstorm	X		

5 PLAN MAINTENANCE PROCESS

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

5.1 Monitoring, Evaluating, and Updating the Plan

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

5.1.1 Responsibility for Plan Maintenance

The Mitigation Planning Committee (MPC) has served as an advisory body during the plan update process, but it 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 Barry County. The County Emergency Management Director oversees the LEPC and will be charged with reconvening the MPC, either as part of the already established LEPC or as a separate group, if necessary. 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;
- 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.

The MPC is an advisory body and can only make recommendations to county, city, town, or district elected officials. Its primary duty is to see the plan successfully carried out and to report to the community governing boards and the public on the status of plan implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation proposals, hearing stakeholder concerns about hazard mitigation, passing concerns on to appropriate entities, and posting relevant information in areas accessible to the public.

5.1.2 Plan Maintenance Schedule

It is recommended that the MPC will annually and after a state or federally declared hazard event as appropriate to monitor progress and update the mitigation strategy. The Barry County Emergency Management Director will be responsible for initiating the plan reviews and will invite members of the MPC to the meeting.

In coordination with all participating jurisdictions, 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. During future meetings, the MPC (or other designated responsible entity) should review changes in vulnerability identified as follows:

- Decreased vulnerability as a result of implementing recommended actions,
- Increased vulnerability as a result of failed or ineffective mitigation actions,
- Increased vulnerability due to hazard events, and/or
- Increased vulnerability as a result of new development (and/or annexation).

Future 5-year updates to this plan will include the following activities:

- Consideration of changes in vulnerability due to action implementation,
- Documentation of success stories where mitigation efforts have proven effective,
- Documentation of unsuccessful mitigation actions and why the actions were not effective,
- Documentation of previously overlooked hazard events that may have occurred since the previous plan approval,
- Incorporation of new data or studies with information on hazard risks,
- Incorporation of new capabilities or changes in capabilities,
- Incorporation of growth data and changes to inventories, and
- Incorporation of ideas for new actions and changes in action prioritization.

In order to best evaluate any changes in vulnerability as a result of plan implementation, the participating jurisdictions will adopt the following process:

- Each proposed action in the plan identified an individual, office, or agency responsible for action implementation. This entity will track and report on an annual basis to the jurisdictional MPC (or designated responsible entity) member on action status. The entity will provide input on whether the action as implemented meets the defined objectives

and is likely to be successful in reducing risk.

- If the action does not meet identified objectives, the jurisdictional MPC (or designated responsible entity) member will determine necessary remedial action, making any required modifications to the plan.

Changes will be made to the plan to remedy actions that have failed or are not considered feasible. Feasibility will be determined after a review of action consistency with established criteria, time frame, community priorities, and/or funding resources. Actions that were not ranked high but were identified as potential mitigation activities will be reviewed as well during the monitoring of this plan. Updating of the plan will be accomplished by written changes and submissions, as the (MPC or designated responsible entity) deems appropriate and necessary.

5.2 Incorporation into Existing Planning Mechanisms

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

Where possible, plan participants, including school and special districts, will use existing plans and/or programs to implement hazard mitigation actions. Based on the capability assessments of the participating jurisdictions, communities in Barry 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;
- 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 EMD and MPC is also responsible for monitoring this integration and incorporation of the appropriate information into the next five-year update of the multi-jurisdictional hazard mitigation plan

Additionally, it is recommended that after the annual review of the Hazard Mitigation Plan, the County Emergency Management Director will provide the updated Mitigation Strategy with the current status of each mitigation action to the County (Boards of Supervisors or Commissions) as well as all Mayors, City Clerks, and School District Superintendents. The Emergency Management Director will request that the mitigation strategy be incorporated, where appropriate, in other planning mechanisms.

Table 5.1 below lists the planning mechanisms by jurisdiction into which the Hazard Mitigation Plan will be integrated.

Table 5.1. Planning Mechanisms Identified for Integration of Hazard Mitigation Plan

Jurisdiction	Planning Mechanisms	Integration Process for Previous Plan	Integration Process for Current Plan
Unincorporated Barry County	County emergency plan County recovery plan Transportation plan Mutual aid agreements Evacuation route map Critical facilities plan Vulnerable population identification LEPC Capital Improvement Plans	Comp plan Storm water management ordinance Capital improvement plan Subdivision regulations Crisis management plan Building permits Major road plans Road improvement plans Emergency operations plan Critical facilities plan	Emergency Plan LEPC Flood maps Critical facilities plan Inundation maps
City of Cassville	Builder's plan Capital Improvement plan Emergency plan Mitigation plan Land use plan Zoning ordinance Subdivision ordinance Storm water ordinance Drainage ordinance Site plan review Economic development plan	Comp plan Storm water management ordinance Capital improvement plan Subdivision regulations Crisis management plan Building permits Major road plans Road improvement plans Emergency operations plan Critical facilities plan	Critical facilities plan Grant writing Capital improvement plan Emergency management plan NFIP regulations
City of Exeter	Emergency plan Mitigation plan Tree trimming ordinance Land use restrictions NFIP Mutual aid agreements	Floodplain ordinance Comp plan Storm water management ordinance Capital improvement plan Subdivision regulations Crisis management plan Building permits Major road plans Road improvement plans Emergency operations plan Critical facilities plan	NFIP ordinance Emergency operations plan
City of Monett	Capital improvement plan Emergency plan Recovery plan Mitigation plan Debris management plan Land use plan Critical facilities plan Zoning ordinance Building code NFIP Storm water ordinance Site plan review	Floodplain Ordinance Comp plan Storm water management ordinance Capital improvement plan Subdivision regulations Crisis management plan Building permits Major road plans Road improvement plans Emergency operations plan Critical facilities plan	Emergency management plan HMP NFIP regulations Flood insurance maps Critical facilities plan Comp plan SHFA maps Building codes Land use plan City ordinances
City of Seligman	Comp plan Emergency plan Mitigation plan Critical facilities plan Zoning ordinance Site plan review Building codes	Comp plan Storm water management ordinance Capital improvement plan Subdivision regulations Crisis management plan Building permits Major road plans Road improvement plans Emergency operations plan Critical facilities plan	Budgeting Capital improvement plan Comp plan Emergency plan Critical facilities plan Grant writing Building codes City ordinances
City of Wheaton	Mitigation plan Zoning ordinance Landscape ordinance Building codes Mutual aid agreements	Comp plan Storm water management ordinance Capital improvement plan Subdivision regulations	Critical facilities plan Emergency operations plan

		Crisis management plan Building permits Major road plans Road improvement plans Emergency operations plan Critical facilities plan	
Cassville R-IV	Master plan Capital improvement plan School emergency plan	Capital improvement plan Critical facilities plan	Critical facilities plan School emergency plan Capital improvement plan Emergency operations plan
Crowder College – Cassville	Master plan Capital improvement plan School emergency plan	-	Comprehensive building plan Cassville city building codes Safe room standard building codes Facility plans
Exeter R-VI	School emergency plan	Capital improvement plan Critical facilities plan	School emergency plan Capital improvement plan Critical facilities plan Emergency operations plan
Monett R-I	Master plan Capital improvement plan School emergency plan	Capital improvement plan Critical facilities plan	District long range facility plan Monett schools operations planning Emergency operations plan
Purdy R-II	Master plan Capital improvement plan School emergency plan	Capital improvement plan Critical facilities plan	Master plan School emergency plan Critical facilities plan Capital improvement plan
Shell Knob 78	Master plan Capital improvement plan School emergency plan	-	Capital improvement plan Master plan Grant writing Budgeting Critical facilities plan Building codes
Southwest R-V	Master plan Capital improvement plan School emergency plan	Capital improvement plan Critical facilities plan	Critical facilities plan Capital improvement plan Budgeting Master plan Building plan Emergency plan
Wheaton R-III	School emergency plan	Capital improvement plan Critical facilities plan	Emergency plan Safety evaluation from AMTS Critical facilities plan Capital improvement plan
Barry-Lawrence Ambulance	Mutual aid agreements Public education/awareness programs	-	Building code LEOP

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. When the MPC reconvenes for the five-year update, the EMD 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.