Exhibit A

Boone County, MO
Hazard Mitigation Plan
2025



The planning process for the update of the Boone County Hazard Mitigation Plan was led by the Mid-Missouri Regional Plan Commission through a contractual agreement with the MO State Emergency Management Agency and Boone County.

Mid-Missouri Regional Planning Commission
206 East Broadway, P.O. Box 140
Ashland, MO 65010
Phone: (573) 657-9779
Fax: (573) 657-2829

MID-MO
Regional Planning Commission

U.S. Department of Homeland Security
FEMA Region 7
11224 Holmes Road
Kansas City, MO 64131

FEMA

January 30, 2026

James Remillard
Director
State Emergency Management Agency (SEMA)
2302 Militia Drive Post Office Box 116
Jefferson City, Missouri 65102

Subject: Approval of the Boone County Hazard Mitigation Plan

Director Remillard:

In accordance with applicable[1] laws, regulations and policy, the Risk Analysis Branch of the Federal Emergency Management Agency (FEMA) Region 7 has approved the Boone County Hazard Mitigation Plan. The attached Local Mitigation Plan Review Tool lists participants receiving approval that have submitted required adoption documentation.

Mitigation plans may include additional content to meet Element H: Additional State Requirements or content the local government included beyond applicable FEMA mitigation planning requirements. FEMA approval does not include the review or approval of content that exceeds the applicable FEMA mitigation planning requirements.

The approval period for this plan is from January 28, 2026, through January 27, 2031. The same official plan expiration date applies to all participating jurisdictions, regardless of adoption date.

An approved plan is required to maintain eligibility for funding under FEMA's Hazard Mitigation Assistance (HMA) programs. All funding requests will be evaluated individually based on the specific eligibility criteria and requirements of the applicable HMA program.

Based on FEMA's review, the plan did not meet all elements required for the Rehabilitation of High Hazard Potential Dams (HHPD) grant program. Thus, the participating jurisdictions are not eligible for assistance from the HHPD Grant Program at this time. If any participating jurisdictions with HHPDs are interested in this assistance, they should contact the FEMA regional mitigation planner identified below to learn more about how to meet the required mitigation planning elements for this program.

Having an approved mitigation plan does not mean that mitigation grant funding will be awarded. Specific application and eligibility requirements for the programs listed above can be found in each FEMA grant program's respective policies and annual Notice of Funding Opportunities, as applicable.

[1] Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and National Dam Safety Program Act, as amended; 44 CFR Part 201, Mitigation Planning; and Local Mitigation Planning Policy Guide (FP-206-21-0002, April 11, 2025).

To avoid a lapsed plan, the next plan update must be approved before the end of the approval period, including adoption by the participating jurisdictions. Before the end of the approval period, please allow sufficient time to secure funding for the update, including the review and approval process. Please include time for any revisions, if needed, and for the jurisdiction to formally adopt the plan after the review, if not adopted prior to submission. This will enable them to remain eligible to apply for and receive funding from FEMA's mitigation grant programs with a mitigation plan requirement. Local governments, including special districts, with a plan status of "Approvable Pending Adoption" are not eligible for FEMA's mitigation grant programs with a mitigation plan requirement.

We look forward to discussing options for implementing this mitigation plan. If you should have any questions or concerns, please contact Bryan Murdie, Risk Analysis Branch Chief, at 202.257.7627 or bryan.murdie@fema.dhs.gov.

Sincerely,

LAURIE L BESTGEN

Digitally signed by LAURIE L BESTGEN
Date: 2026.01.30 09:57:44 -06'00'

Laurie L. Bestgen, Director
Mitigation Division

Attachment: Local Mitigation Plan Review Tool

Boone County Hazard Mitigation Planning Committee

Jurisdictional Representatives of Boone County Mitigation Planning Committee

Name	Title	Department	Jurisdiction/Agency
Chris Lewin	Mitigation Specialist	Office of Emergency Management	Boone County
Chris Kelley	Director	Office of Emergency Management	Boone County
Jake Waller	Deputy Director	Office of Emergency Management	Boone County
Rebecca Estes	Public Health Specialist	Health	City of Columbia
Kyle Michels	City Administrator	Administration	City of Ashland
Tara Strain	City Administrator	Administration	City of Centralia
Traci Pallismer	Alderperson	Board of Alderpeople	City of Sturgeon
Jeff Arp	Alderperson	Board of Alderpeople	City of Harrisburg
Deb Lancaster	Mayor	Mayor's Office	Village of Huntsdale
Trynton Roberts	Alderperson/Emergency Management Coordinator	Board of Alderpeople	City of Hallsville
Janice Orton	City Clerk	Administration	Village of Rocheport
Tim Hentz	Chairman	Board of Trustees	Village of Hartsburg
Ken Gregory	Director of Safety and Security	Safety and Security	Columbia Public Schools
Tim Roth	Superintendent	Administration	Southern Boone Schools
Tyler Walker	Superintendent	Administration	Hallsville School District
Jeff Carr	Operations Director	Safety and Security	Sturgeon R-V School District
Steve Combs	Superintendent	Administration	Harrisburg School District
Steven Chancellor	Superintendent	Administration	Centralia School District
Jerry Jenkins	Emergency Management Coordinator	Emergency Management	University of Missouri
Demond Tauber	Director – Campus Safety and Security	Safety and Security	Stephen's College
Daniel Cunningham	Project Manager	BCRSD	Boone County Regional Sewer District (BCRSD)
Vineet Kapila	Construction Project Supervisor	Public Works	City of Columbia
Seth Truesdell	Mayor	Mayor's Office	City of Sturgeon
Kathy Wilhite	City Clerk	Administration	Village of Harrisburg
Kenyetta Ridgway-Sample	City Administrator	Administration	City of Hallsville
John Zondca	Mayor	Mayor's Office	Village of Rocheport
Jon Logan	Safety and Security Assistant Coordinator	Safety and Security	Columbia Public Schools
Scott Young	Chief of Police	Ashland PD	City of Ashland
Brian Schaeffer	Fire Chief	Columbia FD	City of Columbia
Eric Hempel	Sustainability Manager	Office of	City of Columbia

Stakeholder Representatives of Boone County Mitigation Planning Committee

Name	Title	Department	Jurisdiction/Agency
Lily E. White	Vice President of External Affairs	Columbia Chamber of Commerce	Columbia Chamber of Commerce
Patricia Wickham	Director of Advocacy and Network Development	Resources and Public Education	Aging Best
Tracy Blank	Administrative Assistant	Emergency Management Agency	Cole County
James Creel	Director of Public Works	Public Works	City of Ashland
Andrew Worrall	Sergeant	Ashland PD	City of Ashland
John Ambra	Deputy Fire Chief	Columbia FD	City of Columbia
Scott Olsen	Fire Chief	Boone County FPD	Boone County FPD
Lazell Ofield	Chief Operations Officer	Administration	Columbia Public Schools
Helen Porter	Chief Schools Officer	Administration	Columbia Public Schools
David Dittmer	Natural Resource Supervisor	Parks and Recreation	City of Columbia
Brady Sandker	Supervisor	Airport Safety	City of Columbia
Lelande Rehard	Environmental Program Coordinator	Sustainability Office	City of Columbia
Matt Unrein	Deputy City Manager	City Manager's Office	City of Columbia
Rebecca Roesslet	Assistant Director	Public Health & Human Services	City of Columbia
Stephen McLane	Hallsville Station Manager	Boone County FPD	Boone County FPD
Rich Horrell	Patrol Lieutenant	Columbia PD	City of Columbia
Thad Yonke	Senior Planner	Planning and Zoning	Boone County
Andy Muscato	Patrol Lieutenant	Columbia PD	City of Columbia
Beth Boos	Deputy Director	Information-Technology	Boone County
Anna Foster	Systems and Support Manager	Information-Technology	Boone County
Jeff McCann	Chief Engineer	Planning and Zoning	Boone County
Greg Edington	Director	Road and Bridge	Boone County
Julia Lutz	Director	Information-Technology	Boone County
Doug Westhoff	Operations Bureau Director	Boone County FPD	Boone County FPD
Stirling Williams	Operations Manager	Joint Communications	Boone County
Matthew Brown	Training & Exercise Specialist	Office of Emergency Management	Boone County

The Boone County Hazard Mitigation Plan was developed by the communities and citizens of Boone County, their elected officials, and public servants. The process was carried out by identifying the natural hazards that impact Boone County and its residents, assessing the probability of occurrence and severity posed by each hazard, identifying the most vulnerable areas, and evaluating all possible mitigation actions that might be effective. Potential mitigation actions were assessed and prioritized based on the perceived need, probable outcome, potential for being executed, and benefit related to cost.

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EXECUTIVE SUMMARY

Hazard mitigation, at its core, focuses on anticipating and lowering risks to lives and property. Natural hazards are taking an increasing toll on lives and property in the United States. The number of FEMA declared Presidential Disasters across the nation has increased drastically over the past handful of decades. The cost of these disasters has also increased in recent years, in part because of increased population and a larger built environment but also because of the magnitude of many recent disasters. According to FEMA's 2023 Preparedness Report, there were 60 climate-related disasters that cost over $1 billion each and caused 1,460 fatalities and 2,939 injuries between 2020 and 2022. 18 of these were in 2022. FEMA average daily deployments have doubled since 2017. Hazard mitigation, the cornerstone of emergency management, seeks to address these issues. https://www.fema.gov/sites/default/files/documents/fema_2023-npr.pdf Hazard mitigation can save lives and property; it also makes good economic sense. A 2018 study by the National Institute of Building Sciences finds $6 saved for every dollar invested in mitigation activities to reduce risk and disaster losses," In the case of riverine flood, the savings are a $7-to-$1 benefit for proactive mitigation steps such as acquiring or demolishing flood-prone buildings "(Laura Lightbody, 2018). Hazard mitigation is a good business practice for both the public and private sectors. https://www.pewtrusts.org/en/research-and-analysis/articles/2018/01/11/every-$1-invested-in-disaster-mitigation-saves-$6

Funding and Funding Issues: Some actions in the current mitigation strategy can be put in place given minimal resources and some staff time. However, there are some very important mitigation activities which require major funding. The Federal Emergency Management Agency (FEMA) has both pre-disaster and post-disaster mitigation grant programs to help local jurisdictions with mitigation projects. These programs are outlined in Section 6.5 of the plan. The jurisdictions participating in the plan are eligible to apply for funding from these programs; a 25% local match is typically required for the funds received.

Jurisdictions that participated in the plan update include:

- Unincorporated Boone County
- Columbia
- Ashland
- Sturgeon
- Centralia
- Hallsville
- Harrisburg
- Hartsburg
- Huntsdale
- Columbia Public Schools
- Southern Boone Schools
- Hallsville School District
- Harrisburg School District

- Centralia School District
- Sturgeon School District
- Stephen's College
- *University of Missouri (Pending Adoption)

*University of Missouri participated in all required steps except the final adoption of the plan. At this time, they are not eligible for participation consideration.

Jurisdictions that were invited but chose not to participate in this update include:

- Columbia College
- McBaine
- Pierpont

Representatives from these jurisdictions comprised the hazard mitigation planning committee which met for 3 general sessions. The draft plan was presented at one public meeting and published on the website of the Mid-MO Regional Planning Commission, to allow for input from the general public. The plan will be evaluated and maintained on a yearly basis with the help of the planning committee; the next complete update will be undertaken in five years.
The ultimate test of a plan is the action taken on the roadmap presented. It is to be hoped that many of the mitigation actions in this plan will have been completed before the next five-year update. Action on the strategy in this plan will help to ensure a greater, and more cost-effective, level of protection for the citizens and property of Boone County and its jurisdictions.
The Boone County Hazard Mitigation Plan can be found online at: www.mmrpc.org/reports-library/hazard-mitigation-reports/.

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

1. Implement mitigation actions that improve the protection of human life, health, and safety from the adverse effects of disasters
2. Implement mitigation actions that improve the continuity of government and essential services from the adverse effects of disasters
3. Implement mitigation actions that improve the protection of public and private property from the adverse effects of disasters
4. Implement mitigation actions that improve the protection of community tranquility from the adverse effects of disasters

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	Goals Addressed	Hazards Addressed	Address Current Development	Address Future Development	Continued Compliance with NFIP
Ashland COOP	Ashland	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Sinkholes			
Undergrounding Utilities	Ashland	High	1.0	Severe Storms, Tornados, Winter Weather			
Floodplain management	Ashland	High	2.0	Flooding			✓
FEMA Safe Rooms	Ashland	High	1.0	Severe Thunderstorms, Tornados			
Stormwater Upgrade	Ashland	High	3.0	Flooding	✓		
GIS data sharing	Boone County	High	5.0	Earthquakes, Drought, Extreme			

				Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
RISK Map	Boone County	High	1.0	Flooding			
Siren Tests	Boone County	High	4.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Brush Management	Boone County	High	3.0	Winter Weather, Thunderstorms			
Telecom Risk Assessment	Boone County	Medium	1.0	Earthquakes, Drought, Extreme Temperatures,			

				Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Boone County COOP	Boone County	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Revolving Local Hazard Mitigation Fund	Boone County	High	3.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire,			

				Flooding, Dam Failure, Levee Failure, Sinkholes			
Undergrounding Utilities	Boone County	High	3.0	Winter Weather and Thunderstorms			
Cooling/Warming Center agreements	Boone County	High	3.0	Extreme Temperatures			
Cell on Wheels Agreements	Boone County	High	3.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Dam EAPs	Boone County	Low	1.0	Dam Failure/Flooding			
Floodplain Management	Boone County	High	2.0	Flooding			✓
Building Code Update	Boone County	High	2.0	Earthquakes, Drought, Extreme Temperatures,			

				Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Equipment Locks	Boone County	High	3.0	Earthquake, Tornado			
Flash Flood Mitigation	Boone County	High	3.0	Flooding			
Evacuation Routes	Boone County	High	1.0	Earthquake, Tornado, Extreme Temperatures, Winter Weather			
Shelter Backup HVAC	Boone County	High	3.0	Tornados, Flooding, Extreme Temperatures,			
Supply Cache	Boone County	Low	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather,			

				Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Mental First Aid	Boone County	High	3.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Public Education	Boone County	High	4.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			

Weather Radios	Boone County	High	4.0	Severe Storms, Winter Weather, Tornados, Flooding			
Ready-in-3	Boone County	Medium	4.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
GIS data sharing	Boone County	High	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
RISK Map	Boone	High	1.0	Flooding			

	County						
Siren Tests	Boone County	High	4.0	Tornado, Severe Storms			
Brush Management	Boone County	High	1.0	Winter Weather, Thunderstorms, Wildfire,			
Telecom Risk Assessment	Boone County	Medium	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Boone County COOP	Boone County	2030	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee			

				Failure, Sinkholes			
Revolving Local Hazard Mitigation Fund	Boone County	High	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Undergrounding Utilities	Boone County	High	3.0	Winter Weather and Thunderstorms			
Cooling/Warming Center agreements	Boone County	High	1.0	Extreme Temperatures			
Cell on Wheels Agreements	Boone County	High	3.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam			

				Failure, Levee Failure, Sinkholes			
Dam EAPs	Boone County	Low	1.0	Dam Failure/Flooding			
Floodplain Management	Boone County	High	2.0	Flooding			✓
Building Code Update	Boone County	High	3.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Equipment Locks	Boone County	Medium	3.0	Earthquake, Tornado, Extreme Temperatures, Severe Winter Weather, Flooding, Severe Thunderstorms			
Flash Flood Mitigation	Boone County	High	1.0	Flooding			

Evacuation Routes	Boone County	High	1.0	Earthquake, Tornado, Extreme Temperatures, Winter Weather			
Shelter Backup Power	Boone County	High	2.0	Tornados, Flooding, Extreme Temperatures,			
Supply Cache	Boone County	Low	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Mental First Aid	Boone County	High	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam			

				Failure, Levee Failure, Sinkholes			
Public Education	Boone County	High	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Weather Radios	Boone County	High	1.0	Severe Storms, Winter Weather, Tornados, Flooding			
Ready-in-3	Boone County	Medium	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee			

				Failure, Sinkholes			
Safe Room	Boone County	Medium	1.0	Tornados, Severe weather			
Generators	Boone County	Medium	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Vulnerability Assessment	Boone County	Low	2.0	Earthquake			
Development roadway standards	Boone County	High	3.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee			

				Failure, Sinkholes			
Enhanced road access	Boone County	High	1.0	Earthquakes, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Portable Generator Receptacles	Boone County	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Siren Testing	Centralia	High	3.0	Severe Storms, Tornados			
Centralia COOP	Centralia	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe			

				Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Undergrounding Utilities	Centralia	Medium	3.0	Winter Weather, Severe Storms, Tornados			
Floodplain management	Centralia	High	3.0	Flooding			✓
Burn Ban and Permits	Centralia	Medium	3.0	Wildfire			
Stormwater Upgrade	Centralia	High	3.0	Flooding/Flash Flooding	✓		
Active Shooter Mitigation	Centralia R-VI	High	3.0	Unwanted Intruder			
Centralia School District COOP	Centralia R-VI	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire,			

				Flooding, Dam Failure, Levee Failure, Sinkholes			
Safe Room	Centralia R-VI	Medium	3.0	Severe Thunderstorms, Tornados			
Active Shooter Mitigation	Columbia Public Schools	High	3.0	Unwanted Intruder			
GIS Data Sharing	Columbia	High		Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
RISK Map	Columbia	High	1.0	Flooding			
Columbia COOP	Columbia	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter			

				Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Cooling/Warming Center Agreements	Columbia	High	3.0	Extreme Temperatures			
Floodplain Management	Columbia	High	3.0	Flooding			✓
Sinkhole Regulation	Columbia	Medium	2.0	Sinkholes/Land Subsidence			
Building Code Update	Columbia	High	3.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Dam Road Regulation	Columbia	High	1.0	Dam Failure			

Equipment Locks	Columbia	High	2.0	Earthquake, Tornado			
Weather Asset Management	Columbia	High	3.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Supply Cache	Columbia	Low	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Airport Compliance	Columbia	High	2.0	Transportation Incident			

Ready-in-3	Columbia	Medium	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Flood Buyout	Columbia	High	3.0	Flooding/Flash Flooding			
Overland Flow	Columbia	Medium	3.0	Flooding/Flash Flooding			
Participate in state sponsored awareness programs concerning earthquake emergency system and earthquake safety in schools.	Columbia College	High					
Evaluate and maintain emergency	Columbia College	High					

preparedness plans.							
Conduct emergency preparedness exercises periodically throughout the year.	Columbia College	High					
Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards	Columbia College	Low			✓		
Continue to increase capacity to prevent and respond to unwanted intruder/active shooter events.	Columbia College	High					
Columbia Public Schools COOP	Columbia Public Schools	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter			

				Weather, Tornado, Wildfire, Flooding, Levees, Dams, Sinkholes			
Safe Room	Columbia Public Schools	Medium	1.0	Severe Thunderstorms, Tornados			
Hallsville COOP	Hallsville	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Levees, Dams, Sinkholes			
2.1.5	Hallsville	High	3.0	Flooding/Flash Flooding			
Safe Room	Hallsville	High	1.0	Severe Thunderstorms, Tornados			
Floodplain Management	Hallsville	High	3.0	Flooding			✓
Active Shooter	Hallsville	High	1.0	Unwanted			

Mitigation	R-IV			Intruder			
Hallsville School District COOP	Hallsville R-IV	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Levees, Dams, Sinkholes			
Safe Room	Hallsville R-IV	Medium	1.0	Severe Thunderstorms, Tornados			
Harrisburg COOP	Harrisburg	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Undergrounding	Harrisburg	Medium	3.0	Winter Weather, Severe Storms,			

Utilities				Tornados			
Floodplain Management	Harrisburg	High	2.0	Flooding			✓
Safe Room	Harrisburg	High	3.0	Severe Thunderstorms, Tornados			
2.1.5	Harrisburg	High	3.0	Flooding/Flash Flooding			
Harrisburg COOP	Harrisburg	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Undergrounding Utilities	Harrisburg	Medium	3.0	Winter Weather, Severe Storms, Tornados			
Floodplain Management	Harrisburg	High	2.0	Flooding			✓
Safe Room	Harrisburg	High	3.0	Severe Thunderstorms, Tornados			

2.1.5	Harrisburg	High	3.0	Flooding/Flash Flooding			
Generators	Harrisburg	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Backup Radios	Harrisburg	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Cell on Wheels (COW)	Harrisburg	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado,			

				Wildfire, Flooding			
Active Shooter Mitigation	Harrisburg R-VIII	High	3.0	Unwanted Intruder			
Harrisburg School District COOP	Harrisburg R-VIII	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Safe Room	Harrisburg R-VIII	Medium	3.0	Severe Thunderstorms, Tornados			
Floodplain management	Hartsburg	High	3.0	Flooding			✓
Sewer Inundation Mitigation	Hartsburg	High	3.0	Flooding			
Undergrounding Utilities	Hartsburg	Medium	3.0	Winter Weather, Severe Storms, Tornados			
Undergrounding Utilities	Huntsdale	High	3.0	Winter Weather, Severe Storms, Tornados			

Floodplain Management	Huntsdale	High	2.0	Flooding			✓
2.1.5	Huntsdale	Low	3.0	Flooding/Flash Flooding			
Generator	Ashland	Medium	2.0	Earthquake, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Mine Survey	City of Centralia	Low	3.0	Sinkholes			
Tree Removal and Replanting	City of Centralia	High	4.0	Wildfire, Extreme Temperatures, Thunderstorms, Tornado, Winter Weather, Drought			
Generators	Columbia Public Schools	Medium	2.0	Earthquakes, Severe Thunderstorms, Severe Winter Weather, Tornado			
Communication System Upgrade	Columbia Public Schools	High	1.0	Earthquakes, Extreme Temperatures, Severe	✓		

				Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Weapons Detection Lanes	Columbia Public Schools	Medium	1.0	Unwanted Intruder			
Vulnerability Assessment	Columbia Public Schools	Low	3.0	Earthquake			
Undergrounding Utilities	City of Columbia	High	3.0	Tornado, Severe Winter Weather, Severe Storms			
Road and Bridge Elevation	City of Columbia	High	1.0	Flooding			
Brush Removal Program	City of Columbia	Medium	3.0	Wildfire/Structure Fire			
Warming Fire Safety	City of Columbia	Medium	3.0	Wildfire/Structure Fire			
Wildfire Protection Plan and Training	City of Columbia	Medium	3.0	Wildfire/Structure Fire			
Rebuild Recycling Center	City of Columbia	High	3.0	Severe Storms, Tornado			

Unwanted Intruder Mitigation	Hallsville R-IV	High	1.0	Unwanted Intruder			
Backup Radios	Harrisburg	Medium	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Community Safety Location	Hartsburg	Medium	1.0	Earthquakes, drought, extreme temperatures, severe thunderstorms, tornado, wildfire, levee, sink holes, dam failure			
Huntsdale COOP	Huntsdale	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire,			

				Flooding, Levees, Dams, Sinkholes			
Low Flow Toilets and Faucets	City of Rocheport	Medium	1.0	Drought			
Earthquake and Sinkhole Awareness Education	City of Rocheport	Low	1.0	Earthquakes and sinkholes			
City shelter	City of Rocheport	Medium	3.0	Extreme Temperatures, Severe Thunderstorms, and Tornado			
New Fire Hydrants	City of Rocheport	Medium	1.0	Wildfire		✓	
Brush Removal Program	City of Rocheport	Low	1.0	Wildfire			
Upsize culverts	City of Rocheport	Medium	3.0	Flooding			
Flood Wall	City of Rocheport	High	3.0	Flooding			
Emergency Operations Plan	Sturgeon School District	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter			

				Weather, Tornado, Wildfire, Flooding			
Natural Hazard Education	Sturgeon School District	Medium	1.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Upgrade Communications Systems	Sturgeon School District	High	1.0	Severe Thunderstorms, Severe Winter Weather, Tornado, Earthquakes, Wildfire	✓		
Generators	University of Missouri	Medium	2.0	Severe Winter Weather, Tornado, Thunderstorm			
MU COOP	University of Missouri	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe			

				Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Brush Removal	University of Missouri	Medium	3.0	Wildfire			
Drought Management Plan	University of Missouri	Low	3.0	Drought			
Undergrounding Utilities	Rocheport	High	3.0	Winter Weather, Severe Storms, Tornados			
Floodplain management	Rocheport	High	2.0	Flooding			✓
Flood Buyout	Rocheport	Low	5.0	Flood			
Sewer Inundation Mitigation	Rocheport	High	3.0	Flooding			
Active Shooter Mitigation	Southern Boone	High	3.0	Unwanted Intruder			
Southern Boone School District COOP	Southern Boone	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms,			

				Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Safe Room	Southern Boone	Medium	3.0	Severe Thunderstorms, Tornados			
Active Shooter Mitigation	Stephen's College	High	3.0	Unwanted Intruder			
Stephen's College COOP	Stephen's College	High	2.0	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes			
Safe Room	Stephen's College	Medium	3.0	Severe Thunderstorms, Tornados			
Sturgeon COOP	Sturgeon	High	2.0	Earthquakes,			

				Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Undergrounding Utilities	Sturgeon	High	3.0	Winter Weather, Severe Storms, Tornados			
Floodplain Management	Sturgeon	High	2.0	Flooding			✓
Waterline Replacement	Sturgeon	Medium	3.0	Wildfire	✓		
Safe Room	Sturgeon	High	3.0	Severe Thunderstorms, Tornados			
Sewer Inundation Mitigation	Sturgeon	High	3.0	Flooding/Flash Flooding			
Stormwater Upgrade	Sturgeon	High	3.0	Flooding/Flash Flooding	✓		
Active Shooter Mitigation	Sturgeon R-V	High	3.0	Unwanted Intruder			
Sturgeon School	Sturgeon R-	High	2.0	Earthquakes, Drought, Extreme			

District COOP	V			Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding			
Safe Room	Sturgeon R-V	Medium	3.0	Severe Thunderstorms, Tornados			
Salt Dome Relocation	University of Missouri	High	3.0	Severe Storms, Tornados			
Safe Room	University of Missouri	Medium	3.0	Severe Thunderstorms, Tornados			
Active Shooter Mitigation	University of Missouri	High	3.0	Unwanted Intruder			
Warning System Upgrade	University of Missouri	High	3.0	Tornado	✓		

Prerequisites

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 A, 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, or will, adopt 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 (local government); and

WHEREAS the (*local government/school district*) has prepared a multi-hazard mitigation plan, hereby known as (*title and date of mitigation plan*) in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

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

WHEREAS adoption by the (*local governing body/school district*) demonstrates its 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:

Section 1. In accordance with (*local rule for adopting resolutions*), the (*local governing body/school district*) adopts the (title and date of mitigation plan). While content related to (*local government/school district*) may require revisions to meet the plan approval requirements, changes occurring after adoption will not require (*local government/school district*) to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

ADOPTED by a vote of in favor and___against, and___abstaining, this_day of _____,____.

By (Sig):
Print name:

ATTEST:
By (Sig.):
Print name:

Chapter 1: Introduction and Planning Process

- 1.1Purpose……...…….……*1*
- 1.2 Background and Scope……..…….……...….1
- 1.3 Plan Organization……...……3
- 1.4 Planning Process…….4
  - 1.4.1 Multi- Jurisdictional Participation
  - 1.4.2 The Planning Steps

1.1 PURPOSE

FEMA defines hazard mitigation as any sustainable action that reduces or eliminates long-term risk to people and property from future disasters. Hazard mitigation planning breaks the cycle of disaster damage, reconstruction, and repeated damage. This includes long-term solutions that reduce the impact of disasters in the future.

The Boone County Hazard Mitigation Plan is designed as a resource for county and municipal governments, residents, developers, organizations, and others interested in controlling the potentially disastrous effects of natural, man-made, and technological hazards in Boone County. Each year natural, man-made, and technological hazards take a great toll in the United States. Boone County is not immune; it is subject to numerous natural, man-made, and technological hazards which can threaten life and property. A well-conceived mitigation strategy, developed through an inclusive and thoughtful planning process, is an important step in protecting citizens and reducing loss.

The Federal Emergency Management Agency (FEMA) defines mitigation as "sustained action taken to reduce or eliminate long-term risk to people and their property from hazards and their effects." A 2018 study by the National Institute of Building Sciences finds $6 saved for every dollar invested in mitigation activities to reduce risk and disaster losses.

Multiple jurisdictions within Boone County participated in the development of this plan. Having a current and approved hazard mitigation plan is a prerequisite for participating jurisdictions to be eligible to apply for FEMA pre-disaster mitigation grants and the mitigation portion of post disaster mitigation grants. The process for declaring Presidential Disasters was established with the passage of the Disaster Relief Act of 1974. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288) of 1988 as amended by the Disaster Mitigation Act of 2000 (Public Law 106-390) and the implementing regulations set forth by the Interim Final Rule published in the *Federal Register* on February 26, 2002, (44 CFR §201.6) and finalized on October 31, 2007 created the organizational framework through which funds and assistance would be provided after a Presidential Disaster Declaration; FEMA was designated to coordinate the relief efforts.

In 1993, FEMA created the Mitigation Directorate to oversee hazard mitigation. This established mitigation as the cornerstone of emergency management. The Disaster Mitigation Act of 2000 further defined activities related to disaster relief and mitigation; one of its provisions encourages development of hazard mitigation measures, including land use and construction regulations. In April 2023, FEMA released the Local Mitigation Planning Policy Guide and in May 2023, FEMA released FEMA's Local Mitigation Planning Handbook, both of which were consulted in the development of this plan.

1.2 Background and Scope

In November 2003, a "current and approved" hazard mitigation plan became a FEMA eligibility requirement for local jurisdictions applying for pre-disaster mitigation grants and the mitigation portion of post-disaster grant funds.
Due to this change in FEMA grant requirements, the Missouri State Emergency Management Agency (SEMA) contracted with the Missouri Council of Governments for the Regional

Planning Commissions to direct hazard mitigation planning for interested counties within their respective regions. Boone County, a member of the Mid-Missouri Regional Planning Commission (Mid-MO RPC), contracted with the Mid-MO RPC to facilitate the development of a hazard mitigation plan for the county.
A Project Steering Committee was formed to oversee the planning and writing of the original Boone County Hazard Mitigation Plan in 2004. The initial plan was approved by FEMA and adopted by the participating jurisdictions in the spring of 2005.
The required 5-year update of the plan was undertaken in the spring of 2009 and the updated plan was approved by FEMA on November 8, 2010. Participation in the planning process within the county increased significantly; the updated plan included 14 "participating jurisdictions" adopting the mitigation plan as their own. In addition to Boone County, this included 8 incorporated communities, 4 school districts, and the University of Missouri-Columbia. The Boone County Hazard Mitigation Plans in 2010 and 2015 were written to be working documents to guide participating jurisdictions in the county in the work of mitigating potential hazards. To this effect, the current plan is publicly available on the website of the Mid-MO RPC (www.midmorpc.org) since it was approved and adopted.

Maintenance of Hazard Mitigation Plan 2020-2025

The maintenance plan in the 2020 document called for an annual monitoring and review of the plan to be facilitated by the Mid-MO RPC. The process was as follows: The mitigation representative of each participating jurisdiction was sent an email with an attachment of the mitigation actions for the jurisdiction; a request was made for comments on the status of the actions and any other information regarding changes or development in the jurisdictions which might bear on hazard mitigation. Research was done by staff of the Mid-MO RPC on hazard events taking place since the last monitoring. After receiving responses from the participating jurisdictions, an addendum summary of the monitoring and review was included in the plan.
In addition to the yearly monitoring, the plan is available on the websites of the Columbia/Boone County Office of Emergency Management and the Mid-MO RPC. The Mid-MO RPC also disseminates information regarding mitigation grants when funding becomes available.

Jurisdictions that participated in the 2020 plan as well as the 2025 plan update include:

- Boone County
- Columbia
- Ashland
- Centralia
- Sturgeon
- Harrisburg
- Huntsdale
- Hallsville
- Rocheport
- Hartsburg
- Columbia Public Schools
- Southern Boone Schools
- Hallsville School District
- Sturgeon School District

- Harrisburg School District
- Centralia School District
- *University of Missouri
- Stephens College

*University of Missouri participated in all required steps except the final adoption of the plan. At this time, they are not eligible for participation consideration.

Jurisdictions that were invited but chose not to participate in the 2025 update include:

- Columbia College
- North Callaway R-I School District
- Fayette R-III School District
- New Franklin R-I School District
- Pierpont
- McBaine
- Unincorporated Howard County
- Unincorporated Cooper County
- Unincorporated Moniteau County
- Unincorporated Cole County
- Unincorporated Callaway County

The school districts who did not participate primarily serve students in adjacent counties and participate in the adjacent counties' hazard mitigation plans.

Jurisdictions received email notifications of upcoming meetings and their corresponding agendas, along with any "homework" in the form of questionnaires or surveys. Meeting notices were also posted to the RPC and County Office of Emergency Management Facebook pages. Phone calls were also made by the planner and the County Office of Emergency Management to encourage participation.

1.3 PLAN ORGANIZATION

The plan is formatted into 5 Chapters with several sub-sections per section. The plan sections include:

- Chapter 1: Introduction and the 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: Changes Made in Plan Update

Plan Section	Summary of Updates
Chapter 1 – Introduction and Planning Process	**Updated members of the Mitigation Planning Committee (MPC)** **Updated chapter format**
Chapter 2 – Planning Area Profile and Capabilities	**Updated chapter format**
Chapter 3 – Risk Assessment	**Combined Extreme Heat and cold into one hazard: extreme temperatures** **Updated chapter format**
Chapter 4 – Mitigation Strategy	**Updated chapter format** **Changed action worksheet layout/info**
Chapter 5 – Plan Implementation and Maintenance	**Updated chapter format** **Added planning mechanisms for hazard mitigation**

1.4 PLANNING PROCESS

A Hazard Mitigation Plan must be updated and adopted by the participating jurisdictions every five years to be considered current. The update of the Boone County Hazard Mitigation Plan was directed by the emergency management planner from Mid-MO RPC (Miriam Bouallegue) as specified in a Memorandum of Agreement (MOA) with the Missouri State Emergency Management Agency (SEMA). The role of Mid-MO RPC in the planning process is to:

- Assist in establishing a Mitigation Planning Committee (MPC) as defined by the Disaster Mitigation Act (DMA)
- Find out if the MPC established for the previously approved plan was a standing committee that met in the interim, and set forth any changes in the MPC membership and procedures since adoption of the previous plan,
- Assess whether there was adherence to the process set forth in the previously approved plan for maintenance (example, did the MPC meet regularly as specified in the previously approved plan), and explain how adherence occurred, and/or why it did not occur,
- Organize Planning Committee Meetings locations and times
- Ensure the updated plan meets the DMA requirements as established by federal regulations and follows the most current planning guidance of the Federal Emergency Management Agency (FEMA),
- Facilitate the entire plan development process,
- Identify the data that MPC participants could provide and conduct the research and documentation necessary to augment that data,
- Assist in soliciting public input,
- Produce the draft and final plan update in a FEMA-approvable document and coordinate the Missouri State Emergency Management Agency (SEMA) and (FEMA) plan reviews.

The update process consisted of 3 planning committee meetings over the update period. Meeting announcements and sign-in sheets are included in Appendix B.
All hazard mitigation planning meetings were open to the public and public notice was provided in accordance with Missouri's "Sunshine Law" (Revised Statutes of Missouri 610.010, 610.020, 610.023, and 610.024.) Notice of each meeting was posted on the Facebook pages of Mid-MO RPC and the County Emergency Management Office.

Table 1.2 Jurisdictional Representatives of Boone County Mitigation Planning Committee

Name	Title	Department	Jurisdiction/Agency
Chris Lewin	Mitigation Specialist	Office of Emergency Management	Boone County
Chris Kelley	Director	Office of Emergency Management	Boone County
Jake Waller	Deputy Director	Office of Emergency Management	Boone County
Rebecca Estes	Public Health Specialist	Health	City of Columbia
Kyle Michels	City Administrator	Administration	City of Ashland
Tara Strain	City Administrator	Administration	City of Centralia
Traci Pallismer	Alderperson	Board of Alderpeople	City of Sturgeon
Jeff Arp	Alderperson	Board of Alderpeople	City of Harrisburg
Deb Lancaster	Mayor	Mayor's Office	Village of Huntsdale
Trynton Roberts	Alderperson/Emergency Management Coordinator	Board of Alderpeople	City of Hallsville
Janice Orton	City Clerk	Administration	Village of Rocheport
Tim Hentz	Chairman	Board of Trustees	Village of Hartsburg
Ken Gregory	Director of Safety and Security	Safety and Security	Columbia Public Schools
Tim Roth	Superintendent	Administration	Southern Boone Schools
Tyler Walker	Superintendent	Administration	Hallsville School District
Jeff Carr	Operations Director	Safety and Security	Sturgeon R-V School District
Steve Combs	Superintendent	Administration	Harrisburg School District
Steven Chancellor	Superintendent	Administration	Centralia School District
Jerry Jenkins	Emergency Management Coordinator	Emergency Management	University of Missouri
Demond Tauber	Director – Campus Safety and Security	Safety and Security	Stephen's College
Daniel Cunningham	Project Manager	BCRSD	Boone County Regional Sewer District (BCRSD)
Vineet Kapila	Construction Project Supervisor	Public Works	City of Columbia
Seth Truesdell	Mayor	Mayor's Office	City of Sturgeon
Kathy Wilhite	City Clerk	Administration	Village of Harrisburg
Kenyetta Ridgway-Sample	City Administrator	Administration	City of Hallsville
John Zondca	Mayor	Mayor's Office	Village of Rocheport
Jon Logan	Safety and Security Assistant Coordinator	Safety and Security	Columbia Public Schools
Scott Young	Chief of Police	Ashland PD	City of Ashland
Brian Schaeffer	Fire Chief	Columbia FD	City of Columbia
] Eric Hempel	Sustainability Manager	Office of	City of Columbia
Name	**Title**	**Department**	**Jurisdiction/Agency**

Lily E. White	Vice President of External Affairs	Columbia Chamber of Commerce	Columbia Chamber of Commerce
Patricia Wickham	Director of Advocacy and Network Development	Resources and Public Education	Aging Best
Tracy Blank	Administrative Assistant	Emergency Management Agency	Cole County
James Creel	Director of Public Works	Public Works	City of Ashland
Andrew Worrall	Sergeant	Ashland PD	City of Ashland
John Ambra	Deputy Fire Chief	Columbia FD	City of Columbia
Scott Olsen	Fire Chief	Boone County FPD	Boone County FPD
Lazell Ofield	Chief Operations Officer	Administration	Columbia Public Schools
Helen Porter	Chief Schools Officer	Administration	Columbia Public Schools
David Dittmer	Natural Resource Supervisor	Parks and Recreation	City of Columbia
Brady Sandker	Supervisor	Airport Safety	City of Columbia
Lelande Rehard	Environmental Program Coordinator	Sustainability Office	City of Columbia
Matt Unrein	Deputy City Manager	City Manager's	City of Columbia
Rebecca Roesslet	Assistant Director	Public Health & Human Services	City of Columbia
Stephen McLane	Hallsville Station Manager	Boone County FPD	Boone County FPD
Rich Horrell	Patrol Lieutenant	Columbia PD	City of Columbia
Thad Yonke	Senior Planner	Planning and Zoning	Boone County
Andy Muscato	Patrol Lieutenant	Columbia PD	City of Columbia
Beth Boos	Deputy Director	Information-	Boone County
Anna Foster	Systems and Support Manager	Information-	Boone County
Jeff McCann	Chief Engineer	Planning and Zoning	Boone County
Greg Edington	Director	Road and Bridge	Boone County
Julia Lutz	Director	Information-	Boone County
Doug Westhoff	Operations Bureau Director	Boone County FPD	Boone County FPD
Stirling Williams	Operations Manager	Joint	Boone County
Matthew Brown	Training & Exercise Specialist	Office of Emergency Management	Boone 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			
Boone County EOC	x				x	x
Centralia	X	x	x		X	x
Columbia	x	x	x		x	x
Rocheport	X	X	X		X	
Sturgeon	X	X	X		X	X
Boone County	X	X	X		X	X
Hallsville	X	X	X		X	X
Ashland	X	X	x		X	X
Harrisburg	X				X	
Huntsdale	X				X	

University of Missouri	x				X	X
Hallsville School	x				X	
Sturgeon School	X				X	
Southern Boone	X				X	
Columbia Public School	X				X	
Centralia School	x				X	
Stephens College	X				X	
Harrisburg School	X				X	
Columbia Regional Airport	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.

Stakeholders who participate in the planning process contribute invaluable knowledge to identify local hazards and drive innovative mitigation strategies. By including stakeholders with diverse expertise, Boone County can assess how hazards affect businesses, housing, social services, infrastructure, natural and cultural resources, and vulnerable populations. Multijurisdictional plans also allow stakeholders to build partnerships and coordinate mitigation tasks.

Multiple jurisdictions within Boone County participated in the development of this plan. Having a current and approved hazard mitigation plan is a prerequisite for participating jurisdictions to be eligible to apply for FEMA pre-disaster mitigation grants and the mitigation portion of post disaster mitigation grants. Invitations to participate in the development of the plan were sent to commissioners, incorporated community leaders, public schools and colleges, special districts, and various other stakeholders multiple times throughout the update to encourage participation in some manner. Each jurisdiction who participated will have to adopt the updated plan.

- Participation in a meeting was not required as long as other participation was had. Representatives from jurisdictions participated through phone meetings and emails with the planner and provided feedback through the questionnaire. Meeting participation could be in-person or by proxy.
- Each participating jurisdiction must provide sufficient information to support plan development by completion and return of surveys.
- For plan updates, eliminate from further consideration those actions from the previously approved plan that were not implemented because they were impractical, inappropriate, not cost-effective, or were otherwise not feasible.
- Review and comment on plan drafts
- 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.

Table 1.4 Jurisdictional Participation in Planning Process

Jurisdiction	Kick-off Meeting	Meeting #2	Meeting #3	Phone/Email	Data Collection Questionnaire	Update/Develop Mitigation Actions
Boone County	x	x	x	x	x	x
Columbia	x	x	x	x	x	x
Ashland	x	x	x	x	x	x
Centralia	x	x	x	x	x	x
Sturgeon	x	x	x	x	x	x
Harrisburg	x	x	x	x	x	x
Huntsdale	x	x	x	x	x	x
Hallsville	x	x	x	x	x	x
Rocheport	x	x	x	x	x	x
Hartsburg	x	x	x	x	x	x
Columbia Public Schools	x	x	x	x	x	x
Southern Boone Schools	x	x	x	x	x	x
Hallsville School District	x	x	x	x	x	x
Sturgeon School District	x	x	x	x	x	x
Centralia School District	x	x	x	x	x	x
Harrisburg School District	x	x	x	x	x	x
University of MO	x	x	x	x	x	x
Boone County Sewer	x	x	x	x	x	x
Stephens College	x	x	x	x	x	x

1.4.2 The Planning Steps

The plan update follows the framework and development process in FEMA's Local Mitigation Planning Handbook (May 2023), Local Mitigation Planning Policy Guide (April 19, 2023), and Integrating Hazard Mitigation into Local Planning: Case Studies and Tools for Community Officials (March 1, 2013).

Development of the plan also followed the 10-step planning process adapted from FEMA's Community Rating System (CRS) and Flood Mitigation Assistance programs. The 10-step process allows the plan to meet funding eligibility requirements of the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program, and Flood Mitigation Assistance Program as well as qualify for points under Activity 510 for Mitigation Plans, under the Community Rating System.

Surveys and questionnaires were important in getting first-hand information from jurisdictions. One-on-one time, public meetings, and many emails produced a wealth of information taken into the plan.

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

Contact lists were made for Boone County jurisdictions, stakeholders, and neighboring communities, and email notices were directly sent out to all jurisdictions and special districts in Boone County making sure to update contacts for positions who may have changed personnel. The notice consisted of a meeting announcement and short summary of what the meeting would be covering and its importance.

A kick-off meeting was hosted October 17, 2024 at the Boone County Emergency Management building. The foundation topic of this meeting was to outline the process of the hazard mitigation plan update and its importance. Surveys were passed out to each jurisdiction in attendance to identify what data the participants could provide. This meeting also served as an introduction to the types of hazards and critical facilities that would be included in the plan. Those in attendance were asked to sign in. Documentation can be found in the following appendices. They were instructed to either email the finished surveys to the lead planner or they had the option to return them in person at the next scheduled meeting. The date for the next meeting was set before everyone left the current meeting. Any jurisdictions not at the meeting were noted.

Meeting 2 took place on January 8, 2025 at the Boone County Emergency Management building. Anyone who wasn't at the first meeting was given a survey to fill out for their jurisdiction. Anyone done with their survey had the opportunity to turn it in if they had not emailed it prior to the meeting. There was discussion on parts of the survey that may not have been easily understood how to answer or where to get the information from. Mitigation goals and actions were discussed. Risk Assessment results were shared with the group.

Meeting 3 took place March 5, 2025 at the Boone County Emergency Management building. More surveys were turned in. There was discussion about making sure that everyone logs their hours to meet the "in-kind" match. Mitigation Actions list and grant opportunities were discussed. Projects were either removed because they were done or no longer feasible, added, or listed as on-going.

Table 1.6: Schedule of MPC Meetings

Meeting	Topic	Date
Informational Meeting	• Importance of Hazard Mitigation Planning • Jurisdictions and Stakeholders that need to be included • Planning Process	08/14/2024
Kick-Off Meeting	• Importance of Hazard Mitigation Planning • Why the Plan needs updated and what is included • Planning process • How to Participate • Handed out questionnaires	10/17/2024
Meeting #2	• Return questionnaires • Discussed questions about the questionnaire • Discussed Risk Assessments • Discuss mitigation goals and actions	01/08/2025
Meeting #3	• How in-kind match works • Discuss survey results • Discuss grant opportunities • Discuss plan maintenance	03/05/2025

Step 2. Public Involvement

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.

Each of the 3 meetings of the MPC were open to the public. It was advertised through the Mid-MO RPC and County Emergency Management Office Facebook pages. The draft is available at the Mid-MO RPC website for anyone to review. Comments can be taken through email, phone,

or in-person at the office. Individual invites and meeting notices were emailed to each jurisdiction for participation. Jurisdictions that did not show up or return email contact after the second meeting were called directly and educated on the importance of their participation. Anyone who did not come in-person to a meeting was emailed a survey to fill out for their jurisdiction.

No official public comments were received during the planning process. A public survey was available online on Google Forms. Each jurisdiction received a survey link and flyer to advertise it to their community members. The City of Harrisburg also distributed paper copies of the survey to their most vulnerable citizens. The needs and concerns of the public were considered based on the feedback given in the public surveys as well as by jurisdictional representatives and their knowledge and interaction with the public outside the planning process.

The majority of public feedback was utilized in the mitigation action portion of the plan to steer decision making toward useful actions with direct public impacts such as generators to keep services going and shelters for those who need warming or cooling facilities.

Step 3. Coordinate

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

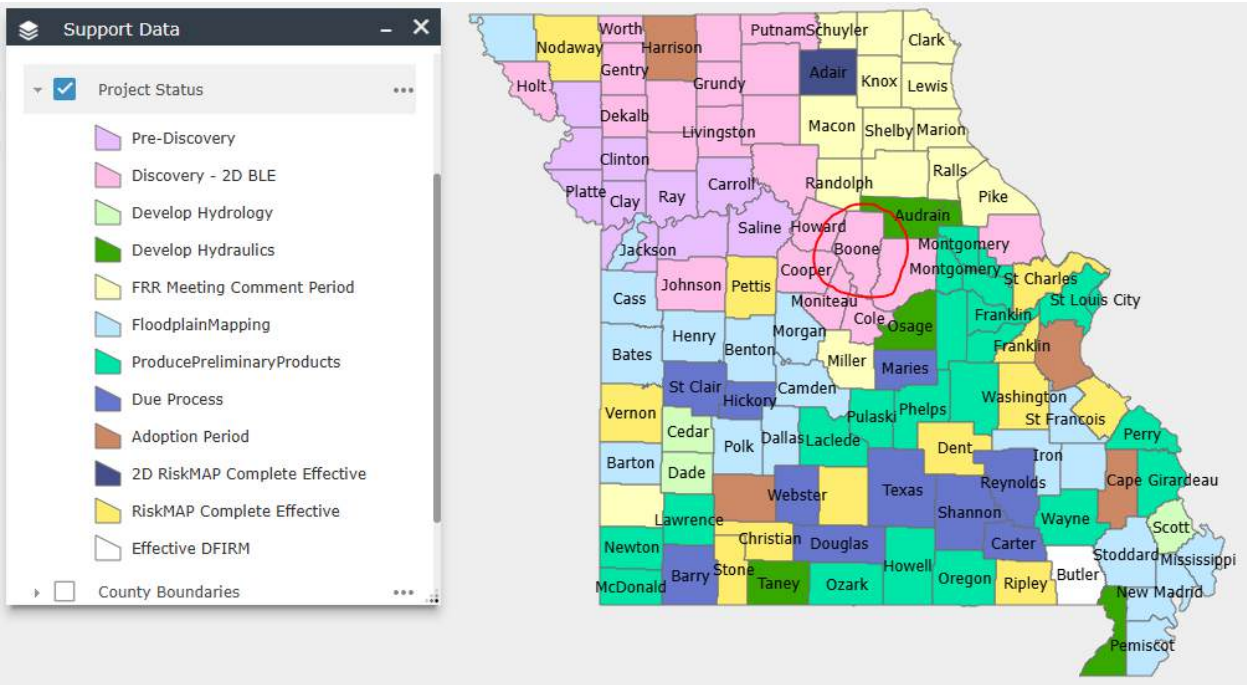
Participants from all incorporated cities, towns, and villages were invited to every meeting, along with all school districts and colleges. Other invitees were emergency response agencies, county offices, etc. Once a draft of the plan was complete it was posted to the Mid-MO RPC website for review by all interested parties. Invitations were sent by email and notices were published to the RPC Facebook page and a calendar with meetings shared via email to jurisdictions and stakeholders throughout the 6 county RPC region.

Table 1.7: Invited Stakeholders

Stakeholder/Jurisdiction	Position/Department
Central Missouri Community Action Agency	Executive Director
Aging Best	Director of Advocacy and Network Development
City of Refuge	Director of Refugee Services
Impact Support Services	Chief Program Officer
Columbia Housing Authority	Chief Executive Officer
Greenbelt Land Trust of Mid-Missouri	Executive Director
Voluntary Action Center	Housing Coordinator
Flourish Initiative	Housing Manager
Love Columbia	Community Engagement Director
Services for Independent Living	Director of Advocacy, Development, and Outreach
Columbia Chamber of Commerce	Vice President of External Affairs
Powerhouse Community Development	Executive Director
Missouri Conservation Corps	Project Director
Office of State Senator Caleb Rowden	State Senator
Office of State Representative Cheri Toalson Reisch	State Representative
Office of State Representative Kathy Steinhoff	State Representative
Office of State Representative David Tyson Smith	State Representative
Office of State Representative Adrian Plank	State Representative
Office of State Representative Doug Mann	State Representative

Coordination with FEMA Risk MAP Project

Figure 1.1 shows the status of Risk Mapping in Boone County.



Source: Missouri Floodplain User's Portal

Integration of Other Data, Reports, Studies, and Plans

Several other sources and documents were consulted to update the Plan. These documents and studies provide statistics for consideration, as well as preparedness and mitigation options viable to the planning area. Studies of dams and flooding maps provide inundation information for potential infrastructure or buildings impacted during dam or levee failure as well as typical flooding scenarios. Several of the required tables within the document utilize information from reports produced by the USDA, DNR, and Department of Conservation. Those documents and sources include:

- Flood Insurance Rate Maps (FIRMs)
- State Department of Natural Resources (DNR) dam information
- The National Inventory of Dams (NID)
- 2013 & 2018 Missouri State Hazard Mitigation Plans
- Wildland/Urban Interface and Intermix areas from the SILVIS Lab – Department of Forest Ecology and Management – University of Wisconsin
- United States Department of Agriculture – Census of Agriculture
- Corp of Engineers - National Levee Database
- *2040 Long-Range Transportation Plan*, Columbia Area Transportation Study Organization (CATSO), 2014

- *Atlas of Missouri Ecoregions*, Missouri Department of Conservation
- *Bonne Femme Watershed Plan (2007)*
- *Boone County Emergency Operations Plan (2019)*
- *Columbia Imagined, 2022*
- *Comprehensive Economic Development Strategy for the Mid-MO Region (2024),* Mid-MO Regional Planning Commission
- *Hazard Vulnerability Analysis,* Columbia/Boone County Public Health and Human Services
- *Hinkson Creek Watershed Management Plan*
- *Long Range Transportation Plan (LRTP)*, Missouri Department of Transportation
- *Missouri Drought Plan (2022)*, Missouri Department of Natural Resources
- *Missouri State Hazard Mitigation Plan (2018),* Missouri State Emergency Management Agency (SEMA)
- *National Climate Assessment 2018,* U.S. Global Change Research Program (GlobalChange.gov)
- *Regional Transportation Plan (2024)*, Mid-MO Regional Planning Commission
- Situation Reports (online), Missouri SEMA
- *FEMA's Local Mitigation Planning Handbook (April 2025)*
- *Online tools provided by SEMA and other State Agencies*
- *FEMA's 2023 National Preparedness Report*

Step 4: Assess the Hazard

Risk Assessment surveys were compiled and discussed at the second meeting. The risk of hazards were based on previous disasters, hazards that were identified in the State Hazard Mitigation Plan, and hazards from the previously approved hazard mitigation plan. Hazards were prioritized by their likelihood and severity of impacts by each jurisdiction, then totaled to rate each hazard on a whole. Additional details about the individual hazards can be found in the chapter on Risk Assessment.

Step 5: Assess the Problem

Assets for each jurisdiction were identified through the use of HAZUS, the data questionnaire, and Census. Losses were estimated by utilizing the HAZUS database and the 2023 State Hazard Mitigation Plan when needed.

Step 6: Set Goals

Those goals summarized are:

1. Implement mitigation actions that improve the protection of human life, health, and safety from the adverse effects of disasters

2. Implement mitigation actions that improve the continuity of government and essential services from the adverse effects of disasters

3. Implement mitigation actions that improve the protection of public and private property from the adverse effects of disasters

4. Implement mitigation actions that improve the protection of community tranquility from the adverse effects of disasters

Step 7: Review Possible Mitigation Actions and Activities

Mitigation Actions were discussed at the 3rd meeting. Each action from the last update was reviewed and updated individually by the MPC. The FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (2013)* was summarized at the meeting with the questionnaire to give everyone projects to think about for their jurisdiction. A focus for the MPC was the addition of safe rooms in schools and public places to the Mitigation Action Plan across the county.

Step 8: Draft an Action Plan

Based on the response from the final MPC meeting, an Action Plan was formed from any on-going and remaining actions identified as well as actions added to the list. Possible grant opportunities to assist in achieving the set goals and actions were also discussed at the final meeting. On-going efforts and mitigation achievements through projects and policy is a priority for stakeholders.

Step 9: Adopt the Plan

Throughout the whole update process it was reiterated in word and text that in order for participation in the plan to count a jurisdiction must participate by attending meetings or returning the survey/questionnaire, and lastly by signing an adoption resolution of the plan that can be included in the draft to SEMA.

Step 10: Implement, Evaluate, and Revise the Plan

Plan implementation was discussed at the final meeting while discussing grant and partnership opportunities to move the actions on the mitigation list along. Future revisions will be discussed in more detail one-on-one with the participating jurisdictions. Further details regarding implementation, monitoring and maintenance can be found in chapter 5, Plan Maintenance Process.

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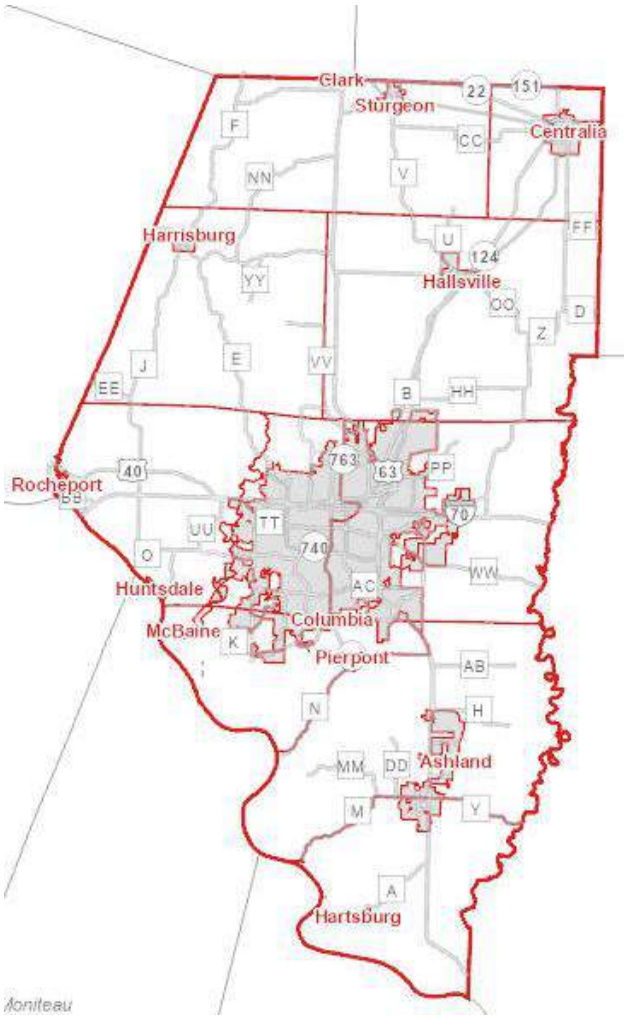
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Chapter 2: Planning Area Profile



2.1 Boone County Planning Area Profile

Boone County is a steadily growing county in central Missouri. The 2020 census indicated a county of 183,610 people, which is a 15% increase over the 2010 census count of 162,551 people. The latest American Community Survey (ACS) 5-year estimates show the county with a 1% increase from 2020 to 185,874 people in 2023. In relation, between 2010 and 2020, the state of Missouri as well as national population numbers have also shown an increase, with a state increase from 5,988,927 to 6,154,913, or 2.8%, and a national population increase from 308,745,538 to 331,449,281 or 7.4%.

Median income for Boone County has seen over a 70% increase to $69,913 from $41,006 in 2010, according to the latest 5-year ACS data, and is slightly above the state median income of $68,545, which has only seen a 48% increase from $46,262 since 2010. While Boone has a slightly lower median household income than the national 2023 ACS 5-year estimate of $77,719, the national median income has shown growth from $50,046 in 2010, more in line with the state's at about 55%.

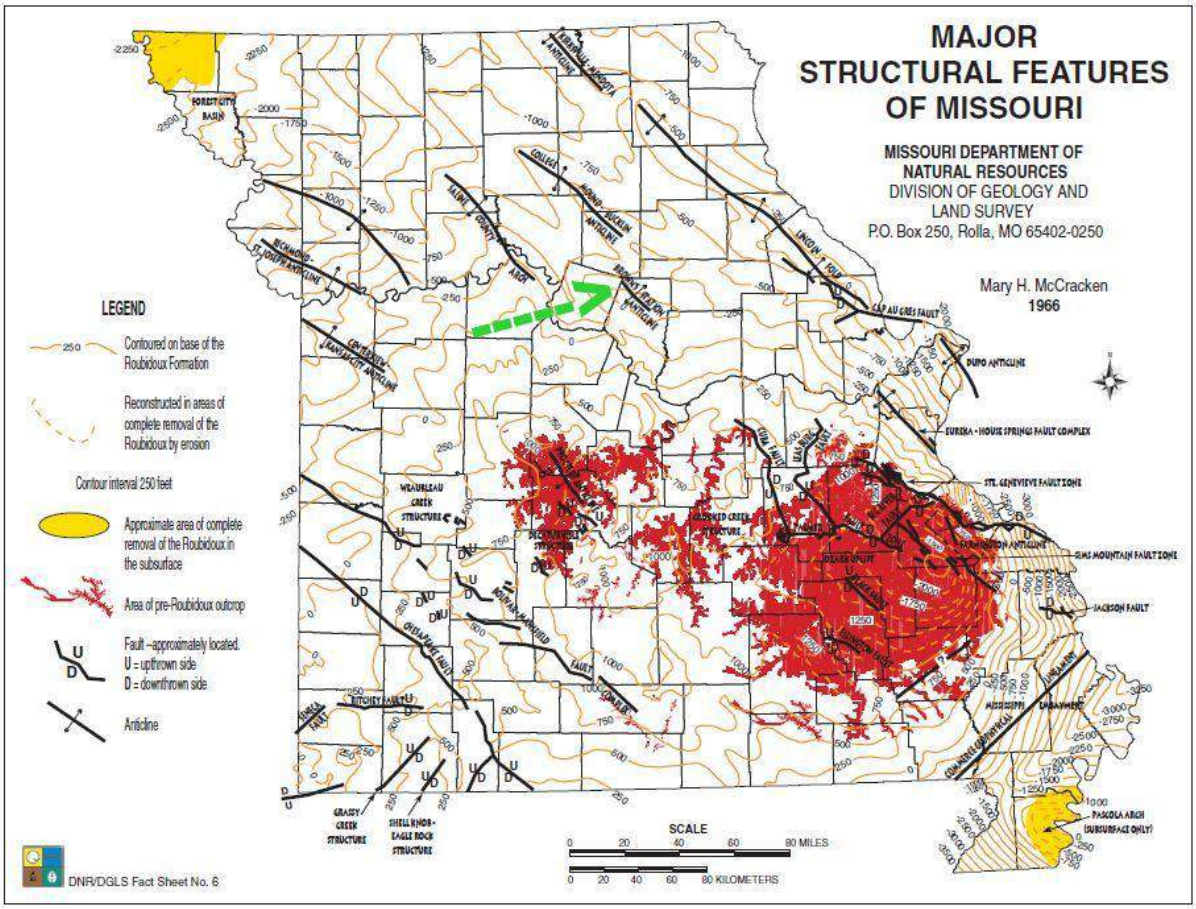
With the rising income rates comes equally rising housing costs. The median home value in Boone County increased 65% from 2010 to 2023 according to ACS 5-year estimates. In 2010 Boone County homeowners would pay a median price of $153,900 for a home. In 2023 the median price was around $254,100, which is over the Missouri median home cost of only $215,600. Missouri has seen a median price tick up since the 2010 value of $137,700, by 57%. Boone County has seen more increase in median value than the national increase of 61% from $188,400 in 2010 to $303,400 in 2023, from the latest 5-year ACS estimates.

2.1.1 Geography, Geology, and Topography

Boone County is located in central Missouri with an area covering 685 square miles. It is located midway between Kansas City to the west and St. Louis to the east. The City of Columbia is the county seat and largest population center. The incorporated communities in the county are: Ashland, Centralia, Columbia, Hallsville, Harrisburg, Hartsburg, Huntsdale, McBaine, Pierpont, Rocheport, and Sturgeon (Figure 2.1).

Geologically, Boone County has been shaped by both the Ozark Uplift in the southeastern part of the state and glaciations from the north. The Browns Station Anticline is the one major structural feature found in Boone County; it extends across the northern part of the county (Figure 2.2).

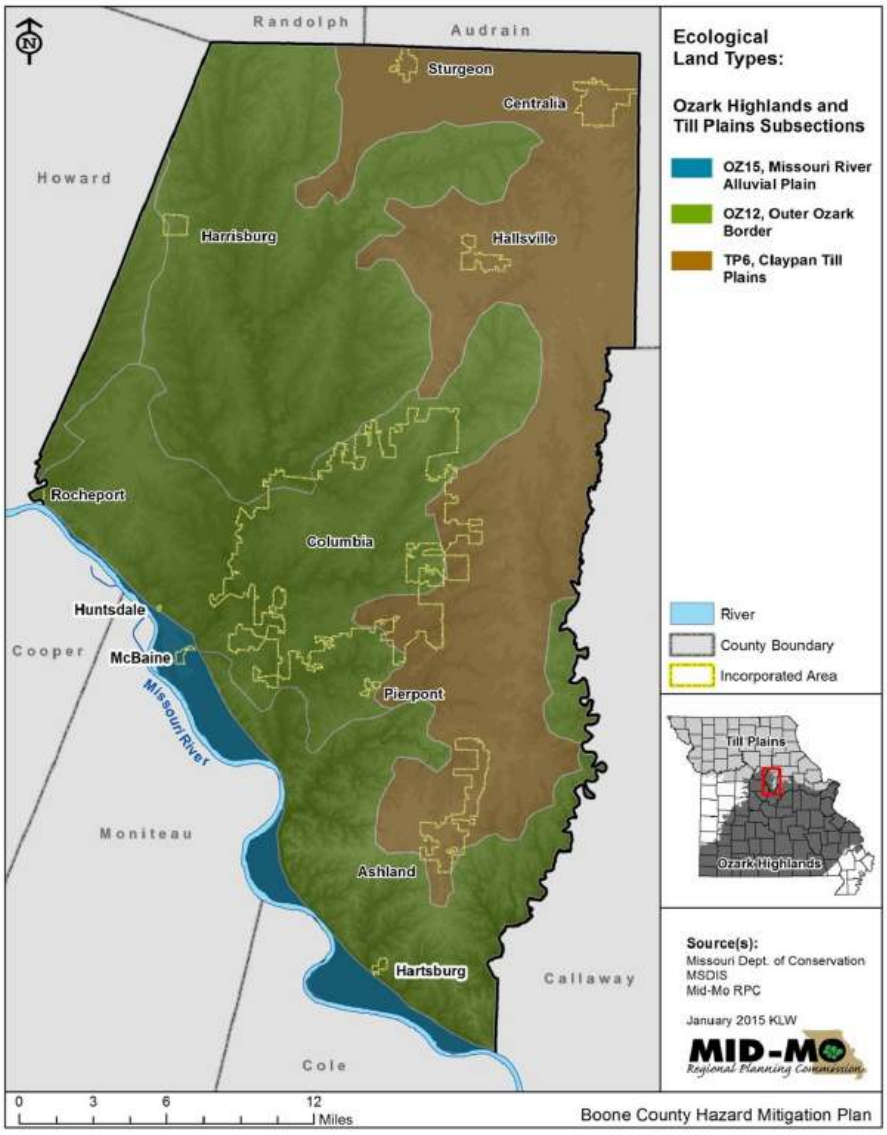
Figure 2.2



The geology of the planning area has implications for the hazards analyzed in this plan. Of particular concern is the New Madrid Seismic Zone (NMSZ) in the southeastern part of the state.

Boone County consists of three main ecological land types according to the MO Department of Conservation's *Atlas of Missouri Ecoregions* (Figure 2.3): the Claypan Till Plains, the Outer Ozark Border of the Ozark Highlands, and the Missouri River Alluvial Plain.

Figure 2.3



Claypan Till Plains
The distinguishing feature of the Claypan Till Plains is the presence of well-developed claypan soils on a flat glacial till plain. Most of the surface is flat or gently rolling with local relief less than 100 feet. Bedrock exposures are rare. This area was formerly prairie, for the most part, with narrow belts of timber along streams. Most of the subsection is now farmland and primarily cropland.

Outer Ozark Border
The Outer Ozark Border consists of a belt of deeply dissected hills (relief mostly 200-350 feet) and bluff lands bordering the Missouri River. Slopes are steep and bedrock exposures are common. Loess, occasionally very thick, mantles the uplands of the entire subsection. The area was historically timbered in oak savanna and woodland, oak and mixed-hardwood forests, and occasional prairie and glade openings.

Karst plains are also present. Karst is defined by the United States Geological Survey (USGS) as "terrain with distinctive landforms and hydrology created from the dissolution of soluble rocks, principally limestone and dolomite. Karst terrain is characterized by springs, caves, sinkholes, and a unique hydrogeology that results in aquifers that are highly productive but extremely

vulnerable to contamination." This land type will be touched on again in the land subsidence and sinkhole hazard profile in Section 3.

Current land use in the Outer Ozark Border is extremely varied and includes row crops, improved pasture, and densely wooded valleys. Urbanization pressures from Columbia are great.

Missouri River Alluvial Plain The Missouri River Alluvial Plain consists of the Missouri River channel and its adjoining alluvial plain. During the last half of the 20th Century, the river was narrowed, its banks were stabilized, and most of its islands were eliminated. Soils in the area are deep and loamy. Pre-settlement vegetation was mostly bottomland forest dominated by riverfront species including willow, cottonwood, sycamore, elm, silver maple, and hackberry. The alluvial plain is subject to flooding, although many bottoms have some degree of levee protection. Today land use is chiefly row crops.

The Missouri River's relationship to Boone County deserves special attention because the river is the defining physical feature in Mid-Missouri and it surrounds the southwestern border of the county.

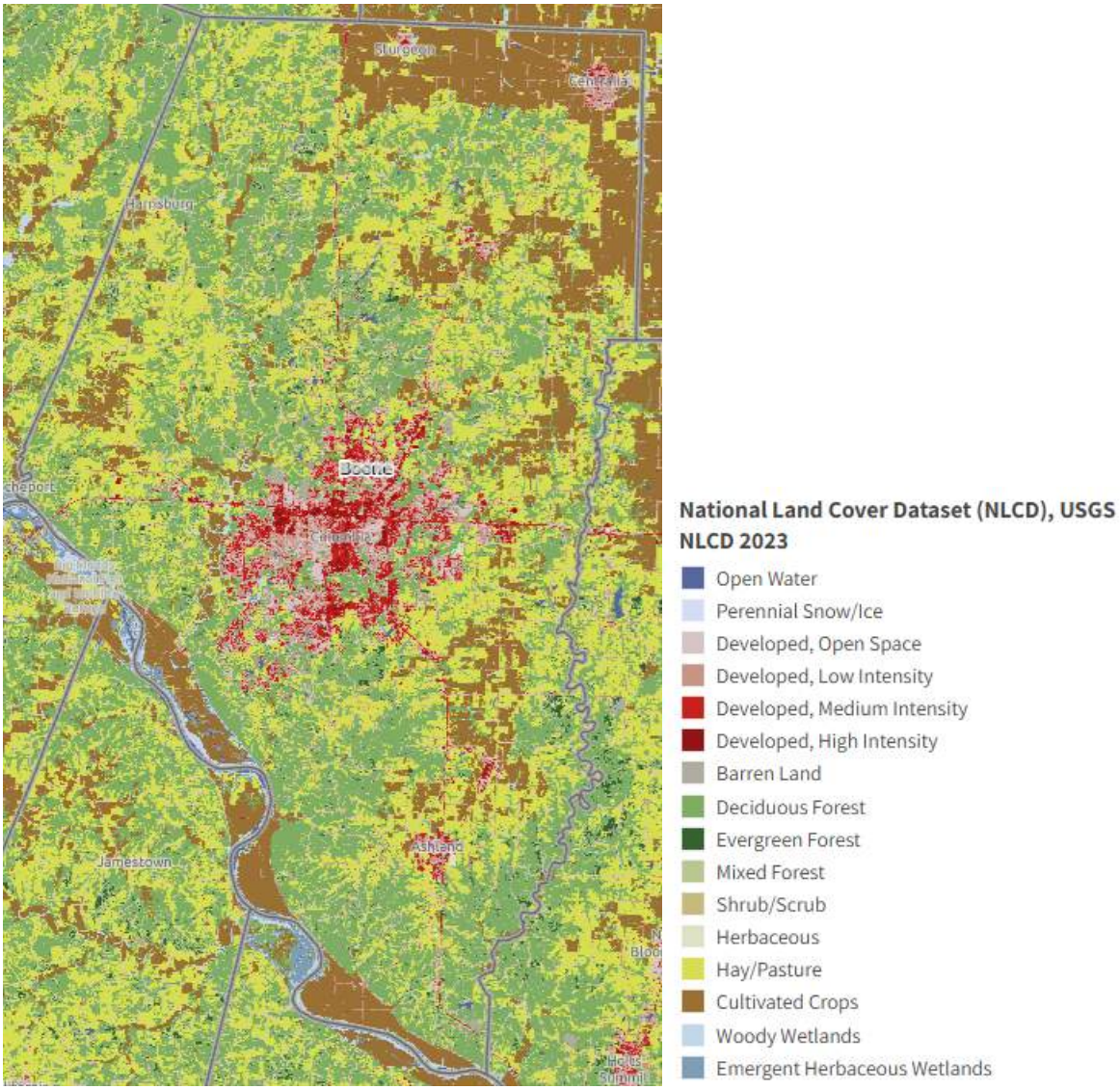
The Missouri River drains approximately one sixth of the United States and is the longest river in the country. Flood control structures, power plants, and other engineering projects have profoundly changed the course of the river since Lewis and Clark first traversed it in the early 1800s. In recent years, debates over the future of the Missouri River have taken place among the seven states through which it runs. Commercial river traffic, recreational use, environmental concerns, managing river levels to comply with the needs of endangered species, and the preservation of sacred and historical sites along the river and floodplain are all issues that make the management of the river a sensitive balancing act.

In both 1994 and 1995, the Missouri River was listed as one of the "10 Most Endangered Rivers in the Country" by American Rivers, a river conservation group (http://www.americanrivers.org/). This "Most Endangered" list does not reflect rivers in the worst condition; rather, it seeks to highlight rivers "confronted by decisions in the coming year that could determine their future." The Missouri River was chosen for the list in the mid-1990s because of dam, channelization, navigation, and agricultural runoff issues.

The flooding of the river in 2011 brought the controversy over its management into sharp focus. Record snowfalls in the Rockies combined with heavy spring rains to result in record water releases from six reservoirs on the river. Flooding occurred along the river from Montana to Missouri. The U.S. Army Corps of Engineers came under sharp criticism for not releasing water earlier in the season so the reservoirs would be able to accommodate the snow melt and rains. Meetings were held throughout the Missouri River Basin where local frustration was voiced over species protection and recreation being prioritized over flood control in river management decisions. Record flooding also occurred in Boone County from the Missouri River in 2019, bringing river management to the public's attention again. (https://www.columbiamissourian.com/news/local/2019-set-a-record-for-flooding-in-missouri-how-bad-was-the-damage/article_c4d64174-28db-11ea-977b-5f0c87cf5b79.html)

There is still significant deciduous forest in the western and southern parts of Boone County. This is interspersed with some grassland and cropland. Cropland predominates in the northernmost area of the county, in some eastern parts of the county, and in some areas along the Missouri River (Figure 2.4).

Figure 2.4



2.1.3 CLIMATE

Boone County lies in a Humid Temperate climate and is vulnerable to northern pressure systems in the winter and strong pressure and storm systems from the Gulf of Mexico and the Great Plains region of the central United States. While Boone County does have extreme variations in weather at times, there is a seasonal pattern.

National Centers for Environmental Information (NCEI) releases “climate normals”, or averages of three decades of climate variables, every 10 years. Monthly temperature and precipitation data for the period 1981-2010 at the Columbia Regional Airport (1981-2010), located in southern Boone County, are shown in the accompanying charts (Figures 2.5-2.6).

During the period from January 1, 2000, to January 1, 2025, the mean annual temperature was 55.3°F according to the Missouri Historical Agricultural Database from the University of Missouri Extension (http://agebb.missouri.edu/weather/history/index.asp). The mean annual precipitation was 42.62 inches with a mean annual snowfall of 18.4 inches. The average January minimum temperature was 20.9°F and the average July maximum temperature was 87.6°F. The wettest months were May-September with 62.3 % of the annual precipitation occurring during these months. Additional information on climate change and impacts to the planning area can be found in Appendix C.

2.1.4 POPULATION/DEMOGRAPHICS

A mapping of Boone County's population (2010 Census) by block group clearly illustrates that the population is centered in and around City of Columbia. (Figure 2.7) The 2020 Census indicated a rapid rise in population since the 2010 census; the population increased by 15%.

An inspection of the data in Table 2.1 indicates that the vast majority of population growth took place within the incorporated communities of Ashland and Columbia; unincorporated Boone County only saw a population growth of 5%. The highest growth rate by far was in the City of Ashland, whose population grew by 28%. Overall, Boone County's population grew by 13%.

Table 2.1 Boone County Population 2010-2023 by Jurisdiction

Jurisdiction	2010 Population	2020 Population	2023 Annual Population Estimate or ACS Population	# Change (2010-2023)	% Change (2010-2023)
Unincorporated Boone	43,377	45,359	45,360	1,982	5%
Ashland	3,707	4,747	4,811	1,040	28%
Centralia	4,027	4,312	4,615	285	7%
Columbia	108,500	126,254	127,200	17,754	16%
Hallsville	1,491	1,516	2,049	25	2%
Harrisburg	266	256	344	-10	-4%
Hartsburg	108	116	120	8	7%
Huntsdale	31	28	17	-3	-10%
Rocheport	239	190	215	-49	-21%
Sturgeon	872	832	1143	-40	-5%
Total	162,699	183,610	185,874	20,911	13%

Source: U.S. Bureau of the Census, Decennial Census, annual population estimates/ 5-Year American Community Survey 2023;

Currently, a number of economic development projects are occurring along the Highway 63 corridor between Columbia and the City of Ashland. Given the past level of growth in the two cities, the level of commuting in the Mid-Missouri region, and the fact that the Highway 63 corridor connects with Jefferson City (the state capital) to the south, it can be expected that this area will see a strong growth in population in the coming years. This growth will be made possible by the loss in the agricultural land in the area. 5-year ACS 2023 data estimates that there are currently 75,084 family households in Boone County averaging 2.95 persons per household, which is higher than the state and national averages of 2.42 and 2.54, respectively.

Some sectors of the population are more vulnerable in general to the threat of hazardous events. Children need the help and guidance of adults, especially in extraordinary circumstances, and this is also true for some older citizens. According to 5-year ACS data, 5.5% of the county's estimated population in 2023 was under the age of 5, slightly lower than the state and national percentages of 5.6% and 5.7%, respectively. Keeping in trend with an overall uptick in aging population, 2023 estimates have over 13% of Boone's population over 65 years old, which is well under the state's 18.4% rate of 65+. That national percentage of over 65 population sits at 16.8%.

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.

Table 2.2: Unemployment, Poverty, Education, and Language Percentage Demographics, Boone 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
Boone County	103779	3%	7.9%	20.1%	51%	8.8%
Ashland	2909	1.2%	2.8%	25.9%	41.4%	1.9%
Centralia	2016	6.9%	5.5%	31%	32.4%	0%
Columbia	71446	3.4%	8.2%	16.9%	56.5%	10.7%
Hallsville	1086	2.8%	8.1%	27%	26.9%	1.8%
Harrisburg	162	2%	4.1%	36.5%	26.9%	1.3%
Hartsburg	58	0%	0%	32.3%	19.2%	1.7%
Huntsdale	6	0%	0%	0%	40%	17.6%
Rocheport	137	0%	0%	9.1%	36.6%	5.7%
Sturgeon	548	0.9%	3.2%	27.3%	46.0%	2.7%
Missouri	3121721	4.1%	8.4%	30.3%	31.9%	6.6%
United States	169855626	5.2%	8.7%	26.2%	35.0%	22.5%

Source: U.S. Census, 2023 American Community Survey, 5-year Estimates.

2.1.5 HISTORY

Boone County, presently the most populous county in central Missouri, was established in 1821. The county was named for Daniel Boone, one of the most popular icons of early American settlement.

Boone County did not rise to a level of prominence in the state until the University of Missouri, the first public university west of the Mississippi, was established in Columbia in 1839. Nine hundred Boone County citizens won the bid for the university by pledging $117,921 in cash and land. The location of the university in Columbia has meant increased development for Boone County ever since. The university continues to attract students from all over the state, country, and world to study and work in the region.

Table 2.3: Occupations

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
Boone County	49.4%	16.5%	18.3%	6.7%	9.2%
Ashland	49.3%	19.9%	14.0%	9.0%	7.7%
Centralia	34.2%	11.3%	23.9%	9.5%	21.2%

Columbia	51.5%	18.3%	17.8%	4.4%	8.1%
Hallsville	38.4%	13.1%	30.5%	7.5%	10.5%
Harrisburg	26.9%	14.4%	30.6%	14.4%	13.8%
Hartsburg	15.5%	27.6%	13.8%	37.9%	5.2%
Huntsdale	83.3%	16.7%	0%	0%	0%
Rocheport	36.5%	30.7%	21.9%	4.4%	6.6%
Sturgeon	38.9%	20.2%	19.2%	11.3%	10.4%

Source: U.S. Census, 2023 American Community Survey, 5-year Estimates.

2.1.7 Agriculture

Agriculture continues to be important in the economy of the planning area. Almost 200,000 acres (approximately 45%) of the county remains agricultural land.

Soybeans, corn, and wheat are the top three individual crops in the county. Other crops consist of hay, sorghum, berries, fruit and nut trees, and garden vegetables. Cattle and calves and hogs and pigs are the major livestock in production. The 2022 agricultural census showed over $137 Million dollars in sales, with sales per farm averaging $122,405.

The average farm size is 176 acres, in line with the average farm size in surrounding counties. Callaway County, adjacent to the east, has an average farm size of 227 acres and Cole County, adjacent to the south, has an average farm size of 105 acres. There are 502 hired farm workers in Boone County, which is 0.48% of the total workforce.

Nearly half of the land area in Boone County is farmland. Any hazard impacting the agricultural sector has the potential to significantly impact the area's economy.

Table 2.4

Agricultural Overview - Boone County

	2022
Land in farms (acres)	196,763
Number of farms	1120
Avg size of farm (acres)	176
Avg value per farm	$985,231
Avg value per acre	$5,608
Total sales	$137,094,000
Average sales per farm	$122,405

Source: USDA Census of Agriculture 2022

2.1.8 Hazard Mitigation Assistance (HMA) Grants in Planning Area

There has been more than a half million dollars in Hazard Mitigation Assistance (HMA) provided to Boone County projects since 1993. The four projects listed below account for $559,077.17 in funding.

Table 2.5: HMA Grants

Disaster Declaration	Project Type	Subgrantee	Project Total	Date Approved
995	200.1: Acquisition of Private Real Property (Structures and Land) - Riverine	BOONE	330356	6/29/1994
	402.1: Infrastructure Protective Measures (Roads and Bridges)	County of Boone	57026.17	2/11/2006
995	200.1: Acquisition of Private Real Property (Structures and Land) - Riverine	HARTSBURG	93595	6/10/1994
	402.1: Infrastructure Protective Measures (Roads and Bridges)	County of Boone	78100	9/14/2005

2.1.9 FEMA Public Assistance (PA) Grants in Planning Area

There has been nearly $2 million in Public Assistance (PA) grants awarded in Boone County. Below is $1,804,877.97 in projects that have varied in size and location through the county.

Table 2.6: PA Grants

Disaster Declaration	Applicant	Project Size	Project Total	Project Type
4490	Curators Of The University Of Missouri	Large	$ 7,993,531.12	Emergency Protective Measures
4490	Columbia Public Schools	Small	$ 469,586.85	Emergency Protective Measures
4490	Boone County	Small	$ 21,409.43	Emergency Protective Measures
4490	Curators Of The University Of Missouri	Large	$ 2,574,328.59	Emergency Protective Measures
4490	Curators Of The University Of Missouri	Large	$ 46,916,147.00	Emergency Protective Measures
4490	Curators Of The University Of Missouri	Small	$ 63,745.60	Emergency Protective Measures
4490	Boone County	Small	$ 46,870.05	Emergency Protective Measures
4490	Boone County	Small	$ 9,717.77	Emergency Protective Measures
4490	Curators Of The University Of Missouri	Small	$ 99,134.24	Emergency Protective Measures
4490	Boone County Fire Department	Small	$ 74,092.56	Emergency Protective Measures

4490	Curators Of The University Of Missouri	Small	$ 591,822.08	Emergency Protective Measures
4490	Curators Of The University Of Missouri	Small	$ 167,161.82	Emergency Protective Measures
4490	Boone County	Small	$ 2,106.88	Management Costs
4490	Boone County	Small	$ 27,022.51	Emergency Protective Measures
4490	Curators Of The University Of Missouri	Large	$ 1,125,180.32	Emergency Protective Measures
4490	Curators Of The University Of Missouri	Small	$ 358,172.50	Emergency Protective Measures
4490	Boone County Senior Citizen Services Corporation Dba The Bluffs	Small	$ 23,096.73	Emergency Protective Measures
4490	Curators Of The University Of Missouri	Small	$ 271,386.91	Emergency Protective Measures
4317	City Of Columbia	Small	$ 3,473.32	Debris Removal
4451	City Of Columbia	Small	$ 14,863.48	Roads And Bridges
4451	Boone County	Small	$ 63,697.87	Emergency Protective Measures
4612	Boone County Regional Sewer District	Small	$ 9,702.44	Emergency Protective Measures
4451	City Of Columbia	Small	$ 13,579.60	Emergency Protective Measures

4612	City Of Columbia	Small	$ 68,057.33	Utilities
4612	City Of Columbia	Small	$ 31,651.01	Roads And Bridges
4612	City Of Columbia	Small	$ 46,562.44	Parks, Recreational Facilities, And Other Items
4451	Boone County	Small	$ 67,890.57	Roads And Bridges
4451	City Of Rocheport	Small	$ 37,779.78	Roads And Bridges
4317	City Of Columbia	Small	$ 12,122.51	Roads And Bridges
4612	Boone County	Small	$ 24,814.24	Roads And Bridges
4317	Boone County Public Works	Small	$ 939.86	Debris Removal
4612	Boone County	Small	$ 31,325.54	Roads And Bridges
4317	City Of Columbia	Small	$ 448.46	Debris Removal
4612	Boone County	Small	$ 46,805.43	Debris Removal
4612	City Of Columbia	Small	$ 17,050.90	Debris Removal
4612	City Of Columbia	Small	$ 13,419.53	Roads And Bridges
4612	City Of Columbia	Small	$ 202,054.93	Parks, Recreational Facilities, And Other Items
4451	City Of Columbia	Small	$ 37,986.80	Utilities
4317	Boone County Public Works	Small	$ 11,631.44	Parks, Recreational Facilities, And Other Items
4317	City Of Columbia	Small	$ 11,842.74	Parks, Recreational Facilities, And Other Items
4451	City Of Columbia	Small	$ 18,682.25	Debris Removal
4317	Boone County Public Works	Small	$ 74,197.44	Roads And Bridges

4612	Boone County Regional Sewer District	Small	$ 6,286.02	Debris Removal
4612	Boone County	Small	$ 65,770.64	Roads And Bridges
4451	City Of Rocheport	Small	$ 6,024.90	Debris Removal
4612	City Of Columbia	Small	$ 48,700.00	Roads And Bridges
4612	Boone County	Small	$ 22,953.51	Roads And Bridges
4451	City Of Rocheport	Small	$ 6,049.40	Management Costs
4612	City Of Columbia	Small	$ 3,877.13	Emergency Protective Measures
4451	City Of Rocheport	Small	$ 27,358.34	Emergency Protective Measures
4451	City Of Rocheport	Small	$ 49,824.80	Parks, Recreational Facilities, And Other Items
4451	Boone County	Small	$ 35,480.16	Debris Removal
4612	City Of Columbia	Small	$ 67,364.84	Roads And Bridges
4317	City Of Columbia	Small	$ 40,140.98	Debris Removal
4317	Boone County Public Works	Small	$ 8,434.27	Roads And Bridges
4451	City Of Columbia	Small	$ 8,063.80	Roads And Bridges
4612	Boone County	Small	$ 4,386.03	Roads And Bridges
4612	City Of Columbia	Small	$ 145,310.34	Roads And Bridges
4317	City Of Columbia	Small	$ 60,668.29	Roads And Bridges
4612	City Of Columbia	Small	$ 55,475.49	Debris Removal
4612	City Of Columbia	Small	$ 4,656.65	Buildings And Equipment
4612	Boone County	Small	$ 5,020.23	Management Costs

4612	Boone County	Small	$ 18,477.88	Roads And Bridges
4451	Boone County	Small	$ 15,475.30	Roads And Bridges
4451	Boone County	Small	$ 7,594.98	Management Costs
4612	City Of Columbia	Small	$ 5,285.38	Management Costs
4317	Boone County Public Works	Small	$ 26,692.01	Debris Removal
4451	Boone County	Small	$ 120,686.30	Roads And Bridges
4490	Curators Of The University Of Missouri	Large	$ 3,008,030.51	Management Costs
4451	City Of Rocheport	Small	$ 9,959.57	Emergency Work Donated Resources
1412	City Of Hallsville	Small	$ 1,847.67	Roads And Bridges
1412	City Of Columbia	Large	$ 49,213.15	Public Utilities
1412	City Of Columbia	Large	$ 73,950.00	Public Utilities
1412	City Of Columbia	Small	$ 8,978.26	Recreational Or Other
1412	Boone County	Small	$ 16,520.04	Roads And Bridges
1412	Boone County	Large	$ 257,099.07	Roads And Bridges
1412	Boone County	Small	$ 37,431.00	Roads And Bridges
1412	Boone County	Small	$ 36,614.09	Public Buildings
1412	Boone County	Large	$ 194,722.13	Public Buildings
1412	Boone County	Small	$ 2,194.94	Roads And Bridges
1412	Boone County	Small	$ 22,981.56	Roads And Bridges
1412	Boone County	Large	$ 127,545.20	Roads And Bridges
1631	Boone County	Small	$ -	Public Buildings
1631	Boone County	Small	$ -	Public Buildings

1631	Boone County	Small	$ -	Public Buildings
1631	Boone County	Small	$ -	Public Buildings
1631	Boone County	Small	$ 13,000.00	Public Buildings
1631	Boone County	Small	$ 16,000.00	Public Buildings
1631	Boone County	Small	$ -	Public Buildings
1631	Boone County	Small	$ -	Public Buildings
1631	Boone County	Small	$ 4,000.00	Public Buildings
1631	Boone County	Small	$ 5,000.00	Public Buildings
1631	City Of Columbia	Small	$ 44,181.77	Public Buildings
1673	City Of Hallsville	Small	$ 2,344.45	Protective Measures
1673	City Of Sturgeon	Small	$ 2,025.96	Protective Measures
1673	City Of Ashland	Small	$ 2,977.10	Protective Measures
1673	City Of Harrisburg	Small	$ 1,690.00	Protective Measures
1673	City Of Centralia	Small	$ 6,111.70	Protective Measures
1673	Boone County	Small	$ 2,299.06	Protective Measures
1673	City Of Columbia	Small	$ 2,526.76	Protective Measures
1673	COLUMBIA PUBLIC SCHOOLS	Small	$ 26,522.93	Protective Measures
1673	Boone County	Large	$ 179,810.39	Protective Measures
1673	Boone County Fire Department	Small	$ 4,387.30	Protective Measures
1673	CENTRALIA BOARD OF EDUCATION	Small	$ 500.00	Public Buildings

1673	CENTRALIA BOARD OF EDUCATION	Small	$ 2,775.40	Protective Measures
1673	City Of Columbia	Large	$ 103,511.42	Protective Measures
1673	UNIVERSITY OF MISSOURI - COLUMBIA	Small	$ 52,296.48	Protective Measures
1673	COLUMBIA PUBLIC SCHOOLS	Small	$ 1,165.00	Public Buildings
1673	COLUMBIA PUBLIC SCHOOLS	Small	$ 13,912.56	Public Buildings
1673	COLUMBIA PUBLIC SCHOOLS	Small	$ 2,650.00	Public Buildings
1673	COLUMBIA PUBLIC SCHOOLS	Small	$ 4,400.00	Protective Measures
1673	COLUMBIA PUBLIC SCHOOLS	Small	$ 2,760.00	Public Buildings
1673	BOONE HOSPITAL CENTER (CH ALLIED SERVIES)	Small	$ 15,743.76	Protective Measures
1673	City Of Hallsville	Small	$ 324.00	Protective Measures
1676	City Of Harrisburg	Small	$ 2,865.00	Protective Measures
1676	City Of Ashland	Small	$ 4,581.28	Protective Measures
1676	City Of Columbia	Small	$ 9,893.54	Protective Measures
1676	City Of Hallsville	Small	$ 4,830.21	Protective Measures

1676	Hallsville School District	Small	$ 3,255.80	Protective Measures
1676	Harrisburg School District	Small	$ 1,000.00	Public Buildings
1676	City Of Centralia	Small	$ 10,257.55	Protective Measures
1676	Harrisburg School District	Small	$ 6,491.21	Protective Measures
1676	City Of Sturgeon	Small	$ 4,886.33	Protective Measures
1676	Village Of Hartsburg	Small	$ 1,123.20	Protective Measures
1676	Sturgeon School District	Small	$ 2,221.29	Protective Measures
1676	Sturgeon School District	Small	$ 1,000.00	Public Buildings
1676	DANIEL BOONE REGIONAL LIBRARY	Small	$ 5,962.50	Protective Measures
1676	Boone County	Large	$ 265,743.50	Protective Measures
1676	B'NAI B'RITH HILLEL FOUNDATION	Small	$ 1,039.19	Protective Measures
1676	Village Of Hartsburg	Small	$ 294.70	Protective Measures
1676	BOONE HOSPITAL CENTER (CH ALLIED SERVIES)	Small	$ 41,250.54	Protective Measures
1676	COLUMBIA PUBLIC SCHOOLS	Large	$ 119,022.02	Protective Measures

1676	COLUMBIA PUBLIC SCHOOLS	Small	$ 2,120.00	Public Buildings
1676	COLUMBIA PUBLIC SCHOOLS	Small	$ 10,050.00	Public Buildings
1676	COLUMBIA PUBLIC SCHOOLS	Small	$ 3,025.00	Public Buildings
1676	City Of Columbia	Large	$ 183,331.01	Protective Measures
1676	City Of Hallsville	Small	$ 300.00	Protective Measures
1676	UNIVERSITY OF MISSOURI - COLUMBIA	Large	$ 117,852.32	Protective Measures
1676	UNIVERSITY OF MISSOURI - COLUMBIA	Small	$ 23,736.06	Protective Measures
1676	UNIVERSITY OF MISSOURI - COLUMBIA	Small	$ 13,628.26	Public Buildings
1676	UNIVERSITY OF MISSOURI - COLUMBIA	Small	$ 1,000.00	Public Buildings
1676	UNIVERSITY OF MISSOURI - COLUMBIA	Small	$ 2,700.00	Public Buildings
1676	UNIVERSITY OF MISSOURI - COLUMBIA	Small	$ 10,000.00	Public Buildings
1676	UNIVERSITY OF MISSOURI - COLUMBIA	Small	$ 1,083.88	Public Buildings

1676	UNIVERSITY OF MISSOURI - COLUMBIA	Small	$ 1,436.21	Public Buildings
1736	Village Of Hartsburg	Small	$ 3,750.00	Debris Removal
1736	City Of Centralia	Small	$ 8,116.70	Protective Measures
1736	City Of Hallsville	Small	$ 6,822.57	Protective Measures
1736	Village Of Hartsburg	Small	$ 1,220.29	Protective Measures
1736	Village Of Hartsburg	Small	$ 1,655.55	Protective Measures
1736	City Of Harrisburg	Small	$ 1,767.50	Protective Measures
1736	City Of Columbia	Small	$ 7,134.07	Protective Measures
1736	City Of Ashland	Small	$ 8,173.63	Protective Measures
1736	Boone County	Large	$ 291,260.68	Protective Measures
1736	City Of Columbia	Small	$ 2,253.38	Protective Measures
1736	City Of Columbia	Small	$ 5,033.61	Debris Removal
1736	City Of Columbia	Small	$ 5,225.64	Public Utilities
1736	BOONE HOSPITAL CENTER (CH ALLIED SERVIES)	Small	$ 58,257.73	Protective Measures
1736	Boone County Fire Department	Small	$ 6,229.07	Protective Measures
1736	City Of Columbia	Large	$ 258,324.94	Protective Measures
1736	UNIVERSITY OF MISSOURI - COLUMBIA	Small	$ 2,955.92	Public Buildings

1736	UNIVERSITY OF MISSOURI - COLUMBIA	Large	$ 213,266.38	Protective Measures
1736	City Of Ashland	Small	$ 36,412.69	Debris Removal
1736	COLUMBIA PUBLIC SCHOOLS	Small	$ 47,643.14	Protective Measures
1736	Boone County	Large	$ 184,469.71	Debris Removal
1961	City Of Sturgeon	Small	$ 1,290.16	Protective Measures
1961	DANIEL BOONE REGIONAL LIBRARY	Small	$ 9,422.50	Protective Measures
1961	City Of Sturgeon	Small	$ 1,000.00	Public Buildings
1961	Harrisburg School District	Small	$ 2,928.28	Protective Measures
1961	City Of Harrisburg	Small	$ 2,016.40	Protective Measures
1961	City Of Sturgeon	Small	$ 253.47	Protective Measures
1961	City Of Columbia	Small	$ 7,441.96	Protective Measures
1961	City Of Columbia	Small	$ 4,092.48	Protective Measures
1961	PUBLIC WATER SUPPLY DISTRICT	Small	$ 1,565.79	Protective Measures
1961	BOONE COUNTY - CENTRALIA SPECIAL ROAD DISTRICT	Small	$ 10,244.68	Protective Measures
1961	City Of Centralia	Small	$ 12,598.98	Protective Measures
1961	CHRISTIAN FELLOWSHIP SCHOOL	Small	$ 1,405.03	Protective Measures

1961	THE BOARD OF TRUSTEES OF BOONE COUNTY HOSPITAL	Small	$ 26,640.00	Protective Measures
1961	Southern Boone School District	Small	$ 11,178.34	Protective Measures
1961	Southern Boone School District	Small	$ 500.00	Public Buildings
1961	City Of Ashland	Small	$ 9,939.86	Protective Measures
1961	City Of Columbia	Small	$ 6,752.48	Protective Measures
1961	City Of Columbia	Small	$ 1,275.00	Public Buildings
1961	Boone County Regional Sewer District	Small	$ 1,619.28	Protective Measures
1961	Boone County	Large	$ 97,230.61	Protective Measures
1961	City Of Hallsville	Small	$ 5,935.91	Protective Measures
1961	Harrisburg School District	Small	$ 1,260.00	Public Buildings
1961	City Of Columbia	Small	$ 3,214.85	Protective Measures
1961	Boone County	Small	$ 1,412.68	Protective Measures
1961	City Of Columbia	Small	$ 2,049.39	Protective Measures
1961	COLUMBIA PUBLIC SCHOOLS	Large	$ 72,500.00	Public Buildings
1961	City Of Columbia	Large	$ 167,543.77	Protective Measures
1961	City Of Columbia	Small	$ 11,466.00	Public Buildings
1961	Boone County Fire Department	Small	$ 7,120.87	Protective Measures

1961	Boone County Fire Department	Small	$ 1,148.20	Protective Measures
1961	Boone County Fire Department	Small	$ 285.23	Protective Measures
1961	City Of Columbia	Large	$ 137,625.00	Roads And Bridges
1961	BOONE HOSPITAL CENTER (CH ALLIED SERVIES)	Small	$ 55,695.88	Protective Measures
1961	City Of Columbia	Small	$ 781.90	Protective Measures
1961	City Of Columbia	Small	$ 2,031.17	Protective Measures
1961	COLUMBIA PUBLIC SCHOOLS	Small	$ 56,562.60	Protective Measures
3232	City Of Columbia	Small	$ 1,904.33	Protective Measures
3232	City Of Columbia	Small	$ 5,191.88	Protective Measures
Total			**$ 69,670,232.53**	

2.2 JURISDICTIONAL PROFILES AND MITIGATION CAPABILITIES

The following is the individual profiles for each participating jurisdiction. Information regarding previous mitigation initiatives and ongoing efforts can be found in the summary tables below. These tables indicate specific capabilities of each jurisdiction that relate to their ability to implement mitigation opportunities. Unincorporated Boone County is profiled first, followed by the incorporated communities, the special districts, and the public schools and universities.

2.2.1 Unincorporated Boone County

Boone County consists of all the unincorporated areas with the county boundary.

The Boone County Commission is the administrative authority. It is an elected three-member governing body with a District I (Southern) Commissioner, a District II (Northern) Commissioner, and a Presiding Commissioner. The Commission establishes County policy; approves and adopts the annual budget for all County operations; approves actual expenditures for each department, as well as supervises the operations of:

- Road and Bridge
- Resource Management
- Emergency Management
- Joint Communications
- Human Resources & Risk Management
- Purchasing
- Information Technology/GIS
- Facilities Management

The commission also ensures County-wide compliance with numerous statutory requirements; and acts as liaison with County boards, commissions, and other governmental entities.

Boone County also has the following elected positions:

- Assessor
- Auditor
- Collector
- County Clerk
- Public Administrator
- Prosecuting Attorney
- Recorder
- Sheriff
- Treasurer

In 2012, a Children's Service Fund was established in the county "to protect the well-being and safety of children and youth nineteen years of age or less and to strengthen families". The fund is financed by one-quarter of a cent sales tax increase which was passed by over 57% of the voters in the November election. A board appointed by the County Commission oversees the fund. The Boone Co. Schools Mental Health Coalition has a project, which is one of many being funded with these monies. One of the goals of the project is to "train all school staff to recognize and

respond appropriately to students with signs and symptoms of mental health concerns." Such training will function as mitigation for active shooter events. Boone County also offers public outreach programs on household disaster preparedness, economic opportunities, and water and environmental education.

Multiple strategic level planning elements have been updated/drafted or implemented. The Boone County Emergency Operations Plan was updated in 2021 and is currently undergoing another revision for 2025. The Boone County Master Plan was updated in 2025 and directly references and prioritizes mitigation strategies outlined in the 2020 Hazard Mitigation Plan. The county is updating its Recovery Plan, which is expected later this year, and will incorporate hazards and strategies from the 2020 Hazard Mitigation Plan.

Another notable change is that the E-911 Columbia/Boone County Office of Emergency Management has separated from the City of Columbia's organizational structure and is now funded through a dedicated countywide sales tax passed in April of 2013. The three-eighths-cent sales tax generates an estimated $9.3 million per year and will finance construction of a new 911 and emergency management center that will withstand an F5 tornado. The tax also allowed the county to hire more call-takers and to upgrade radio equipment and information technology hardware and software. The Boone County Emergency Communications Center (ECC) opened in 2016 and combines the 9-1-1 Communications Center and the Office Of Emergency Management functions into a single facility.

The Boone County Office Of Emergency Management (OEM) is responsible for developing and implementing a comprehensive framework to enhance resilience and ensure effective mitigation, preparedness, response, and recovery for all disasters that affect Boone County. Upon impact with a complex natural, manmade, or technological disaster, Boone County OEM will activate the Emergency Operation Center (EOC) - housed in the ECC – to coordinate/manage the incident. The dedicated sales tax also support the procurement of resources and services needed to respond to a disaster.

As outlined in the Boone county Emergency Operations Plan, Boone County Joint Communications (BCJC), has responsibilities under Emergency Support Function (ESF) - 2: Communications and Warning. Upon activation of the EOC, the Emergency management Director, or designee, can request a representative from BCJC and other agencies outlined in the EOP to help coordinate disaster response and recovery efforts. As additional layers of responsibility, BCJC activates the early warning system; retrieves data from the National Crime Information Center (NCIC) and the Missouri Uniform Law Enforcement System (MULES) for the police departments they serve; and inputs information into the various records management systems for several public safety agencies.

Various security levels are required within the ECC. The public lobby for the ECC is open during defined business hours and a secure reception point has been established to control public access to the ECC. Access control to secure areas within the facility, either from staff entry points to the facility or for public cleared for entry from the lobby is managed by card authorization. Use of electronic access control systems allows for zones of varying security levels to be created throughout the facility and for users to granted or denied access to these areas with relative ease.

Redundant systems are in place for non-interruption of power supply, backup heating and cooling, telephone, and radio transmission and reception.

The primary concern for this area is tornadic activity, and the ECC is to be designed for survival of an EF-5. This means wind speeds in excess of 200 mph and impacts from debris at over 150 mph. There are 103 outdoor warning sirens activated by the ECC. Other sources of natural disaster will not have significant cost impact. Boone County is just out of the New Madrid earthquake zone. The ECC is designed to provide an appropriate level of protection from this particular threat. The threat of flooding was eliminated through site selection.

New facilities or infrastructure planned for construction during the next five years include a public safety childcare center for first responder families, a Sheriff's Office Training Annex, and various infrastructure projects such as road and bridge improvements.

Boone County implements the 2015 IECC set of building codes. International codes do factor in natural hazards as part of its requirements. The County serves as the enforcement unit for codes in several of the small communities within Boone such as Centralia, Hallsville, Harrisburg, Hartsburg, Huntsdale, Rocheport and Sturgeon. While building codes are enforced within the county and plans must include stormwater management, ways to improve this process would be staying up-to-date with the latest IECC codes and including local hazard mitigation information as part of the building process to encourage development to go beyond current code when able. The challenge with any form of building code is balancing safety with affordability. While it would be nice to build every home to withstand anything that might theoretically come its way, it's simply not feasible to do this and continue to have development.

Table 2.7: Unincorporated Boone County Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Boone County Master Plan: 2025
Builder's Plan	No
Capital Improvement Plan	Proposed Budget Plan: 2025
City Emergency Operations Plan	N/A
County Emergency Operations Plan	Yes: 2021; Next Update (2025)
Local Recovery Plan	In Progress
County Recovery Plan	In Progress, expected 2025
City Mitigation Plan	N/A
County Mitigation Plan	2020
Debris Management Plan	Included in EOP: 2020
Economic Development Plan	REDI

Transportation Plan	Regional Transportation Plan: 2022
Land-Use Plan	Boone County Master Plan: 2025
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	Bonne Femme: 2023
Firewise or other fire mitigation plan	No
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recover)	Yes
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	Yes: 2015 International Code
Floodplain Ordinance	Yes: 2025
Subdivision Ordinance	Yes
Tree Trimming Ordinance	N/A
Nuisance Ordinance	Yes
Stormwater Ordinance	Yes
Drainage Ordinance	Yes
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	Yes
Landscape Ordinance	Yes
Seismic Construction Ordinance	N/A
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes
Hazard Awareness Program	Yes
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	Yes
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	N/A
ISO Fire Rating	Varies

Economic Development Program	Yes: REDI
Land Use Program	Yes
Public Education/Awareness	Yes
Property Acquisition	Yes
Planning/Zoning Boards	Yes
Stream Maintenance Program	Yes
Tree Trimming Program	Yes
Engineering Studies for Streams (Local/County/Regional)	Yes
Mutual Aid Agreements	Yes
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	No
Flood Insurance Maps	Yes
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	Yes
Critical Facilities Inventory	No
Vulnerable Population Inventory	Yes
Land Use Map	Yes
Staff/Department	
Building Code Official	Yes: full-time
Building Inspector	Yes: full-time
Mapping Specialist (GIS)	Yes: full-time
Engineer	Yes: full-time
Development Planner	Yes: full-time
Public Works Official	Yes: full-time
Emergency Management Director	Yes: full-time
NFIP Floodplain Administrator	Yes: full-time
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	Yes

County Emergency Management Commission	Yes
Sanitation Department	No
Transportation Department	Yes
Economic Development Department	Yes
Housing Department	N/A
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	Yes
Veterans Groups	Yes
Local Environmental Organization	Yes: multiple
Homeowners Associations	Yes: multiple
Chamber of Commerce	Yes: multiple
Community Organizations (Lions, Kiwanis, Etc.)	Yes: multiple
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	N/A
Ability to incur debt through general obligation bonds	N/A
Ability to incur debt through special tax bonds	N/A
Ability to incur debt through private activities	N/A
Withhold spending in hazard prone areas	N/A

2.2.2 ASHLAND

The City of Ashland is located in the southern portion of Boone County and straddles US Route 63. The Board of Aldermen is the policy making body of the city government and consists of two representatives from each of its three wards. The Board of Aldermen members and the Mayor is elected to two-year terms. Departments and positions managed and employed by the City of Ashland include:

- City Administrator
- City Clerk
- City Treasurer
- Police Department
- Public Works Department
- Water utility
- Sewer utility
- Parks Department
- Community Development Department

Ashland has experienced robust growth in the past several years. The changes between the 2000 and 2010 censuses give a sense of the strong growth: the city population almost doubled (98% increase) between 2000 and 2010. Growth was slower for the 2020 census but with a large number of housing going in and recent annexations a large jump is expected for 2030.

Leadership strategies are focused on effectively managing growth. The sewer collection system will run north along U.S. Highway 63 with full intents and purposes of serving the Airport Planned Industrial and Airport Planned Commercial zoning districts. Industrial and commercial growth is proposed on the east side of U.S. Highway 63 off of Route Y.

Ashland utilizes the 2012 IECC building codes. The international codes do account for natural hazards to some degree, especially thermal transfer such as extreme temperatures that the area experiences. The codes are looser than the more updated 2015 codes that the county has adopted. Updating to the latest codes could further future proof new development against hazards. Due to the flat nature of the terrain in and around Ashland, stormwater runoff is a challenge that must be accounted for in new development. Growth around Ashland has been primarily residential and moved quickly. Limitations in staff and funding impacts the city's ability to address hazard mitigation in older parts of town. Focus has been on keeping up with and trying to manage the fast paced new growth.

Table 2.8: Ashland Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes: 2019
Builder's Plan	N/A

Capital Improvement Plan	N/A
City Emergency Operations Plan	Yes
County Emergency Operations Plan	Yes
Local Recovery Plan	N/A
County Recovery Plan	In Progress
City Mitigation Plan	N/A
County Mitigation Plan	2015
Debris Management Plan	N/A
Economic Development Plan	N/A
Transportation Plan	Yes: 2025
Land-Use Plan	Yes:2019
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	N/A
Firewise or other fire mitigation plan	No
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recover)	N/A
Policies/Ordinance	
Zoning Ordinance	Yes: 2024
Building Code	Yes: 2012
Floodplain Ordinance	Yes
Subdivision Ordinance	Yes: 2024
Tree Trimming Ordinance	N/A
Nuisance Ordinance	N/A
Stormwater Ordinance	Yes
Drainage Ordinance	N/A
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	N/A
Landscape Ordinance	Yes: 2024
Seismic Construction Ordinance	N/A
Program	

Zoning/Land Use Restrictions	Yes: 2024
Codes Building Site/Design	Yes: 2024
Hazard Awareness Program	N/A
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	N/A
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	N/A
ISO Fire Rating	4 (SOBOC, Fire can update)
Economic Development Program	N/A
Land Use Program	N/A
Public Education/Awareness	N/A
Property Acquisition	N/A
Planning/Zoning Boards	Yes
Stream Maintenance Program	Yes
Tree Trimming Program	N/A
Engineering Studies for Streams (Local/County/Regional)	Bonne Femme Watershed
Mutual Aid Agreements	Yes, countywide
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	Yes
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	County
Critical Facilities Inventory	N/A
Vulnerable Population Inventory	N/A
Land Use Map	Yes, on website
Staff/Department	
Building Code Official	Darin Ratermann, Community Development
Building Inspector	Darin Ratermann, Community Development

Mapping Specialist (GIS)	N/A
Engineer	Christina Lubbert, Lubbert Engineering
Development Planner	Darin Ratermann, Community Development
Public Works Official	Yes
Emergency Management Director	Scott Young, Police Chief
NFIP Floodplain Administrator	Darin Ratermann, Community Development
Emergency Response Team	N/A
Hazardous Materials Expert	N/A
Local Emergency Planning Committee	N/A
County Emergency Management Commission	N/A
Sanitation Department	Republic Services
Transportation Department	Yes
Economic Development Department	Kyle Michel, City Administrator
Housing Department	N/A
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	N/A
Salvation Army	N/A
Veterans Groups	American Legions Post 152
Local Environmental Organization	N/A
Homeowners Associations	N/A
Chamber of Commerce	Southern Boone Chamber of Commerce
Community Organizations (Lions, Kiwanis, Etc.)	Lions, Ashland Optimist Club
Local Funding Availability	
Apply for Community Development Block	N/A
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur debt through general obligation bonds	Yes

Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Withhold spending in hazard prone areas	Yes

2.2.3 CENTRALIA

The Mayor and the Board of Aldermen are the policy making bodies in the city government. Centralia also has the following offices and staff positions:

- City Administrator
- City Clerk
- Fire
- Police
- Streets Foreman
- Water Foreman
- Line Foreman

In 2021, the City experienced an ice storm, which caused significant power line damage. Some undergrounding has been accomplished to minimize outages across town during significant storms.

The City conducts education and outreach to residents on the City Facebook page pertaining to responsible water and electric use. There are 3 outdoor warning sirens in the City, activated by the County. Since the last plan update, the City's population has grown by approximately 167 residents, which has resulted in many single-family homes and duplexes being built. No development is expected in the floodplain or other hazard areas. City building codes keep up with the County codes. Due to staffing and funding limitations it's unlikely any mitigation capabilities will be expanded upon in the near future.

Table 2.9: Centralia Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes: 2018
Builder's Plan	N/A
Capital Improvement Plan	N/A
City Emergency Operations Plan	N/A
County Emergency Operations Plan	Yes
Local Recovery Plan	N/A
County Recovery Plan	In Progress
City Mitigation Plan	N/A
County Mitigation Plan	2020
Debris Management Plan	N/A

Economic Development Plan	CREDI
Transportation Plan	Regional Transportation Plan (Mid-MO)
Land-Use Plan	N/A
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	N/A
Firewise or other fire mitigation plan	No
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recover)	N/A
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	Yes: ICC IBC 2015
Floodplain Ordinance	Yes: 01/15/2001
Subdivision Ordinance	Yes
Tree Trimming Ordinance	N/A
Nuisance Ordinance	Yes
Stormwater Ordinance	No
Drainage Ordinance	N/A
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	N/A
Landscape Ordinance	N/A
Seismic Construction Ordinance	N/A
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	N/A
Hazard Awareness Program	N/A
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	N/A
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	N/A

ISO Fire Rating	5
Economic Development Program	REDI
Land Use Program	N/A
Public Education/Awareness	N/A
Property Acquisition	N/A
Planning/Zoning Boards	Yes
Stream Maintenance Program	N/A
Tree Trimming Program	N/A
Engineering Studies for Streams (Local/County/Regional)	N/A
Mutual Aid Agreements	N/A
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	County
Critical Facilities Inventory	N/A
Vulnerable Population Inventory	N/A
Land Use Map	N/A
Staff/Department	
Building Code Official	County
Building Inspector	County
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes: full-time
Emergency Management Director	County
NFIP Floodplain Administrator	Yes
Emergency Response Team	No
Hazardous Materials Expert	No

Local Emergency Planning Committee	Yes: part-time
County Emergency Management Commission	N/A
Sanitation Department	No
Transportation Department	Yes
Economic Development Department	No
Housing Department	No
Historic Preservation	Yes: part-time
Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	No
Veterans Groups	Yes
Local Environmental Organization	No
Homeowners Associations	Yes
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, Etc.)	Yes: Kiwanis, Rotary
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	No
Withhold spending in hazard prone areas	No

2.2.4 COLUMBIA

The City of Columbia has a council/manager form of government. The mayor and 6 council members are elected by the citizens of Columbia and serve as non-paid members for 3 years with staggered terms of service. The city manager reports to the Mayor and Council and is considered the chief administrator. Department heads for all municipal functions report to the City Manager. Each department in the City is required to have a Business Continuity Plan. Columbia also has the following offices and staff positions:

- City Manager
- City Clerk
- Fire
- Planning & Development
- Police
- Public Communications
- Public Works

The City of Columbia has continued in its efforts to bury electric lines and offer flood buyouts when possible.

The City of Columbia has several ongoing public education or information programs, including the DHSS/SEMA “Ready in 3” program for household preparedness, fire safety campaigns, and environmental education focused on heat wave safety and responsible water use.

Vulnerable populations in the City include disabled populations with special needs and refugee populations with specific cultural and language needs. The City seeks tools to assist these populations in understanding the risks and hazards in the community, hazard impacts, and resources to be prepared.

It is anticipated that the City of Columbia will continue to grow. Growth is primarily expected to occur within the Urban Services Area (USA) boundary identified in Columbia Imagined, the City’s adopted comprehensive plan, as this area has sewer and often other utility infrastructure capacity. Most development is anticipated to occur in the southwest and northeast areas of Columbia, with areas on the southeast anticipated to also have some growth based upon recent platting activity. There are approximately 75 outdoor warning sirens in the City which are activated by the Boone County Office of Emergency Management. Community members can also self-enroll in Smart 9-1-1/RAVE Alert to receive notifications and emergency warnings. There are no designated public tornado shelters or saferooms in the City.

The City’s Capital Improvement Program (CIP) describes planned capital improvements by type (streets and sidewalks, parks, public safety, airport, utilities, etc.) Notable future civic developments likely to occur in the next few years include a new airport terminal, Police headquarters, remodels of fire stations, and many expansions to stormwater and sewer handling. The City is also making efforts toward infrastructure that is not only resilient, but also green.

City of Columbia has adopted the 2018 IECC building code requirements for all new construction and upgrades to existing construction. These codes do account for natural hazards, especially extreme temperature hazards. The city has dedicated a lot of staff time and funds toward upgrades in its policies and new infrastructure but due to the size of the mitigation need and the funds it would take to upgrade everything it's unlikely that major steps to mitigate hazards in older buildings and infrastructure will occur soon.

Table 2.10: City of Columbia Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes: 2021
Builder's Plan	N/A
Capital Improvement Plan	Yes: 2024
City Emergency Operations Plan	N/A: The City of Columbia is an included entity in the County Emergency Operations Plan.
County Emergency Operations Plan	Yes: 2021
Local Recovery Plan	In Progress
County Recovery Plan	In Progress
City Mitigation Plan	N/A: The City of Columbia is an included entity in the County Risk Management Plan
County Mitigation Plan	2020
Debris Management Plan	N/A: Appendix 2 of Boone County Emergency Response Plan
Economic Development Plan	N/A
Transportation Plan	Yes: 2025 (Columbia Area Transportation Study Organization)
Land-Use Plan	Yes: 2013, status report in 2020
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	Bonne Femme: 2023
Firewise or other fire mitigation plan	No
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recover)	Each department in the City is required to have a Business Continuity Plan.
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	Yes: 2018

Floodplain Ordinance	Yes: included in Unified Development Ordinance 2015
Subdivision Ordinance	Yes
Tree Trimming Ordinance	Yes
Nuisance Ordinance	Yes
Stormwater Ordinance	Yes
Drainage Ordinance	Yes
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	Yes
Landscape Ordinance	N/A
Seismic Construction Ordinance	N/A
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes
Hazard Awareness Program	Yes
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	N/A: Included in Boone County's plan
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	N/A
ISO Fire Rating	2
Economic Development Program	REDI
Land Use Program	Yes: Part of the planning and zoning commission
Public Education/Awareness	Yes
Property Acquisition	Yes
Planning/Zoning Boards	Yes
Stream Maintenance Program	Yes
Tree Trimming Program	Yes
Engineering Studies for Streams (Local/County/Regional)	N/A
Mutual Aid Agreements	Yes
Studies/Reports/Maps	

Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A (other than the FEMA HMP)
Flood Insurance Maps	Yes
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	County
Critical Facilities Inventory	No
Vulnerable Population Inventory	Yes
Land Use Map	Yes
Staff/Department	
Building Code Official	Yes; full-time in the Community Development Department
Building Inspector	Yes; full-time in the Community Development Department
Mapping Specialist (GIS)	Yes; full-time in the City of Columbia IT Department
Engineer	Yes; full-time in the Community Development Department
Development Planner	Yes; full-time in the Community Development Department
Public Works Official	Yes; full-time in the Public Works Department
Emergency Management Director	N/A (County)
NFIP Floodplain Administrator	Yes; full-time in the Community Development Department
Emergency Response Team	Yes: Fire and Police Departments
Hazardous Materials Expert	Yes; Fire Department
Local Emergency Planning Committee	Yes; County
County Emergency Management Commission	Yes; County Office of Emergency Management
Sanitation Department	Yes
Transportation Department	Yes
Economic Development Department	REDI
Housing Department	Yes
Historic Preservation	Yes
Non-Governmental Organizations (NGOs)	
American Red Cross	Yes
Salvation Army	Yes

Veterans Groups	Yes
Local Environmental Organization	Yes; several
Homeowners Associations	Yes; several
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, Etc.)	Yes; several
Local Funding Availability	
Apply for Community Development Block	N/A
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	Yes
Withhold spending in hazard prone areas	Yes

2.2.5 HALLSVILLE

The Mayor and the Board of Aldermen are the policy making bodies in the city government. Hallsville also has the following offices and staff positions:

- City Administrator
- Chief of Police
- City Clerk
- Public Works Superintendent

Hallsville has pursued a policy of continued slow growth with careful planning. This has been important for the city as it is within commuting distance of Columbia where many jobs are located. Part of the approach to controlled growth is the infilling of empty lots and minimum lot sizes and setbacks. Hallsville also recently designated an Alderman to serve as an Emergency Management Coordinator. The City recently installed a generator at City Hall and the Community Center. There are 3 churches which offer storm shelters in the City and none are FEMA-rated. Since the last plan update, the new Echo Ridge subdivision has been developed. An extension of this subdivision is likely, along with the Douglas Pointe subdivision. Due to a lack of staff Hallsville relies on the county for some of its enforcement and codes. Without staff or funds any mitigation advancements are unlikely in the near future.

Table 2.11: Hallsville Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes: 2023
Builder's Plan	No
Capital Improvement Plan	No
City Emergency Operations Plan	No
County Emergency Operations Plan	Yes: annual review
Local Recovery Plan	No
County Recovery Plan	Yes: 2020
City Mitigation Plan	No
County Mitigation Plan	Yes: 2020
Debris Management Plan	Yes
Economic Development Plan	No
Transportation Plan	Regional Transportation Plan and included in the Hallsville Comprehensive Plan

Land-Use Plan	Yes, included in the Comprehensive Plan
Flood Mitigation Assistance (FMA) Plan	No
Watershed Plan	No
Firewise or other fire mitigation plan	No
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recover)	No
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	Yes: 2022
Floodplain Ordinance	Yes: 2016
Subdivision Ordinance	Yes
Tree Trimming Ordinance	Yes
Nuisance Ordinance	Yes
Stormwater Ordinance	Yes
Drainage Ordinance	Yes
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	No
Landscape Ordinance	Yes
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	No
Hazard Awareness Program	No
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	No
National Weather Service (NWS) Storm Ready	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	N/A
ISO Fire Rating	4
Economic Development Program	No

Land Use Program	Yes
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	Yes
Stream Maintenance Program	No
Tree Trimming Program	Yes
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	No
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	Yes
Flood Insurance Maps	Yes
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	No
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	Yes
Staff/Department	
Building Code Official	Yes: full-time
Building Inspector	Yes: full-time
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes: full-time
Emergency Management Director	Yes: part-time
NFIP Floodplain Administrator	Yes: full-time
Emergency Response Team	Yes/CERT
Hazardous Materials Expert	No
Local Emergency Planning Committee	No
County Emergency Management Commission	Yes

Sanitation Department	Contracted Out
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Local Environmental Organization	No
Homeowners Associations	Yes
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, Etc.)	Yes: Masons
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	No
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	Yes
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	No
Withhold spending in hazard prone areas	No

2.2.6 HARRISBURG

The Board of Trustees is the policy making body in Harrisburg. The village also has the following staff position:

- City Clerk

The Village of Harrisburg joined the NFIP in 2012. The Village also went through a strategic planning process during which it examined its infrastructure and what would be needed for growth. The Village is interested in preserving its historic structures while in the process of growth. With this in mind, the Village acquired the old hardware store and the Harrisburg School ("The Old School House") and its grounds.

The city relies on the county for building code enforcement and inspections but does not have any real zoning ordinance that controls land use. Adopting formal zoning ordinances to restrict land use could be a useful tool to mitigate some hazards. Low staffing and a small population to serve on boards, as well as funding to put the necessary documentation in place means this will not likely happen anytime soon unless some kind of construction boom takes place to force it.

Table 2.12: Harrisburg Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	No
Builder's Plan	N/A
Capital Improvement Plan	N/A
City Emergency Operations Plan	Yes
County Emergency Operations Plan	Annual Review
Local Recovery Plan	N/A
County Recovery Plan	In progress
City Mitigation Plan	N/A
County Mitigation Plan	N/A
Debris Management Plan	No
Economic Development Plan	No
Transportation Plan	Regional Transportation Plan: 2015
Land-Use Plan	No
Flood Mitigation Assistance (FMA) Plan	N/A

Watershed Plan	N/A
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recover)	N/A
Policies/Ordinance	
Zoning Ordinance	No
Building Code	Yes
Floodplain Ordinance	Yes
Subdivision Ordinance	No
Tree Trimming Ordinance	No
Nuisance Ordinance	N/A
Stormwater Ordinance	N/A
Drainage Ordinance	N/A
Site Plan Review Requirements	N/A
Historic Preservation Ordinance	Yes
Landscape Ordinance	N/A
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	No
Codes Building Site/Design	N/A
Hazard Awareness Program	N/A
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	N/A
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	N/A
ISO Fire Rating	N/A
Economic Development Program	N/A
Land Use Program	N/A
Public Education/Awareness	N/A

Property Acquisition	N/A
Planning/Zoning Boards	N/A
Stream Maintenance Program	N/A
Tree Trimming Program	N/A
Engineering Studies for Streams (Local/County/Regional)	N/A
Mutual Aid Agreements	N/A
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	County
Critical Facilities Inventory	N/A
Vulnerable Population Inventory	No
Land Use Map	N/A
Staff/Department	
Building Code Official	No
Building Inspector	N/A
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	N/A
Emergency Management Director	N/A
NFIP Floodplain Administrator	Yes
Emergency Response Team	N/A
Hazardous Materials Expert	No
Local Emergency Planning Committee	N/A
County Emergency Management Commission	N/A
Sanitation Department	N/A
Transportation Department	N/A

Economic Development Department	N/A
Housing Department	No
Historic Preservation	N/A
Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Local Environmental Organization	No
Homeowners Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, Etc.)	No
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	N/A
Impact fees for new development	N/A
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	N/A
Withhold spending in hazard prone areas	N/A

2.2.7 HARTSBURG

The policy making body in the village government is a Board of Trustees with a chairman selected by the board. The Village is using ARPA funds to improve the sewer system to reduce negative impacts on the environment during a natural disaster, including a structure to cover the UV lamp to avoid critical damage/failure. The Village has 1 outdoor warning siren, activated by the County.

The village has zoning ordinances that help control land use but it uses the county to manage and enforce building codes. There is not much growth in Hartsburg and the city owns very little in the way of facilities, so the ability to mitigate many hazards is limited short of incentivizing the current population to upgrade and harden existing structures. There is no funds for such a campaign.

Table 2.13: Hartsburg Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	No
Builder's Plan	N/A
Capital Improvement Plan	N/A
City Emergency Operations Plan	Yes
County Emergency Operations Plan	Annual Review
Local Recovery Plan	N/A
County Recovery Plan	In Progress
City Mitigation Plan	N/A
County Mitigation Plan	Yes: 2020
Debris Management Plan	No
Economic Development Plan	N/A
Transportation Plan	Regional Transportation Plan? 2022
Land-Use Plan	N/A
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	N/A
Firewise or other fire mitigation plan	No
School Mitigation Plan	N/A
Critical Facilities Plan	N/A

(Mitigation/Response/Recover)	
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	Yes
Floodplain Ordinance	Yes
Subdivision Ordinance	N/A
Tree Trimming Ordinance	N/A
Nuisance Ordinance	N/A
Stormwater Ordinance	N/A
Drainage Ordinance	N/A
Site Plan Review Requirements	N/A
Historic Preservation Ordinance	N/A
Landscape Ordinance	N/A
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	N/A
Hazard Awareness Program	N/A
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	N/A
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	N/A
ISO Fire Rating	5
Economic Development Program	N/A
Land Use Program	N/A
Public Education/Awareness	N/A
Property Acquisition	N/A
Planning/Zoning Boards	N/A
Stream Maintenance Program	N/A

Tree Trimming Program	N/A
Engineering Studies for Streams (Local/County/Regional)	N/A
Mutual Aid Agreements	N/A
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	County
Critical Facilities Inventory	N/A
Vulnerable Population Inventory	No
Land Use Map	N/A
Staff/Department	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	No
Emergency Management Director	No
NFIP Floodplain Administrator	Yes
Emergency Response Team	N/A
Hazardous Materials Expert	No
Local Emergency Planning Committee	N/A
County Emergency Management Commission	N/A
Sanitation Department	N/A
Transportation Department	No
Economic Development Department	N/A
Housing Department	No
Historic Preservation	N/A

Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Local Environmental Organization	No
Homeowners Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, Etc.)	No
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	N/A
Impact fees for new development	N/A
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	N/A
Withhold spending in hazard prone areas	N/A

2.2.8 HUNTSDALE

The Mayor and the Board of Aldermen are the policy making bodies of the government. Some aldermen members have attended training to be CERT certified through the county. The Village of Huntsdale doesn't own any buildings or vehicles.

An engineering firm was hired to redesign the streets and stormwater ditches throughout the village. The project began in 2007 and construction was completed in 2012.

Since the last update, The Nature Conservancy and Missouri River Relief have inherited 163.3 acres between the Missouri River and the MKT Trail. The lower portion of land within the city limits and the 163.3 acres along the river fall within the 100-year flood plain whereas the development on the North side of Sarr Street fall in the 500-year flood plain. Levees were built after the Flood of 93. The Katy Trail draws hikers and cyclists through, and a boat ramp now owned by the Missouri Department of Conservation allows visitors and residents to have access to the Missouri River.

Huntsdale does not own any structures but does utilize zoning to control land use within its boundary. It relies on the county to enforce building codes. Residents could use better access to a community facility that is hardened for storms and safe from flooding but due to having no staff and no funding it's unlikely any further mitigation actions will be taken in the coming years.

Table 2.14: Huntsdale Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	No: county
Builder's Plan	No
Capital Improvement Plan	No
City Emergency Operations Plan	N/A
County Emergency Operations Plan	Annual Review
Local Recovery Plan	N/A
County Recovery Plan	In Progress
City Mitigation Plan	N/A
County Mitigation Plan	Yes: 2020
Debris Management Plan	N/A
Economic Development Plan	N/A

Transportation Plan	Regional Transportation Plan: 2022
Land-Use Plan	N/A
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	N/A
Firewise or other fire mitigation plan	No
School Mitigation Plan	No
Critical Facilities Plan (Mitigation/Response/Recover)	N/A
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	Yes
Floodplain Ordinance	Yes
Subdivision Ordinance	N/A
Tree Trimming Ordinance	N/A
Nuisance Ordinance	N/A
Stormwater Ordinance	N/A
Drainage Ordinance	N/A
Site Plan Review Requirements	N/A
Historic Preservation Ordinance	N/A
Landscape Ordinance	N/A
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes – follow IBC with exception
Hazard Awareness Program	No
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	10

Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	Yes
Stream Maintenance Program	No
Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	N/A
Mutual Aid Agreements	N/A
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	County
Critical Facilities Inventory	N/A
Vulnerable Population Inventory	N/A
Land Use Map	N/A
Staff/Department	
Building Code Official	Yes
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes: part-time volunteer
Emergency Management Director	Yes: County
NFIP Floodplain Administrator	Yes: Part-time Volunteer
Emergency Response Team	Yes: BCFPD
Hazardous Materials Expert	Yes: BCFPD
Local Emergency Planning Committee	Yes: County

County Emergency Management Commission	N/A
Sanitation Department	No
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Local Environmental Organization	No
Homeowners Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, Etc.)	No
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	N/A
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	N/A
Withhold spending in hazard prone areas	N/A

2.2.9 ROCHEPORT

The Mayor and the City Council are the policy making bodies in the city government. The City employs a City Clerk.

The City of Rocheport no longer owns or operates the wastewater treatment plant; it is now owned and operated by the Boone County Regional Sewer District. Past mitigation actions include exploring effective strategies to mitigate flooding at the wastewater treatment plant in Rocheport. In the spring of 2019 flooding reached more than 33 ft in June 2019. Sandbagging efforts were enacted to protect the town and the wastewater treatment plant. While businesses were not directly under water there was a marked decrease in economic activity due to Katy Trail closures.

Zoning ordinances are in place and the city relies on the county for code enforcement. The city has had limited mitigation activities due to limited staff and funding. This is unlikely to change in the near future as it focuses on bouncing back from trail closures.

Table 2.15: Rocheport Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	No
Builder's Plan	N/A
Capital Improvement Plan	N/A
City Emergency Operations Plan	Yes: Backup city hall
County Emergency Operations Plan	Annual Review
Local Recovery Plan	N/A
County Recovery Plan	In Progress
City Mitigation Plan	N/A
County Mitigation Plan	2020
Debris Management Plan	County: 2018
Economic Development Plan	N/A
Transportation Plan	Regional Transportation Plan: 2015
Land-Use Plan	N/A
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	N/A

Firewise or other fire mitigation plan	No
School Mitigation Plan	N/A
Critical Facilities Plan (Mitigation/Response/Recover)	N/A
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	Yes
Floodplain Ordinance	Yes
Subdivision Ordinance	Yes
Tree Trimming Ordinance	N/A
Nuisance Ordinance	N/A
Stormwater Ordinance	No
Drainage Ordinance	N/A
Site Plan Review Requirements	N/A
Historic Preservation Ordinance	N/A
Landscape Ordinance	N/A
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	N/A
Hazard Awareness Program	N/A
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	N/A
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	N/A
ISO Fire Rating	5
Economic Development Program	N/A
Land Use Program	N/A
Public Education/Awareness	N/A
Property Acquisition	N/A

Planning/Zoning Boards	N/A
Stream Maintenance Program	N/A
Tree Trimming Program	N/A
Engineering Studies for Streams (Local/County/Regional)	No
Mutual Aid Agreements	N/A
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	County
Critical Facilities Inventory	No
Vulnerable Population Inventory	No
Land Use Map	N/A
Staff/Department	
Building Code Official	No
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	N/A
Emergency Management Director	N/A
NFIP Floodplain Administrator	Yes
Emergency Response Team	N/A
Hazardous Materials Expert	N/A
Local Emergency Planning Committee	N/A
County Emergency Management Commission	N/A
Sanitation Department	No
Transportation Department	No
Economic Development Department	No

Housing Department	No
Historic Preservation	No
Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Local Environmental Organization	No
Homeowners Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, Etc.)	No
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	County
Impact fees for new development	N/A
Ability to incur debt through general obligation bonds	N/A
Ability to incur debt through special tax bonds	N/A
Ability to incur debt through private activities	N/A
Withhold spending in hazard prone areas	N/A

2.2.10 STURGEON

The Mayor and the Board of Aldermen are the policy making bodies in the city government. The City employs a City Clerk, who is the floodplain administrator.

Since the last update the city project to change the wastewater system to a no discharge/land application system and the addition of a holding basin for treated wastewater from the lagoons has been completed. Residential development since 2015 includes the Bailey Residential Subdivision. The City has 1 outdoor warning siren, activated by the County but no FEMA rated storm shelter. The city has been working toward stormwater management in a portion of town to manage flash flooding that takes place from time to time. Due to lack of funding and limited staff time progress on projects is slow.

Sturgeon does have zoning ordinances and building codes that drive growth and development. There has recently been a lot of residential growth.

Table 2.16: Sturgeon Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	Yes
Builder's Plan	County
Capital Improvement Plan	N/A
City Emergency Operations Plan	N/A
County Emergency Operations Plan	Annual Review
Local Recovery Plan	N/A
County Recovery Plan	Annual Review
City Mitigation Plan	N/A
County Mitigation Plan	2020
Debris Management Plan	N/A
Economic Development Plan	Regional Economic Development Inc.
Transportation Plan	Regional Transportation Plan: 2015
Land-Use Plan	N/A
Flood Mitigation Assistance (FMA) Plan	Yes
Watershed Plan	Yes
Firewise or other fire mitigation plan	No
School Mitigation Plan	No

Critical Facilities Plan (Mitigation/Response/Recover)	No
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	ICC 2012
Floodplain Ordinance	Yes
Subdivision Ordinance	Yes
Tree Trimming Ordinance	No
Nuisance Ordinance	Yes
Stormwater Ordinance	Yes
Drainage Ordinance	No
Site Plan Review Requirements	Yes
Historic Preservation Ordinance	Yes
Landscape Ordinance	No
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	County
Hazard Awareness Program	No
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	5
Economic Development Program	Yes
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	Yes
Stream Maintenance Program	N/A

Tree Trimming Program	Yes
Engineering Studies for Streams (Local/County/Regional)	Yes
Mutual Aid Agreements	Yes
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	No
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	N/A
FEMA Flood Insurance Study (Detailed)	N/A
Evacuation Route Map	County
Critical Facilities Inventory	N/A
Vulnerable Population Inventory	No
Land Use Map	Yes
Staff/Department	
Building Code Official	Mayor
Building Inspector	Contracted Out
Mapping Specialist (GIS)	No
Engineer	Contracted Out
Development Planner	No
Public Works Official	Yes
Emergency Management Director	No
NFIP Floodplain Administrator	Yes
Emergency Response Team	No
Hazardous Materials Expert	No
Local Emergency Planning Committee	No
County Emergency Management Commission	No
Sanitation Department	Yes
Transportation Department	Yes
Economic Development Department	No, member of REDI
Housing Department	No
Historic Preservation	Yes

Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Local Environmental Organization	No
Homeowners Associations	No
Chamber of Commerce	Yes
Community Organizations (Lions, Kiwanis, Etc.)	No
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	No
Authority to levy taxes for a specific purpose	N/A
Fees for water, sewer, gas, or electric services	Yes
Impact fees for new development	No
Ability to incur debt through general obligation bonds	No
Ability to incur debt through special tax bonds	No
Ability to incur debt through private activities	No
Withhold spending in hazard prone areas	No

Table 2.17: Summary of Jurisdictional Capabilities

Capabilities	Uninc. Boone County	Ashland	Centralia	Columbia	Hallsville	Harrisburg	Hartsburg	Huntsdale	Rocheport	Sturgeon
Comprehensive Plan	Boone County Master Plan: 2025	Yes: Update In Progress	Yes	Yes: 2013	No	No	No	No: county	No	Pending
Builder's Plan	No	N/A	N/A	N/A	No	N/A	N/A	No	N/A	N/A
Capital Improvement Plan	Proposed Budget Plan: 2025	N/A	N/A	Yes: 2018	No	N/A	N/A	No	N/A	N/A
City Emergency Operations Plan	N/A	Yes	Yes	Yes	In Progress	Yes	Yes	N/A	Yes: Backup city hall	N/A
County Emergency Operations Plan	Yes: 2021; Next Update (2025)	Yes	Yes	Yes	Annual Review	Annual Review	Annual Review	Annual Review	Annual Review	Annual Review
Local Recovery Plan	In Progress	N/A	N/A	In Progress	No	N/A	N/A	N/A	N/A	N/A
County Recovery Plan	In Progress, expected 2025	In Progress	In Progress	In Progress	In Progress	In progress	In Progress	In Progress	In Progress	In Progress

City Mitigation Plan	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
County Mitigation Plan	**2020**	**2015**	**2015**	**2015**	**2015**	**N/A**	**Yes: 2015**	**Yes: 2015**	**2015**	**2015**
Debris Management Plan	**Included in EOP: 2020**	**N/A**	**N/A**	**N/A**	**Yes**	**No**	**No**	**N/A**	**County: 2018**	**N/A**
Economic Development Plan	**REDI**	**N/A**	**CREDI**	**N/A**	**No**	**No**	**N/A**	**N/A**	**N/A**	**N/A**
Transportation Plan	**Regional Transportation Plan: 2022**	**2015: Regional Transportation Plan**	**Regional Transportation Plan (Mid-MO)**	**CATSO TIP: 2019-2022**	**Regional Transportation Plan: 2015**	**Regional Transportation Plan: 2015**	**Regional Transportation Plan? 2015**	**Regional Transportation Plan: 2015**	**Regional Transportation Plan: 2015**	**Regional Transportation Plan: 2015**
Land-Use Plan	**Boone County Master Plan: 2025**	**N/A**	**N/A**	**Yes**	**In-Progress**	**No**	**N/A**	**N/A**	**N/A**	**N/A**
Flood Mitigation Assistance (FMA) Plan	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**N/A**	**N/A**	**N/A**	**Yes**
Watershed Plan	**Bonne Femme: 2023**	**N/A**	**N/A**	**Bonne Femme: 2007**	**No**	**N/A**	**N/A**	**N/A**	**N/A**	**Yes**
Firewise or other	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

fire mitigation plan										
School Mitigation Plan	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**No**	**N/A**	**No**
Critical Facilities Plan (Mitigation/Response/Recover)	**Yes**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**N/A**	**N/A**	**N/A**	**No**
Zoning Ordinance	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**
Building Code	**Yes: 2015 International Code**	**Yes**	**Yes**	**Yes**	**Yes: 2015**	**Yes**	**Yes**	**N/A**	**Yes**	**County**
Floodplain Ordinance	**Yes: 2025**	**Yes**	**Yes**	**Yes**	**Yes: 2016**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Subdivision Ordinance	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**N/A**	**N/A**	**Yes**	**Yes**
Tree Trimming Ordinance	**N/A**	**N/A**	**N/A**	**Yes**	**No**	**No**	**N/A**	**N/A**	**N/A**	**Yes**
Nuisance Ordinance	**Yes**	**N/A**	**Yes**	**Yes**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**Yes**
Stormwater Ordinance	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**N/A**	**N/A**	**N/A**	**No**	**Yes**
Drainage Ordinance	**Yes**	**N/A**	**N/A**	**Yes**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**Yes**
Site Plan Review Requirements	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**Yes**

Historic Preservation Ordinance	**Yes**	**N/A**	**N/A**	**Yes**	**No**	**Yes**	**N/A**	**N/A**	**N/A**	**Yes**
Landscape Ordinance	**Yes**	**N/A**	**N/A**	**N/A**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**Yes**
Seismic Construction Ordinance	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**No**	**No**	**No**	**No**	**No**
Zoning/Land Use Restrictions	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**
Codes Building Site/Design	**Yes**	**Yes**	**N/A**	**Yes**	**Yes**	**N/A**	**N/A**	**No**	**N/A**	**County**
Hazard Awareness Program	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**Yes**
National Flood Insurance Program (NFIP)	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
NFIP Community Rating System (CRS) Program	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
National Weather Service (NWS) Storm Ready	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**Yes**
Firewise Community Certification	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Building Code Effectiveness	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**Yes**

Grading (BCEGs)										
ISO Fire Rating	**Varies**	**4**	**5**	**2**	**4**	**N/A**	**5**	**10**	**5**	**4**
Economic Development Program	**Yes: REDI**	**N/A**	**CREDI**	**REDI**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**Yes**
Land Use Program	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**No**
Public Education/Awareness	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**Yes**
Property Acquisition	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**No**
Planning/Zoning Boards	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**N/A**	**N/A**	**Yes**	**N/A**	**Yes**
Stream Maintenance Program	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**N/A**
Tree Trimming Program	**Yes**	**N/A**	**N/A**	**N/A**	**No**	**N/A**	**N/A**	**No**	**N/A**	**Yes**
Engineering Studies for Streams (Local/County/Regional)	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**
Mutual Aid Agreements	**Yes**	**N/A**	**N/A**	**N/A**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**Yes**
Hazard Analysis/Risk	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**

Assessment (Local)										
Hazard Analysis/Risk Assessment (County)	**No**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Flood Insurance Maps	**Yes**	**Yes**	**N/A**	**N/A**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
FEMA Flood Insurance Study (Detailed)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Evacuation Route Map	**Yes**	**County**	**County**	**County**	**In Progress/ County**	**County**	**County**	**County**	**County**	**County**
Critical Facilities Inventory	**No**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**No**	**N/A**
Vulnerable Population Inventory	**Yes**	**N/A**	**N/A**	**N/A**	**No**	**No**	**No**	**N/A**	**No**	**No**
Land Use Map	**Yes**		**N/A**	**Yes**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**No**
Building Code Official	**Yes: full-time**	**N/A**	**County**	**Yes**	**Boone County**	**No**	**No**	**Yes**	**No**	**County**
Building Inspector	**Yes: full-time**	**N/A**	**County**	**Yes**	**Boone County**	**N/A**	**No**	**No**	**No**	**County**
Mapping Specialist (GIS)	**Yes: full-time**	**N/A**	**No**	**Yes**	**Boone County**	**No**	**No**	**No**	**No**	**No**
Engineer	**Yes**	**N/A**	**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**

Development Planner	**Yes: full-time**	**N/A**	**No**	**N/A**	**No**	**No**	**No**	**No**	**No**	**Yes**
Public Works Official	**Yes: full-time**	**Yes**	**Yes**	**Yes**	**Yes**	**N/A**	**No**	**No**	**N/A**	**Yes**
Emergency Management Director	**Yes: full-time**	**N/A**	**County**	**N/A**	**Yes**	**N/A**	**No**	**Yes: County**	**N/A**	**Yes**
NFIP Floodplain Administrator	**Yes: full-time**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes: Part-time Volunteer**	**Yes**	**Yes**
Emergency Response Team	**No**	**N/A**	**Yes**	**N/A**	**Yes/CERT**	**N/A**	**N/A**	**Yes: BCFPD**	**N/A**	**No**
Hazardous Materials Expert	**No**	**N/A**	**No**	**N/A**	**No**	**No**	**No**	**Yes: BCFPD**	**N/A**	**No**
Local Emergency Planning Committee	**Yes**	**N/A**	**Yes**	**Yes**	**Yes/CERT**	**N/A**	**N/A**	**Yes: County**	**N/A**	**No**
County Emergency Management Commission	**Yes**	**N/A**	**N/A**	**Yes**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**No**
Sanitation Department	**No**	**Yes**	**Yes**	**Yes**	**Contract**	**N/A**	**N/A**	**No**	**No**	**No**
Transportation Department	**Yes**	**N/A**	**Yes**	**Yes**	**No**	**N/A**	**No**	**No**	**No**	**No**
Economic Development	**Yes**	**N/A**	**Yes**	**REDI**	**No**	**N/A**	**N/A**	**No**	**No**	**No**

Department										
Housing Department	**N/A**	**N/A**	**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**
Historic Preservation	**Yes**	**No**	**N/A**	**N/A**	**No**	**N/A**	**N/A**	**No**	**No**	**Yes**
American Red Cross	**Yes**	**N/A**	**N/A**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**
Salvation Army	**Yes**	**N/A**	**N/A**	**N/A**	**No**	**No**	**No**	**No**	**No**	**No**
Veterans Groups	**Yes**	**N/A**	**N/A**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**
Local Environmental Organization	**Yes: multiple**	**N/A**	**N/A**	**N/A**	**No**	**No**	**No**	**No**	**No**	**No**
Homeowners Associations	**Yes: multiple**	**N/A**	**N/A**	**N/A**	**No**	**No**	**No**	**No**	**No**	**No**
Chamber of Commerce	**Yes: multiple**	**Yes**	**Yes**	**Yes**	**No**	**No**	**No**	**No**	**No**	**Yes**
Community Organizations (Lions, Kiwanis, Etc.)	**Yes: multiple**	**Lions**	**Yes**	**N/A**	**Yes**	**No**	**No**	**No**	**No**	**No**
Apply for Community Development Block	**Yes**	**N/A**	**Yes**	**N/A**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Fund projects through Capital	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**

Authority to levy taxes for a specific purpose	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Fees for water, sewer, gas, or electric services	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**N/A**	**N/A**	**No**	**County**	**Yes**
Impact fees for new development	**N/A**	**N/A**	**Yes**	**Yes**	**Yes**	**N/A**	**N/A**	**N/A**	**N/A**	**Yes**
Ability to incur debt through general obligation bonds	**N/A**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**N/A**	**Yes**
Ability to incur debt through special tax bonds	**N/A**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**N/A**	**Yes**
Ability to incur debt through private activities	**N/A**	**Yes**	**N/A**	**Yes**	**No**	**N/A**	**N/A**	**N/A**	**N/A**	**No**
Withhold spending in hazard prone areas	**N/A**	**Yes**	**N/A**	**Yes**	**No**	**N/A**	**N/A**	**N/A**	**N/A**	**No**

2.3 SPECIAL DISTRICT

There are numerous special districts in the planning area which are vital to the health and safety of the population. In addition to providing basic services, personnel of the Special Districts possess a wealth of knowledge and experience valuable for hazard mitigation planning.

2.3.1 WASTEWATER DISTRICTS

Boone County Regional Sewer District (BCRSD)
The Sewer District consists of a four-member board and a County Commissioner who are responsible for wastewater quality within Boone County, except for those facilities operated by a municipality or private entity. BCRSD sets fees for sewer service. The BCRSD now owns and operates the wastewater treatment facilities for the Village of Rocheport and the Village of Hartsburg; these were previously owned by the villages.

The majority of the BCRSD system is gravity sewers. The Sewer District operates and maintains the following treatment/reclamation facilities:

- 14 mechanical plants
- 19 aerated lagoons
- 5 non-aerated lagoons
- 3 re-circulating sand filters
- 1 drip irrigation system

The BCRSD works with the City of Columbia which provides wholesale treatment for some of the subdivisions in the Sewer District's territory. BCRSD has a capital improvement plan, updated in 2014.

Municipal Wastewater Systems
The following municipalities all provide their own wastewater treatment: Ashland, Centralia, Columbia, Hallsville, Harrisburg, and Sturgeon.

2.3.2 ROAD AND BRIDGE DISTRICTS

Centralia Special Road District

- Organized through Chapter 233 of the Missouri Statutes
- Composed of three commissioners elected to serve three-year terms
- Responsible for maintaining the roads and bridges of the Centralia Township and an additional 15 square miles in the area
- The three commissioners of the District can identify projects that may be particularly helpful to protecting the road infrastructure of northeastern Boone County.

2.3.3 NON-GOVERNMENTAL AND VOLUNTEER ORGANIZATIONS

Organizations and Volunteers Active in Disasters (OVAD)

OVAD provides for the effective use of volunteers in enhancing the ability to mitigate, prepare, respond, and recover from disasters throughout Boone County. OVAD activity is coordinated through the Boone County office of the State of Missouri Division of Family Services, in conjunction with the overall plan from the Office of Emergency Management. Organizations in Boone County such as American Red Cross, Columbia Office of Volunteer Services, Salvation Army, Columbia/Boone County Health Department, church agencies, and other non-profits are active in supporting the work of OVAD.

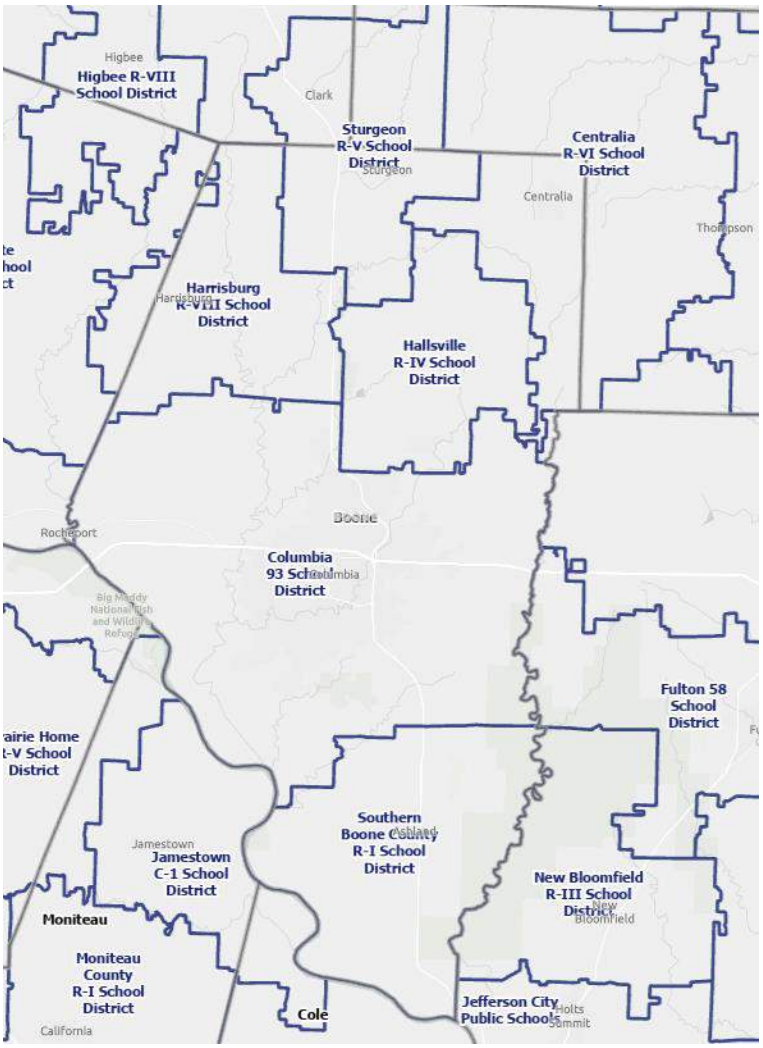
2.4 PUBLIC SCHOOL DISTRICT PROFILES AND MITIGATION CAPABILITIES

There are 9 public School districts that intersect the Boone County boundary. They are:

- Centralia R-VI
- Sturgeon R-V
- Fayette R-III
- Harrisburg R-VIII
- North Callaway R-I
- New Franklin R-I
- Southern Boone R-I
- Columbia Public Schools
- Hallsville R-IV

Figure 2.8 displays the school districts and how they are situated within and around the Boone County boundary.

Figure 2.8: Boone County School Districts



Of the 9 public school districts whose boundaries intersect Boone County only 6 of the districts have buildings and are primarily within Boone County jurisdiction. Centralia, Columbia Public Schools, Hallsville, Harrisburg, Southern Boone, and Sturgeon own structures within Boone County. Of the 6 main districts only Harrisburg R-VIII did not participate in the planning process.

2.4.1 CENTRALIA R-VI SCHOOL DISTRICT

The District partnered with the City of Centralia in February 2013 to add a School Resource Officer who has been instrumental in all areas of school safety and disaster preparedness. There is great interest in adding a tornado safe room for the district. Due to a lack of funding it's unlikely that the school district will make any major mitigation improvements in existing structures. New structures are built to latest codes and take into consideration the most likely hazards when choosing location and design.

District Name	Building Name	Building Enrolment
Centralia R-VI	Centralia High	410
Centralia R-VI	Centralia Intermediate	306
Centralia R-VI	Chance Elem.	307
Centralia R-VI	Chester Boren Middle	293

2.4.2 COLUMBIA PUBLIC SCHOOLS

There is a need for additional tornado shelters at some district schools. This is a huge and expensive task, especially given the tight economic times and the size of the district. As remodels happen throughout the district, hardening efforts are added to facilities. All new additions will have a shelter. Currently, all facilities have a battery backup for life-saving equipment, however only Jefferson Middle School has an on-site generator. The district plans to upgrade from battery backups to generators that can sustain longer power outages and run more equipment, such as elevators for disabled students. The district continues to train all personnel on the various natural and man-made hazards that could face their students and faculty. Preparedness plans are reviewed and altered as needed.

Since the last plan update, the district has added Jefferson Middle School, Rock Bridge Elementary School, and Russell Boulevard Elementary. The district is set to open a new elementary school, Eagle Bluffs, in fall 2026.

Due to a lack of funding it's unlikely that the school district will make any major mitigation improvements in existing structures. New structures are built to latest codes and take into consideration the most likely hazards when choosing location and design.

District Name	Building Name	Building Enrollment
Columbia Public Schools	Alpha Hart Lewis	467
Columbia Public Schools	Ann Hawkins Gentry Mid. School	733
Columbia Public Schools	Beulah Ralph Elementary	677
Columbia Public Schools	Blue Ridge Elem.	469
Columbia Public Schools	Cedar Ridge Elem.	469
Columbia Public Schools	Center For Early Lrning-North	427
Columbia Public Schools	Columbia Area Career Center	0
Columbia Public Schools	David H. Hickman High	2038
Columbia Public Schools	Derby Ridge Elem.	361
Columbia Public Schools	Eliot Battle Elementary	359
Columbia Public Schools	Eugene Field Center	0

Columbia Public Schools	Fairview Elem.	464
Columbia Public Schools	Frederick Douglass High	176
Columbia Public Schools	Jefferson Middle School	621
Columbia Public Schools	John B. Lange Middle	545
Columbia Public Schools	John Ridgeway Elem.	227
Columbia Public Schools	John Warner Middle School	556
Columbia Public Schools	Juvenile Justice Center	16
Columbia Public Schools	Locust St Expressive Arts Elem	287
Columbia Public Schools	Mary Paxton Keeley Elem.	638
Columbia Public Schools	Midway Heights Elem.	241
Columbia Public Schools	Mill Creek Elem.	585
Columbia Public Schools	Muriel Battle High School	1508
Columbia Public Schools	New Haven Elem.	257
Columbia Public Schools	Oakland Middle School	550
Columbia Public Schools	Parkade Elem.	373
Columbia Public Schools	Rock Bridge Elem.	584
Columbia Public Schools	Rock Bridge Sr. High	2057
Columbia Public Schools	Russell Boulevard Elem.	469
Columbia Public Schools	Shepard Boulevard Elem.	547
Columbia Public Schools	Smithton Middle	532
Columbia Public Schools	Thomas Benton Elem.	216
Columbia Public Schools	Two Mile Prairie Elem.	148
Columbia Public Schools	Ulysses S. Grant Elem.	338

Columbia Public Schools	West Boulevard Elem.	320
Columbia Public Schools	West Middle School	524

2.4.3 HALLSVILLE R-IV SCHOOL DISTRICT

District Name	Building Name	Building Enrolment
Hallsville R-IV	Hallsville High	448
Hallsville R-IV	Hallsville Intermediate	349
Hallsville R-IV	Hallsville Middle	347
Hallsville R-IV	Hallsville Primary	403

The School District received the Fleet Excellence Award for its performance on bus safety inspections in 2019; the bus inspections achieved a 100% approval rate with all buses passing inspection and none out of service. The award is presented by the Missouri Highway Patrol. The Hallsville School District has had a track record of achievement in bus safety.

A science wing and a health and fitness classroom/weight room have been completed on the high school. In 2017 an operating levy increase passed to keep class sizes small, expand technology, and attract and retain quality educators. In 2018, a $7 million bond issuance passed to construct a second-grade wing, gymnasium, and storm shelter at the primary school. These additions are complete. The middle school and primary school both have tornado shelters. Since the last plan update, the district has expanded the primary school, middle school, and high school. Enrollment is expected to increase by 10% per year. The school district has a full-time resource officer from the Hallsville Police Department.

Due to a lack of funding it's unlikely that the school district will make any major mitigation improvements in existing structures. New structures are built to latest codes and take into consideration the most likely hazards when choosing location and design.

2.4.4 HARRISBURG R-VIII SCHOOL DISTRICT

Long-term facilities plan goals include the addition of a middle school building, addition of a softball field in the high school sports complex and the acquisition of land for future growth.

Due to a lack of funding it's unlikely that the school district will make any major mitigation improvements in existing structures. New structures are built to latest codes and take into consideration the most likely hazards when choosing location and design.

District Name	Building Name	Building Enrolment
Harrisburg R-VIII	Harrisburg Elementary	291
Harrisburg R-VIII	Harrisburg High	178
Harrisburg R-VIII	Harrisburg Middle	136

2.4.5 SOUTHERN BOONE COUNTY R-I SCHOOL DISTRICT

Southern Boone has had rapid growth in the last several years. In 2018 a bond initiative funded construction on a new elementary gymnasium, central office building, and high school baseball and softball fields. In 2019 voters approved a tax increase to build an addition onto the primary school. The addition will include 17 new classrooms and 6 additional teachers offices.

Future plans include a no-tax increase bond for 2021that would focus on current overcrowding in the elementary and middle schools. Due to a lack of funding it's unlikely that the school district will make any major mitigation improvements in existing structures. New structures and additions are built to latest codes and take into consideration the most likely hazards when choosing location and design.

District Name	Building Name	Building Enrolment
Southern Boone County R-I School District	Southern Boone Elem.	290
Southern Boone County R-I School District	Southern Boone High	544
Southern Boone County R-I School District	Southern Boone Middle	647
Southern Boone County R-I School District	Southern Boone Primary	495

2.4.6 STURGEON R-V SCHOOL DISTRICT

Since the previous update, the district has added an addition to the high school, which included an ag shop, weight room, and safe room for severe weather. Safety upgrades to security cameras and the addition of shatterproof film at the Elementary, Middle, and High School have also been made. The school has a crisis response plan, updated in 2021. The district does not have any current expansion plans, however future expansion will be necessary if enrollment continues to increase. Due to a lack of funding it's unlikely that the school district will make any major mitigation improvements in existing structures. New structures are built to latest codes and take into consideration the most likely hazards when choosing location and design.

District Name	Building Name	Building Enrolment
Sturgeon R-V School District	Moca-S	1792
Sturgeon R-V School District	Sturgeon Elementary	223
Sturgeon R-V School District	Sturgeon High	127
Sturgeon R-V School District	Sturgeon Middle	97

Table 2.25 Summary of Mitigation Capabilities for Boone County School Districts

Capability	Centralia R-VI	Columbia Public Schools	Hallsville R-IV	Harrisburg R-VIII	Southern Boone	Sturgeon R-V
	Planning Elements					
Master Plan/Date	N/A	N/A	N/A	N/A	N/A	N/A
Capital Improvement Plan/Date	Yes: 2013	Yes:2018	Yes:2019	Yes: N/A	Yes:N/A	Yes: N/A
School Emergency Plan/Date	Yes: N/A	Yes:2014	Yes: N/A	Yes	Yes:N/A	Yes: N/A
Weapons Policy/Date	Yes: N/A	Yes	N/A	Yes	Yes	Yes
	Personnel Resources					
Full-Time Building Official (Principal)	Yes	Yes	Yes	Yes	Yes	Yes
Emergency Manager	N/A	N/A	N/A	N/A	N/A	N/A
Grant Writer	N/A	N/A	N/A	N/A	N/A	N/A
Public Information Officer	N/A	Yes	Yes	N/A	N/A	N/A
	Financial Resources					
Capital Improvements Project Funding	Yes	Yes	Yes	Yes	Yes	Yes
Local Funds	Yes	Yes	Yes	Yes	Yes	Yes
General Obligation Bonds	Yes	Yes	Yes	Yes	Yes	Yes
Special Tax Bonds	N/A	N/A	N/A	N/A	N/A	N/A
Private Activities/Donations	N/A	N/A	N/A	N/A	N/A	N/A
State and Federal Funds/Grants	Yes	Yes	Yes	Yes	Yes	Yes
	Other					
Public Education Programs	N/A	N/A	N/A	N/A	N/A	N/A
Privately or Self- Insured?	N/A	N/A	N/A	N/A	N/A	N/A
Fire Evacuation Training	Yes	Yes	Yes	Yes	Yes	Yes
Tornado Sheltering Exercises	Yes	Yes	Yes	Yes	Yes	Yes
Public Address/Emergency Alert System	Yes	Yes	Yes	Yes	Yes	Yes
NOAA Weather Radios	N/A	Yes	N/A	Yes	Yes	N/A
Lock-Down Security Training	Yes	Yes	Yes	Yes	Yes	Yes
Mitigation Programs	N/A	N/A	N/A	N/A	N/A	N/A
Tornado Shelter/Saferoom	Yes	Yes	Yes	Yes	Yes	Yes
Campus Police	SRO	Yes	SRO	N/A	N/A	N/A

2.5 HIGHER EDUCATION

2.5.1 Stephens College

Each school building has a storm shelter and NOAA weather radios. There has been no construction of new facilities or any additions since the last plan update. No future expansion is anticipated in the next 5 years. The college has a campus safety department. Due to a lack of funding it's unlikely that the college will make any major mitigation improvements in existing structures in the upcoming years.

Table 2.27

Stephens College

	Count	Property Valuation
Student Population	604	
Faculty and Staff	318	
Total Buildings	25	$189,250,000.00

Source: Stephens College

2.5.2 UNIVERSITY OF MISSOURI

The University of Missouri (MU) is a separate government entity for most practical purposes. MU strives to have planning documents and policies consistent with those of the City of Columbia and Boone County. MU is a large city within the City of Columbia, with its own power generation capability and separate water system. MU Police Department is one of the very few fully accredited law-enforcement agencies in Missouri. MU has an emergency management coordinator who works directly with city and county government agencies to integrate collaborative planning and training opportunities. MU has worked cooperatively with the City and County in emergency preparedness efforts through collaboration on numerous committees. MU has an emergency alert system called MUAlert. Additional activities include working on the NWS Storm Ready designation.

The University has an updated master plan for all facilities and infrastructure in direct collaboration with the City of Columbia. This includes major renovations to historic buildings, refurbishing outdated infrastructure and building new state of the art facilities. Currently, plans are in the works for major additions to the Trowbridge Center as well as street repair and recons Information about the most the recent MU Campus Master Plan can be found at: https://masterplan.missouri.edu/mu-master-plan/

Due to a lack of funding it's unlikely that the college will make any major mitigation improvements in existing structures in the upcoming years.

Table 2.28

University of Missouri - Columbia		
	Count	
Student Population	31,013	
Faculty	2,600	
Staff	5,500	
	Count	**Total Property Valuation (estimate)**
Buildings	357	$3,209,097,047
Vehicles	967	

Sources: University staff

Chapter 3: Natural Hazards Risk Assessment

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Chapter 3: Natural Hazard 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.

Risk assessment is a process of estimating the potential for injury, death, property damage, or economic loss which may result from a hazard. A risk assessment is only as valuable as the thoroughness and accuracy of the information on which it is based. As will be seen, there is a great variation between hazards in the amount and reliability of the data available for analysis. The goal of the risk assessment is to estimate the potential loss in the planning area, including loss of life, personal injury, property damage, and economic loss, from a hazard event. The risk assessment process allows communities and school/special districts in the planning area to better understand their potential risk to the identified hazards. It will provide a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

- **Section 3.1 Hazard Identification** identifies the natural and man-made hazards that threaten the area and provides basis for the elimination of hazards from further consideration.
- **Section 3.2 Assets at Risk** provides the planning area's total exposure to natural and man-made 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. There will also be discussion of areas of planned future development and implications of such development.
- **Section 3.4 Hazard Profiles and Vulnerability Analysis** provides more detailed information about the hazards impacting the planning area. Each hazard will have a Hazard Profile that provides a general description and threat discussion, a Vulnerability Assessment to further define and quantify populations, structures and other community assets at risk, and a Problem Statement that summarizes the problem and possible solutions.

3.1 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.

This plan evaluated the probability and potential severity of each hazard as part of the planning process. The evaluations informed mitigation options.

3.1.1 Review of Existing Mitigation Plans

There are certain other natural hazards which FEMA requires to be addressed in Hazard Mitigation Plans if they are applicable to the planning area. Avalanches and volcanoes have not been included in this plan as they do not pose a threat due to Boone County's topography and geology. Coastal erosion, coastal storms, hurricanes, and tsunamis do not pose a threat to the county due to its inland location.

The following natural hazards have been identified as posing potential risk in Boone County*:*

- Flood (includes riverine flooding, flash flooding, and storm water flooding)
- Levee Failure
- Dam Failure
- Earthquake
- Land Subsidence/Sinkhole
- Severe Thunderstorms (includes Damaging Winds, Hail, and Lightning)
- Tornado
- Severe Winter Weather (Snow, Ice, and Extreme Cold)
- Drought
- Extreme Heat
- Wildfire

The Missouri State Hazard Mitigation Plan (2023) indicates that expansive soils, landslides, and rockfalls are recognized as hazards in Missouri but occur infrequently and with minimal impact. For this reason, those hazards were not profiled in the state plan nor will they be profiled in the Boone County Plan. In Missouri, local plans customarily include only natural hazards, as only natural hazards are required by federal regulations to be included. Therefore, the MPC determined to only include natural hazards.

3.1.2 Review Disaster Declaration History

Severe storms and flooding are the most common events to warrant a disaster declaration in Boone County. In the event of flooding the declaration is brought on by mounting costs due to widespread water damage and the closure or destruction of several homes and businesses that impact the local economy of the affected area. Missouri State of Emergencies are Executive Orders (E.O.) signed by the Governor. For disasters, a State of Emergency could lead to a Federal Disaster Declaration. Since the last plan update, no non-federally declared events resulted in a significant event impacting the planning area. There have been no federal disaster declarations for Boone County since the last plan update.

Table 3.1: FEMA Disaster Declaration that included Boone County, Missouri 1965-Present

Disaster Number	Description	Declaration Date Incident Period	Individual Assistance (IA) Public Assistance (PA)
4612	Severe Storms and Flooding	6/24/21-7/1/21	PA
4490	Covid-19 Pandemic	1/20/20-5/11/23	IA/PA
3482	Covid-19 Pandemic	1/20/20-5/11/23	PA
4451	Severe Storms and Flooding	4/29/19-7/5/19	IA/PA
4317	Severe Storms and Flooding	4/28/17-5/11/17	PA
3374	Severe Storms and Flooding	12/22/15-1/9/16	PA
3325	Missouri Flooding	6/1/11-8/1/11	PA
1961	Severe Winter Storm	1/31/11-2/5/11	PA
3303	Severe Winter Storm	1/26/09-1/28-09	PA
1809	Severe Storms and Flooding	9/11/08-9/24/08	IA
1749	Severe Storms and Flooding	3/17/08-5/9/08	PA
1736	Severe Winter Storm	12/6/07-12/15/07	PA
3281	Severe Winter Storm	12/8/07-12/15/07	PA
1676	Severe Winter Storm	1/12/07-1/22/07	PA
3232	Hurricane Katrina Evacuation	8/29/05-10/1/05	PA
1463	Severe Storms and Flooding	5/4/03-5/30/03	IA
1403	Ice Storm	1/29/02-2/13/02	IA
1054	Severe Storms and Flooding	5/13/95-6/23/95	IA/PA
995	Flooding	6/10/93-10/25/93	IA/PA
867	Severe Storms and Flooding	5/15/90-5/31/90	IA/PA
779	Severe Storms and Flooding	9/18/86-10/15/86	IA
3017	Drought	9/24/76	PA
372	Severe Storms and Flooding	44/19/73	IA/PA

Source: Federal Emergency Management Agency, https://www.fema.gov/disasters

3.1.3 Research Additional Sources

Sources utilized for information regarding past disaster incidents and research in the planning area include:

- Missouri Hazard Mitigation Plans (2013 and 2018)
- Previously approved Boone County Hazard Mitigation Plan (2015)
- Federal Emergency Management Agency (FEMA)
- Missouri Department of Natural Resources
- National Drought Mitigation Center Drought Reporter
- US Department of Agriculture's Ag Census
- Data Collection Questionnaires completed by each jurisdiction
- State of Missouri GIS data
- Hazards US (Hazus)

- Missouri Department of Transportation
- County Emergency Management
- County Flood Insurance Rate Map, FEMA
- U.S. Army Corps of Engineers
- United States Geological Survey (USGS)
- National Oceanic and Atmospheric Administration's (NOAA) Nation Centers for Environmental Information (NCEI)
    - Note: NOAA and NCEI are the only centralized source of data for many of the weather-related hazards. Although it is usually the best and most current source, there are limitations to the data which should be noted. Note that 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 2014, 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.

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

3.1.4 Hazards Identified

Profiled below is a summary of Natural Hazards in alphabetical order that have significant impacts on the planning area. Each jurisdiction is unique and may not be affected by every hazard. X indicates hazards that impact that jurisdiction.

Table 3.2: Natural Hazard Summary

Jurisdiction	Dam Failure	Drought	Earthquake	Extreme Temperatures	Flooding (River and Flash)	Land Subsidence/Sinkholes	Levee Failure	Severe Winter Weather	Thunderstorm/Lightning/Hail/High Wind	Tornado	Wildfire	
Boone	x	x	x	x	x	x	x	x	x	x	x	
Ashland		x	x	x	x	x		x	x	x	x	
Centralia	x	x	x	x	x	x		x	x	x	x	
Columbia	x	x	x	x	x	x	x	x	x	x	x	
Hallsville	x	x	x	x	x			x	x	x	x	
Harrisburg		x	x	x	x			x	x	x	x	
Hartsburg	x	x	x	x	x	x	x	x	x	x	x	
Huntsdale		x	x	x	x		x	x	x	x	x	
Rocheport		x	x	x	x	x		x	x	x	x	
Sturgeon		x	x	x	x			x	x	x	x	
Schools and Special Districts												
Centralia School District		x	x	x	x			x	x	x	x	
Columbia Public Schools		x	x	x	x			x	x	x	x	
Hallsville R-IV School District		x	x	x	x			x	x	x	x	
Harrisburg R-VIII School District		x	x	x	x			x	x	x	x	
Southern Boone School District		x	x	x	x			x	x	x	x	
Sturgeon R-V School District		x	x	x	x			x	x	x	x	

Stephens College		x	x	x	x			x	x	x	x	
University of Missouri		x	x	x	x			x	x	x	x	

3.1.5 Multi-Jurisdictional Risk Assessment

The 2025 Boone County Hazard Mitigation plan is an update of an earlier plan. The hazard profiles that follow are assessed on a county-wide basis, but each jurisdiction will have unique levels of impact based on population and geographical location. The City of Columbia is the urban center of the planning area, with dense development and infrastructure that brings vulnerability state-wide if a hazard were to cause widespread destruction in the city. Other areas of the county are rural with little population or infrastructure to be damaged in the event of a natural hazard.

The planning area is subject to various natural hazards such as dam failure, drought, earthquake, extreme temperature, flooding, levee failure, wildland fire, severe winter weather, sinkholes/land subsidence, and thunderstorms and lighting. Each natural hazard poses different levels of risk depending on the jurisdiction and each will be discussed further in detail later in this section.

3.2 Assets At Risk

3.2.1 Total Exposure of Population and Structures

Unincorporated County and Incorporated Cities

The following tables provide population data based on the 2018 American Community Survey estimates which are calculated over a 5-year period. Building counts and building exposure values are based on data developed by the State of Missouri Geographic Information Systems (GIS) database. 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. Land values have been excluded from consideration due to the fact that land remains following disasters and any market devaluations are often short term and difficult to quantify. State and Federal assistance programs do not generally address loss of land outside that of crop insurance. The total valuation of buildings is based on county assessor's data which may not be current and government-owned properties are usually taxed differently or not at all. This may cause some inaccuracies in the representation of true value. Public school district assets and special districts are included in the total exposure tables assets by community or county.

The following tables provide a look at population, building and content exposure by jurisdiction, as well as a look at exposure by usage type and building counts per each jurisdiction. The exposure and building information for each school district is also included

Table: 3.3 Maximum Population and Building Exposure by Jurisdiction

Jurisdiction	2023 Annual Population Estimate	Building Count	Building Exposure ($)	Content Exposure ($)	Total Exposure ($)
Ashland	4,811	1203	$273,642	$144,983	$418,625
Boone	45,360	24360	$3,563,055	$1,897,524	$5,460,579
Centralia	4,615	1756	$485,872	$328,460	$814,332
Columbia	127,200	29595	$7,078,227	$3,909,885	$10,988,111
Hallsville	2,049	569	$153,614	$86,381	$239,995
Harrisburg	344	155	$44,669	$23,544	$68,213
Hartsburg	120	53	$9,365	$5,221	$14,587
Huntsdale	17	17	$2,787	$1,379	$4,166
McBaine	215	9	$1,586	$788	$2,374
Pierpont	1143	40	$5,819	$2,857	$8,676
Rocheport	185,874	104	$20,493	$10,246	$30,739
Sturgeon	127,200	400	$97,824	$60,881	$158,705
Grand Total	2,049	58263	$11,738,330	$6,473,432	$18,211,762

Source: U.S. Bureau of the Census, Annual population estimates/ 5-Year American Community Survey 2023; 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	Agriculture	Commercial	Education	Government	Industrial	Residential	Grand Total
Ashland	$483	$26,004	$22,087	$591	$6,150	$218,326	$273,642
Boone - Unincorp	$77,325	$269,493	$36,812	$21,288	$27,675	$3,130,463	$3,563,055
Callaway	$0	$0	$0	$0	$0	$197	$197
Centralia	$228	$126,472	$14,725	$8,278	$25,625	$310,544	$485,872
Columbia	$2,872	$962,136	$456,466	$37,844	$100,450	$5,518,458	$7,078,227
Hallsville	$66	$27,186	$17,670	$3,548	$3,075	$102,070	$153,614
Harrisburg	$275	$11,820	$10,307	$1,183	$0	$21,084	$44,669
Hartsburg	$104	$1,182	$0	$0	$0	$8,079	$9,365
Howard	$0	$1,182	$0	$0	$0	$0	$1,182
Huntsdale	$28	$0	$0	$0	$0	$2,759	$2,787
McBaine	$9	$0	$0	$0	$0	$1,576	$1,586
Pierpont	$104	$0	$0	$0	$0	$5,714	$5,819
Rocheport	$0	$0	$0	$0	$0	$20,493	$20,493
Sturgeon	$303	$26,004	$2,945	$1,183	$0	$67,390	$97,824
Grand Total	**$81,799**	**$1,451,478**	**$561,011**	**$73,915**	**$162,975**	**$9,407,153**	**$11,738,330**

Source: Missouri GIS Database, SEMA Mitigation Management Section

Table: 3.5 Building Counts by Usage Type

Jurisdiction	Agriculture	Commercial	Education	Government	Industrial	Residential	Grand Total
Ashland	51	22	15	1	6	1108	1203
Boone - Unincorp	8157	228	25	36	27	15887	24360
Centralia	24	107	10	14	25	1576	1756
Columbia	303	814	310	64	98	28006	29595
Hallsville	7	23	12	6	3	518	569
Harrisburg	29	10	7	2		107	155
Hartsburg	11	1				41	53
Huntsdale	3					14	17
McBaine	1					8	9
Pierpont	11					29	40

Rocheport						104	104
Sturgeon	32	22	2	2		342	400
Grand Total	**8629**	**1228**	**381**	**125**	**159**	**47741**	**58263**

Source: Missouri GIS Database, SEMA Mitigation Management Section

While schools' total assets are included in the tables above, additional information gathered through the data questionnaires and school websites allow for further discussion. The table below shows enrollment and building information, including counts and replacement cost (exposure).

Table: 3.6 School District Building and Enrollment Summary

Public School District	Enrollment	Building Count	Building Exposure ($)	Content Exposure ($)	Total Exposure ($)
Centralia R-VI	1,289	17	N/A	N/A	141,640,298
Columbia Public	18,197	38	N/A	N/A	3,224,803,339
Hallsville R-IV	1,515	5	N/A	N/A	126,667,350
Harrisburg R-VIII	578	15	N/A	N/A	57,542,485
Southern Boone R-I	1,906	5	N/A	N/A	208,160,537
Sturgeon R-V	2,222	3	N/A	N/A	51,619,542

Source: Missouri GIS Database, SEMA Mitigation Management Section. http://mcds.dese.mo.gov/quickfacts/Pages/District-and-School-Information.aspx

Table 3.7: Jurisdictional Assets Summary

Jurisdiction	Airport Facility	Bus Facility	Childcare Facility	Electric Power Facility	Emergency Operations	Fire Service	Government	Housing	Shelters	Hospital/Health Care	Military	Natural Gas Facility	Nursing Homes	Police Station	Potable Water Facility	Rail	Sanitary Pump Stations	School Facilities	Tier II Chemical Facility	Wastewater Facility	TOTAL
Unincorporated Boone County	0	0	0	0	1	20	3	16756	0	1	0	0	0	1	4	0	0	0	0	14	16,800
Ashland	0	0	5	0	0	0	2	1466	4	1	0	0	3	1	1	0	2	5	0	1	1,491
Centralia	0	0	1	0	0	1	2	1589	7	2	0	0	3	1	1	3	0	17	0	1	1,628
Columbia	1	1	71	1	1	9	2	32954	22	12	1	0	14	1	1	1	0	38	1	1	33,132
Hallsville	0	0	3	0	0	1	3	667	3	1	0	0	0	1	1	1	0	5	0	1	687
Harrisburg	0	0	1	0	0	0	1	118	0	0	0	0	0	0	1	0	0	15	0	0	136
Hartsburg	0	0	0	0	0	0	1	60	2	0	0	0	0	0	0	0	0	0	0	1	64
Huntsdale	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	15
Rocheport	0	0	0	0	0	0	1	126	0	0	0	0	0	0	0	0	0	0	0	0	127
Sturgeon	0	0	1	0	0	0	2	367	2	0	0	0	1	1	1	1	0	3	0	1	380
Totals	1	1	82	1	2	30	16	54024	45	16	1	0	21	6	10	6	2	83	1	20	54,368

Source: Data Questionnaire

3.2.2 Critical and Essential Facilities and Infrastructure

There are four main types of facilities of concern in a hazard event. Critical Facility, essential facility, high potential loss facility, and transportation and lifeline facilities. These facilities are defined by FEMA as "… all manmade structures or other improvements that, because of their function, size, service area, or uniqueness, have the potential to cause serious bodily harm, extensive property damage, or disruption of vital socioeconomic activities if they are destroyed, damaged, or if their functionality is impaired."

Critical facilities commonly include all public and private facilities that a community considers essential for the delivery of vital services and for the protection of the community. The adverse effects of damaged critical facilities can extend far beyond direct physical damage. Disruption of health care, fire, and police services can impair search and rescue, emergency medical care, and even access to damaged areas.

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

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

Table 3.7 includes a summary of the inventory of critical and essential facilities and infrastructure in the planning area. The list was compiled from the data collection questionnaire as well as the following sources reports from DESE, DNR, and other stakeholders

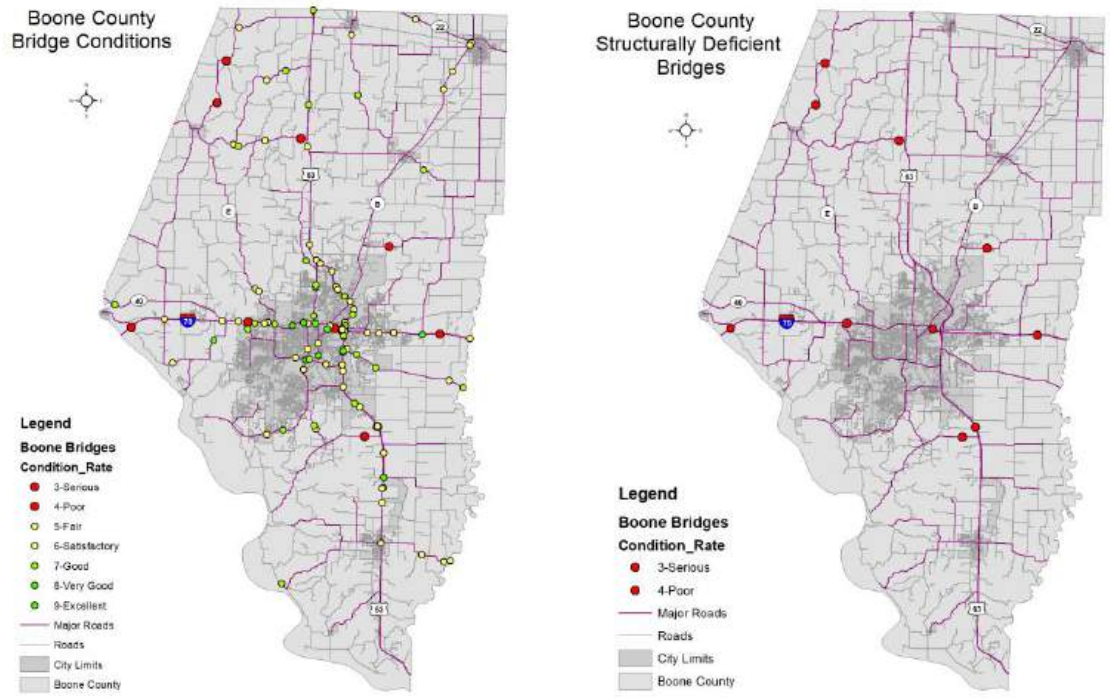
Table 3.8 Inventory of Critical/Essential Facilities and Infrastructure by Jurisdiction

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
Uncorp. Boone	0	0	0	0	0	1	20	3	16756	0		1	0	0	0	1	4	0	0	0	0	0	14	16800
Ashland	0	0	5	0	0	0	0	2	1466	4		1	0	0	3	1	1	0	2	5	0	0	1	1491
Centralia	0	0	1	0	0	0	1	2	1589	7		2	0	0	3	1	1	3	0	17	0	0	1	1628
Columbia	1	1	71	2	1	1	9	2	32954	22		12	1	0	14	1	1	1	0	38	0	1	1	33137
Hallsville	0	0	3	0	0	0	1	3	667	3		1	0	0	0	1	1	1	0	5	0	0	1	687
Harrisburg	0	0	1	0	0	0	0	1	118	0		0	0	0	0	0	1	0	0	15	0	0	0	136
Hartsburg	0	0	0	0	0	0	0	1	60	2		0	0	0	0	0	0	0	0	0	0	0	1	64
Huntsdale	0	0	0	0	0	0	0	0	15	0		0	0	0	0	0	0	0	0	0	0	0	0	15
Rocheport	0	0	0	0	0	0	0	1	126	0		0	0	0	0	0	0	0	0	0	0	0	0	127
Sturgeon	0	0	1	0	0	0	0	2	367	2		0	0	0	1	1	1	1	0	3	0	0	1	380
Totals	1	1	82	2	1	2	30	16	54024	45		16	1	0	21	6	10	6	2	83	0	1	20	54373

Government

The jurisdictions of Boone County, Ashland, Centralia, Columbia, Hallsville, Harrisburg, Hartsburg, Rocheport and Sturgeon all own buildings critical to the functioning of their jurisdictions. The City of Columbia is the county seat; both city and county buildings, which serves the entire county, are located there.

Figure 3.5 Boone County Bridge Conditions



Bridges

The term “scour critical” refers to one of the database elements in the National Bridge Inventory (NBI). This element is quantified using a “scour index”, which is a number indicating the vulnerability of a bridge to scour during a flood. This index rates bridges on their vulnerability to scour during a flood and is based on a scale of 0 to 9. Zero are failed bridges. Bridge with a scour index of 9 are new bridges. 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. A rating of 4 is poor. Anything 5 and higher are fair to excellent. According to the NBI, there are 334 bridges in Boone County and 13 of them are poor, which amounts to 6,384 square feet of poor bridge area. In 2019 legislation passed the Governor’s Focus on Bridges program. Through this program 3 critical or poor condition bridges in Boone County were improved or replaced between 2020-2023.

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

There are 7 plant and animal species listed as threatened or endangered that are known or are believed to occur in Boone County.

Table 3.9 Threatened and Endangered Species in Boone County

Common Name	Scientific Name	Status
Indiana Bat (mammal)	Myotis sodalist	Endangered
Gray Bat (mammal)	Myotis grisescens	Endangered
Northern Long Eared Bat (mammal)	Myotis septentrionalis	Threatened
Tricolored bat (mammal)	Perimyotis subflavus	Proposed Endangered
Pallid Sturgeon (fish)	Scaphirhynchus albus	Endangered
Monarch Butterfly (insect)	Danaus Plexippus	Proposed Threatened
Western Regal Fritillary (insect)	Argynnis idalia occidentalis	Proposed Threatened

Source: U.S. Fish and Wildlife Service, https://ipac.ecosphere.fws.gov/

Parks in Boone County

Boone County has several state-owned land areas and one National Forest (see Figure 3.17). These public lands are important to consider when working on mitigation efforts, especially when they contain hazards such as sinkholes and high fuel loads that could cause wildfires.

The Katy Trail is the longest developed rail-trail in the country and portions of it runs through Boone County and some of its jurisdictions. Many sections of the Katy Trail were damaged and closed in 2019 due to flooding. Sections of the trail are still being worked on to remove flooding debris and repair the trail bed. Caution should be taken for rough surfaces and trail work.

Table 3.10

Public Land in Boone County

Name	Responsible Agency	Acres
Rock Bridge Memorial State Park	Missouri Department of Natural Resources	2272
Mark Twain National Forest (Cedar Creek)	United States Forest Service	~19000
Three Creeks Conservation Area	Missouri Department of Conservation	1506
Eagle Bluffs Conservation Area	Missouri Department of Conservation	3706
Hinkson Woods Conservation Area	Missouri Department of Conservation	80
Green Conservation Area	Missouri Department of Conservation	328
Rocky Forks Lake Conservation Area	Missouri Department of Conservation	2234
Finger Lakes State Park	Missouri Department of Natural Resources	1128
Hartsburg Access	Missouri Department of Conservation	35
Hart Creek	Missouri Department of Conservation	658
Schnabel Woods	Missouri Department of Conservation	79
HJ Waters and CB Moss Wildlife Area	Missouri Department of Conservation	102
Lick Creek Conservation Area	Missouri Department of Conservation	300
Katy Trail State Park	Missouri Department of Natural Resources	~30 miles

Source: Missouri Spatial Data Information Server (MSDIS)

Boone County Properties on the National Register of Historic Places

Boone County has several properties listed on the National Register of Historic Places and multiple jurisdictions have ordinances that address historic places. This registry is an official list of registered cultural resources that are worth preserving. The National Historic Preservation Act of 1966 authorized such a list as part of a national program. The program is administered by the National Parks Service and acts as a resource to coordinate public and private efforts to find, evaluate, and preserve historically and archeologically significant sites. Properties on the list include districts, buildings, structures, and sites that have significance through history, culture, architecture, archeology, and engineering. Table 3.10 is a list of historic sites located in Boone County.

Table 3.11: Boone County Historic Sites

Property	Address	City	Date Listed
Ballenger Building	27-29 S. 9th St	Columbia	1/21/04
Bond's Chapel	MO Route A	Hartsburg	9/9/93
John Boone "Blind" House	4th St	Columbia	9.4/80
Central Dairy Building	1104-1106 E. Broadway	Columbia	1/20/05
Albert Chance House	319 E Sneed St.	Centralia	7/3/79
Chatol	543 S. Jefferson	Centralia	4/20/79
Coca-Cola Bottling Co. Building	10 Hitt St.	Columbia	2/14/06
Columbia Cemetery	30 E. Broadway	Columbia	2/1/07
Columbia Nat. Guard Armory	701 E. Ash St.	Columbia	3/25/93
Sanford Conley House	602 Sanford Pl.	Columbia	12/18/73
Fred Douglas School	310 N. Providence Rd	Columbia	9/4/80
Downtown Columbia Historic District	7th, 8th, 9th, 10th, Broadway, etc.	Columbia	11/8/06
East Campus Neighborhood	College, University, High St.	Columbia	2/16/96
8th Broadway	800-810 E. Broadway	Columbia	4/22/03
Samuel Elkins House	315 N. 10th St.	Columbia	9/12/96
First Christian Church	101 N. 10th St.	Columbia	10/29/91
Francis Quadrangle District	Red Campus	Columbia	12/18/73
Frederick Apartments	1001 University Ave.	Columbia	4/16/13
David Gordon/Collins Cabin	2100 E. Broadway	Columbia	8/29/83
Greenwood	3005 Mexico Gravel Rd.	Columbia	1/15/79
David Guitar House	2815 Oakland Gravel Rd.	Columbia	9/9/93
Samuel Hackman Building	30 S. St.	Hartsburg	12/10/98
Hamilton-Brown Shoe factory	1123 Wilkes Blvd	Columbia	7/19/02
Harrisburg School	140 S. Harris St.	Harrisburg	12/24/13
William Hunt House	8939 W. Terrapin Hills Rd.	Columbia	1/9/97
Kress Building	1025 E. Broadway	Columbia	3/9/05
Maplewood	Nifong Blvd/Ponderosa Dr	Columbia	4/13/79
McClain Furniture Store	916 E. Walnut	Columbia	8/17/05
MO, KS, TX Railroad Depot	402 E. Broadway	Columbia	1/29/79
MO Teachers Association	407 S. 6th St.	Columbia	9/4/80
Missouri Theater	201-215 S. 9th St.	Columbia	6/6/79
MO United Methodist Church	204 S. 9th St.	Columbia	9/4/80
Mount Zion Church/Cemetery	11070 Mount Zion Rd.	Hallsville	1/14/13
N. 9th Street Historic District	5-36 N. 9th St.	Columbia	1/21/04
Moses Payne House	201 N. Roby Farm Rd.	Rocheport	10/7/94
Pierce Pennant Motor Hotel	1406 Old Hwy 40	Columbia	9/2/82
Rocheport Historic District	MO 240	Rocheport	10/8/76
St. Paul's AME Church	501 Park St.	Columbia	9/4/80
Sanborn Field & Soil Erosion Plots	University of Missouri Campus	Columbia	10/15/66
Second Baptist Church	407 E. Broadway	Columbia	9/4/80
Second Christian Church	401 N. 5th St.	Columbia	9/4/80
Senior Hall	Stephens College Campus	Columbia	8/2/77
Sigma Alpha Epsilon Building	24 E. Stewart Rd.	Columbia	10/20/14
Stephens college, South Campus	1200 E. Broadway	Columbia	11/25/05
John Taylor House	716 W. Broadway	Columbia	5/25/01
Tiger Hotel	23 S. 8th St.	Columbia	2/29/80
Virginia Building	111 S. 9th St.	Columbia	3/13/02
Wabash Railroad Station/Freight	126 N. 10th St.	Columbia	10/11/79

House			
West Broadway Historic District	300-922 W. Broadway	Columbia	4/27/10
Wright Brothers Mule Barn	1101-1107 Hinkson/501-507 Fay	Columbia	11/1/07

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

The major, non-retail employers with more than 200 personnel employed are shown in Table 3.12

Employer Name	Main Locations	Product or Service	Employees
University of Missouri	125 Jesse Hall University of Missouri Columbia, MO 65211	Higher Education	9732
MU Healthcare	1 Hospital Drive Columbia, MO 65212	Healthcare	5833
Columbia Public Schools	1818 West Worley Street Columbia, MO 65203	K-12 Education	2,944
Veterans United Home Loans	1400 Veterans United Drive, Columbia, MO 65203.	Mortgage Lender	2,906
Harry S. Truman Memorial Veterans' Hospital	800 Hospital Dr, Columbia, MO 65201	Healthcare	1,957
Boone Health	900 W Nifong Blvd # 101, Columbia, MO 65203	Healthcare	1,581
Shelter Insurance Companies	1817 W Broadway, Columbia, MO 65218	Insurance	1,382
City of Columbia	701 E Broadway, Columbia, MO 65205	Local Government	1,368
Hubbell Power Systems, Inc.	300 N Howard Burton Dr, Centralia, MO 65240	Power Systems	730
McClarty Auto Group: Joe Machens Dealerships	1310 Vandiver DriveColumbia, MO 65202	Automotive Dealer	704
EquipmentShare	8430 Interstate 70 Dr SE, Columbia, MO 65201	Equipment Rental	588
Emery Sapp & Sons	2301 Interstate 70 Dr NW, Columbia, MO 65202	Construction	576
MBS Textbook Exchange	2711 W Ash St, Columbia, MO 65203	Books	496
Boone County Government	705 E Walnut St, Columbia, MO 65201	Local Government	486
3M	5400 Paris Rd, Columbia, MO 65202	Technology	466
Kraft Heinz	4600 Waco Rd, Columbia, MO 65202	Food Production	450

Quaker Oats Company	4501 Paris Rd, Columbia, MO 65202	Food Production	400
Central Bank of Boone County	720 E Broadway Columbia, MO 65201	Bank	340
Columbia Orthopaedic Group	1 S Keene St, Columbia, MO 65201	Healthcare	320
Eurofins BioPharma Product Testing Columbia, Inc.	4780 Discovery Dr, Columbia, MO 65201	Healthcare	337
Burrell Behavioral Health	Berrywood Medical Arts Bldg, 3401 Berrywood Dr, Columbia, MO 65201	Healthcare	317
Midway USA	5875 W Van Horn Tavern Rd, Columbia, MO 65203	Outdoor Products	313
Dana Light Axle Products	2400 Lemone Industrial Blvd. Columbia, Missouri 65201	Automotive Manufacturer	300
Columbia College	Missouri Hall, 1001 Rogers St #111, Columbia, MO 65201	Higher Education	236
Watlow	2101 Pennsylvania Dr, Columbia, MO 65202	Industrial Manufacturer	230
Swift/Principe	5008 Paris Rd, Columbia, MO 65202	Food Production	187

While agriculture plays a large role in Boone County's land use, the 213 farms with workers listed in Boone County according to the 2022 USDA Ag Census only employ around 502 workers which is 0.48% of the total workforce. The majority of the farms only have 1 to 4 workers each.

3.3 Land Use and Development

3.3.1 Development Since Previous Plan Update

Boone County and its jurisdictions have shown growth since the last census, with the most growth estimated to be in and around the City of Columbia. Amenities such as high-speed internet, municipal water and sewer, and job opportunities can drive such growth.

Table 3.13 County population Growth 2010-2023

Jurisdiction	2010 Total Population	2023 Total Population Estimate	# Change (2010-2023)	% Change (2010-2023)
Unincorporated	43,377	45,360	1,982	5%
Ashland	3,707	4,811	1,040	28%
Centralia	4,027	4,615	285	7%
Columbia	108,500	127,200	17,754	16%
Hallsville	1,491	2,049	25	2%
Harrisburg	266	344	-10	-4%
Hartsburg	108	120	8	7%
Huntsdale	31	17	-3	-10%
Rocheport	239	215	-49	-21%

Sturgeon	872	1143	-40	-5%
Total	162,699	185,874	20,911	13%

Source: U.S. Bureau of the Census, Decennial Census, annual population estimates/ 5-Year American Community Survey 2023; *population includes the portions of these cities in adjacent counties

Growth translates into a need for more housing, and the expansion of local emergency capabilities to keep up with demand and added fuel to the system. While American Community Survey estimates a decline in population for some small Boone County jurisdictions, it also estimates an increase for those jurisdictions in housing units. Since housing development usually follows growth, this may be accounting for past growth in the area.

Table 3.14 Change in Housing Units, 2010-2018

Jurisdiction	Housing Units 2010	Housing Units 2023	2010-2023 # Change	2000-2023 % Change
Unincorporated Boone	17,956	19,514	1,558	9%
Ashland	1,536	2,175	639	42%
Centralia	1,723	1,930	207	12%
Columbia	45,971	55,441	9,470	21%
Hallsville	707	849	142	20%
Harrisburg	130	186	56	43%
Hartsburg	59	64	5	8%
Huntsdale	13	9	-4	-31%
Rocheport	83	189	106	128%
Sturgeon	418	555	137	33%
Total	68,596	80,912	12,316	18%

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

3.3.2 Future Land Use and Development

Population growth is expected to continue in Boone County and its jurisdictions. Due to the transportation network that passes through Boone County it continues to be a major shipping corridor which is a draw for companies looking for a place to hub distribution centers which can employ several people. As has already been seen more and more farm land is being developed into housing and businesses throughout the county. With growth comes the need to expand protections such as fire services, storm warning devices, and runoff handling practices.

School District's Future Development

Columbia Public Schools and Southern Boone School District have experienced steady growth that has forced the need to build additional school buildings to help mitigate overcrowding in classrooms. As new buildings are built and old ones are remodeled it's a trend across all districts to employ hardening methods to construction to add resiliency against major storms and potential intruders.

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.

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 and the impact of Climate Change" to Changing Future Conditions Considerations in all of the hazard profiles 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. 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. Strength, magnitude, and extent can also include the speed of onset and the duration of hazard events. 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 probability of future events is, for the most part, based on historical data while also taking into account the expected impact of climate change. It is assigned based on the following scale which was slightly modified from that found in the Missouri State Hazard Mitigation Plan (2018):

- Low – The hazard has little or no chance of happening (less than 1 percent chance of occurrence in any given year)
- Moderate – The hazard has a reasonable probability of occurring (between 1 and 10 percent chance of occurrence in any given year).
- High – The probability is considered sufficiently high to assume that the event will occur (between 10 and 100 percent chance of occurrence in any given year).

In the case of earthquakes, projections made by the USGS have also been taken into account in assessing the probability.

- **Changing Future Conditions Considerations:** This discusses the potential future impacts climate change could have on natural hazard events and their effects on the planning area.

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. The vulnerability assessments can also be based on data that was collected for the 2023 State Hazard Mitigation Plan Update. With the 2023 Hazard Mitigation Plan Update, SEMA is pleased to provide online access to the risk assessment data and associated mapping for the 114 counties in the State, including the independent City of St. Louis. Through the web-based Missouri Hazard Mitigation Viewer, local planners or other interested parties can obtain all State Plan datasets. This effort removes from local mitigation planners a barrier to performing all the needed local risk assessments by providing the data developed during the 2023 State Plan Update.

The Missouri Hazard Mitigation Viewer includes a Map Viewer with a legend of clearly labeled features, a north arrow, a base map that is either aerial imagery or a street map, risk assessment data symbolized the same as in the 2023 State Plan for easy reference, search and query

capabilities, ability to zoom to county level data and capability to download PDF format maps. The Missouri Hazard Mitigation Viewer can be found at this link: http://bit.ly/MoHazardMitigationPlanViewer2023.

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

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

Existing Mitigation/Operating Assumptions: Both the measure of severity and overall vulnerability are greatly impacted by the mitigation already in place in the planning area; this existing mitigation is taken as an operating assumption when evaluating the vulnerability to a particular hazard. The following mitigation activities are applicable to many or all hazards:

- Building codes are in place in Boone County and the following incorporated communities: Ashland, Centralia, Columbia, Hallsville, Harrisburg, Hartsburg, Pierpont, Rocheport, and Sturgeon.
- Resources for the public on retrofitting and protecting buildings are available through the Office of Emergency Management.
- Critical infrastructure in the county is accessible and provided with backup power.
- Cooperative agreements are in place between utility providers in the county.
- Agreements are in place with local shelters in the county.
- General evacuation procedures are included in the Office of Emergency Management's (OEM) Emergency Operation Plan.
- Evacuation routes are in place in all school districts in the county.
- Buses in all school districts have two-way radios on board.
- A public education hazard awareness program is in place through the OEM.
- Hazard information is provided to customers of local hotels through an agreement between the OEM and the Missouri Hotel & Lodging Association.

Other current mitigation activities are aimed at mitigating the effects of a specific hazard and are described under the specific hazard profile.

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

- **Vulnerability Overview** – This is an overall summary of each jurisdiction's vulnerability to the identified hazards. It identifies structures, systems, populations or other community assets that are susceptible to damage and loss for hazard events.

- **Potential Losses to Existing Development/life** – Covers how impacts and potential impacts of the hazard has consequences on existing jurisdictional assets such as buildings, critical facilities, life, etc.

- **Previous and Future Development** - This section goes over how changes in development have impacted the jurisdiction's vulnerability to the hazard.

- **Hazard Summary by Jurisdiction** – Hazards vary by jurisdiction and this section will provide an overview of such variations.

- **Problem Statements**
  The problem statement consists of a brief summary of the problems created by the hazard in the planning area and possible ways to resolve those problems.

3.4.1 FLOODING (RIVERINE AND FLASH)

DESCRIPTION OF HAZARD

A flood is partial or complete inundation of normally dry land areas. Riverine flooding is defined as the overflow of rivers, streams, drains, and lakes due to excessive rainfall, rapid snowmelt, or ice. There are several types of riverine floods, including headwater, backwater, interior drainage, and flash flooding. Riverine flooding is defined as the overflow of rivers, streams, drains, and lakes due to excessive rainfall, rapid snowmelt or ice melt. The areas adjacent to rivers and stream banks that carry excess floodwater during rapid runoff are called floodplains. A floodplain is defined as the lowland and relatively flat area adjoining a river or stream. The terms "base flood" and "100- year flood" refer to the area in the floodplain that is subject to a one percent or greater chance of flooding in any given year. Floodplains are part of a larger entity called a basin, which is defined as all the land drained by a river and its branches. Flooding caused by dam and levee failure is discussed in Section 3.3.3 and Section 3.4.2 respectively. It will not be addressed in this section.

In addition to the threat of **riverine flooding**, when a river or creek overflows its normal boundaries, the planning area is also susceptible to **flash flooding.** NOAA defines a flash flood as "an event that occurs within 6 hours following the end of the causative event (such as rains, ice jams, or dam breaks)…." Flash floods develop quickly and are responsible for more flood related deaths than any other type of flooding. The textual descriptions for flash flooding events in the NOAA database indicate that flash flooding in the planning area is usually triggered by 2-5 inches of rainfall within a "short period".

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. FEMA defines sheet flooding as "a type of flood hazard with flooding depths of 1 to 3 feet that occurs in areas of sloping land."

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.Boone County and its jurisdictions are at great risk for flooding because the southern border of the County is situated on the bank of the Missouri River, the longest river in the United States. The Missouri River drains approximately one-sixth of the area of the continental United States, according to the USGS. It drains over half the state of Missouri as it flows eastward to join the Mississippi River at St. Louis. Since Boone County is located less than 200 miles upstream from the mouth of this 2,540 mile river, it is obvious that flooding is a potential concern for the county. There are also numerous creeks throughout the county with year-round water flows draining into the Missouri River.

Local **storm water flooding** can result when tremendous flow of water occurs due to large rain events. Local flooding can create public safety issues due to flooded roadways and drainage structures. Most flooding in Boone County occurs in late spring and summer but floods can occur in any season.

Location

The entire planning area is at risk from some type of flooding.

Hartsburg, Huntsdale, McBaine, Rocheport, and the unincorporated areas near the Missouri River are at higher risk of riverine flooding than the rest of the county. In addition, there are numerous creeks or branches throughout the planning area subject to small stream flooding. The City of Columbia can experience flooding from the backup of tributary branch of the Missouri River when river levels are high.

Varying levels of flood risk are designated by flood zones mapped on Flood Insurance Rate Maps (FIRMs).

The current FIRMs for Boone County have an effective date of 04/19/17. Overview maps showing the floodplains for the entire planning area (Figure 3.7) and for the City of Columbia (Figure 3.10) included in the following pages. For the smaller jurisdictions with significant flooding risk, the National Flood Hazard Layers from the online system are included (Figures 3.9-3.12). A flood map for Harrisburg was excluded because it does not have any designated floodplain within the jurisdictional boundaries and is not at great risk for significant flooding.

Figure 3.7: Boone County Floodplain

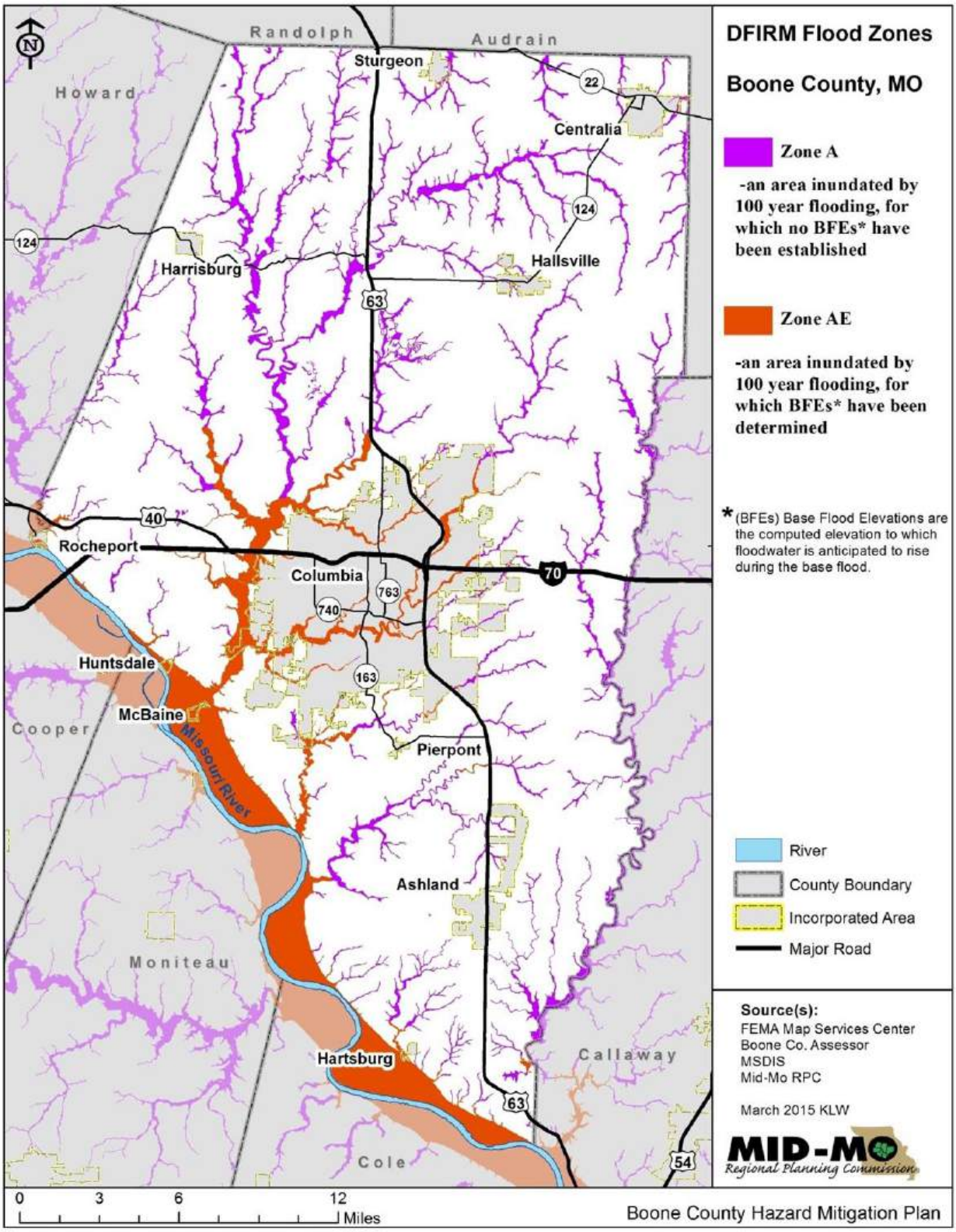


Figure 3.8: Ashland Floodplain

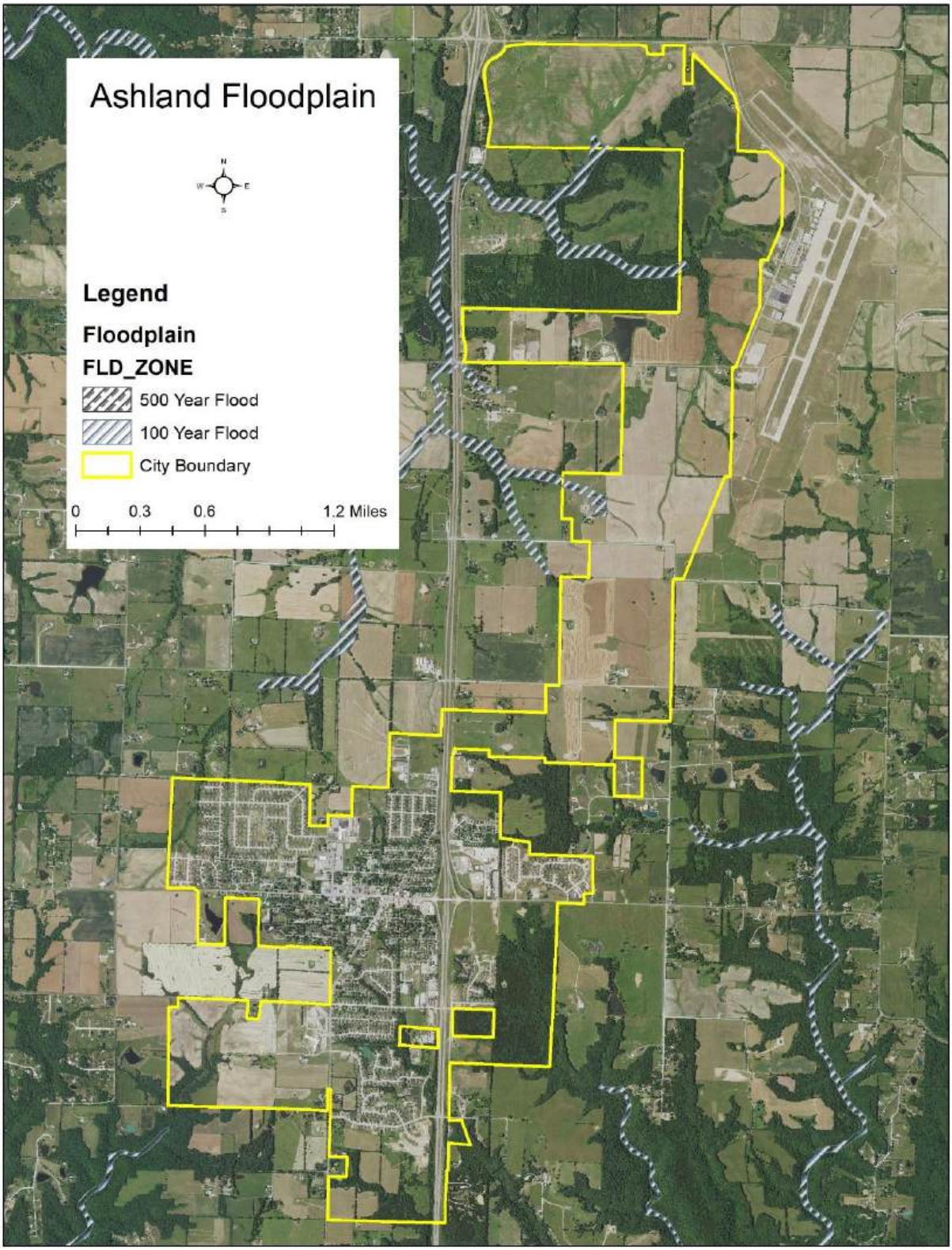


Figure 3.9: Centralia Floodplain

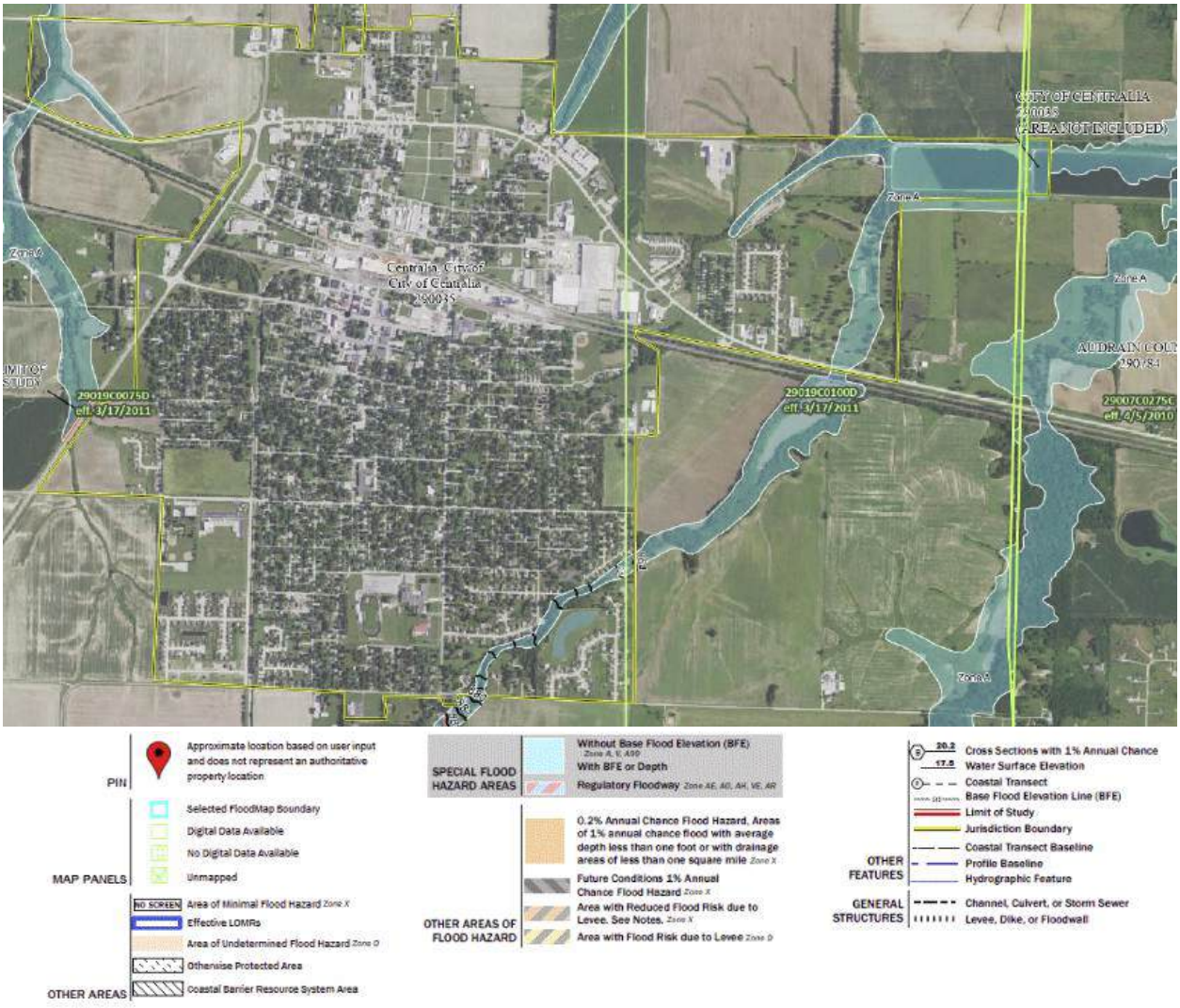


Figure 3.10: Columbia Floodplain

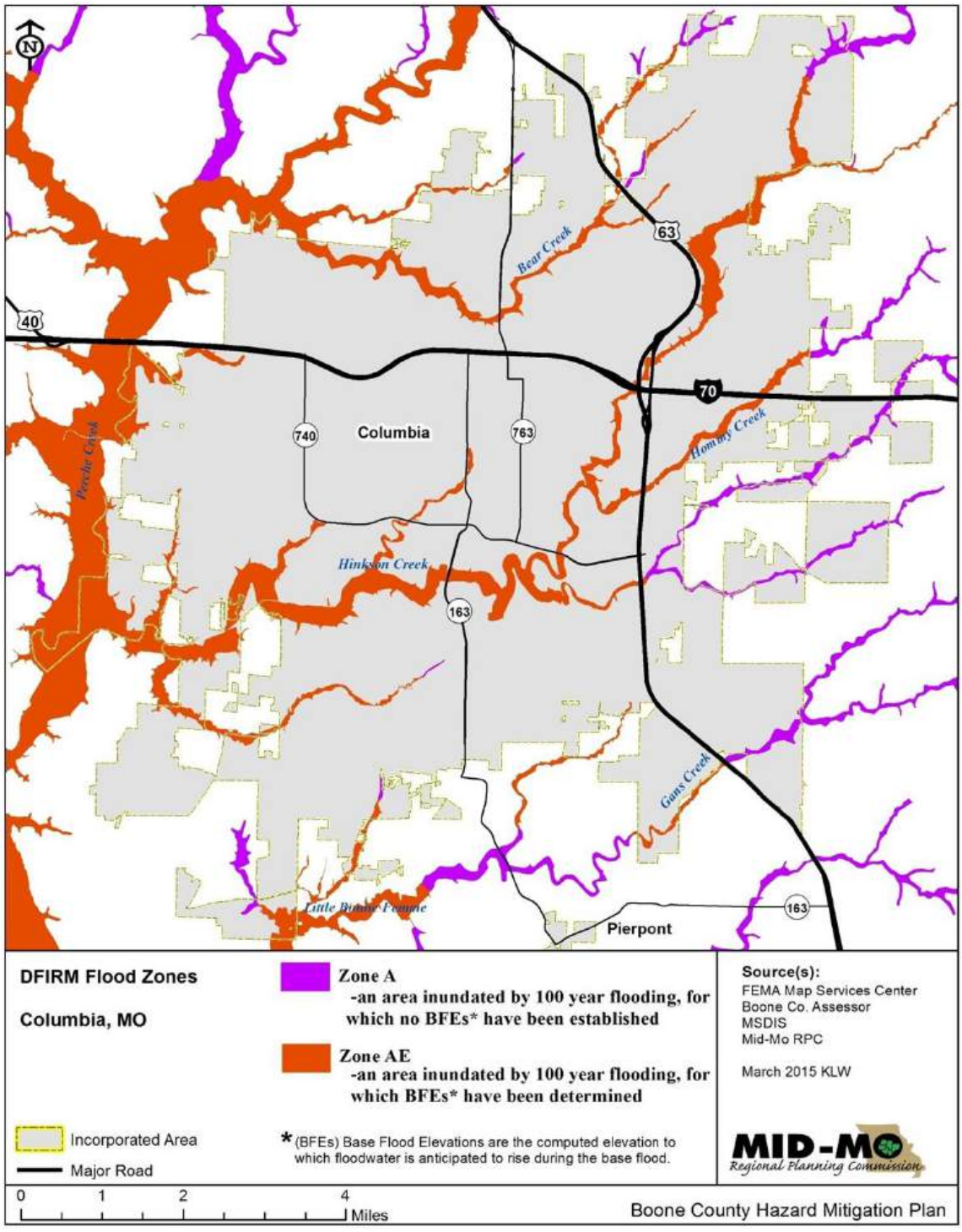


Figure 3.11: Hallsville Floodplain

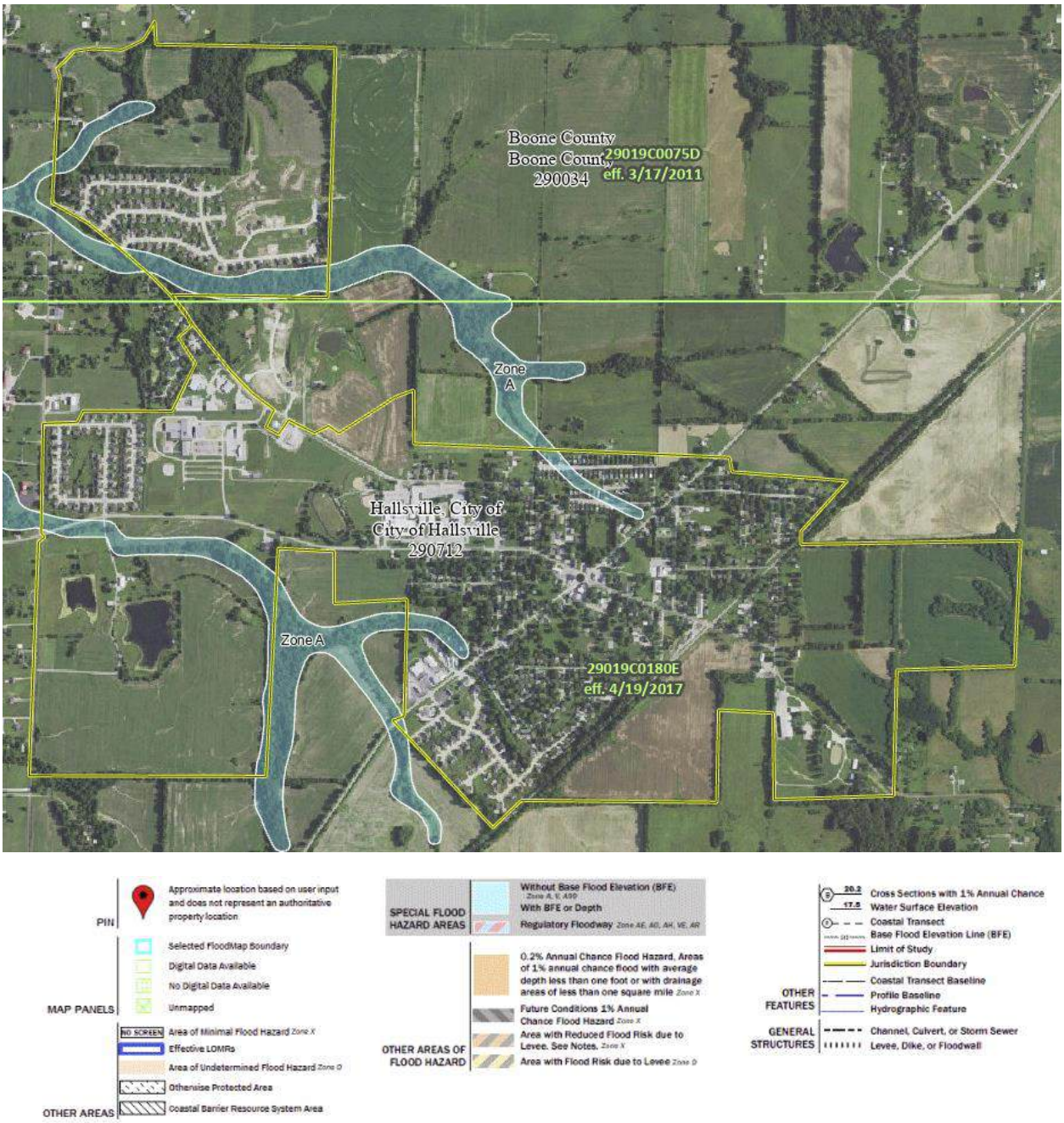


Figure 3.12: Hartsburg

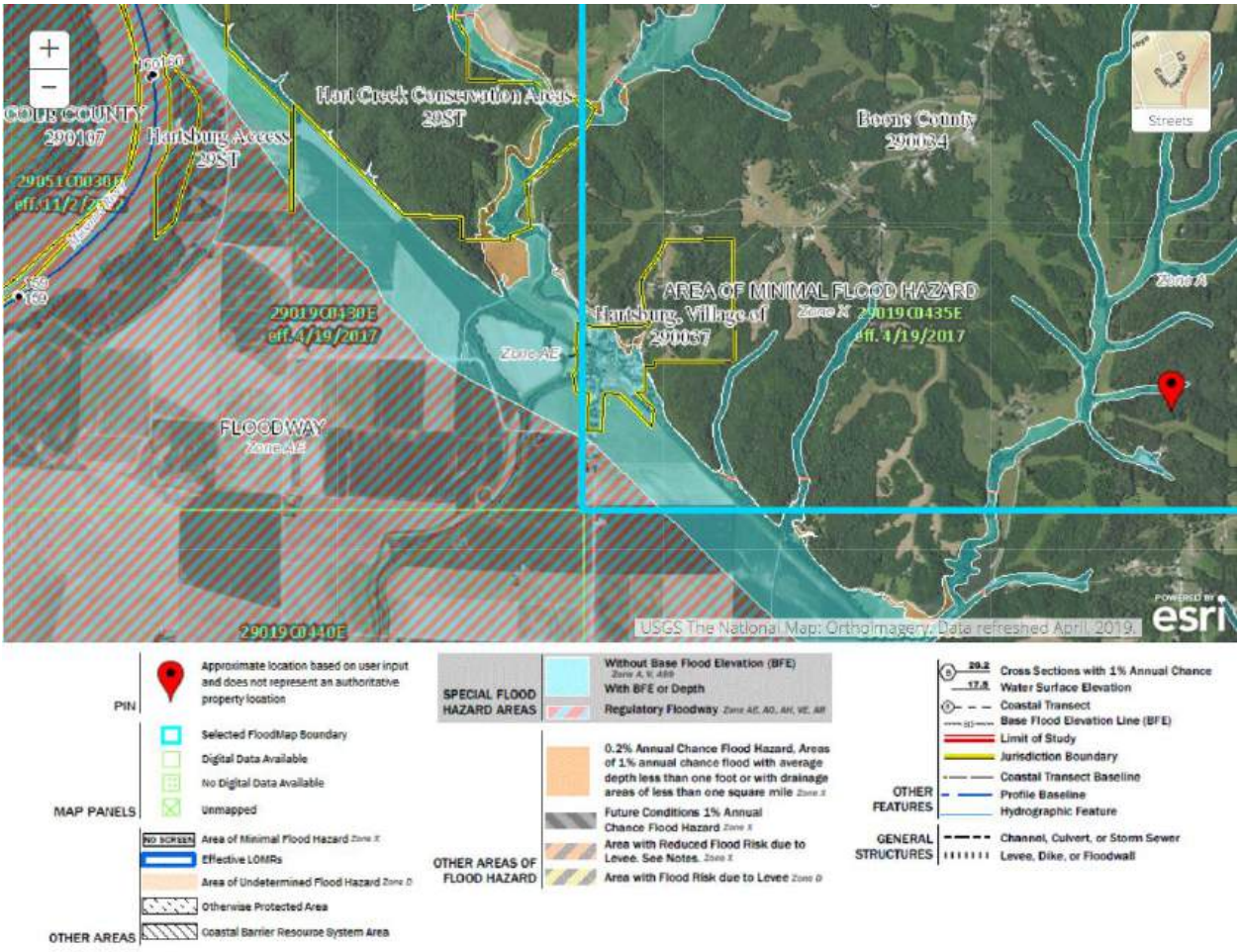

COLE COUNTY
290167
Harlsburg Access
29ST
Hart Creek Conservation Area
29ST
Boone County
290034
Streets
AREA OF MINIMAL FLOOD HAZARD
Zone X
29019C0435E
eff. 4/19/2017
Harlsburg, Village of
290037
29019C0430E
eff. 4/19/2017
Zone AE
FLOODWAY
Zone AE
Zone A
29019C0440E
USGS The National Map: Orthoimagery. Data refreshed April, 2019.
esri
PIN
Approximate location based on user input and does not represent an authoritative property location
MAP PANELS
Selected FloodMap Boundary
Digital Data Available
No Digital Data Available
Unmapped
Area of Minimal Flood Hazard Zone X
Effective LOMRs
Area of Undetermined Flood Hazard Zone D
Otherwise Protected Area
OTHER AREAS
Coastal Barrier Resource System Area
SPECIAL FLOOD HAZARD AREAS
Without Base Flood Elevation (BFE) Zone A, V, A99
With BFE or Depth
Regulatory Floodway Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD
0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
Future Conditions 1% Annual Chance Flood Hazard Zone X
Area with Reduced Flood Risk due to Levee. See Notes. Zone X
Area with Flood Risk due to Levee Zone D
OTHER FEATURES
20.2
17.5
Cross Sections with 1% Annual Chance
Water Surface Elevation
Coastal Transect
Base Flood Elevation Line (BFE)
Limit of Study
Jurisdiction Boundary
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature
GENERAL STRUCTURES
Channel, Culvert, or Storm Sewer
Levee, Dike, or Floodwall

Figure 3.13: Huntsdale

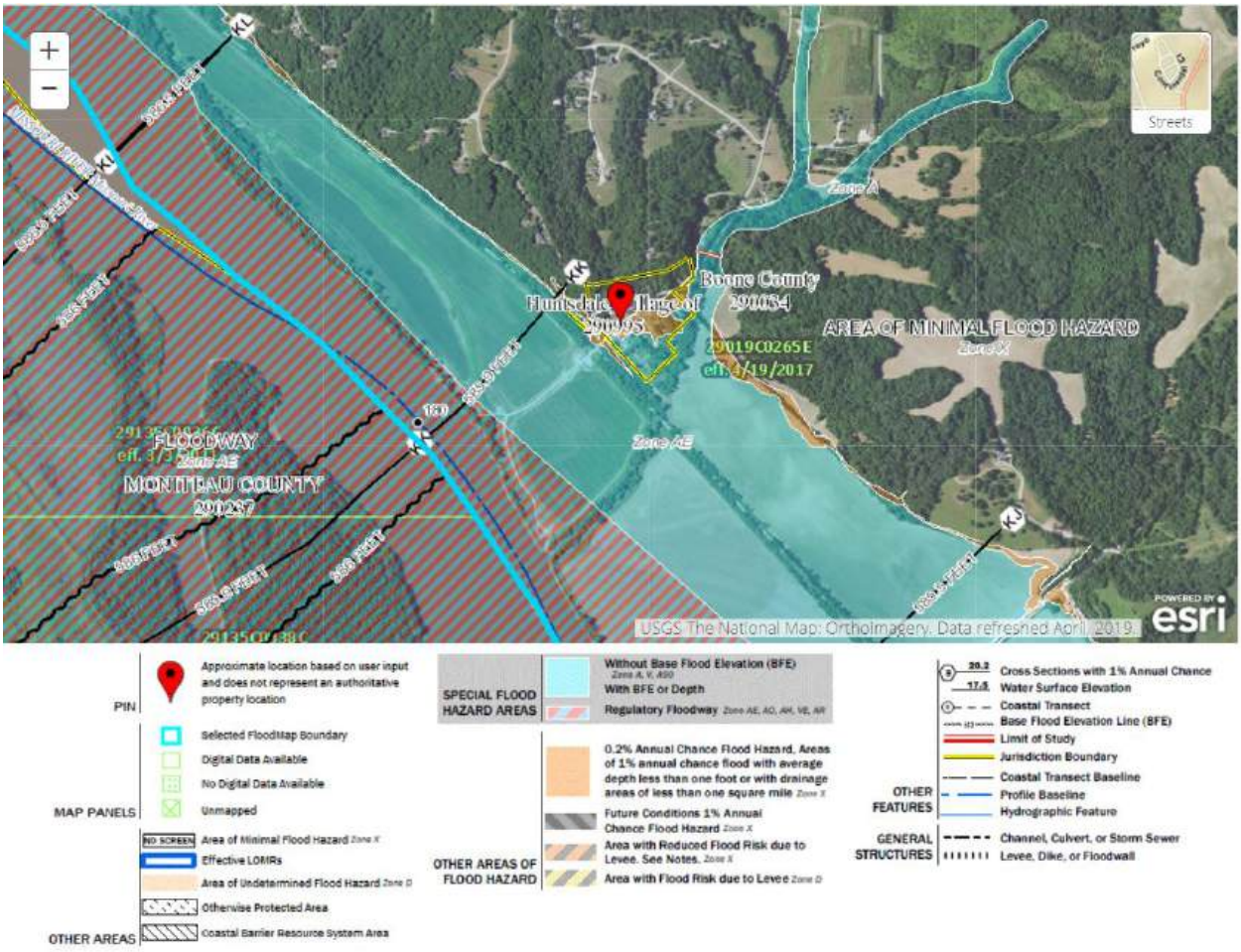


Figure 3.14: Rocheport

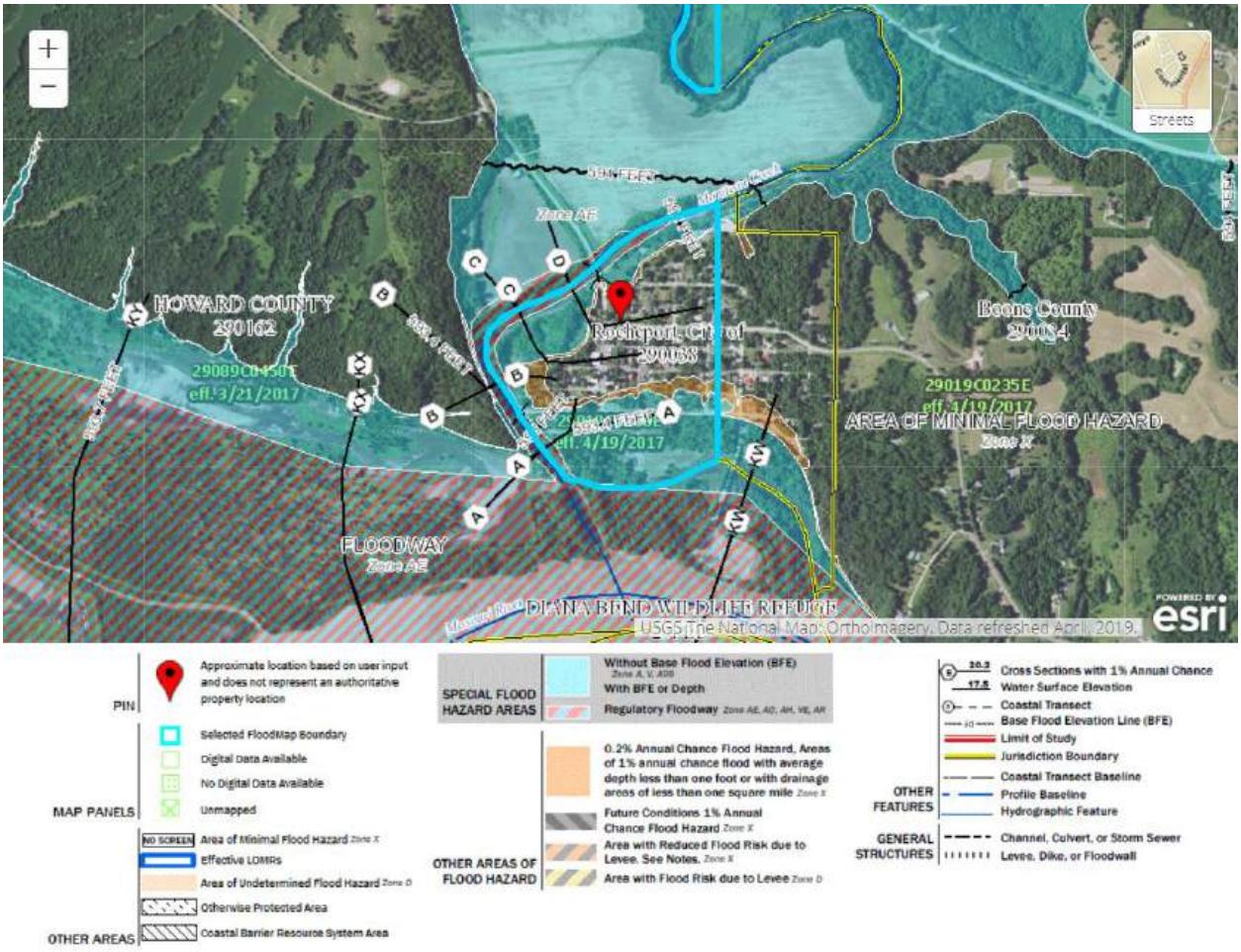
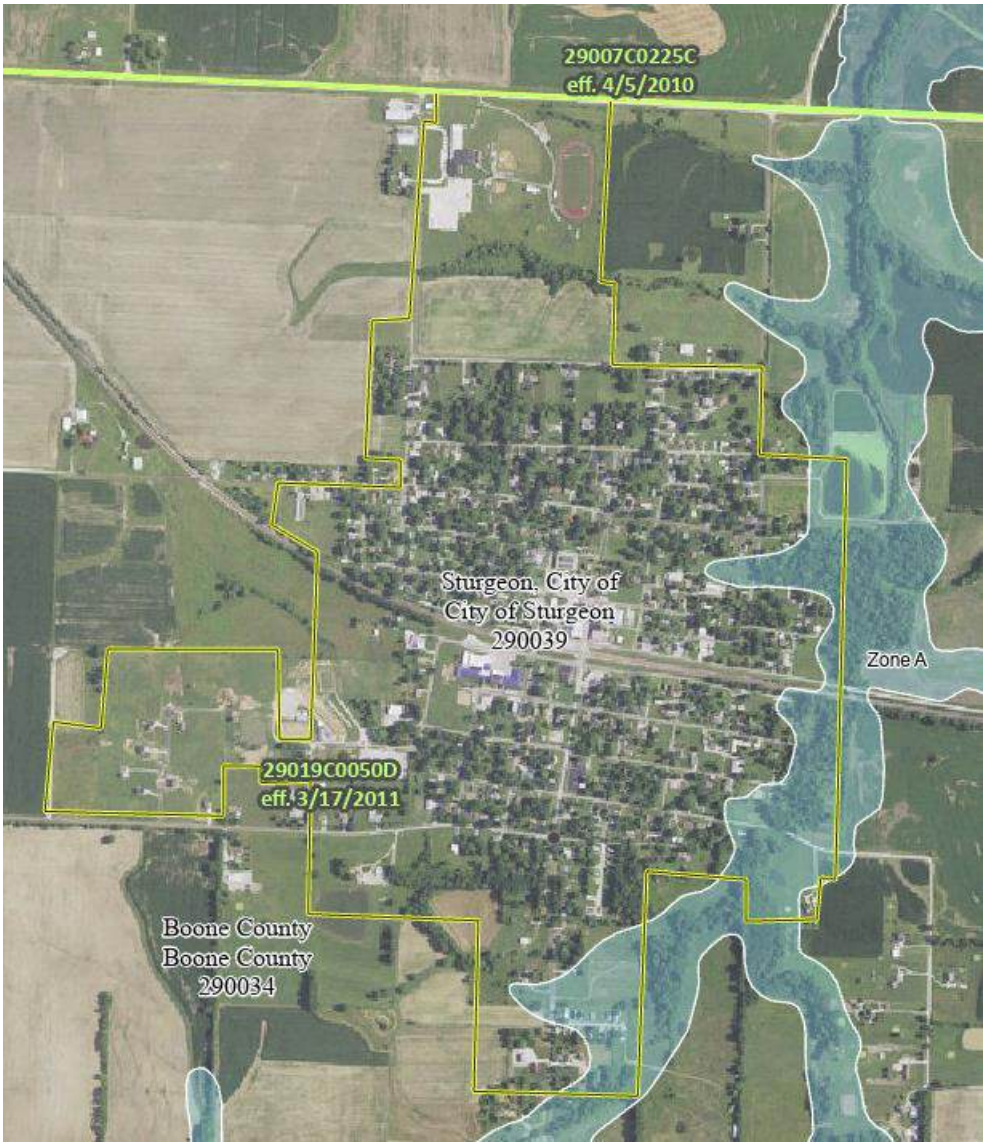
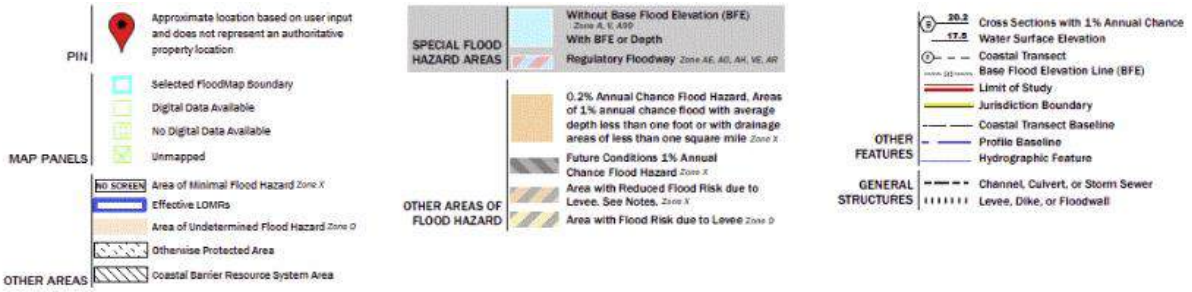


Figure 3.15: Sturgeon Floodplain





Road closures due to high water or flash flooding are common throughout the planning area. The map below indicates areas that are common to close due to flooding and flash floods.

Figure 3.16

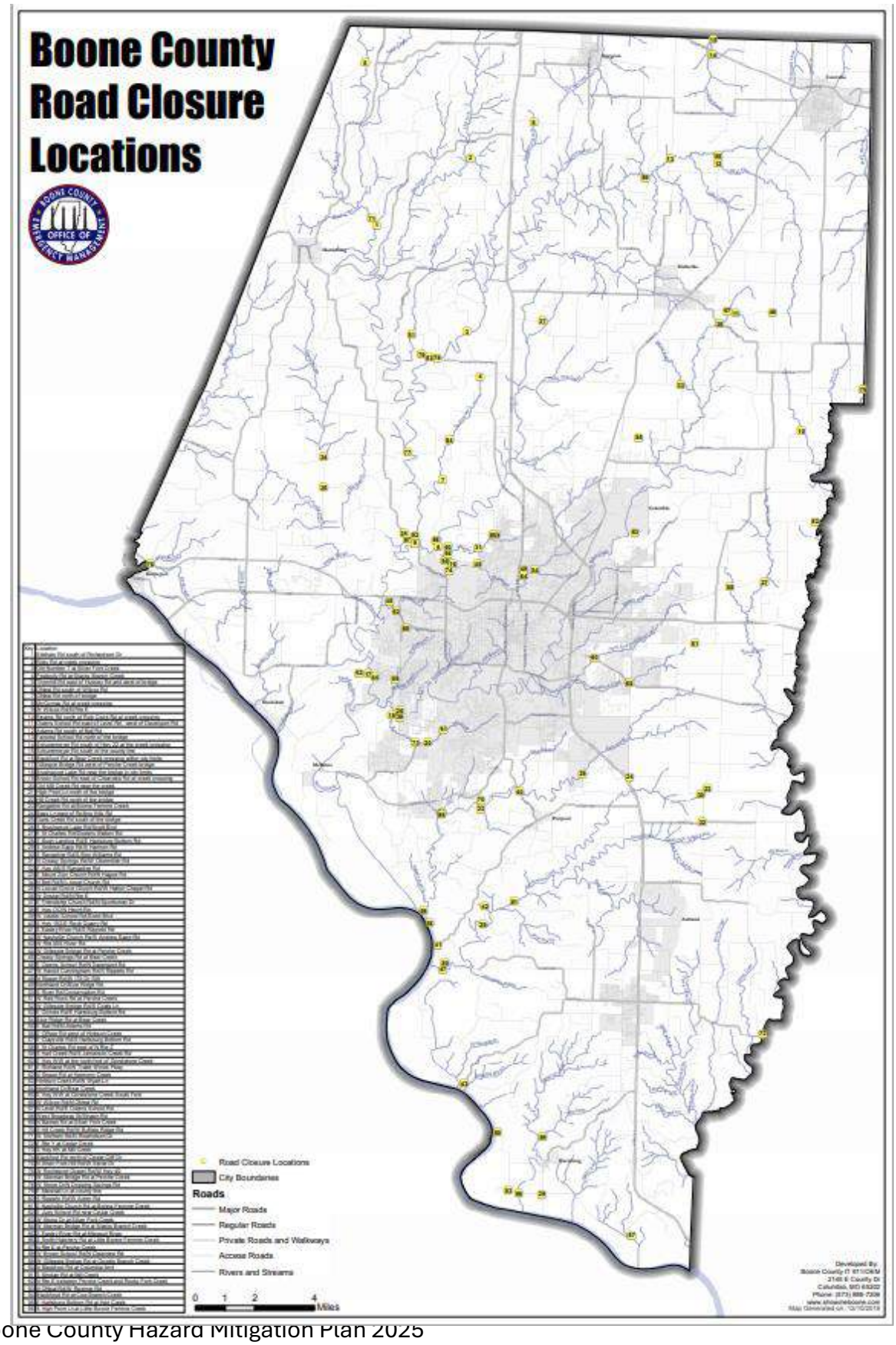

Boone County
Road Closure
Locations
OFFICE OF EMERGENCY MANAGEMENT
Road Closure Locations
City Boundaries
Roads
Major Roads
Regular Roads
Private Roads and Walkways
Access Roads
Rivers and Streams
0 1 2 4
Miles

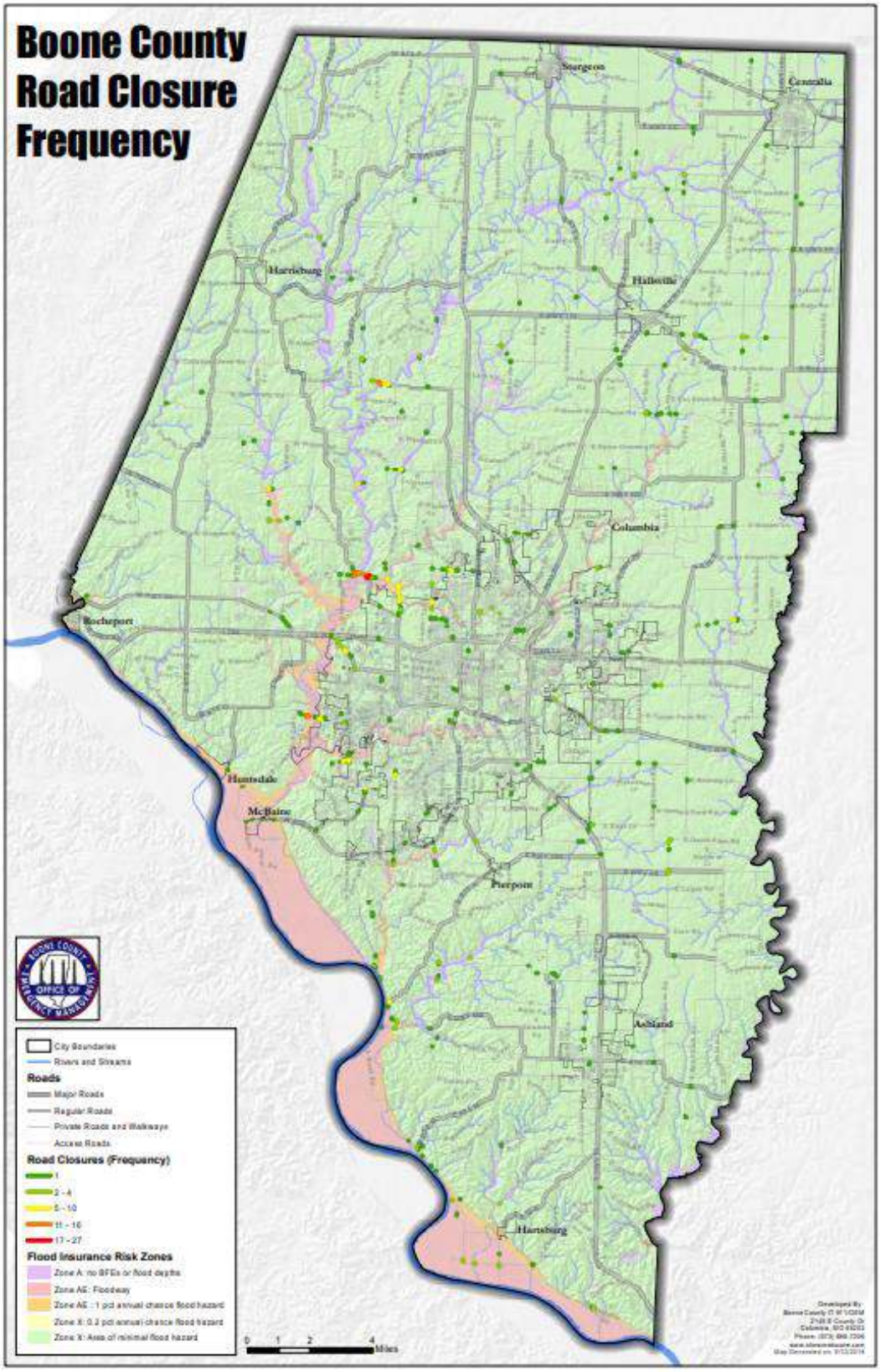
Table 3.15: Road Closure Locations

Key	Location
1	Stidham Rd south of Richardson Dr
2	Riley Rd at creek crossing
3	Old Number 7 at Silver Fork Creek
4	Peabody Rd at Slacks Branch Creek
5	Thornhill Rd east of Hussey Rd and west of bridge
6	ONeal Rd south of Wilcox Rd
7	ONeal Rd north of bridge
8	McComas Rd at creek crossing
9	W Wilcox Rd/N Rte E
10	Reams Rd north of Rob cook Rd at creek crossing
11	Owens School Rd east of Level Rd, west of Davenport Rd
12	Adams Rd south of Ball Rd
13	Farwest School Rd north of the bridge
14	Schunemeyer Rd south of Hwy 22 at the creek crossing
15	Schunemeyer Rd south of the county line
16	Blackfoot Rd at Bear Creek crossing within city limits
17	Gillespie Bridge Rd west of Perche Creek bridge
18	Brushwood Lake Rd near the bridge in city limits
19	Brown School Rd east of Clearview Rd at creek crossing
20	Old Mill Creek Rd near the creek
21	High Point Ln north of the bridge
22	Hill Creek Rd north of the bridge
23	Rangeline Rd at Bonne Femme Creek
24	Bass Ln east of Rolling Hills Rd
25	Gans Creek Rd south of the bridge
26	S Brushwood Lake Rd/Scott Blvd
27	E St Charles Rd/Doziers Station Rd
28	S Bush Landing Rd/E Hartsburg Bottom Rd
29	S Andrew Sapp Rd/S Harmon Rd
30	S Rangeline Rd/S Ben Williams Rd
31	N Creasy Springs Rd/W Obermiller Rd
32	E Hwy AB/S Rangeline Rd
33	E Mount Zion Church Rd/N Hague Rd
34	N Bell Rd/N Locust Church Rd
35	N Locust Grove Church Rd/W Hatton Chapel Rd
36	W Driskel Rd/N Rte E
37	E Friendship church Rd/N Sportsman Dr
38	E Hwy OO/N Hecht Rd
39	W Vawter School Rd/Scott Blvd
40	S Hwy 163/S Rock Quarry Rd
41	S Easley River Rd/S Rippeto Rd
42	W Nashville Church Rd/S Andrew Sapp Rd

43	W Rte M/S River Rd
44	W Gillespie Bridge Rd at Perche Creek
45	Creasy Springs Rd at Bear Creek
46	E Owens School Rd/N Davenport Rd
47	W Harold Cunningham Rd/S Rippeto Rd
48	N Strawn Rd/W 170 Dr SW
49	Northland Dr/Blue Ridge Rd
50	S River Rd/Conservation Rd
51	W Red Rock Rd at Perche Creek
52	W Gillespie Bridge Rd/S Coats Ln
53	E Grimes Rd/E Hartsburg Bottom Rd
54	Blue Ridge Rd at Bear Creek
55	E Ball Rd/N Adams Rd
56	E ORear Rd west of Hinkson Creek
57	E Claysville Rd/S Hartsburg Bottom Rd
58	E St Charles Rd east of N Rte Z
59	S Hart Creek Rd/S Jemerson Creek Rd
60	E Hwy WW at the north fork of Grindstone Creek
61	E Richland Rd/N Trade Winds Pkwy
62	N Strawn Rd at Harmony Creek
63	Hinkson Creek Rd/N Wyatt Ln
64	Northland Dr/Bear Creek
65	E Hwy WW at Grindstone Creek South Fork
66	W Wilcox Rd/N ONeal Rd
67	N Level Rd/E Owens School Rd
68	West Broadway St/Strawn Rd
69	N Barnes Rd at Silver Fork Creek
70	S Hill Creek Rd/W Buffalo Ridge Rd
71	W Stidham Rd/N Richardson Dr
72	E Rte Y at Cedar Creek
73	S Hwy KK at Mill Creek
74	Blackfoot Rd north of Cedar Cliff Dr
75	N Silver Fork Hill Rd/W Stone Dr
76	W Rocheport Gravel Rd/W Hwy 40
77	W Akeman Bridge Rd at Perche Creek
78	W Stone Dr/N Dripping Springs Rd
79	E Marshall Ln at county line
80	S Rippeto Rd/W Acton Rd
81	E Nashville Church Rd at Bonne Femme Creek
82	E Judy School Rd near Cedar Creek
83	W Stone Dr at Silver Fork Creek
84	W Akeman Bridge Rd at Slacks Branch Creek
85	S Easley River Rd at Missouri River
86	S Smith Hatcher Rd at Little Bonne Femme Creek

87	N Rte E at Perche Creek
88	W Brown School Rd/N Clearview Rd
89	W Gillespie Bridge Rd at Goodin Branch Creek
90	N Blackfoot Rd at Columbia limit
91	S Sinclair Rd at Mill Creek
92	N Re E between Perche Creek and Rocky Fork Creek
93	N ONeal Rd/W Roemer Rd
94	Blackfoot Td at Cow Branch Creek
95	E Hartsburg Bottom Rd at Hart Creek
96	S High Point Ln at Little Bonne Femme Creek

Figure 3.17: Road Closure Frequency



There are characteristic differences between riverine flooding and small stream/flash flooding in the planning area; these differences involve both the speed of onset and duration of flooding events.

Riverine flooding –

- Speed on Onset - Riverine flooding is a hazard which allows for mitigation, preparation, and potential evacuation because of the relatively long speed of onset.

- Duration - An examination of the NOAA data for riverine flooding 1996-2019 indicates an average duration of Missouri River flooding of over 13 days per event (Table 3.15).

Small Stream and Flash Flooding –

- Speed on Onset - In contrast to riverine flooding, small stream flooding and flash flooding occur very quickly with heavy rains.

- Duration - Small stream flooding in the planning area usually takes place within the span of one day, according to the NOAA data (Table 3.15). Information from Boone County Public Works indicates that many flash flooding events which cause road closures are confined to a few hours, although the water takes longer to recede in some locations.

Table 3.16

Boone County Historic Data
River and Small Stream Flood

January 1 1996 - December 31, 2024

Location	Date	Type of Flood
Southern Boone	1996: 5/1/96	Missouri River
Southern Boone	1998: 10/6/1998	Missouri River
Southern Boone	2001: 6/4/01	Missouri River
Southern Boone	2002: 5/8/02	Missouri River
Southern Boone	2007: 5/8/2007	Missouri River
Southern Boone	2010: 6/9/10	Missouri River
Central Boone	1997: 9/8/1997	Urban/Small Stream
Columbia	1998: 8/27/1998	Urban/Small Stream
Countywide	2001: 1/28/01 - 1/29/01	Urban/Small Stream
Countywide	2001: 6/6/2001	Urban/Small Stream
Countywide	2008: 9/13/2008	Urban/Small Stream
Central Boone	2015: 11/17/2015	Urban/Small Stream
Countywide	2021: 6/25/2021	Urban/Small Stream
Central Boone	2024: 7/3/2024	Urban/Small Stream

Source: https://www.ncdc.noaa.gov/stormevents/; available data as of 12/31/2024

Data from NOAA indicates 14 river or small stream floods in Boone County since the Missouri River flood of 1995 (Table 3.15). Six of these events were floods of the Missouri River. There have been 10 reported flash flood events since the last plan update (Table 3.16).

Table 3.17

Boone County Historic Data

Flash Flood

January 1 1996 - December 31, 2019

Location	Date	Location	Date
Eastern Boone	06/22/97	Southern Boone	07/04/09
Northern Boone	06/29/98	Countywide	10/08/09
Central Boone	07/04/98	Countywide	10/22/2009
Countywide	10/05/98	Columbia	4/23/2010
Northern Boone	06/12/99	Countywide	4/24/2010
Southern Boone	05/27/00	Columbia area	5/12/2010
Central and Northern Boone	08/07/00	Columbia/Centralia	5/13/2010
Columbia	05/17/01	Countywide	7/7/2010
SW Columbia and North of McBaine	07/19/01	Centralia	7/29/2010
Countywide	05/07/02	Columbia	8/20/2010
Countywide	05/09/02	Columbia area	5/25/2011
Countywide	05/12/02	Countywide	4/29/2012
Southern Boone	08/18/02	Midway/Columbia area	5/26/2013
Columbia	08/20/02	Easley	5/31/2013
Northern Boone	06/12/03	Southern Boone	4/3/2014
Northern Boone	06/25/03	Central Boone	9/1/2014
Countywide	03/26/04	Sturgeon	6/7/2015
Countywide	08/26/04	Countywide	6/25/2015
Countywide	01/12/05	Countywide	7/1/2015
Columbia	05/11/05	Southern Boone	12/26/2015
Columbia	08/26/05	Central Boone	7/3/2016
Columbia	09/19/05	Southern Boone	8/1/2016
Central Boone	06/11/06	Centralia	8/2/2016
Centralia	05/06/07	Northern Boone	4/29/2017
Columbia	05/06/07	Northern Boone	6/26/2018
Centralia	03/17/08	Southern Boone	6/22/2019
Northern Boone	04/10/08	Countywide	8/12/2019
Central to Northern Boone	06/13/08	Rocheport	08/10/2020
Central to Southern Boone	07/22/08	Sturgeon	06/19/2021
Northern Boone	07/25/08	Harrisburg	06/25/2021
Hallsville	07/27/08	Boone County	06/25/2021
Countywide	09/12/08	Boone County	07/01/2021
Countywide	09/13/08	Columbia area	07/14/2023
Countywide	03/24/09	Columbia area	08/02/2023
Northern Boone	04/29/09	Huntsdale	07/03/2024
Northern Boone	05/15/09	Columbia	07/08/2024
		Central Boone	07/08/2024

Source: http://www.ncdc.noaa.gov/stormevents; available data as of 12/31/24

Missouri has a long and active history of flooding over the past century, according to the 2023 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. On Sept. 13, 2008, a 20-year old woman attempted to help a man who had been swept off Clark Lane into Hominy Creek on the east side of Columbia. She was swept away by the floodwaters to her death. This flooding originated from the remnants of Hurricane Ike which swept across the Midwest causing widespread and extensive flooding. Flooded roadways caused minor injuries to two people who were trapped in their car November 11, 2015 after nearly 5 inches of rain fell over a two-day period. In 2024, a Boone County firefighter lost his life rescuing 2 people who had been swept off the road near Range Line Street and Bear Creek in Columbia. This incident occurred several weeks after the same firefighter saved 2 people in a separate incident when a car was swept off the road at Gillespie Bridge Road in Columbia. Tragically, an 81-year-old woman lost her life in that incident. Both incidents followed several weeks of heavy thunderstorms in the area.

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.

1. NFIP Participation in Boone County – Ordinance and Enforcement Information

Community ID #	Community Name	NFIP Participant (Y/N/Sanctioned)	Adoption Date of Current Flood Damage Prevention Ordinance	Floodplain Administrator and/or Agency
290034B	Boone County	Y	2017	Rachel Hultz
290752#	Ashland	Y	2011	Darin Ratermann
290035#	Centralia	Y	2011	Tara Strain
290036B	Columbia	Y	2017	Tim Teddy
290712B	Hallsville	Y	2017	Kenyetta Ridgway-Sample

290246#	Harrisburg	Y	2011	Jeff Arp
290037B	Hartsburg	Y	2017	Bill Molendorp
290995B	Huntsdale	Y	2015	Debby Lancaster
290038B	Rocheport	Y	2017	John Zondca
290039#	Sturgeon	Y	2012	Kevin Abrahamson

Source: NFIP Community Status Book, 2024; PIVOT (information from STATE) Community Status Book | FEMA.gov; M= No

Table 3.18: NFIP Participation in Boone County

Community ID #	Community Name	Current Effective Map Date	Regular- Emergency Program Entry Date
290034B	Boone County	04/19/17	06/15/83
290752#	Ashland	03/17/11	08/24/84
290035#	Centralia	03/17/11	04/15/77
290036B	Columbia	04/19/17	08/27/71
290712B	Hallsville	04/19/17	01/01/06
290246#	Harrisburg	03/17/11	06/08/12
290037B	Hartsburg	04/17/17	08/16/82
290995B	Huntsdale	04/19/17	06/11/15
290038B	Rocheport	04/19/17	08/02/82
290039#	Sturgeon	03/17/11	05/01/87

Source: NFIP Community Status Book, 09/24/19; BureauNet, http://www.fema.gov/national-flood-insurance-program/national- flood-insurance-program-community-status-book; M= No elevation determined – all Zone A, C, and X: NSFHA = No Special Flood Hazard Area; E=Emergency Program

Table 3.19: NFIP Policy and Claim Statistics as of 2024

Community Name	Policies in Force	Insurance in Force	Closed Losses	Total Payments
Uninc. Boone County	57	11,642,300		$375,303
Centralia	2	420,000		
Columbia	156	38,706,500		$2,250,809
Hartsburg	22	1,964,100		$121,572
Rocheport	4	426,500		

Source: NFIP Community Status Book, [09/24/19]; BureauNet, http://bsa.nfipstat.fema.gov/reports/reports.html; *Closed Losses are those flood insurance claims that resulted in payment. Loss statistics as of 09/30/19.

The jurisdictions that participate in the NFIP have adopted Floodplain Ordinances that establish regulations for construction, development, and substantial improvements within floodplain areas. These regulations mandate the acquisition of floodplain development permits and elevation certificates to ensure that all projects comply with these standards. The floodplain administrator for each jurisdiction maintains the records for all development that takes place in the floodplain per FEMA's requirements.

Substantial improvements/ substantial damage provisions are implemented after a disaster event through the Floodplain Ordinance of participating jurisdictions. Each jurisdiction that participates in the NFIP has addressed the specific requirements of FEMA regarding substantial damage/substantial improvement provisions and development.

Repetitive Loss/Severe Repetitive Loss Properties

Properties with at least two flood insurance payments of $1,000 or more in a 10-year period are categorized as Repetitive Loss Properties. Properties that have repetitive loss fall within unincorporated Boone County, and the jurisdictions of Columbia and Hartsburg. They combine for a total of 58 losses. Due to federal restrictions on data sharing, the state was unable to provide full Repetitive Loss data or current Severe Repetitive Loss data. This also impacts information on Property Type and whether the properties are mitigated or non-mitigated. According to the Flood Insurance Administration, jurisdictions included in the planning area have a combined total of 14 repetitive loss properties.

Table 3.20: Repetitive Loss Payments

Jurisdiction	# of Properties	Total Payments	Average Payment	# of Losses
Uninc. Boone County	5	$191,284	$12,002	15
Columbia	4	$126,068	$8,727	11
Hartsburg	2	$101,871	$25,468	4
Total	14	$419,223	N/A	30

Source: SEMA planning division

Severe Repetitive Loss (SRL): A SRL property is defined as a property 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 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. A single-family property can consist of one-to-four residences. Boone County only has two such properties, 1 located in Columbia and the other located in unincorporated Boone County. There are no mitigated severe repetitive loss properties in the county. The total paid in NFIP insurance for the property in unincorporated Boone County is $191,284 and the total number of losses is 15. The total paid in NFIP insurance for the property in Columbia is $2,753,589 and the total number of losses is 14.

Boone County and jurisdictions within all participate in NFIP. New construction and large updates go through site plan reviews and require building permits and inspection. This process allows for management and enforcement of any construction going on in flood prone areas. Properties that receive substantial damage must be repaired to the most recent NFIP and building code requirements.

Table 3.21: Boone County Severe Repetitive Loss Property

Community Name	Repetitive Loss Properties	Mitigated	Non-Mitigated	Total Losses	Residential	Commercial	Total Building Payments	Total Contents Payments	Total Paid
Columbia	6	1	5	32	4	2	$ 1,934,787	$ 84,969	$ 2,019,756
Boone County	7	0	7	28	6	1	$ 454,614	$ 9,069	$ 463,683
Hartsburg	1	0	1	2	1	0	$ 12,610	$ -	$ 12,610

Source: 2025 SEMA Planning

Previous Occurrences

The floods of 1993 and 1995 were the worst repetitive flood events in Missouri history, according to the *Missouri State Hazard Mitigation Plan (2013)*. There were five presidential disaster declarations for flooding during this period; Boone County was included in Disaster Declaration #995 (July 9, 1993) and Disaster Declaration #1054 (June 2, 1995).

All levees in Boone County failed during the Flood of 1993, according to the U.S. Army Corps of Engineers. More information about this is included under Levee Failure.

The towns of Hartsburg, Huntsdale, McBaine, Rocheport and the unincorporated areas near the Missouri River experienced elevated loss statistics during the Missouri River floods of 1993 and 1995 as compared with damages in the remainder of the county.

2019 saw near record flooding. Depths were reported within a couple feet of 1993 flood levels and on par with 1995 levels. Levees upstream and down-stream were breached. Those breaches outside of Boone County led to drops in depths that took pressure off multiple levees in Boone County.

Table 3.22: NCEI Boone County Flash Flood Events Summary 2000-2025

DATE	# of Events	# of Deaths	# of Injuries	Property Damage	Crop Damage
5/27/2000	1	0	0	0	0
8/7/2000	1	0	0	0	0
5/17/2001	1	0	0	0	0
7/19/2001	1	0	0	0	0
5/7/2002	1	0	0	0	0
5/9/2002	1	0	0	0	0
5/12/2002	1	0	0	0	0
8/18/2002	1	0	1	0	0
8/20/2002	1	0	0	0	0
6/12/2003	1	0	0	0	0
6/25/2003	1	0	0	0	0

3/26/2004	1	0	0	500000	0
8/26/2004	1	0	0	0	0
1/12/2005	1	0	0	0	0
5/11/2005	1	0	0	0	0
8/26/2005	1	0	0	0	0
9/19/2005	1	0	0	0	0
6/11/2006	1	0	0	0	0
5/6/2007	1	0	0	45000	0
5/6/2007	1	0	0	0	0
3/17/2008	1	0	0	0	0
4/10/2008	1	0	0	1000	0
6/13/2008	1	0	0	1000	0
7/22/2008	1	0	0	0	0
7/25/2008	1	0	0	0	0
7/27/2008	1	0	0	0	0
9/12/2008	1	0	0	0	0
9/13/2008	1	0	0	0	0
3/24/2009	1	0	0	0	0
4/29/2009	1	0	0	0	0
5/15/2009	1	0	0	0	0
7/4/2009	1	0	0	0	0
10/8/2009	1	0	0	0	0
10/22/2009	1	0	0	0	0
4/23/2010	1	0	0	0	0
4/24/2010	1	0	0	0	0
5/12/2010	1	0	0	0	0
5/13/2010	1	0	0	0	0
7/7/2010	1	0	0	0	0
7/29/2010	1	0	0	0	0
8/20/2010	1	0	0	0	0
5/25/2011	1	0	0	0	0
4/29/2012	1	0	0	0	0
5/26/2013	1	0	0	0	0
5/31/2013	1	0	0	0	0
4/3/2014	1	0	0	0	0
9/1/2014	1	0	0	0	0
6/7/2015	1	0	0	0	0
6/25/2015	1	0	0	0	0
7/1/2015	1	0	0	0	0
12/26/2015	1	0	0	0	0
7/3/2016	1	0	0	0	0
8/1/2016	1	0	0	0	0

8/2/2016	1	0	0	0	0
4/29/2017	1	0	0	0	0
6/26/2018	1	0	0	0	0
6/22/2019	1	0	0	0	0
8/11/2019	1	0	0	0	0
8/12/2019	1	0	0	0	0
8/10/2020	1	0	0	0	0
6/19/2021	1	0	0	0	0
6/25/2021	1	0	0	0	0
6/25/2021	1	0	0	0	0
7/1/2021	1	0	0	0	0
7/14/2023	1	0	0	0	0
8/2/2023	1	0	0	0	0
7/3/2024	1	1	0	20000	0
7/8/2024	1	0	0	100000	0
7/8/2024	1	0	0	1000	0

Source: NCEI, 02/01/2000-01/31/2025

Table 3.23: NCEI Boone County Riverine Flood Events Summary 2000-2020

Date	# of Events	# of Deaths	# of Injuries	Property Damage	Crop Damage
1/28/2001	1	0	0	0	0
6/4/2001	1	0	0	0	0
6/6/2001	1	0	0	0	0
5/8/2002	1	0	0	0	0
5/8/2007	1	0	0	10000	25000
9/13/2008	1	1	0	0	0
6/9/2010	1	0	0	0	0
11/17/2015	1	0	2	0	0
6/25/2021	1	0	0	0	0
7/3/2024	1	0	0	500	0

Source: NCEI, 02/01/2000-01/31/25

Probability of Future Events

Table: 3.24			
Probability of Future Flooding Events			
EF-Scale	**# of flood events (2000-2025)**	**Probability**	**Probability Rating**
River flood	10	40%	High
Flash flood	70	100%	High

While the probability of flooding of the Missouri River is high, the towns by the river (Hartsburg, Huntsdale and Rocheport) are all protected to varying degrees by levees. The Katy Trail State Park functions as a levee for all three jurisdictions; Hartsburg and Huntsdale are also protected by agricultural levees. For this reason, there is only a moderate probability of flooding in these three towns.

Probability: High – Boone County (unincorp.), Columbia
Moderate – Hartsburg, Huntsdale, Rocheport
Low - all other participating jurisdictions

Changing Future Conditions *Considerations*

Precipitation is projected to increase, and in more extreme events, the risk of flooding could increase. This risk can be exacerbated by more and more construction that adds more impermeable surfaces that give large quantities of water nowhere to go. Additionally, higher precipitation throughout the year can cause groundwater levels to rise, causing water to recede more slowly after a flood.

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. 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.
Refer to section 3.2 of the plan where scour critical bridges were identified.

Severity: High – Hartsburg, Huntsdale, Rocheport
Moderate – Boone County (unincorporated), Columbia
Low - all other participating jurisdictions

Boone County is vulnerable to both Missouri River floods and flash flooding; the City of Columbia is vulnerable to flash flooding and flooding from the backup of branches feeding into the Missouri River during times of river flooding. Flash flooding events happen at a high frequency and average 2.8 events a year. In a 25-year period there isn't a single year in which flash flooding hasn't happened.

Potential Impact – Life
All types of flooding present a threat to human life and livelihood. Small stream/urban stream flooding and flash flooding are particularly hazardous due to their quick onset. It is an ongoing struggle to educate the public concerning the very real hazard presented by flooded low water crossings and other flash flooding situations.

In addition to the risk of drowning, exposure to flood waters can result in infection or injury from sewage, agricultural runoff, and industrial chemicals. Flooded buildings present health risks from mold, chemicals and electrical hazards.

Flooding also poses a threat to the livelihood of those farming in low lands; this is especially a problem near the Missouri River. When the river level is high for an extended period, water will seep up through the soil and cause additional flooding to that already caused by heavy rains. Standing water in fields may prevent planting at the optimal time for a successful harvest or damage/destroy crops during the growing season.

Potential Losses to Existing Development
Structures and infrastructure near the Missouri River are potentially vulnerable to damage from riverine flooding; many of these structures are protected by levees and sandbagging at times of high river levels but there is the potential for floodwaters to top the levees or for levee failure.

Flash flooding events present a risk of damage to roadways, drainage systems, and culverts. In addition, there are homes at risk of flash flooding, especially in the City of Columbia. There are no critical building facilities in the floodplain for any jurisdictions, however Rocheport, Sturgeon, and Harrisburg have wastewater facilities that are at risk of overtopping if a historic level flood or flash flooding were to occur. There are 916 buildings in the 100-year floodplain and/or floodway in Boone County. Additionally, there are 543 buildings at risk of 500-year floods.

Impact of Previous and Future Development
There is a high level of awareness in the planning area regarding the dangers and potential of flooding. Participation in the NFIP by Boone County and all the major communities means that

floodplain ordinances are in place regulating development in the floodplain. In addition, Boone County and the City of Columbia have storm water management plans and requirements in place.

However, development is vigorous in the planning area, especially in and around the City of Columbia. The city is already vulnerable to flash flooding and an increase in impervious surface means an increase in runoff. It is important that development projects are closely monitored to ensure compliance with all storm water requirements and regulations in order to minimize increases to flash flooding from development. This is increasingly crucial as it is now known that climate change is causing an increase in the type of heavy downpours which trigger flash flooding.

Hazard Summary by Jurisdiction
The Missouri River floods of 1993 and 1995 were devastating events for many parts of the Midwest United States. Changes in river management, including major wetland restoration projects along the river's long course, the buildup of some levee sections in parts of the planning area, and the buyout of properties in the river floodplain have all helped to mitigate risk associated with riverine flooding in the planning area.

Boone County
A Stream Buffer Ordinance, Order 205-2009, was passed by the Boone County Commission in April 2009 with an implementation date of June 1, 2009, and a review after one year of implementation. One of the ordinance's many focuses is the reduction of flash flooding. The ordinance governs the unincorporated areas of the county.

A Joint Storm Water Task Force, formed by the Boone County Commission and the City of Columbia, met from 2002 to 2008 and drafted a Storm Water Ordinance for the County.

Columbia
The City of Columbia Water Treatment Plant is located in the Missouri River floodplain. After the floods of 1993 and 1995, the following mitigation was put in place to protect the water supply: the well platforms were raised seven feet; secondary power and waterlines were run from the well field to the water treatment plant and a concrete flood protection wall was constructed around the plant.

Lagoons for the city's wastewater treatment system are also located in the floodplain and surrounded by a berm for flood protection.

The Public Works Department staff reviews all subdivision plans to ensure structures are not built in the floodway and are 2 feet above the 100-year flood elevation when placed in the flood fringe.

The City of Columbia has a Stormwater Master Plan. It has a Stormwater Management Program located within the Department of Public Works.

Columbia's "Stormwater Management & Water Quality Manual" was updated in February 2009 with revisions in 2013. The manual includes the following specifications for road classifications and their respective levels of safety against flooding (Table 3.25).

Table 3.25
Design Capacity for Streets

Street Classification	Minimum Design Storm Capacity	Design Storm Return Interval
Arterial	1%	100 year
Collector and Local Non-Residential	4%	25 year
Residential	10%	10 year

Source: Stormwater Management & Water Quality Manual, Columbia, MO, 2013

Flash flooding is of particular concern in the City of Columbia; flood buyouts in the city have been outside of the floodplain in Zone X where the properties were repeatedly affected by flash flooding. Columbia still has a significant number of NFIP repetitive loss properties.

Rocheport
The City of Rocheport relies on the County in times of major flooding to provide sandbags or concrete barriers which are placed on the north side of the Katy Trail to protect the city. This has been effective but is an expensive venture for the County. There are also four houses on the south (river) side of the Katy Trail which could sustain damage in times of flooding and would not be assisted by the sandbagging; the city has targeted three of these houses for potential flood buyouts; one house has been elevated. The city park on the south side of town will flood with lower river levels but this is not a major concern for the city. The Boone County Regional Sewer District now owns and operates the wastewater treatment facility serving the city; it is located in the floodplain.

Huntsdale
While Huntsdale is located near the river and has a significant area in the floodplain, the main part of the town is almost totally surrounded by levees. There is a campground along the river outside of the levee protection area, but it is not used in the event of potential flooding. The town sandbags a small area along the Grocery Branch on the southeast edge of town but has not experienced severely problematic flooding since the 1993 floods.

Hartsburg
Hartsburg also has levee protection from both the agricultural Hartsburg Levees and a section of the Katy Trail which runs through the village. This section was elevated to 32 feet following the 1993 flood and provides extra protection for about half of the village, including the business section. In times of flood threat, Hartsburg sandbags on this part of the Katy Trail but more than half of the town residences (11 houses) are on the river side of the trail and protected only by one of the agricultural levees. If flooding overtops the agricultural levees, the consequences for these

11 houses would be severe. There have been a number of times in the past 15 years when the village sandbagged on the trail but no levees were overtopped in that period.

Ashland, Centralia, Hallsville, Harrisburg, and **Sturgeon** are not impacted by major Missouri River flooding but do suffer flash flooding in extreme rain events where the rate of rainfall is excessive. This can lead to water backups onto roadways due to not enough runoff capacity. Such backups can put wastewater infrastructure at risk in Sturgeon and Harrisburg.

SUMMARY OF VULNERABILITY

The entire planning area is at risk from some type of flooding. The most common types of flooding in the area are flash and sheet flooding associated with heavy downpours. This is of particular concern in the unincorporated parts of Boone County, where roads can become impassable, and in the City of Columbia, where flash flooding affects a number of NFIP repetitive loss properties. Climate change is causing an increase in heavy downpours and this will, in turn, most likely increase the frequency and/or severity of flash flooding.

While none of the school districts have any buildings located in floodplain their bus routes can be severely impacted by flooded and impassible roads during heavy rain events.

Flooding of the Missouri River is a potential problem for the areas near the river: the unincorporated areas of Boone County, the jurisdictions of Hartsburg, Huntsdale, and Rocheport and also the City of Columbia, which has significant infrastructure situated in the river bottoms.

Some county roads near the river become impassable during times of high water levels. The incorporated areas of Hartsburg and Huntsdale are protected both by agricultural levees and the Katy Trail, which acts as a levee, but the levees and trail require sandbagging at times of high river levels. Most of Rocheport is also protected by the Katy Trail; the trail is also sandbagged at this location at times of potential flooding. The levees, along with the sandbagging efforts, have kept these towns safe from flooding for the past few decades; however, there is always the possibility that the levees could be overtopped, or fail, with very high river levels.

The City of Columbia's infrastructure near the river is protected by berms and the McBaine Levee; again, there is always the potential for the levee to be overtopped or fail. Columbia can also experience flooding from the backup of a major tributary branch when the Missouri River is high.

All major jurisdictions of the planning area are members of the NFIP and have floodplain regulations in place. In addition, Boone County and the City of Columbia have put extensive time, energy, and resources into developing storm water plans and regulations. These factors, plus a high awareness of the threat of potential flooding, all act to help mitigate the vulnerability to this hazard.

Problem Statement

Flooding and flash flooding are frequent occurrences in the planning area that pose a threat to life, livelihood, property, and infrastructure. Risk to these things vary across the planning area with highest risk being to lands and jurisdictions along the Missouri River and creeks and streams that feed it. While all jurisdictions in the planning area are part of the NFIP, portions of Boone County, Columbia, Hartsburg, Huntsdale, and Rocheport have the most risk due to their proximity to the river and how much of their infrastructure is located in flood and flash flood prone areas. As a result of past events ordinances and guidance has been put in place by Boone County and the City of Columbia to help control development in hazard areas. Proper stormwater handling, warning systems, elevated low-water crossings, and riverbank restoration are all actions to aid in the reduction of flood damage in the planning area.

3.4.2 LEVEE FAILURE

HAZARD PROFILE

DESCRIPTION OF HAZARD

Levees are earth embankments constructed along rivers and coastlines to protect adjacent lands from flooding. Floodwalls are concrete structures, often components of levee systems, designed for urban areas where there is insufficient room for earthen levees. When levees and floodwalls and their appurtenant structures are stressed beyond their capabilities to withstand floods, levee failure can result in injuries and loss of life, as well as damages to property, the environment, and the economy.

Levees can be small agricultural levees that protect farmland from high-frequency flooding. Levees can also be larger, designed to protect people and property in larger urban areas from less frequent flooding events such as the 100-year and 500-year flood levels. For purposes of this discussion, levee failure will refer to both overtopping and breach as defined in FEMA's Publication "So You Live Behind a Levee" (http://mrcc.isws.illinois.edu/1913Flood/awareness/materials/SoYouLiveBehindLevee.pdf).

A levee is defined by the National Flood Insurance Program as "a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding."

Federally authorized levees are typically designed and built by the US Army Corps of Engineers in cooperation with a local sponsor then turned over to a local sponsor to operate and maintain.

Non-federal levees are designed, built, and managed by a non-federal entity.

There is no single agency with responsibility for levee oversight. The Corps of Engineers has specific and limited responsibilities for approximately 2,000 levees nationwide through their Levee Program. The responsibilities of local levee owners or sponsors are broad and may include levee safety; land use planning and development; building codes; and operations, maintenance, repair, rehabilitation, and replacement of the levee. The certification of levees for FEMA's National Flood Insurance Program is also the responsibility of the local levee owners or sponsors. Federally authorized and some non-federal levees may be eligible for Corps of Engineers rehabilitation assistance funding.

This assessment discusses the major levees in the planning area; these levees are owned and operated by levee districts. There are also several privately owned levees which are maintained by their owners; official data on the locations of these private levees is not available.

The USACE notes that there is a "large universe of private and other non Corps levees that have not been inventoried or inspected/assessed. We don't know the size of this universe, where the levees are located, their condition, or the consequences of failure, loss of life being of paramount concern."

Following are the FEMA publication descriptions of different kinds of levee failure.

Overtopping: When a Flood Is Too Big

Overtopping occurs when floodwaters exceed the height of a levee and flow over its crown. As the water passes over the top, it may erode the levee, worsening the flooding and potentially causing an opening, or breach, in the levee.

Breaching: When a Levee Gives Way

A levee breach occurs when part of a levee gives way, creating an opening through which floodwaters may pass. A breach may occur gradually or suddenly. The most dangerous breaches happen quickly during periods of high water. The resulting torrent can quickly swamp a large area behind the failed levee with little or no warning.

Earthen levees can be damaged in several ways. For instance, strong river currents and waves can erode the surface. Debris and ice carried by floodwaters—and even large objects such as boats or barges—can collide with and gouge the levee. Trees growing on a levee can blow over, leaving a hole where the root wad and soil used to be. Burrowing animals can create holes that enable water to pass through a levee. If severe enough, any of these situations can lead to a zone of weakness that could cause a levee breach. In seismically active areas, earthquakes and ground shaking can cause a loss of soil strength, weakening a levee and possibly resulting in failure. Seismic activity can also cause levees to slide or slump, both of which can lead to failure.

Geographic Location

Missouri is a state with many levees. Currently, there is no single comprehensive inventory of levee systems in the state. Levees have been constructed across the state by public entities and private entities with varying levels of protection, inspection oversight, and maintenance. The lack of a comprehensive levee inventory is not unique to Missouri.

There are two concurrent nation-wide levee inventory development efforts, one led by the United State Army Corps of Engineers (USACE) and one led by Federal Emergency Management Agency (FEMA). The National Levee Database (NLD), developed by USACE, captures all USACE related levee projects, regardless of design levels of protection. The Midterm Levee Inventory (MLI), developed by FEMA, captures all levee data (USACE and non-USACE) but primarily focuses on levees that provide 1% annual-chance flood protection on FEMA Flood Insurance Rate Maps (FIRMs).

It is likely that agricultural levees and other non-regulated levees within the planning area exist that are not inventoried or inspected. These levees that are not designed to provide protection from the 1-percent annual chance flood would overtop or fail in the 1-percent annual chance flood scenario. Therefore, any associated losses would be taken into account in the loss estimates provided in the Flood Hazard Section.

Boone County, the Villages of Hartsburg and Huntsdale, and the City of Columbia are all vulnerable to levee failure.

The major levees in the planning area, the McBaine and Hartsburg Levees, are located along the southwestern border of Boone County on the left descending bank of the Missouri River between river miles 180 and 150. They protect agricultural land, the communities of McBaine, Huntsdale, and Hartsburg, and a water treatment facility for the City of Columbia from Missouri River flooding.

Figure 3.18

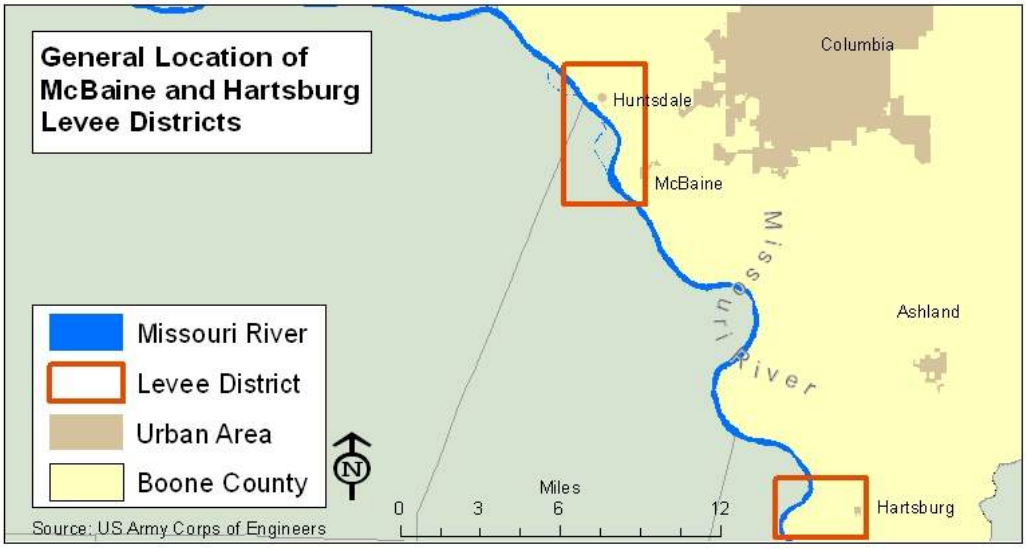


Table 3.26			
Major Levees in Planning Area			
Levee Name	**MO River Mile Location (left descending bank)**	**Segment Length (miles)**	**Leveed Area Acreage**
McBaine Levee	179.6 to 175.0	10.59	2492.94
Hartsburg Levee District Section 1	160.5 to 155.3	7.32	2,071.05
Hartsburg Levee District Section 2	155.2 to 153.6	5.60	1,341.90
Hartsburg Levee District Section 3	153.6 to 150.8	6.53	739.14
Sources: USACE National Levee Database: USACE Levee Inspection Reports			

The McBaine and Hartsburg levees together protect over 6,000 acres of land; they are earthen levees which were locally constructed and are locally operated and maintained. The levees were built as agricultural levees to withstand 50-year floods; none are NFIP certified. The sponsoring levee districts are separate taxing entities organized by the Boone County Circuit Court.

The levees are part of the Army Corps of Engineers Rehabilitation Program and were last inspected in 2014. According to the USACE, "The rating is based on the levee inspection checklist, which includes 125 specific items dealing with operation and maintenance of levee embankments, floodwalls, interior drainage, pump stations, and channels." The McBaine Levee received an "acceptable" rating during the most recent inspection and the Hartsburg Levees received "minimally acceptable" ratings. This is based on a 3-tier scale ranging from acceptable to unacceptable.

Levee System Inspection Ratings

Acceptable	All inspection items are rated as Acceptable.
Minimally Acceptable	One or more inspection items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable inspection items would not prevent the segment/system from performing as intended during the next flood event.
Unacceptable	One or more inspection items are rated as Unacceptable and would prevent the segment/system from performing as intended, or a serious deficiency noted in past inspections (previous Unacceptable items in a Minimally Acceptable overall rating) has not been corrected within the established timeframe, not to exceed two years.

As part of the USACE Levee Program, the levee districts are eligible for Corps of Engineers levee rehabilitation assistance should their levees receive damage during a flood event. The levee must maintain a *minimally acceptable* standard to remain eligible for the assistance.

More detailed views of the major levees are shown in Figures 3.19 and 3.20.

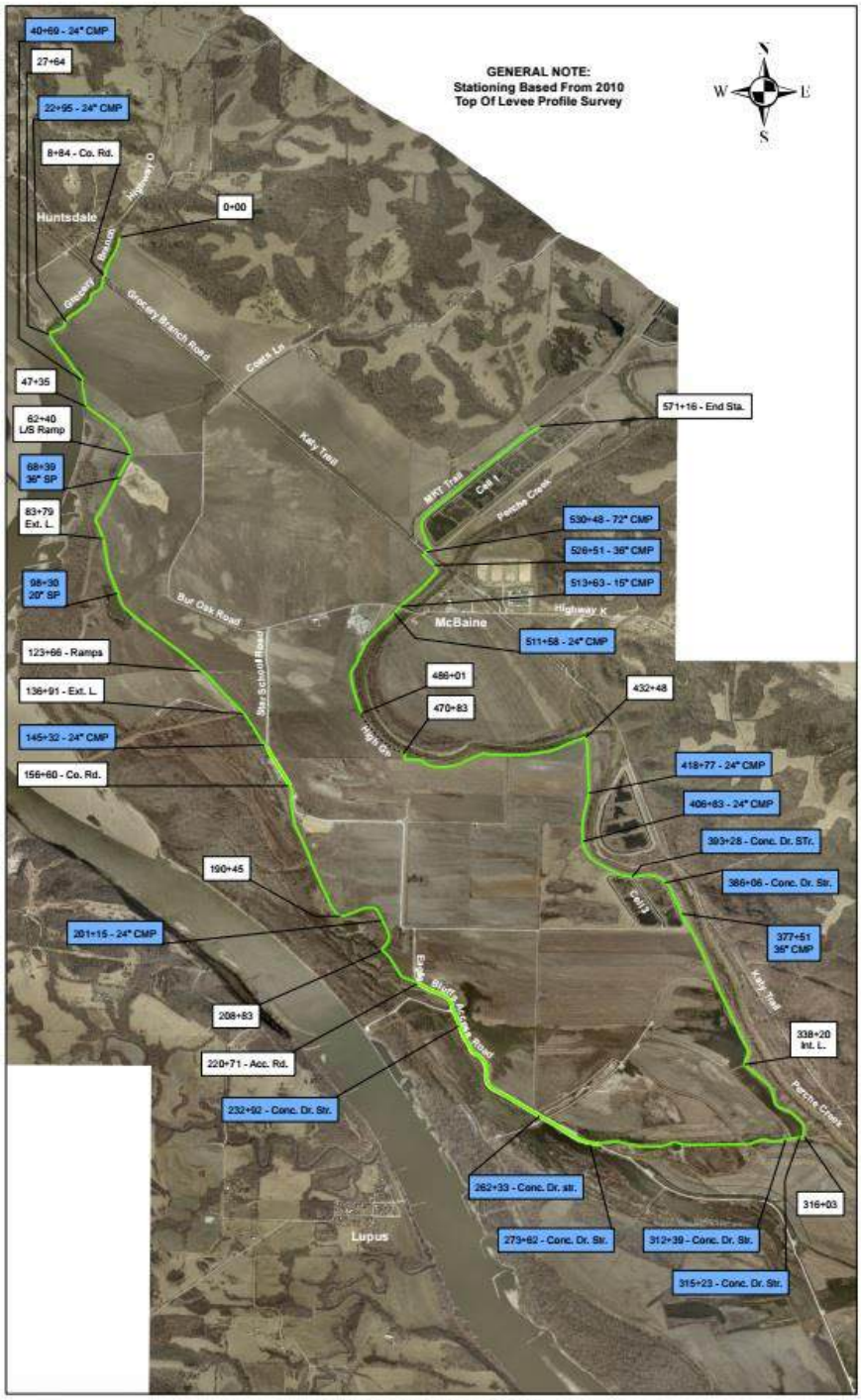
MCBAINE LEVEE

Figure 3.19A



Source: McBaine Levee District President, John Sam Williamson and Joe Gibbs PE

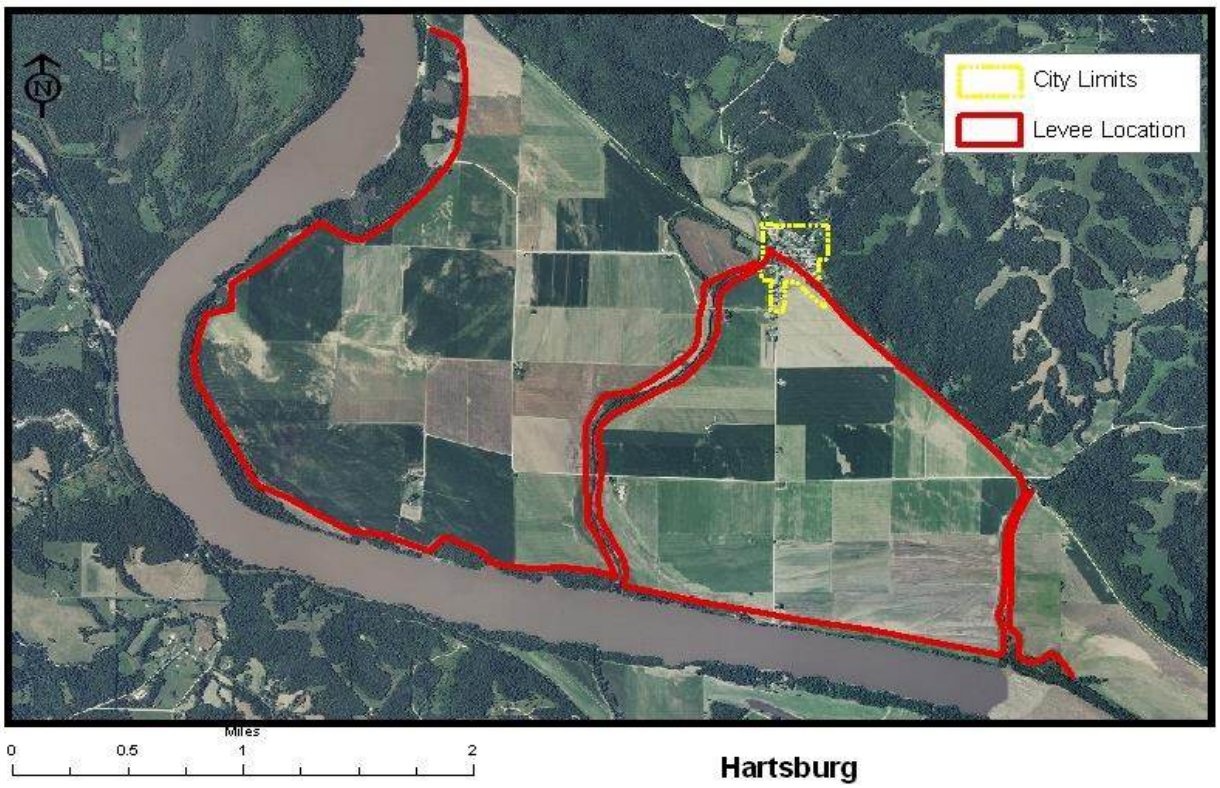
Figure 3.19B



Source: USACE

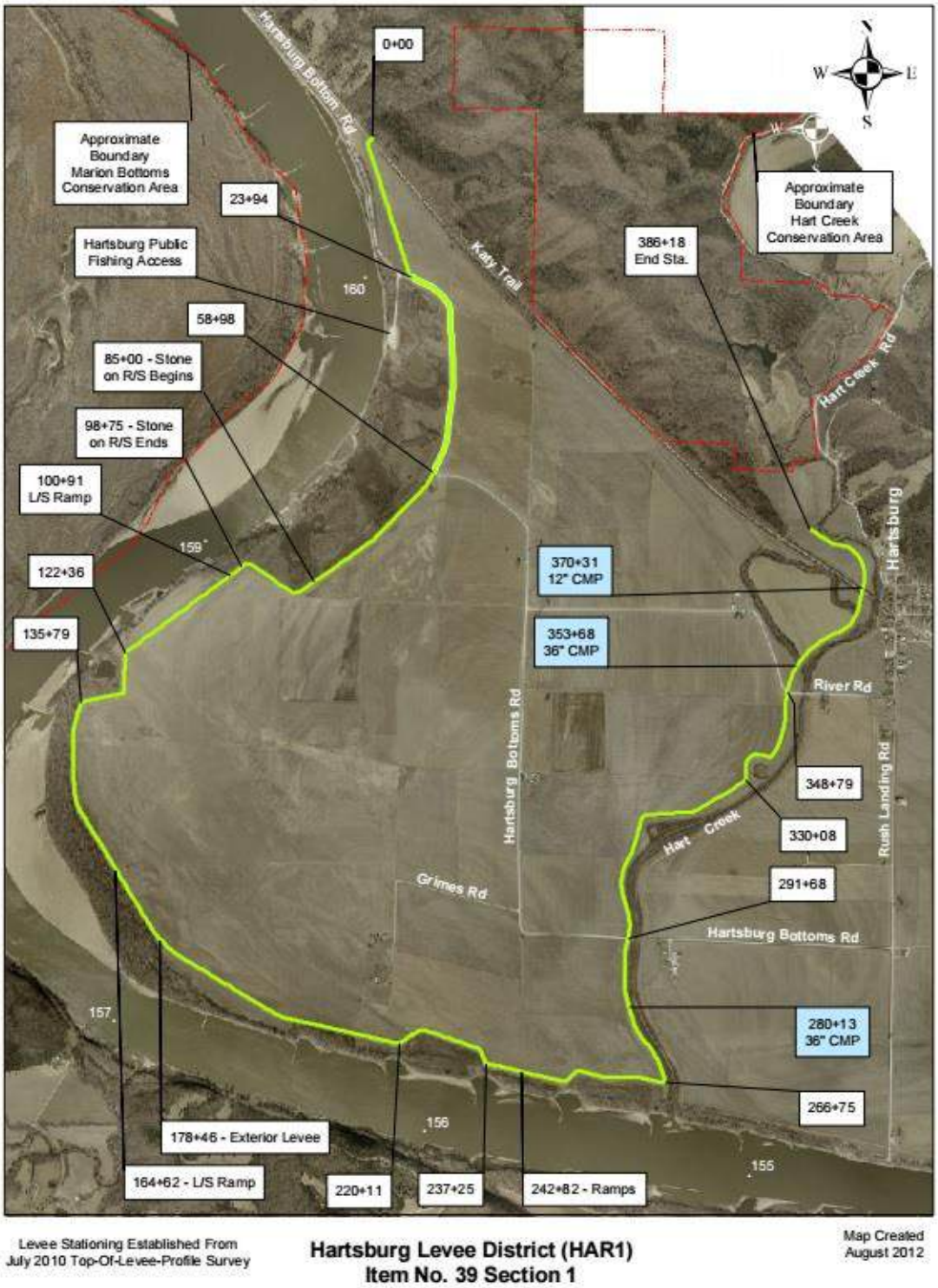
HARTSBURG LEVEES

Figure 3.20A



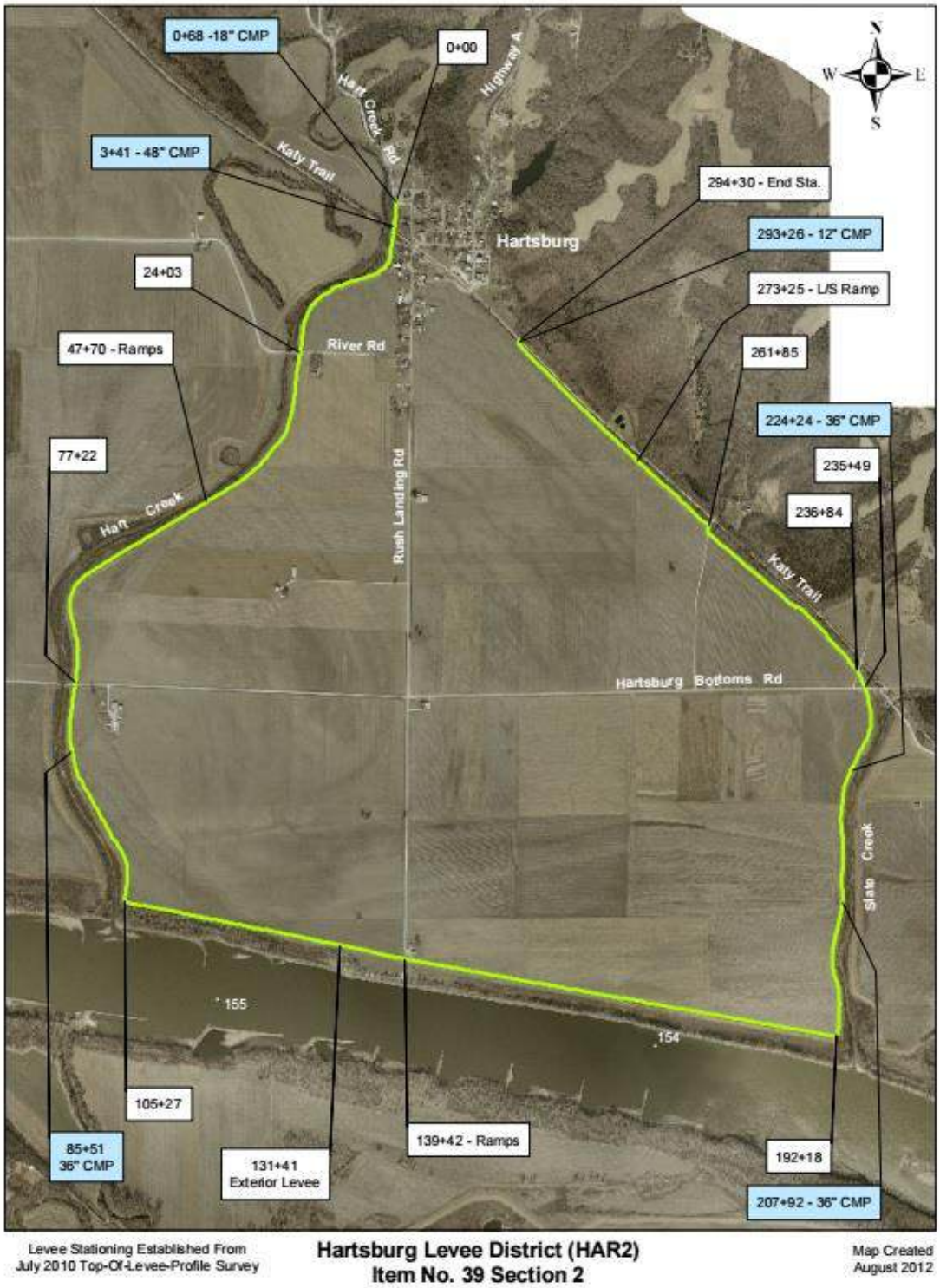
Source: Hartsburg Floodplain Administrator Mike Rodemeyer

Figure 3.20B



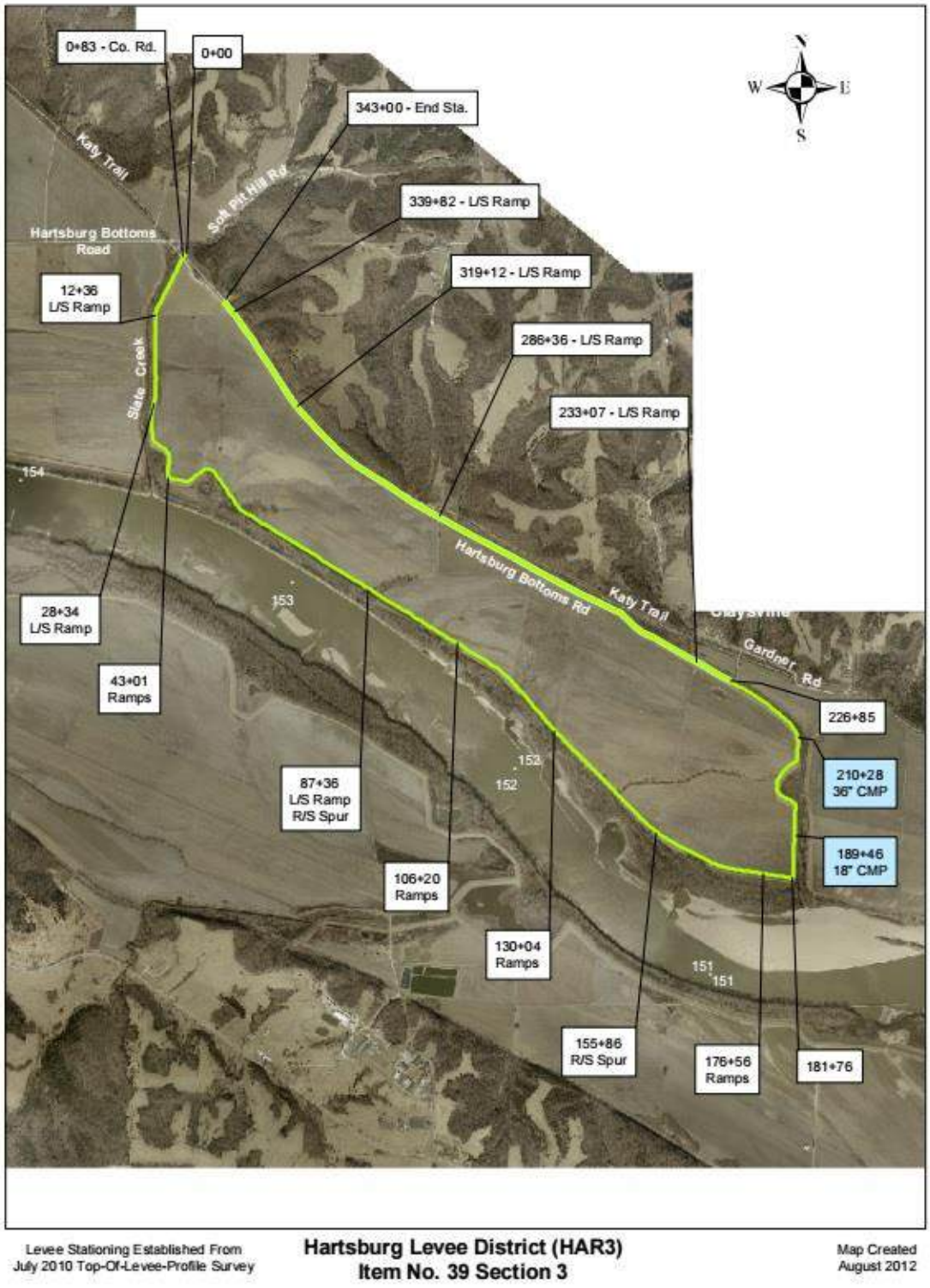
Source: USACE

Figure 3.20C



Source: USACE

Figure 3.20D



Source: USACE

In addition to receiving protection from the Hartsburg Levees, the Village of Hartsburg receives added levee protection from a section of the Katy Trail State Park (owned and maintained by the MO Department of Natural Resources) which runs through the town. This section was elevated to 32 feet following the 1993 flood and provides extra protection for about half of the village, including the business district. The Katy Trail also provides added levee protection for the Village of Huntsdale and the City of Rocheport.

Extent/Magnitude/Strength

Levee failure is typically an additional or secondary impact of another disaster such as flooding or earthquake. The main difference between levee failure and losses associated with riverine flooding is magnitude. Levee failure often occurs during a flood event, causing destruction in addition to what would have been caused by flooding alone. In addition, there would be an increased potential for loss of life due to the speed of onset and greater depth, extent, and velocity of flooding due to levee breach.

As previously mentioned, agricultural levees and levees that are not designed to provide flood protection from at least the 1-percent annual chance flood likely do exist in the planning area. However, none of these levees are shown on the Preliminary DFIRM, nor are they enrolled in the USACE Levee Safety Program. As a result, an inventory of these types of levees is not available for analysis. Additionally, since these types of levees do not provide protection from the 1-percent annual chance flood, losses associated with overtopping or failure are captured in the Flood Section of this plan.

Levee failure is typically an additional or secondary impact of another disaster such as flooding or earthquake. Levee failure often occurs during a flood event, causing destruction in addition to what would have been caused by flooding alone. A breech on an agricultural levee can not only cause immediate crop loss but sand and silt brought in from a levee break can impact the growing medium for years to come.

Regular maintenance and inspection of the levees is critical. For the major levees in the planning area, the potential of major failure is connected to flooding of the Missouri River, a hazard with a longer speed of onset than many other hazards. This longer speed of onset allows time to mitigate and prepare for potential failure as flooding threatens.

Previous Occurrences

During the 1993 Flood, according to the US Army Corps of Engineers, all levees in Boone County failed and resulted in the inundation of land and structures being protected by those levees. The water treatment plant for the City of Columbia was located in the path of the flood water but, due to intensive efforts by several parties, there were no effects on the structure.

According to the Boone County Health Department, no Boone County public water or city water supplies in the county suffered contamination. Some private wells were sampled and found to contain higher bacteria levels after the flood. These wells were treated with chlorine and the issue was resolved.

In 2019 levees in Boone County were tested by nearing record level river levels that stayed high for a prolonged period of time. The extended time in which the levees were under pressure caused scouring in places but due to breaks in upstream levees the pressure was reduced to levees in the planning area before they broke.

Probability of Future Occurrence

Probability: Moderate – Boone County, Columbia, Hartsburg, Huntsdale
Not applicable – All other participating jurisdictions

According to USACE's 2014 inspection, the Hartsburg and McBaine levees have a 10% chance of being overtopped in any given year; however, there haven't been any levee breeches in the planning area in the last 25 years. With regular maintenance the probability of a levee break is low but with the high rate of flooding along the Missouri river the potential for a break is never zero.

Changing Future Conditions Considerations

As precipitation is projected to increase, and in more extreme events, the risk of flooding could increase. Prolonged elevated water levels can make maintenance and repairs difficult to accomplish only increasing the risk for a break through scouring and seepage.

Vulnerability

Vulnerability Overview

The USACE regularly inspects levees within its Levee Safety Program to monitor their overall condition, identify deficiencies, verify that maintenance is taking place, determine eligibility for federal rehabilitation assistance (in accordance with P.L. 84-99), and provide information about the levees on which the public relies. Inspection information also contributes to effective risk assessments and supports levee accreditation decisions for the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA).

The USACE now conducts two types of levee inspections. Routine Inspection is a visual inspection to verify and rate levee system operation and maintenance. It is typically conducted each year for all levees in the USACE Levee Safety Program. Periodic Inspection is a comprehensive inspection led by a professional engineer and conducted by a USACE multidisciplinary team that includes the levee sponsor. The USACE typically conducts this inspection every five years on the federally authorized levees in the USACE Levee Safety Program.

Both Routine and Periodic Inspections result in a rating for operation and maintenance. Each levee segment receives an overall segment inspection rating of Acceptable, Minimally Acceptable, or Unacceptable. **Figure 3.4** below defines the three ratings.

1. **Definitions of the Three Levee System Ratings**

Levee System Inspection Ratings

Acceptable	All inspection items are rated as Acceptable.
Minimally Acceptable	One or more levee segment inspection items are rated as Minimally Acceptable or one or more items are rated as Unacceptable and an engineering determination concludes that the Unacceptable inspection items would not prevent the segment/system from performing as intended during the next flood event.
Unacceptable	One or more levee segment inspection items are rated as Unacceptable and would prevent the segment/system from performing as intended, or a serious deficiency noted in past inspections (previous Unacceptable items in a Minimally Acceptable overall rating) has not been corrected within the established timeframe, not to exceed two years.

Potential Losses to Existing Development

Structures and infrastructure near the levees are potentially vulnerable to damage from flooding due to failure; many of these structures are protected by levees and sandbagging at times of high river levels but there is the potential for levee failure to lead to sandbag failure. Failure of levees and sandbags leads to the risk of damage to roadways, drainage systems, and culverts. Because the Katy Trail acts as a form of backup levee extreme flood levels of a historic nature would be required to make a substantial impact. Most risk is to crops that are grown directly within the levee protection zone. Failure or overtopping of a levee can damage or kill crops being grown in the fertile lowland areas and also contaminate soil with sand and other things washed in from the Missouri River which can create significant long-term impacts for farmers.

The McBaine and Hartsburg Levees are maintained by the levee districts. They receive regular inspections as part of the USACE Rehabilitation and Inspection Program. According to the USACE's National Levee Database, the first section of the Hartsburg levee district protects 26 buildings worth $920,000, with an estimated population of 4 people. This section also protects 499 acres of farmland with an agricultural product value of $990,000. The second section of the Hartsburg levee district protects 70 buildings worth $13,000,000 with an estimated population of 134 people. This section also protects 900 acres of farmland with an agricultural product value of $495,000. The McBaine levee district protects 8 buildings worth $1,000,000, with an estimated population of 4 people. The McBaine levee district also protects 363 acres of farmland with an agricultural product value of $11,300,000.

Impacts to Previous and Future Development

Almost all of the land protected by the major levees in the planning area is within the Missouri River floodplain and any development would be subject to the floodplain regulations of either

Boone County or the Village of Hartsburg and Huntsdale. It is highly unlikely that development, other than necessary infrastructure, will take place in these areas.

Hazard Summary

Boone County, the Villages of Hartsburg and Huntsdale, and the City of Columbia are all vulnerable to levee failure.

The Villages of Huntsdale and Hartsburg are both protected from Missouri River flooding by major agricultural levees (the McBaine Levee and Hartsburg Levees, respectively). These levees also protect some county roads and agricultural lands; in addition, the McBaine Levee protects some of Columbia's critical infrastructure and significant public utilities located in the floodplain.

These levees failed during the 1993 Missouri River flood. Changes in management of the Missouri River, including major wetland restoration projects along the river's long course, have helped to control flood levels on the lower Missouri since that time. In addition, some properties in the floodplain were abandoned, moved, or bought out following that flood; this reduced the number of structures vulnerable to flooding/levee failure. Regular maintenance and inspection of the levees has helped to ensure their integrity to withstand the pressures of rising river levels.

The risk of flooding from levee failure remains, however. The warning time afforded by a hazard such as levee failure, which has a long period of onset, will allow for preparations and evacuations to take place, should the need arise.

Problem Statement

Levee failure is not a common occurrence in the planning area. The last instance of levee failure in the planning area was in 1993 when records were set across the state for flooding levels. Levee failure is usually a slow process that gives people time to evacuate areas at risk. Keeping up with maintenance and frequent inspections are actions of mitigation to help prevent such breakages that could lead to property damage and crop loss.

3.4.3 DAM FAILURE

DESCRIPTION OF HAZARD

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. Most are owned by governments, watershed districts, industries, lake associations, land developers, and private citizens.

Dam owners have primary responsibility for the safe design, operation and maintenance of their dams. They also have responsibility for providing early warning of problems at the dam, for developing an effective emergency action plan, and for coordinating that plan with local officials. The State has ultimate responsibility for public safety, and many states regulate construction, modification, maintenance, and operation of dams, and also ensure a dam safety program.

Dam construction varies widely throughout the state. A majority of dams are of earthen construction. Missouri's mining industry has produced numerous tailing dams for the surface disposal of mine waste. These dams are made from mining material deposited in slurry form in an impoundment. Other types of earthen dams are reinforced with a core of concrete and/or asphalt. The largest dams in the state are built of reinforced concrete, and are used for hydroelectric power.

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.

Piping, erosion, and structural failures are often interrelated. For example, erosion, either on the surface or internal, may weaken the dam or lead to structural failure. Similarly, a structural failure may shorten the seepage path and lead to a piping failure.

Dam Hazard Classification - Dams in Missouri have been classified according to both a federal and state system with regards to potential hazard posed.

The **federal classification system** is based upon the probable loss of human life and the impact on economic, environmental and lifeline interests from dam failure. It should be noted that there is always the possibility of loss of human life when a dam fails; this classification system does not account for the possibility of people occasionally passing through an inundation area which is usually unoccupied (e.g. occasional recreational users, daytime user of downstream lands, etc.)

The **state classification system** is based upon the type and number of structures downstream from a dam. An inventory of all the dams of the state was done in the late 1970s and early 1980s, according to Glenn Lloyd, Civil Engineer and Dam Safety Inspector with the Dam Safety Program of the MO Department of Natural Resources (DNR). All of the known dams were classified by the state at that time.

A summary of the federal and state classification systems is shown in Table 3.24 and 3.25.

Table 3.24 MoDNR Dam Hazard Classification Definitions

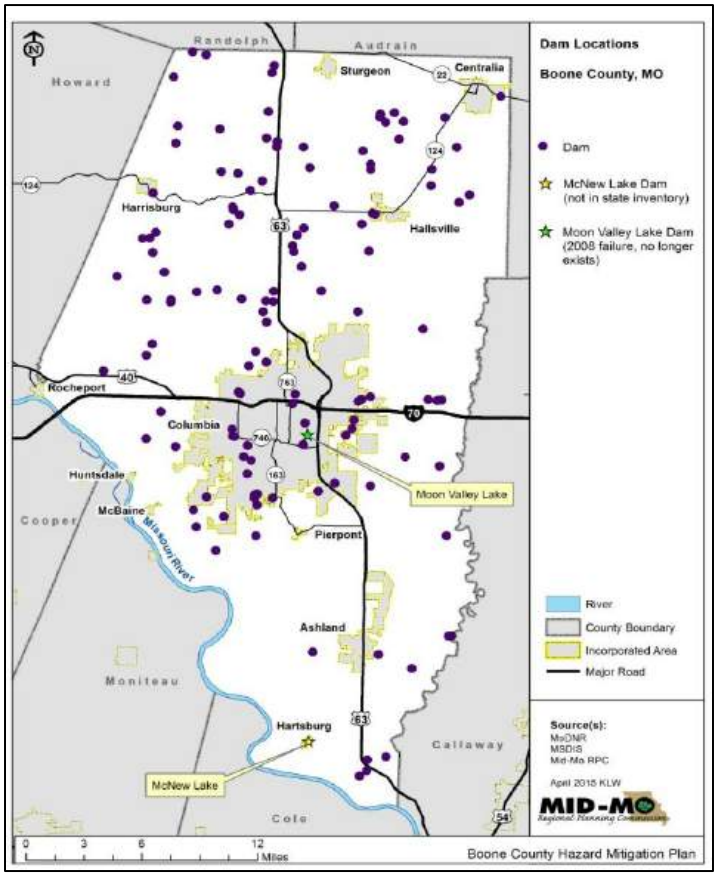
Hazard Class	Definition
Class I	10 or more permanent dwellings; or any public building
Class II	1-9 permanent dwellings; or 1 or more campgrounds with permanent water, sewer and electrical services; or one or more industrial buildings
Class III	Everything else

Source: Missouri Department of Natural Resources, http://dnr.mo.gov/env/wrc/docs/rules_reg_94.pdf

Table 3.25 NID Dam Hazard Classification Definitions

Hazard Class	Definition
Low Hazard	No probable loss of human life; low economic and/or environmental loss; loss principally limited to owner's property
Significant Hazard	No probable loss of human life but potential economic loss, environmental damage, disruption of lifeline facilities or other impact of concern
High Hazard	Probable loss of human life

Source: National Inventory of Dams



Dam Regulation in Missouri

Pursuant to Chapter 236 of the Revised Statutes of Missouri, a dam must be 35 feet or higher to be state regulated; regulation makes a dam subject to permit and inspection requirements. For regulated dams, the state classification system dictates the required inspection cycle. According to the Association of State Dam Safety Officials, 5,113 dams in Missouri have been classified and only 685 are regulated by the state.

The inspection cycle for regulated dams allows for a regulated dam's classification to be updated when appropriate. Classification is a dynamic system; development can easily change the situation downstream. A regulated dam in Missouri would have its classification appraised at least once every 5 years.

The DNR National Dam Inventory database lists 128 dams in Boone County; one of these (Moon Valley Lake Dam) is no longer in existence due to failure. The database reflects only the known dams; a dam less than 35 feet in height which was built since the inventory was taken some 30 years ago may not appear in the database. One additional dam (McNew Lake Dam) was brought to the attention of the hazard planning committee in 2020; it is located outside of Hartsburg.

Of the known dams, only 19 are regulated by the state. None are federally regulated. One must use caution in assuming the classifications of non-regulated dams are currently accurate. It is very probable that, for most of the non-regulated dams, the classification does not take into account almost 30 years of development and change in Boone County.

Figure 3.21

Figure 3.22

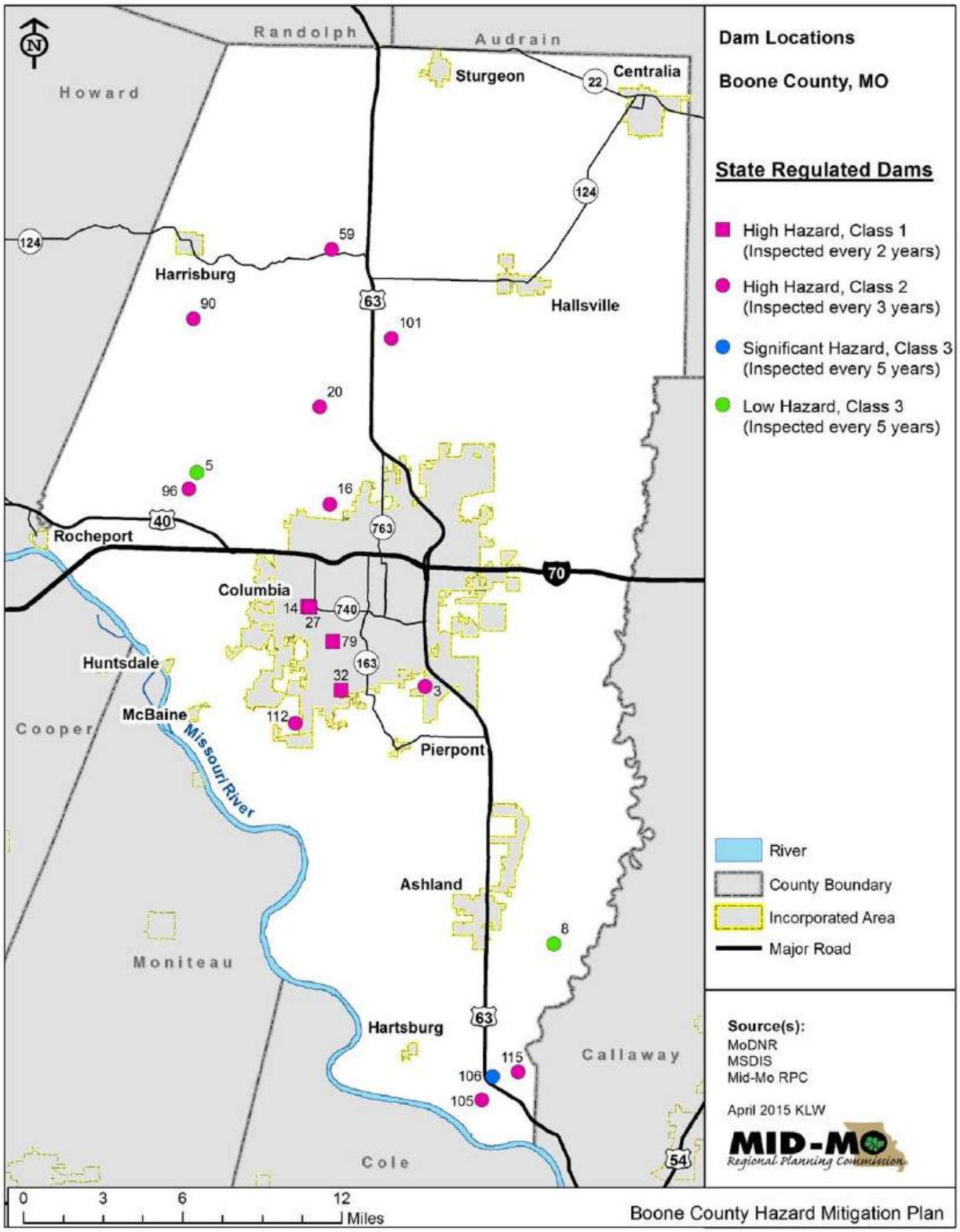

Dam Locations
Boone County, MO
State Regulated Dams
High Hazard, Class 1 (Inspected every 2 years)
High Hazard, Class 2 (Inspected every 3 years)
Significant Hazard, Class 3 (Inspected every 5 years)
Low Hazard, Class 3 (Inspected every 5 years)
River
County Boundary
Incorporated Area
Major Road
Source(s):
MoDNR
MSDIS
Mid-Mo RPC
April 2015 KLW
MID-MO Regional Planning Commission
Randolph
Audrain
Howard
Cooper
Moniteau
Callaway
Cole
Sturgeon
Centralia
Harrisburg
Hallsville
Rocheport
Columbia
Huntsdale
McBaine
Pierpont
Ashland
Hartsburg
Missouri River
59
90
101
20
5
96
16
14
27
79
32
3
112
8
115
106
105
124
22
63
40
763
70
740
163
54
0 3 6 12 Miles
Boone County Hazard Mitigation Plan

Figure 3.23

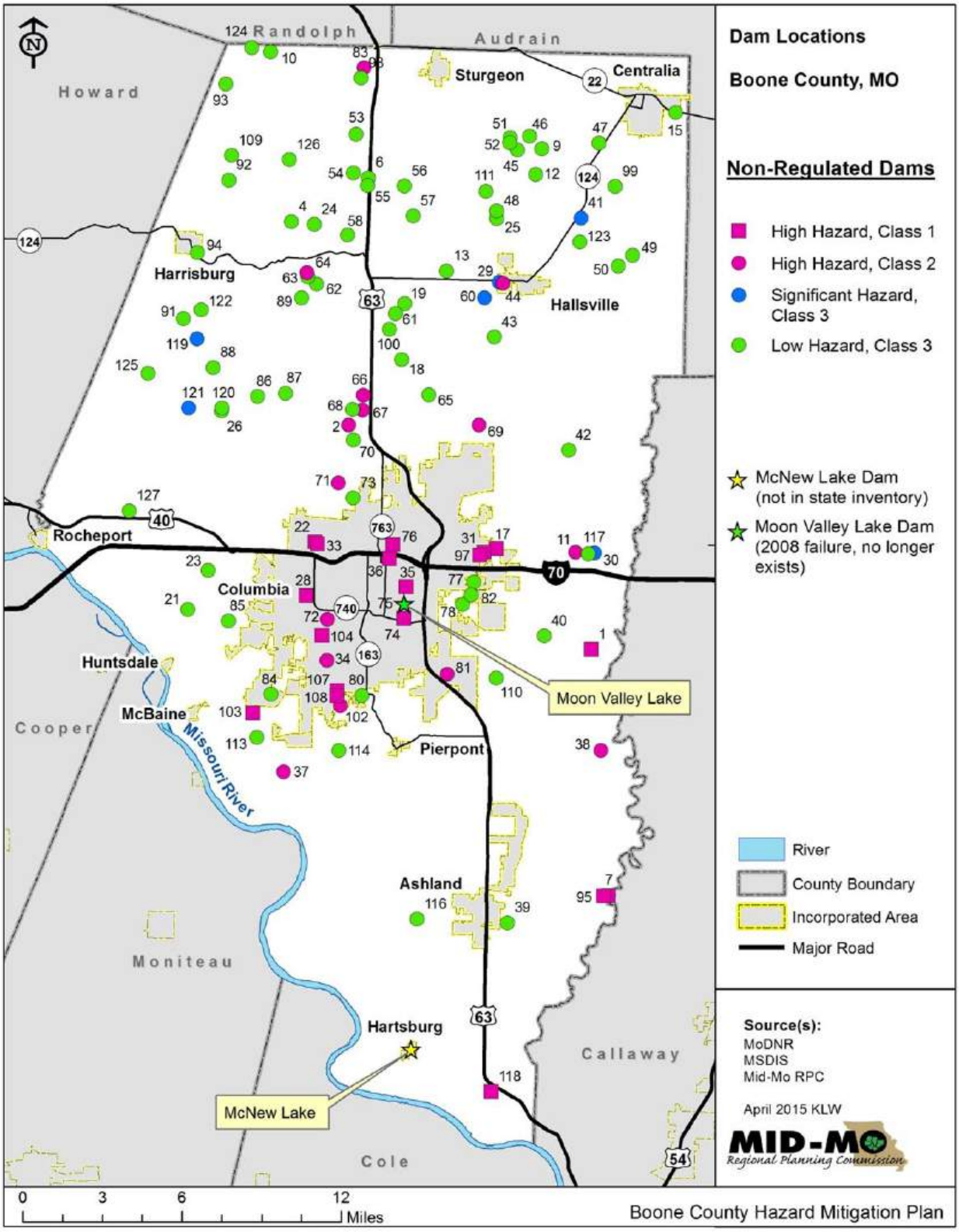

Dam Locations
Boone County, MO
Non-Regulated Dams
High Hazard, Class 1
High Hazard, Class 2
Significant Hazard, Class 3
Low Hazard, Class 3
McNew Lake Dam (not in state inventory)
Moon Valley Lake Dam (2008 failure, no longer exists)
River
County Boundary
Incorporated Area
Major Road
Source(s):
MoDNR
MSDIS
Mid-Mo RPC
April 2015 KLW
MID-MO Regional Planning Commission
Randolph
Audrain
Howard
Cooper
Moniteau
Callaway
Cole
Sturgeon
Centralia
Harrisburg
Hallsville
Rocheport
Columbia
Huntsdale
McBaine
Pierpont
Ashland
Hartsburg
Moon Valley Lake
McNew Lake
Missouri River
0 3 6 12 Miles
Boone County Hazard Mitigation Plan

Figure 3.24

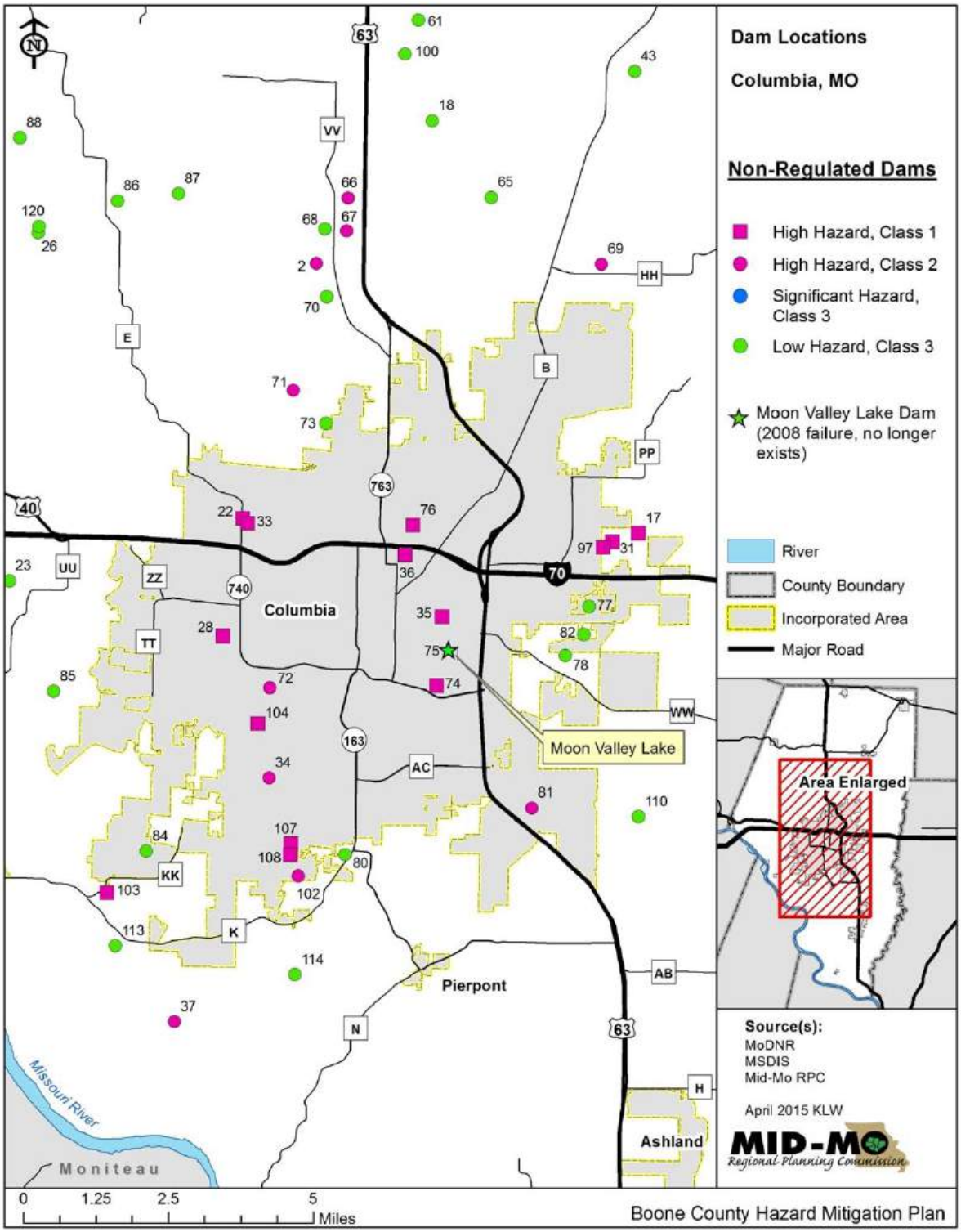

Dam Locations
Columbia, MO
Non-Regulated Dams
High Hazard, Class 1
High Hazard, Class 2
Significant Hazard, Class 3
Low Hazard, Class 3
Moon Valley Lake Dam (2008 failure, no longer exists)
River
County Boundary
Incorporated Area
Major Road
Area Enlarged
Source(s):
MoDNR
MSDIS
Mid-Mo RPC
April 2015 KLW
MID-MO Regional Planning Commission
Columbia
Pierpont
Ashland
Moon Valley Lake
Missouri River
Moniteau
0 1.25 2.5 5 Miles
Boone County Hazard Mitigation Plan

Table 3.29 Dam Summary

DAM NAME	RIVER	Nearest Downstream City	DISTANCE to Nearest City	Dam Owner	Dam Height	Normal Storage (Acre-ft)	Emergency Action Plan (EAP)	Last Inspection Date
LAKE CHATEAU DAM	TR-LITTLE CEDAR CREEK	COLUMBIA	9	LAKE CHATEAU INC	31	183	NR	5/31/1979
COUNTY DOWNES LAKE DAM	TR ROCKY FORK	MCBAINE	13	COUNTY DOWNS HOME.ASSOC.	30	275	NR	
PHILIPS PARK LAKE DAM	TR-CLEAR CREEK	COLUMBIA	5	THE CITY OF COLUMBIA	46	653	Y	4/26/2016
WINDMILLER DAM #1	TR-CEDAR CREEK	CEDAR CITY	20	ELIZABETH WINDMILLER	30	260	NR	5/31/1979
TURKEY FARM LAKE DAM	TR LITTLE CEDAR CREEK	JEFFERSON CITY	28	UNIVERSITY OF MISSOURI	20	78	NR	
HULEN LAKE WEST DAM	TR COUNTY HOUSE BRANCH	COLUMBIA	0	LAKESHORE ESTATES	50	255	Y	4/26/2016
ROEMER'S LAKE DAM	TR COW BRANCH	MCBAINE	10	ROEMER FAMILY LLC	37	277	Y	4/6/2016
WELCH LAKE DAM	HOMINY BRANCH	COLUMBIA	2	EDW,INC.	22	49	NR	3/10/1981
BOCO MO DAM	TR-SLACKS BR CR	COLUMBIA	8		39	759	Y	3/20/2018
COLUMBIA MUN GOLF COURSE LOWER L. DAM	TRIBUTARY TO HARMONY CREEK	MCBAINE	0	CITY OF COLUMBIA	15	9	NR	9/13/1978
HULEN LAKE EAST DAM	TR COUNTY HOUSE BRANCH	COLUMBIA	0	LAKESHORE ESTATES	50	171	Y	4/26/2016
FAIRVIEW LAKE DAM	TR-COUNTY HOUSE BRANCH	COLUMBIA	0	FAIRVIEW LAKE ASSOCIATIO	34	25	NR	4/13/1978
HAGAN LAKE DAM	HOMINY BRANCH	COLUMBIA	0	DAN HAGAN	19	66	NR	6/3/1980
CEDAR LAKE DAM	TR-LITTLE BONNE FEMME CREEK	EASLEY	0	CEDAR LAKE HOA	42	188	Y	7/5/2017
COLUMBIA MUM. GOLF COURSE DAM	TR-HARMONY CREEK	COLUMBIA	0	COLUMBIA PARK & REC DEPT	17	29	NR	9/13/1978
COUNTRY CLUB OF MO LAKE DAM	TR-MILL CREEK	COLUMBIA	0	COUNTRY CLUB OF MISSOURI	30	69	NR	
STEPHENS LAKE DAM	TR HINKSON CREEK	COLUMBIA	0	STEPHENS COLLEGE	23	63	NR	7/11/1980
MOORES LAKE DAM	TR-BEAR CREEK	COLUMBIA	0	CITY OF COLUMBIA	30	51	NR	7/11/1980
SMITH HATCHERY LAKE DAM	TR-MAYHAN BR	EASLEY	0	SMITH HATCHERY	25	40	NR	
GINN LAKE DAM	TR-CEDAR CREEK	JEFFERSON CITY	0	STANLEY GINN	30	80	NR	
COUNTRY BOY ESTATES LAKE DAM 2	TR-SILVER FORK	MCBAINE	0	COUNTRY BOY ESTATES HOA	37	32	Y	3/7/2017
LEWIS LAKE NORTH DAM	TR-REEDER CR	MCBAINE	0	MARY A LEWIS	25	100	NR	
WALNUT CREST LAKE DAM	TR-ROCKY FORK CR	MCBAINE	0	WALNUT CR/M P RINES	25	22	NR	

WEIL LAKE DAM	TR-ROCKY FORK CREEK	MCBAINE	14	GARY WEIL	25	25	NR	
SELTSAM LAKE DAM	TR-HINKSON CREEK	COLUMBIA	2	DARRELL SELTSAM	25	20	NR	
RAYFIELD LAKE DAM	TR-ROCKY FORK CREEK	MCBAINE	0	RAYMOND WIGGINS	25	20	NR	
MILLS LAKE DAM	TR-HINKSON CREEK	COLUMBIA	0	THOMAS L MILLS	30	22	NR	
LAKE CYRENE DAM	TR-HINKSON CREEK	COLUMBIA	0	LAKE CYRENE,INC.	25	50	NR	3/11/1981
MOON VALLEY LAKE DAM	HOMINY BRANCH	COLUMBIA	0	E.L. ROGERS	18	74	NR	3/11/1981
SHADY LAKE DAM	BEAR CREEK	COLUMBIA	0	DOROTHY M. CLARY	26	49	NR	6/2/1980
WOODRAIL LAKE DAM	HINKSON CREEK	HINKSON	7	KYLE E RUSSELL	54	324	Y	6/2/2016
UNIV OF MO-R1 DAM	TR GANS CREEK	WILTON	0	UNIVERSITY OF MISSOURI	18	60	NR	
TINCHER LAKE NORTH DAM	TR-LICK FORK	MCBAINE	0	HUGH TINCHER	25	35	NR	
CALLAHAN CREEK A-1	CALLAHAN CR	MCBAINE		CALLAHAN CR WTRSD SUBDST	35	77	Y	8/12/2015
WINDMILLER DAM #2	TR-CEDAR CREEK	CEDAR CITY	20	ELIZABETH WINDMILLER	20	67	NR	5/31/1979
CALLAHAN CREEK C-2	BARCLAY BR	MCBAINE		CALLAHAN CR WTRSD SUBDST	54	55	Y	5/7/2015
WATERS EDGE ESTATES LAKE DAM	HOMINY BRANCH	COLUMBIA	4	WATERS EDGE ESTATES INC.	25	122	NR	7/12/1980
FINGER LAKES DAM SOUTH	ROCKY FORK CK.	COLUMBIA	17	MO. DNR PARKS	44	398	Y	7/15/2014
HIGHLANDS LAKE DAM	ROCK CREEK	COLUMBIA	0	HIGHLAND PROPERTIES CO.	34	57	NR	7/16/1986
B & C SUBDIVISION DAM	PERCHE CREEK	MCBAINE	2	B & C SUBDIVISION CORP	34	431	NR	
LIMERICK LAKE DAM	TRIBUTARY HINKSON	COLUMBIA	6	LIMERICK HEIGHTS, INC.	31	21	NR	
CLAYSVILLE LAKE DAM	UNNAME TRIB TO MO.RIVER	CLAYSVILLE	1		42	273	Y	1/25/2018
HIGHLANDS LOWER LAKE DAM	TRIB TO CEDAR CREEK	COLUMBIA	7	INNOVATIVE MGT & INVESTM	30	40	NR	
HIGHLANDS SOUTH LAKE DAM	TRIB TI CEDAR CREEK	COLUMBIA	7	INNOVATIVE MGT & INVESTM	30	10	NR	
ARROWHEAD LAKE DAM		COLUMBIA	0	ARROWHEAD LAKE EST H/0	37	382	Y	4/6/2016
LAKE CHAMPETRA DAM	TR,TO CEDAR CREEK	CEDAR CITY	0	LAKE CHAMPETRA HOA	60	1530	Y	6/2/2016
DEMARCO LAKE DAM	TR-MISSOURI RIVER	CLAYSVILLE	2	GUY DEMARCO	31	26	NR	7/1/1980

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. Contact the MoDNR Dam and Reservoir Safety Program at 800-361-4827 to request the inundation maps for your county to show geographic locations at risk, extent of failure and to perform GIS analysis of those assets at risk to dam failur

Strength/Magnitude/Extent

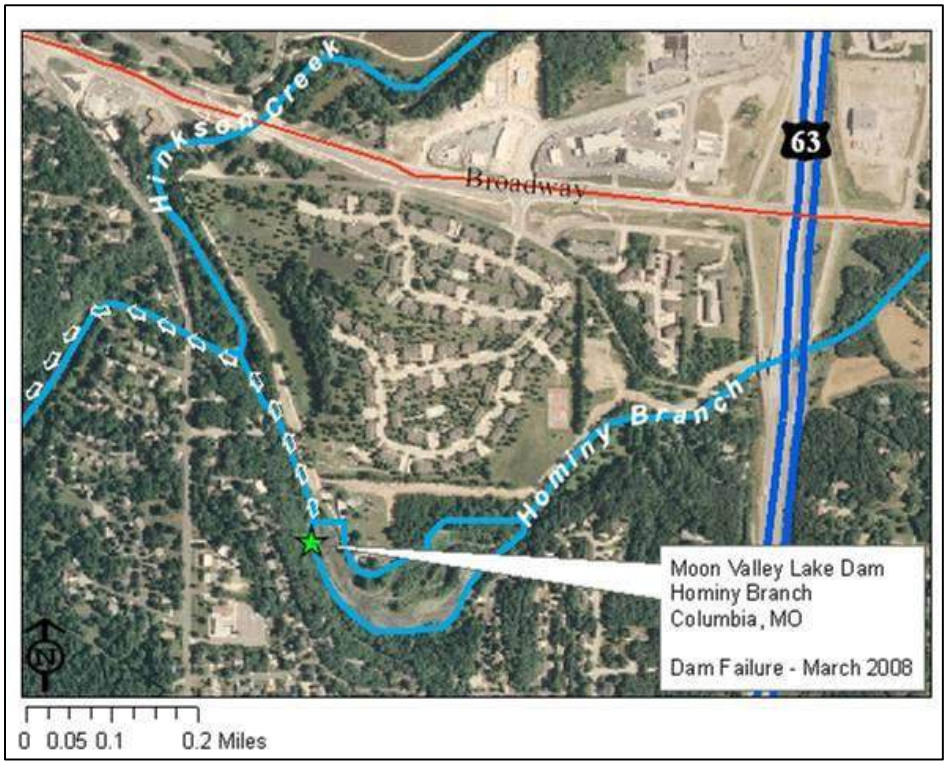
The strength/magnitude of dam failure would be similar in some cases to flood events (see the flood hazard vulnerability analysis and discussion). The strength/magnitude/extent of dam failure is related to the volume of water behind the dam as well as the potential speed of onset, depth, and velocity. Note that for this reason, dam failures could flood areas outside of mapped flood hazards. The speed of onset of a dam failure can vary considerably. In most cases, regular inspections, either formal or informal, will promote a longer period of onset and allow for possible mitigation. Unfortunately, the current lack of required dam inspections increases the likelihood of dam conditions being ignored by owners – a situation which promotes a quicker speed of onset and an increased threat from the hazard. The extent of hazard which a dam failure poses is also influenced by the reservoir size.

Previous Occurrences

Boone County experienced its first widely known dam failure in March 2008 when Moon Valley Lake Dam in Columbia failed. This 18-foot-high dam had been built in 1964; it drained 2,100 acres and had a 13-acre reservoir according to the DNR database.

Moon Valley Lake Dam was classified as high hazard according to the federal classification system and Class 1 in the state classification; however, there was no loss of life with the dam failure. This may be partially attributable to the fact that Moon Valley Lake was silted in and the main release from the dam failure was silt. Silt from the lake went down the Hominy Branch into the Hinkson Creek. The added silt has caused greater flooding problems on the Hinkson Creek since the time of the dam failure. The City of Columbia estimated the cost of removing the sediment and stabilizing about 2,000 feet of the stream bank to be in the vicinity of $400,000.

Figure 3.25



In addition to the Moon Valley Lake Dam failure, the NOAA database reports the failure of a "small earthen dam on a neighborhood lake" in southern Boone County on August. 18, 2002. This resulted in the flooding of streets and some basements and a minor injury from an electrical shock in a flooded basement.

In late October 2009, there was a near failure of Renn's Lake Dam in neighboring Cole County. The dam's structure had been weakened by tree roots and heavy rainfall caused a 15-foot section of the earthen dam to erode. Emergency crews and volunteers were able to relieve the pressure on the dam and avert complete failure by pumping thousands of gallons of water out of the lake. The failure or near failure of two dams in central Missouri within two years has highlighted this potential hazard in the region.

Boone and Cole Counties are not the only counties in Missouri to experience dam failures. The Stanford University's National Performance of Dams Program documented 33 dam failures in Missouri as of 2018. (http://npdp.stanford.edu/sites/default/files/reports/npdp_dam_failure_summary_compilation_v1_2018.pdf)

In 2005, there was a huge dam failure which destroyed Johnson Shut-Ins State Park in Reynolds County. On December 14, 2005, the AmerenUE's Taum Sauk reservoir dam at their hydroelectric complex failed; 1.5 billion gallons of water were released into the park in 10 minutes. There was no loss of life, even though the superintendent's family was swept out of their home. However, if this failure had occurred during the summer when the popular park has many visitors, it could have resulted in a catastrophic loss of life.

All of these dam failures indicated that this is a serious problem which needs attention. Many of Missouri's smaller dams are becoming a greater hazard as they continue to age and deteriorate. While hundreds of them need to be rehabilitated, lack of available funding and often questions of ownership loom as obstacles difficult to overcome.

Probability of Future Events

There are 33 unregulated high hazard dams in Boone County including the failed Moon Lake dam. Since unregulated dams are not inspected, it is difficult to know their probability of failure. Based on known historical occurrences, there have been two dam failures in the planning area since 2002, one in unincorporated Boone County and one in Columbia. This gives a probability of 4.3% (1/23*100) for these jurisdictions where the failing dams were located. The probabilities for the other jurisdictions are either low, if they have dams, or nonexistent if they are not vulnerable to the hazard.

McNew Lake Dam, located within the Village of Hartsburg, is not currently considered to pose much of a threat for a number of reasons, according to village officials. Physically, the dam has a wide base with a low angled slope; a metal culvert, approximately 3 feet wide, allows for overflow. Driving is not allowed on top of the dam. The dam owner is responsible for maintaining the dam and cooperates well with the City Council.

Probability: Moderate – Boone County (unincorporated), Columbia
Low – Centralia, Hallsville, Hartsburg
Not applicable – all other participating jurisdictions

Changing Future Conditions considerations

The future of climate change on dam failure is largely tied to future precipitation events. Since precipitation is predicted to increase in the future with potential for more vigorous rainfall events, this creates an elevated risk of flooding and pressure on dams and spillways to handle the extra water amounts. This elevated pressure brings about the importance for regular inspections and maintenance, as well as the need for engineering with higher flood levels in mind.

VULNERABILITY

VULNERABILITY OVERVIEW

Many incorporated and unincorporated areas of Boone County are vulnerable to the effects of dam failure. A dam failure in Boone County could range from very minimal environmental damage to a significant loss of life and infrastructure. All impacts are dependent upon several variables: water, debris, people, and structures.

49 dams in Boone County are considered to pose a high hazard should there be a dam break. Of these dams, 33 of them are not regulated by the state and thus not subject to inspection requirements, including the failed Moon Valley Lake dam.

The Dam Inventory for the state of Missouri was compiled in the late 1970's to early 1980's. Only half of those non-regulated dams have ever been documented as having been inspected; one was inspected in 1997 and all others were inspected between 1979 and 1986. This presents two main problems. First, it has been more than 20 years since most of the non-regulated High Hazard dams have been inspected, not counting the ones that were never inspected. Second,

because these are *non-regulated* dams, the state has no jurisdiction over maintenance. These two issues lead to the overall problem of dam location and development downstream.

State regulated dams are classified by what lies downstream of the dam and what will be impacted by the failure of that dam. Non-regulated dams received their classifications nearly 30 years ago or more and development that occurs downstream is not monitored by any agency; this potentially puts the public at risk. Also, development upstream that might increase the contents held by the dam can cause failure. Because there is no entity in charge of non-regulated dams, the original classifications for these dams may not be correct. Some dams may not exist anymore while others may pose a greater downstream threat than their classifications indicate.

While evaluating the state dam inventory list and comparing it to 2009 aerial images of the planning area a few locations were found to be inconsistent with the Missouri Department of Natural Resources database.

The following dam is listed as High Hazard according to the state database, but according to 2009 aerial imagery they no longer exist or hold water: Moon Valley Lake Dam (non-regulated)

McNew Lake Dam, located within the Village of Hartsburg, does not appear in the state inventory of dams. Because of its close proximity and position uphill from several residences in the community, this dam should be viewed as "High Hazard". This dam has been included in all maps.

Hallsville has both a non-regulated high hazard dam and a non-regulated significant hazard dam within its corporate boundaries. Centralia has a non-regulated low hazard dam just at the edge of the city; it would drain towards Centralia if a failure would occur.

There is the very real danger of injury or loss of life with a dam failure event. This threat is recognized and built into the dam classification system. Note that ratings for dam failure are based on estimates of homes that lie within a half mile downstream of a high hazard dam. Due to the current lack of inundation studies, dam failure estimates are not exact and may change when proper inundation data is collected. Again, inundation information is not available to accurately quantify vulnerability.

Severity: Moderate – Boone County, Columbia, Hallsville, Hartsburg
Low – Centralia
Not applicable - all other participating jurisdictions

Potential Losses to Existing Development:
The potential impact on structures downstream from a dam failure directly correlates to the amount of water and/or debris that is behind the dam. As previously discussed, it is important to take into account the age of the data that has been compiled on state regulated and non-regulated dams in the county and in the state. Because data on non-regulated dams was collected in the late 1970's and early 1980's it is not necessarily reliable to use when looking at possible areas of impact. According to the Missouri State Hazard Mitigation Viewer, there are 61 structures in Boone County that are affected by State dams.

The downstream areas and parcels within a half mile of the State Hazard Class 1 dams and a number of the State Hazard Class 2 dams in the planning area have been mapped (Figures 3.26A-K). All figures were created using the same scale.

Table 3.30A

Location Guide for Aerial View Maps of High Hazard Dams

Map ID #	Dam Name	Figure 4.37
103	B & C Subdivision Dam	C
20	BOCO Mo Dam	J
32	Cedar Lake Dam	C
22	Columbia Municipal Golf Course Lower Dam	I
33	Columbia Municipal Golf Course Upper Dam	I
118	Demarco Lake Dam	D
28	Fairview Lake Dam	F
31	Hagan Lake Dam	K
107	Highlands Lake Lower Dam	B
27	Hulen Lake East Dam	F
14	Hulen Lake West Dam	F
115	Lake Champetra Dam	D
1	Lake Chateau Dam	G
74	Lake Cyrene Dam	K
104	Limerick Lake Dam	I
128	McNew Lake Dam	L
36	Moores Lake Dam	E
3	Philips Park Lake Dam (Perry Philips Dam)	G
76	Shady Lake Dam	E
35	Stephens Lake Dam	H
97	Waters Edge Estates Lake Dam	K
17	Welch Lake Dam	K
7	Windmiller Dam #1	B
95	Windmiller Dam #2	B
79	Woodrail Lake Dam	I

Figure 3.26A

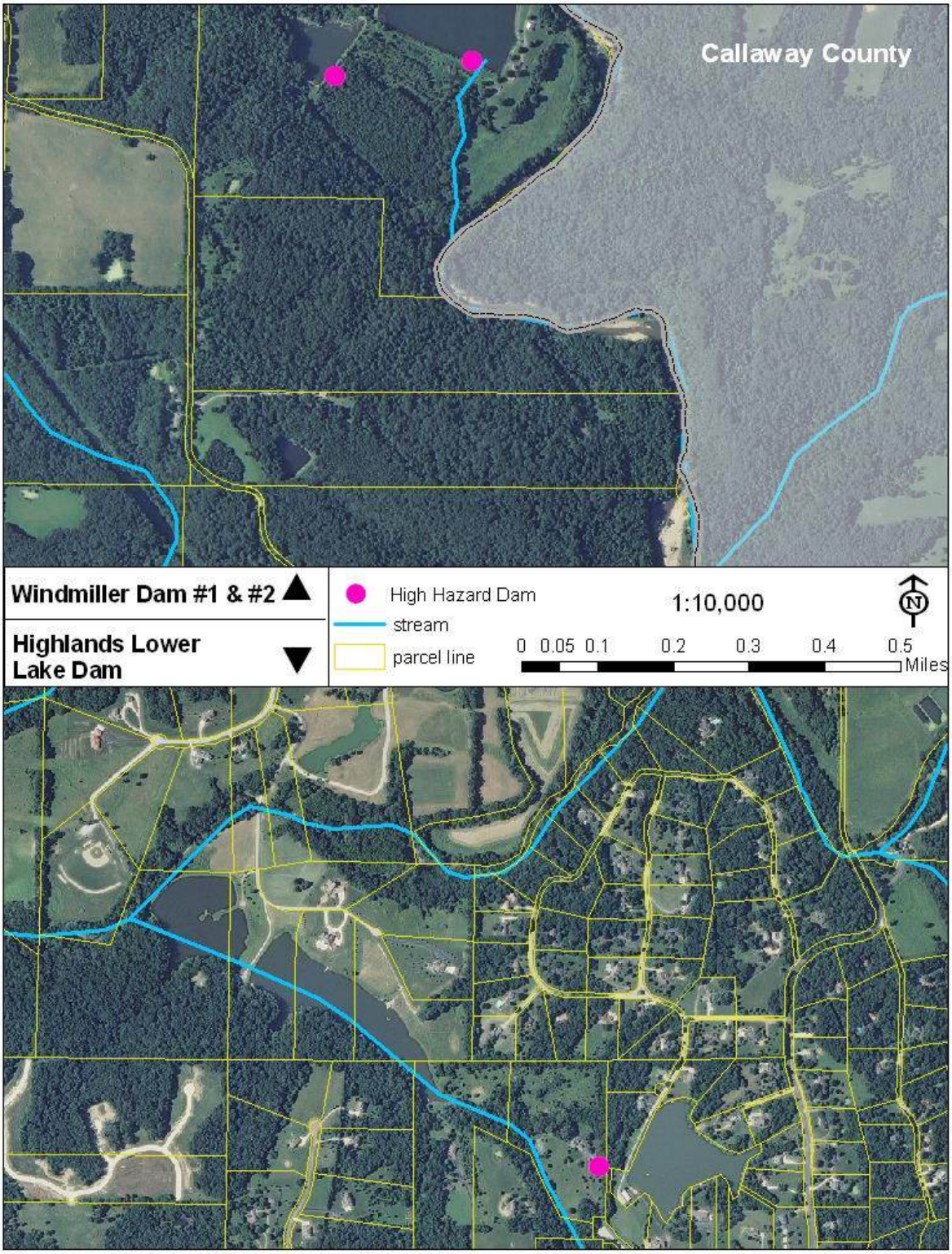

Callaway County
Windmiller Dam #1 & #2
Highlands Lower Lake Dam
High Hazard Dam
stream
parcel line
1:10,000
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles
N

Figure 3.26B

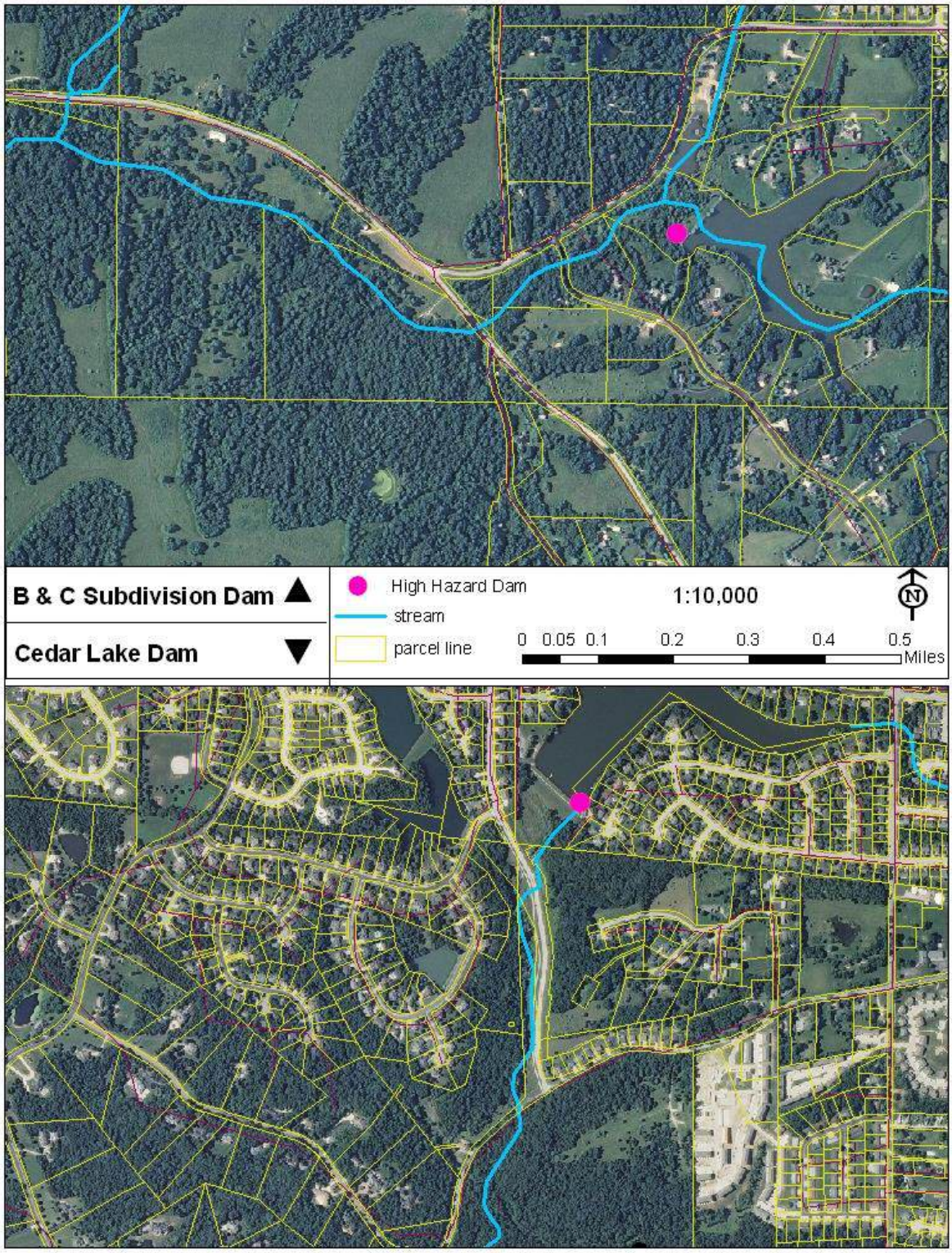

B & C Subdivision Dam
Cedar Lake Dam
High Hazard Dam
stream
parcel line
1:10,000
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles
N

Figure 3.26C

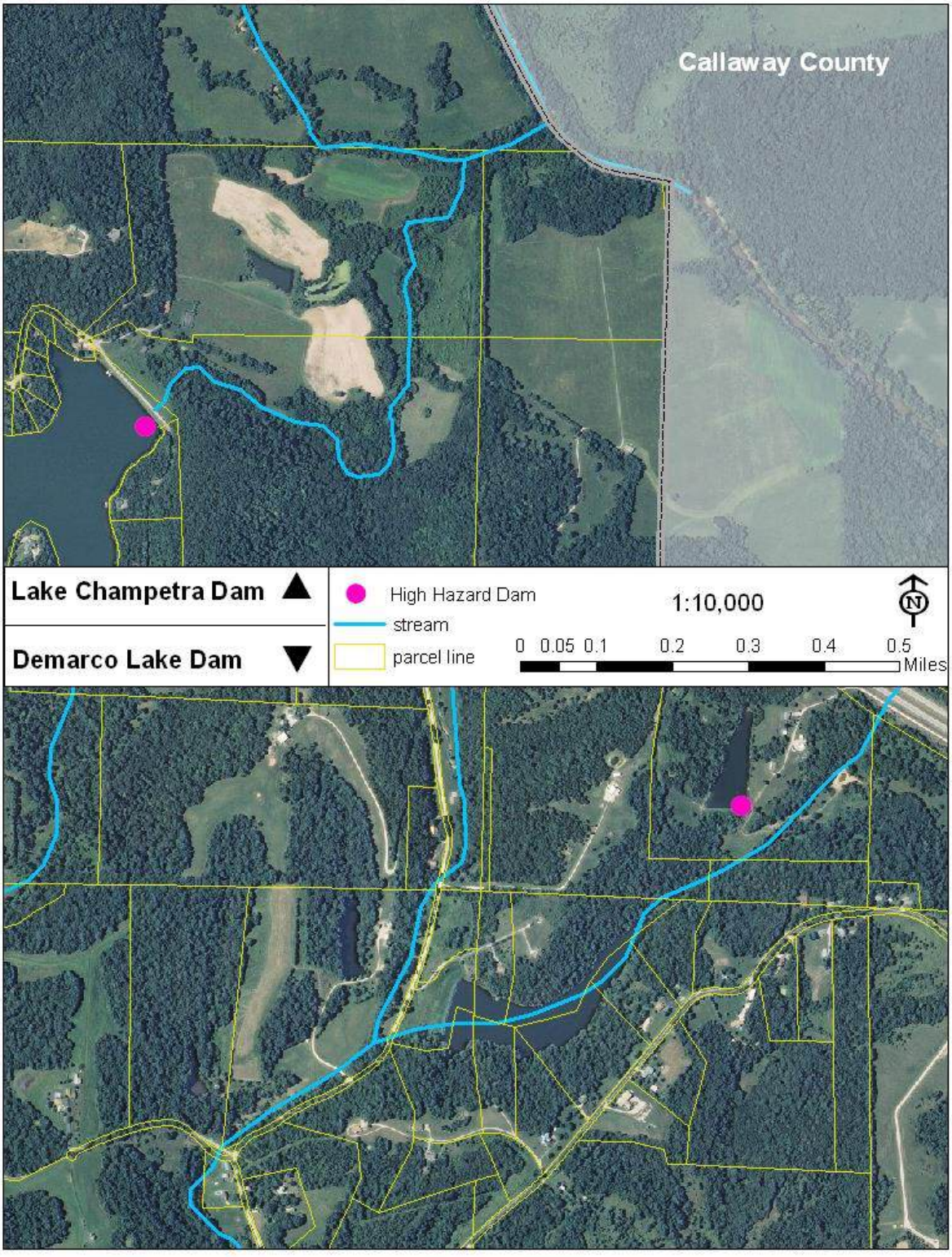

Callaway County
Lake Champetra Dam
Demarco Lake Dam
High Hazard Dam
stream
parcel line
1:10,000
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles

Figure 3.26D

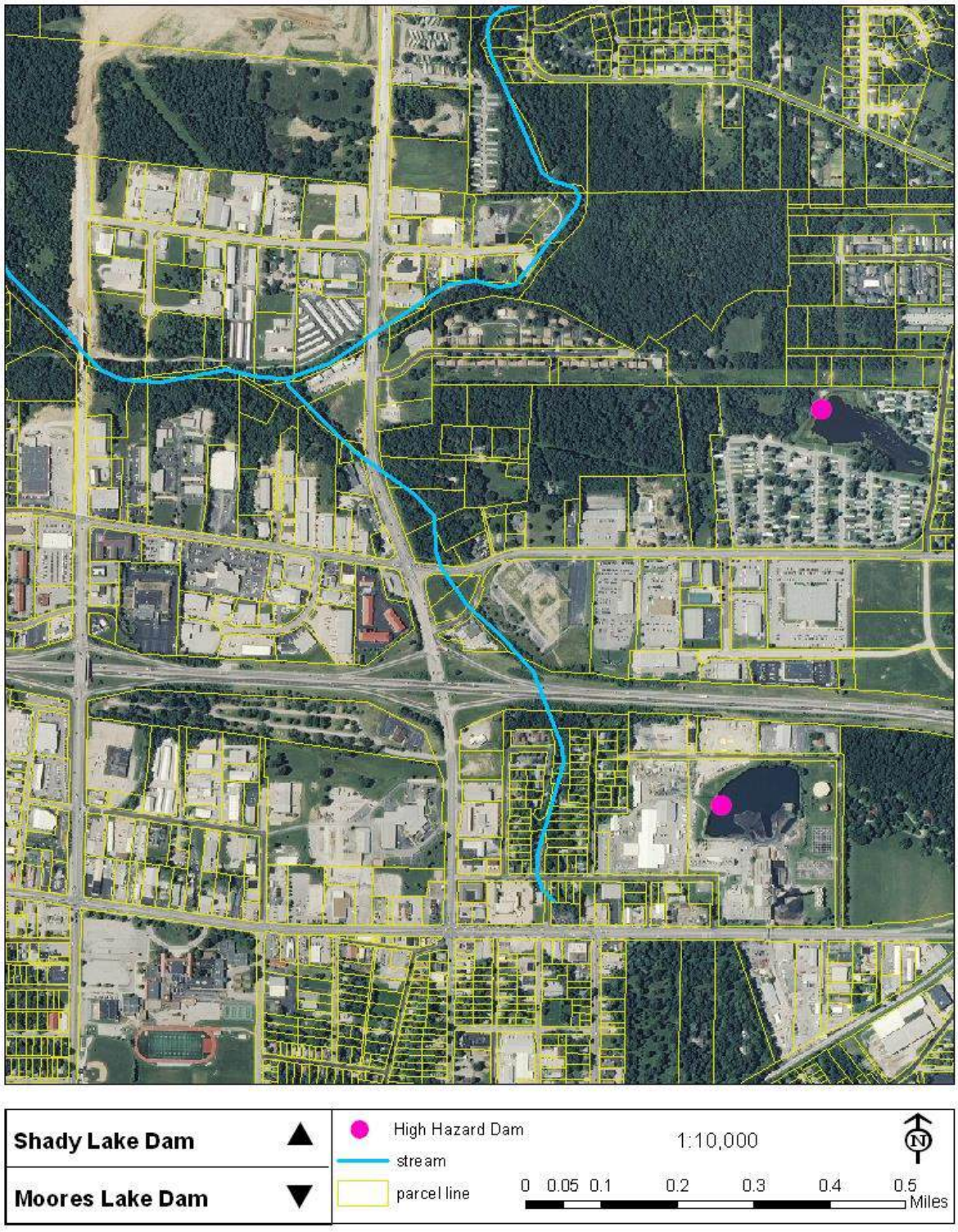

Shady Lake Dam
Moores Lake Dam
High Hazard Dam
stream
parcel line
1:10,000
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles
N

Figure 3.26E


Fairview Lake Dam
Hulen Lake West Dam
Hulen Lake East Dam
Fairview Lake Dam
Hulen Lake East Dam
Hulen Lake West Dam
High Hazard Dam
stream
parcel line
1:10,000
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles

Figure 3.26F

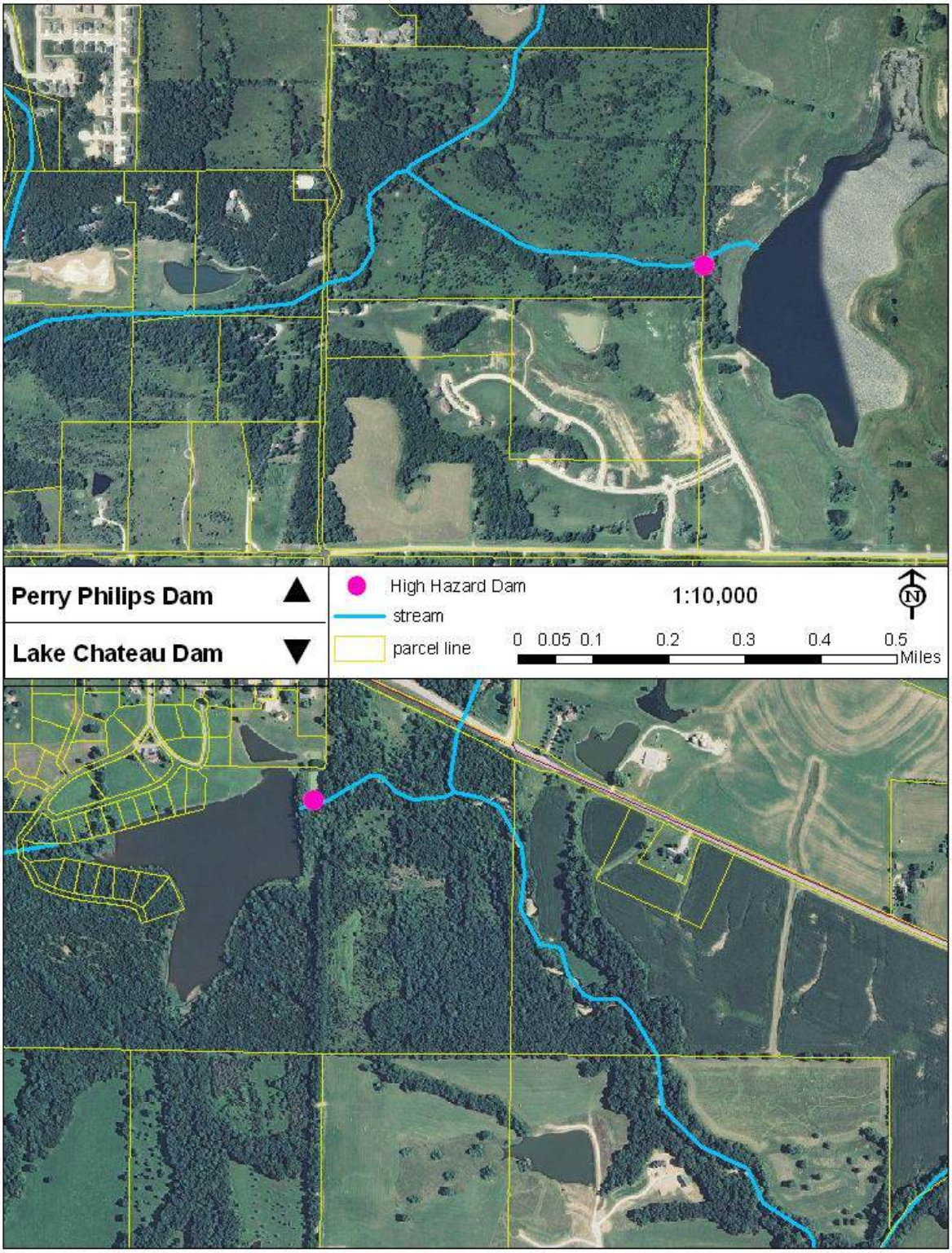

Perry Philips Dam
Lake Chateau Dam
High Hazard Dam
stream
parcel line
1:10,000
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles

Figure 3.26G

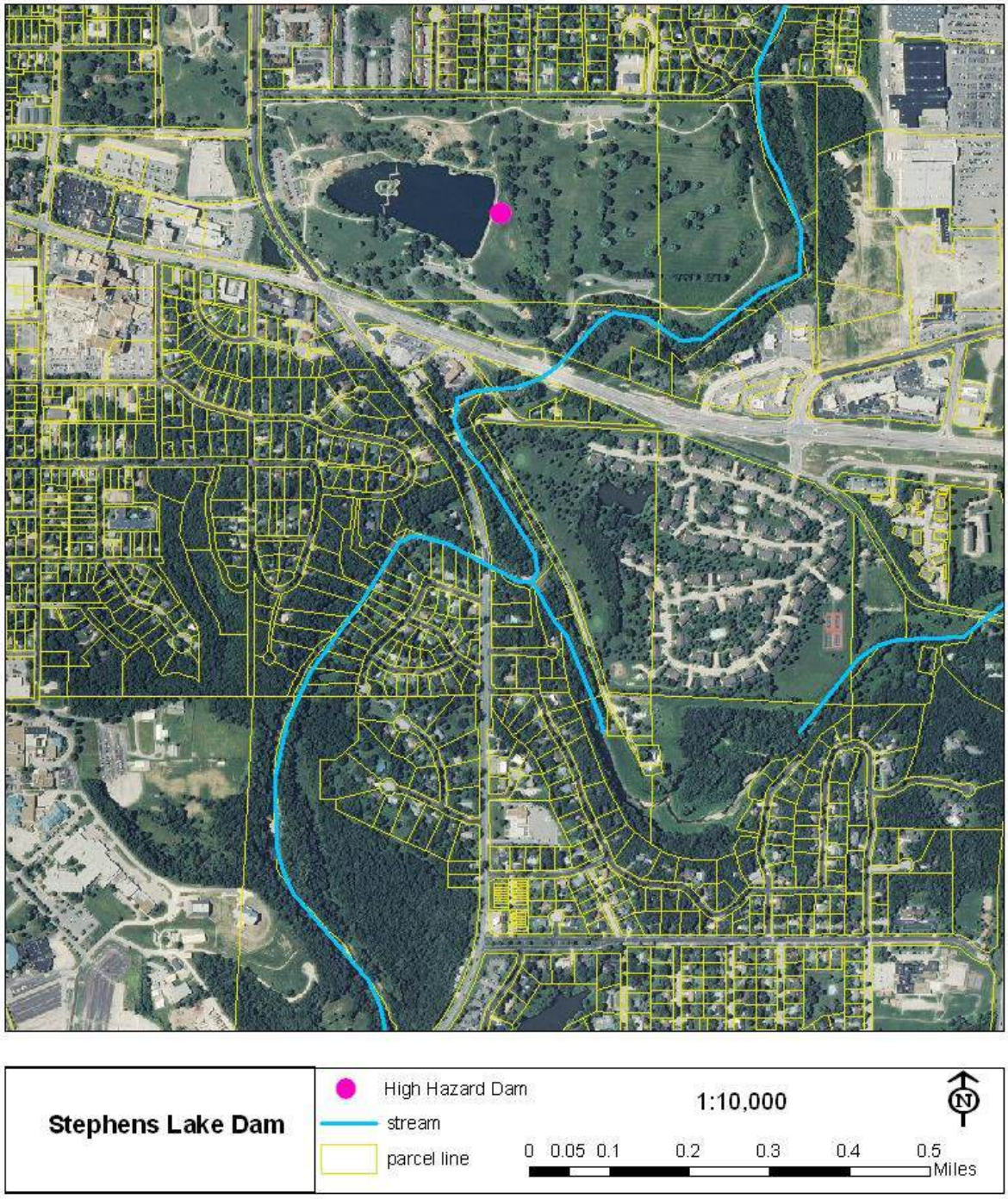

Stephens Lake Dam
High Hazard Dam
stream
parcel line
1:10,000
N
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles

Figure 3.26H

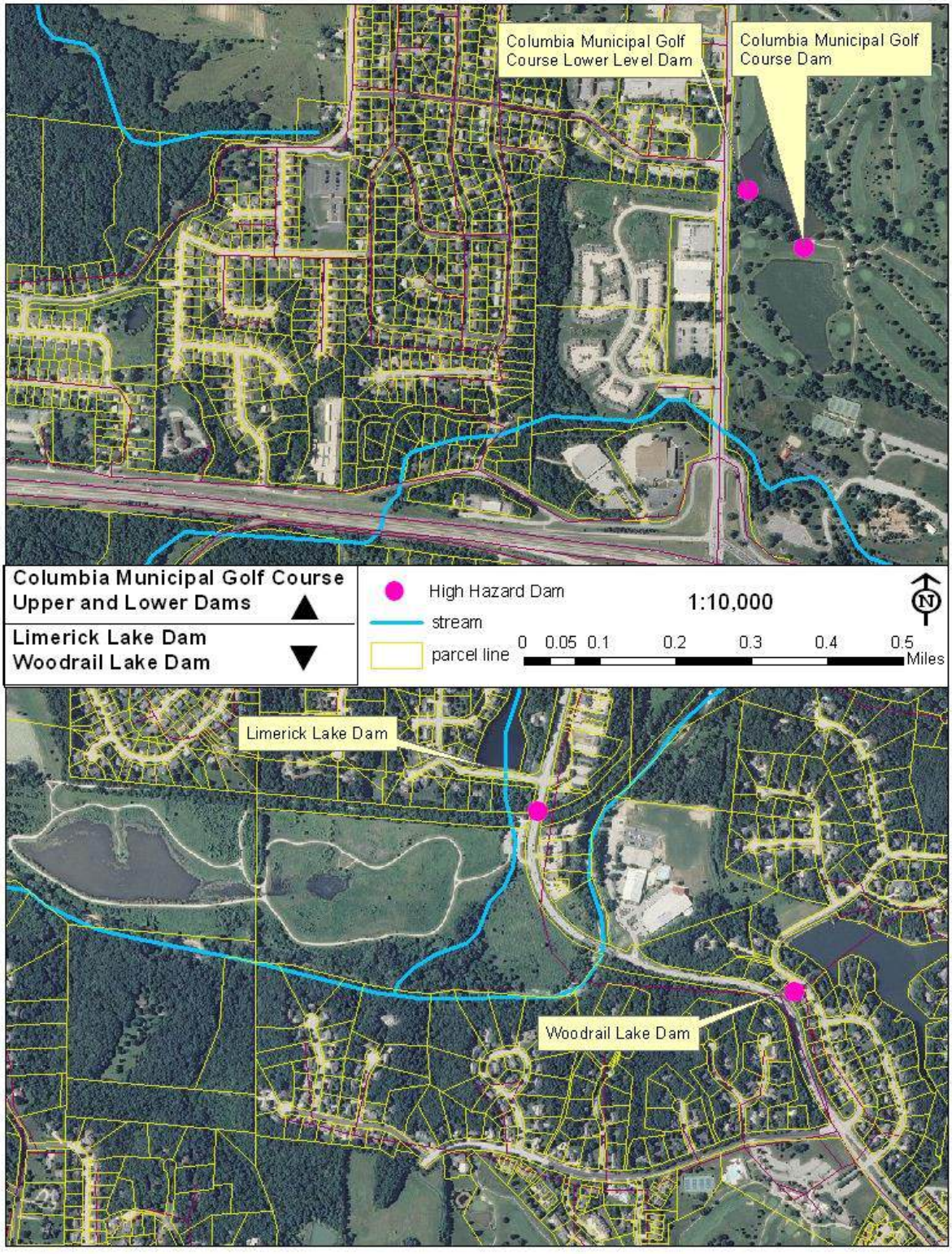

Columbia Municipal Golf Course Lower Level Dam
Columbia Municipal Golf Course Dam
Columbia Municipal Golf Course Upper and Lower Dams
Limerick Lake Dam
Woodrail Lake Dam
High Hazard Dam
stream
parcel line
1:10,000
0 0.05 0.1 0.2 0.3 0.4 0.5 Miles
N
Limerick Lake Dam
Woodrail Lake Dam

Figure 3.26l

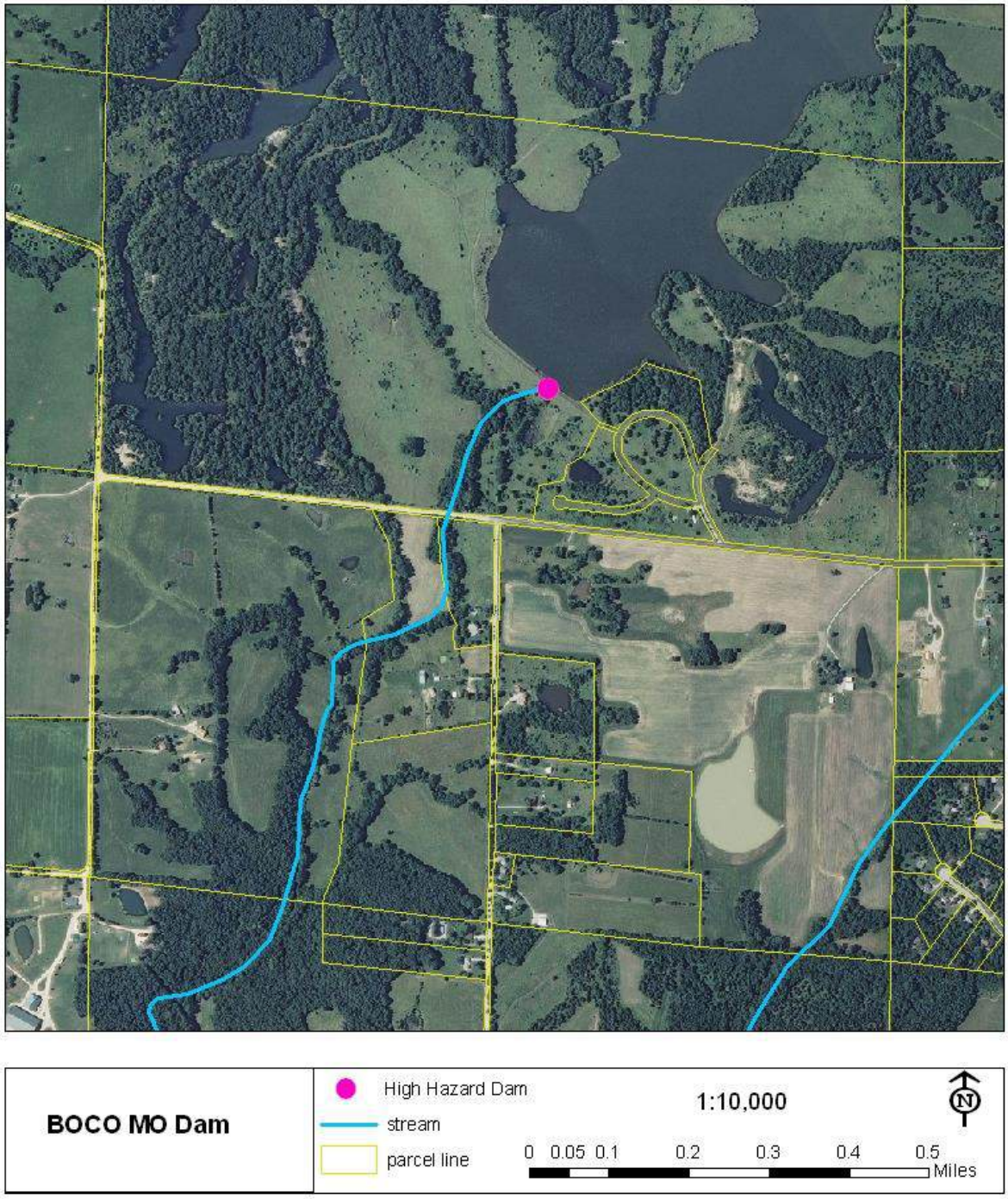

BOCO MO Dam
High Hazard Dam
stream
parcel line
1:10,000
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles

Figure 3.26J

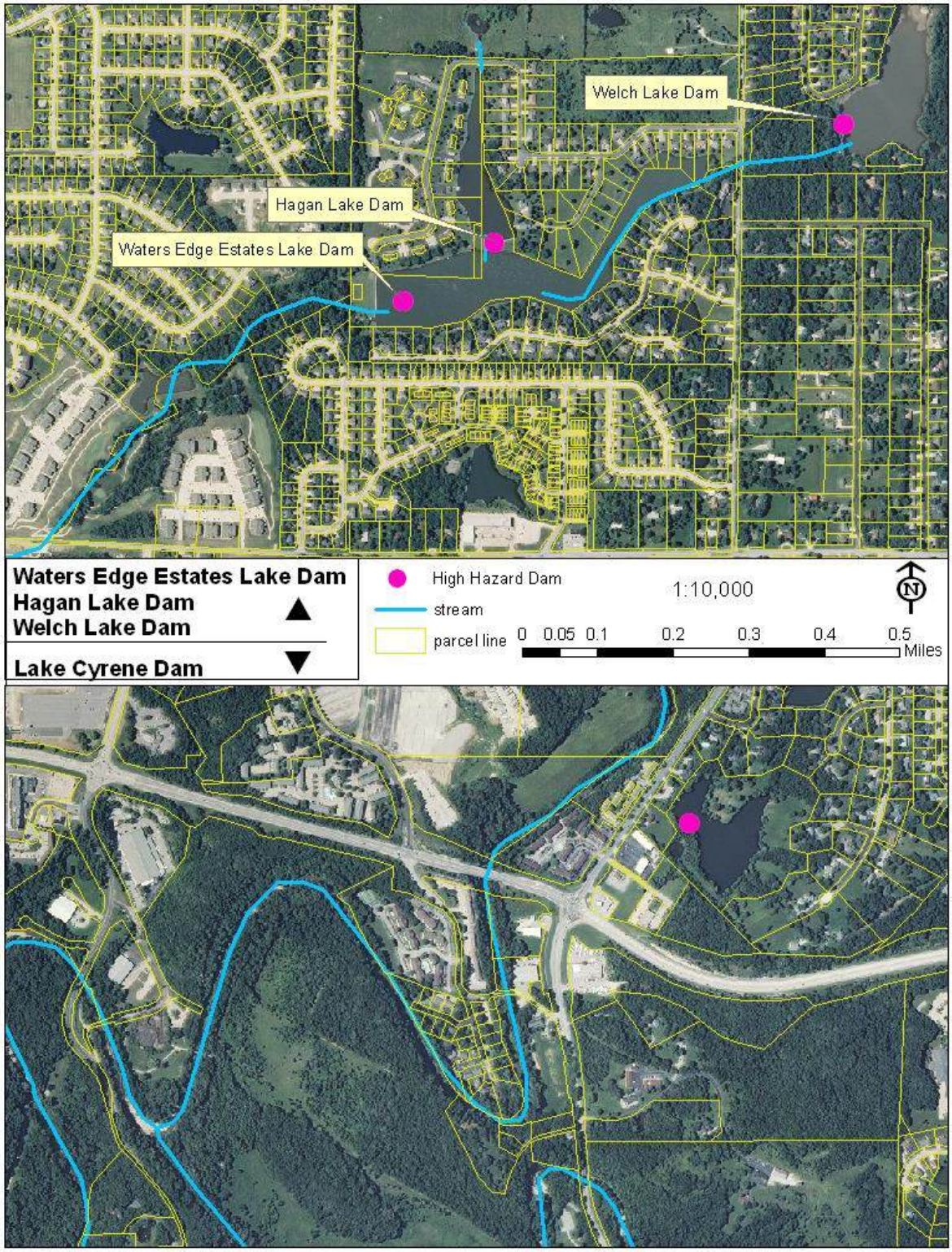
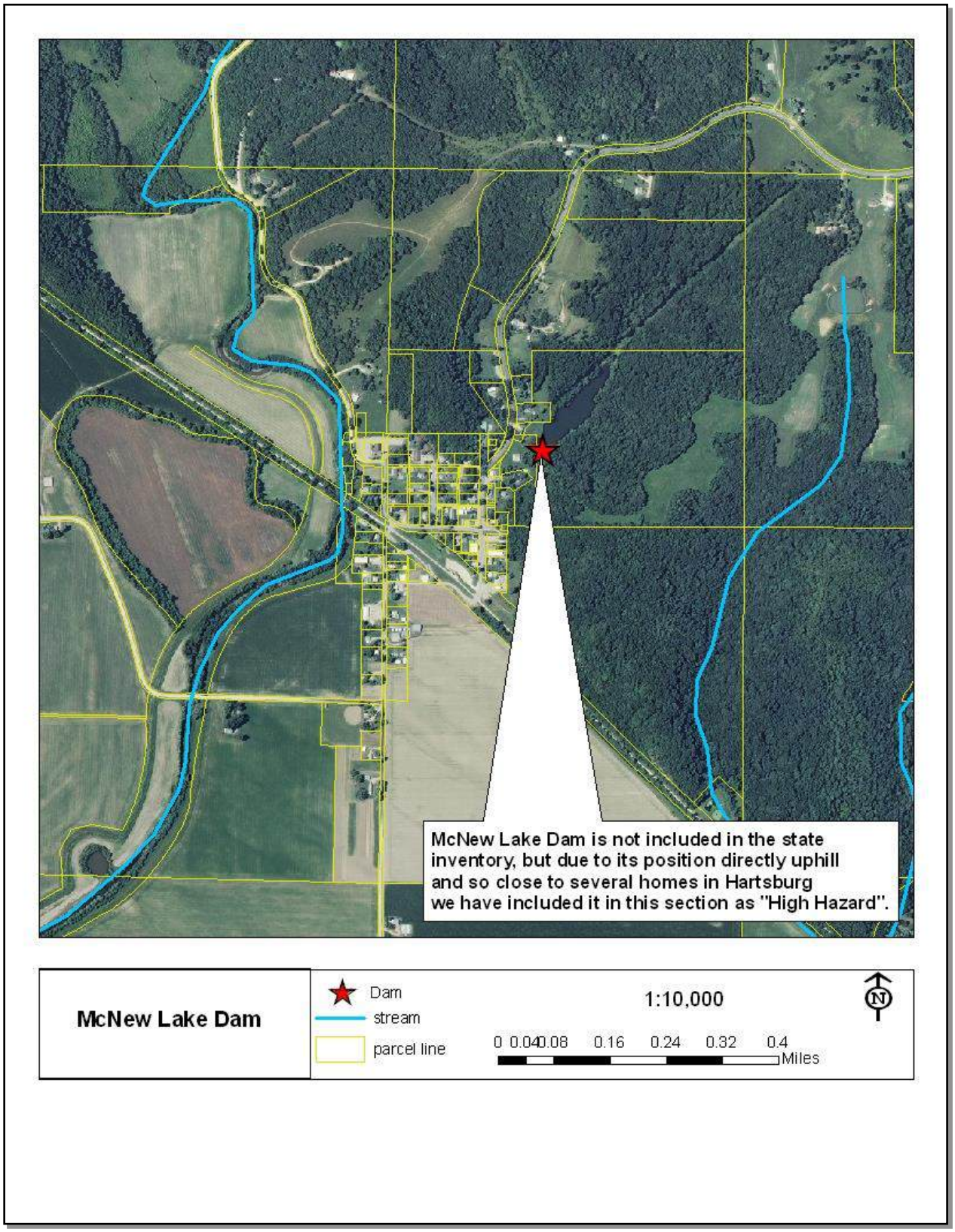

Welch Lake Dam
Hagan Lake Dam
Waters Edge Estates Lake Dam
Waters Edge Estates Lake Dam
Hagan Lake Dam
Welch Lake Dam
Lake Cyrene Dam
High Hazard Dam
stream
parcel line
1:10,000
0 0.05 0.1 0.2 0.3 0.4 0.5
Miles
N

Figure 3.26K


McNew Lake Dam is not included in the state inventory, but due to its position directly uphill and so close to several homes in Hartsburg we have included it in this section as "High Hazard".
McNew Lake Dam
Dam
stream
parcel line
1:10,000
0 0.04 0.08 0.16 0.24 0.32 0.4
Miles
N

Impact of Previous and Future Development

Since many dams in Boone County are privately owned and not regulated by the state, the dangers of development below aging or unsafe dams is an issue that needs to be addressed. If development occurs without knowledge of a potentially unsafe dam upstream, both lives and the development are put in jeopardy.

Better information for the inundation areas of the state regulated high hazard dams may be available in the future. Inundation studies are being carried out by the Natural Resources Conservation Service's Water Resources Center and Emergency Action Plans (EAPs) are being written for the dams. Future federal funding of state dam safety programs will be linked to the completion of these EAPs for regulated dams. As of this update EAPs have been written for all of the state regulated high hazard dams in the planning area.

HAZARD SUMMARY BY JURISDICTION

The jurisdictions of Boone County, Centralia, Columbia, Hallsville, and Hartsburg are all vulnerable to dam failure. There are 128 known dams in the planning area; of these, only 31 are regulated by the state. (A dam must be 35 feet or higher to fall under state regulations.)

Boone County, Columbia, Hallsville, and Hartsburg all have high hazard dams which would affect their jurisdictions if failure occurred. (The high hazard classification indicates the presence of permanent dwellings in the downstream environment and the probable loss of human life from dam failure.) The non-regulated dam situated on the city limits of Centralia poses less of a threat due to its downstream environment.

The Dam Safety Program of the Missouri Department of Natural Resources has been working with the owners of state regulated high hazard dams to develop Emergency Action Plans (EAPs). These plans are a great aid for local governments in planning for growth and development.

A major looming issue remains concerning the unregulated dams in the planning area. The data for unregulated dams in the DNR National Dam Inventory, including their ownership and hazard classification, dates back to the late 1970s and early 1980s. A high number of these unregulated dams are in Boone County and Columbia where the pace of growth and development is strong; their classifications may not accurately reflect current downstream conditions. In addition, there is a lack of knowledge of the physical condition and maintenance of these dams.

The DNR Dam Safety Program has offered to assist county governments in conducting meetings for owners of non-regulated dams who are interested or willing to develop EAPs. A mitigation action has been included in this plan for the jurisdiction of Boone County to follow up on this offer and work with the owners of these dams.

In 2014, Boone County updated its subdivision regulations to regulate the construction and maintenance of new dams greater than 25 feet in height located within or adjacent to new subdivisions or developments. These regulations will help mitigate the risk posed by some new dams in the future.

Problem Statement

Much like flash flooding, the risk in a dam failure to life and property comes from the sudden rush of water downstream. Development in the Columbia area and parts of Boone County pose the highest risk. Dams such as Hulen Lake Dam that have dense subdivisions built up around them threaten several structures and populations if a failure was to occur.

Many dams in the planning area are not regulated and inspections may be infrequent or not at all. Boone County already has regulations in place for new dams over 25 ft. There needs to be continued review of such regulations and making sure that businesses and residents downstream from such dams have access to any emergency plans that may be available for the particular dam that could affect them. The requirement of inspections on dams with potentially affected populations over a certain size could help ensure the safety of those downstream.

3.4.4 Earthquakes

Hazard Profile

Hazard Description

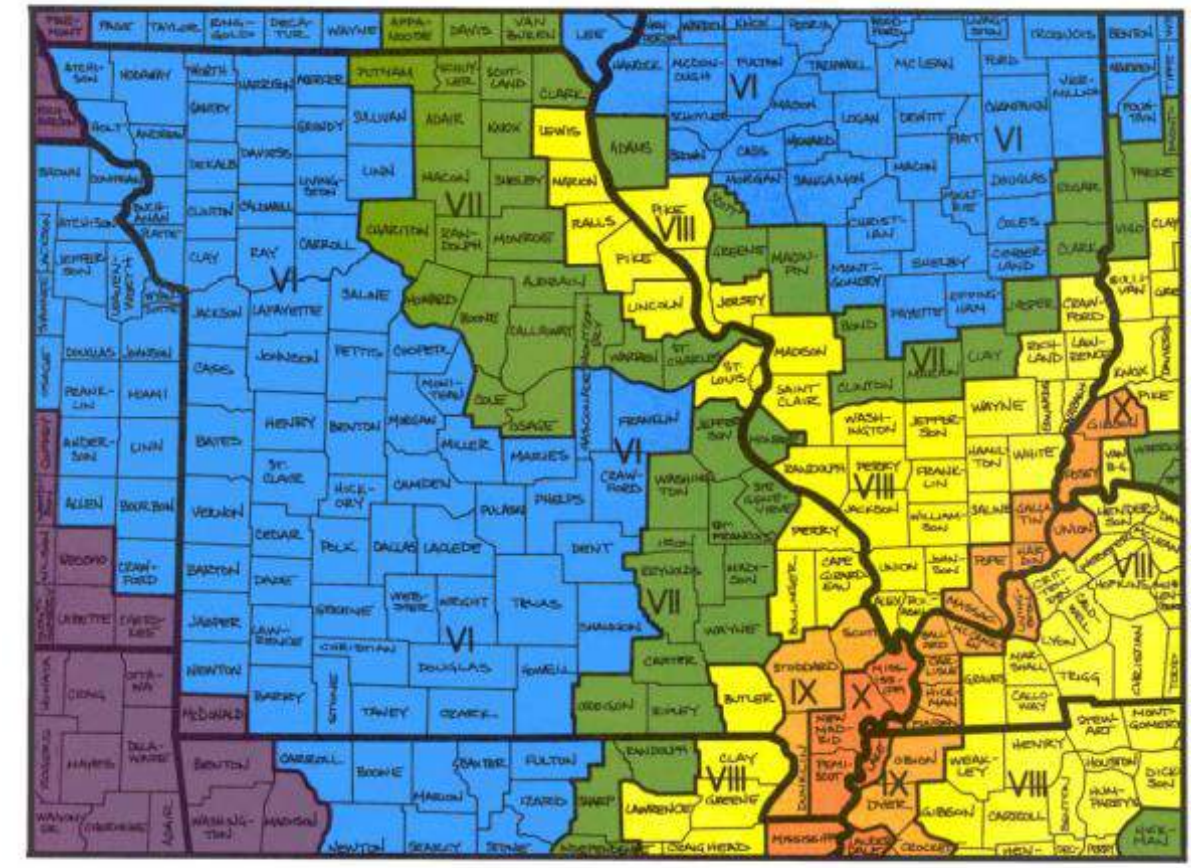
The United States Geological Society (USGS) describes an earthquake as "a sudden movement of the earth's crust caused by the release of stress accumulated along geologic faults or by volcanic activity." Earthquakes occur primarily along fault zones and tears in the earth's crust. Along these faults and tears in the crust, stresses can build until one side of the fault slips, generating compressive and shear energy that produces 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.

Earthquakes can be one of the most destructive forces of nature causing death, destruction of property, and billions of dollars of damage. The New Madrid Seismic Zone (NMSZ), which runs through southeastern Missouri, is the most active seismic zone east of the Rocky Mountains. Any hazard mitigation planning in Missouri must, of necessity, take possible earthquakes into account. Missouri and much of the Midwest can feel earthquakes from very far away because the geology of the area is more amenable to ground shaking than the California geology. New Madrid earthquakes can cover up to twenty times the area of typical California earthquakes because of this differing geology.

Geographic Location

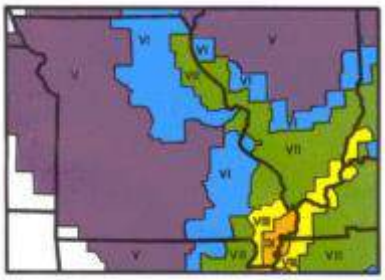
The entire planning area is at risk for the effects of an earthquake along the New Madrid Seismic Zone. Areas close to the Missouri River may be particularly vulnerable. The soil, or alluvium, along river channels is especially vulnerable to liquefaction from earthquake waves; river alluvium also tends to amplify the waves. While the Nemaha Ridge runs through Kansas and Oklahoma seismic activity along this ridge does not overly impact the planning area.

Figure 3.7: Seismic Zones



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.

6.7

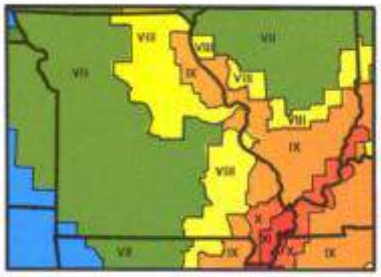


This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude – 6.7 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.

7.6

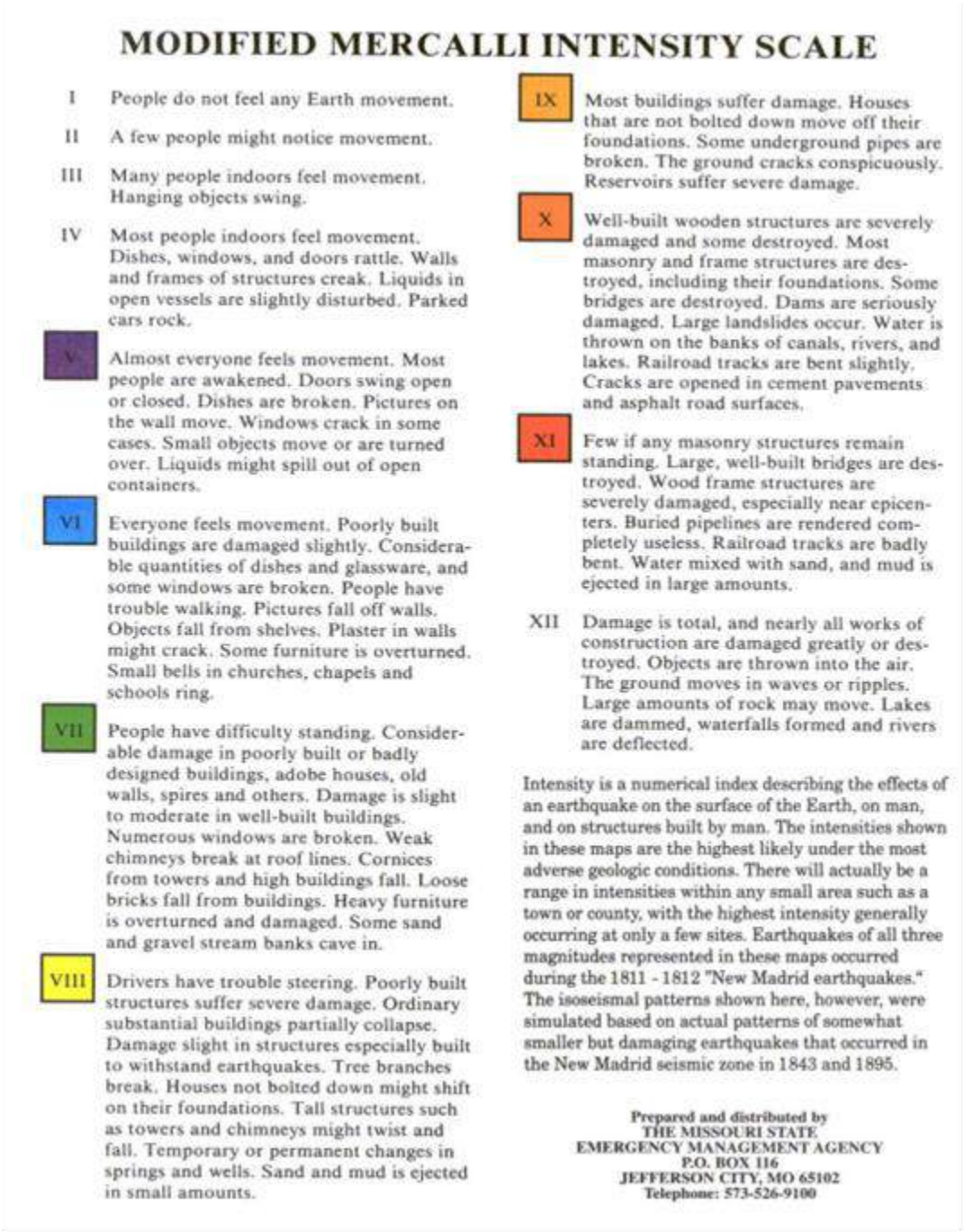
This map shows the highest projected Modified Mercalli intensities by county from a potential magnitude – 8.6 earthquake whose epicenter could be anywhere along the length of the New Madrid seismic zone.

8.6



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

Figure 3.8: Projected Earthquake Intensities



MODIFIED MERCALLI INTENSITY SCALE

I People do not feel any Earth 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 and frames of structures creak. Liquids in open vessels are slightly disturbed. Parked cars rock.

V Almost everyone feels movement. Most people are awakened. Doors swing open or closed. Dishes are broken. Pictures on the wall move. Windows crack in some cases. Small objects move or are turned over. Liquids might spill out of open containers.

VI Everyone feels movement. Poorly built buildings are damaged slightly. Considerable quantities of dishes and glassware, and some windows are broken. People have trouble walking. Pictures fall off walls. Objects fall from shelves. Plaster in walls might crack. Some furniture is overturned. Small bells in churches, chapels and schools ring.

VII People have difficulty standing. Considerable damage in poorly built or badly designed buildings, adobe houses, old walls, spires and others. Damage is slight to moderate in well-built buildings. Numerous windows are broken. Weak chimneys break at roof lines. 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 might shift on their foundations. Tall structures such as towers and chimneys might twist and fall. Temporary or permanent changes in springs and wells. Sand and mud is ejected in small amounts.

IX Most buildings suffer damage. Houses that are not bolted down move off their foundations. Some underground pipes are broken. The ground cracks conspicuously. Reservoirs suffer severe damage.

X Well-built wooden structures are severely damaged and some destroyed. Most masonry and frame structures are destroyed, including their foundations. Some bridges are destroyed. Dams are seriously damaged. Large landslides occur. Water is thrown on the banks of canals, rivers, and lakes. Railroad tracks are bent slightly. Cracks are opened in cement pavements and asphalt road surfaces.

XI Few if any masonry structures remain standing. Large, well-built bridges are destroyed. Wood frame structures are severely damaged, especially near epicenters. Buried pipelines are rendered completely useless. Railroad tracks are badly bent. Water mixed with sand, and mud is ejected in large amounts.

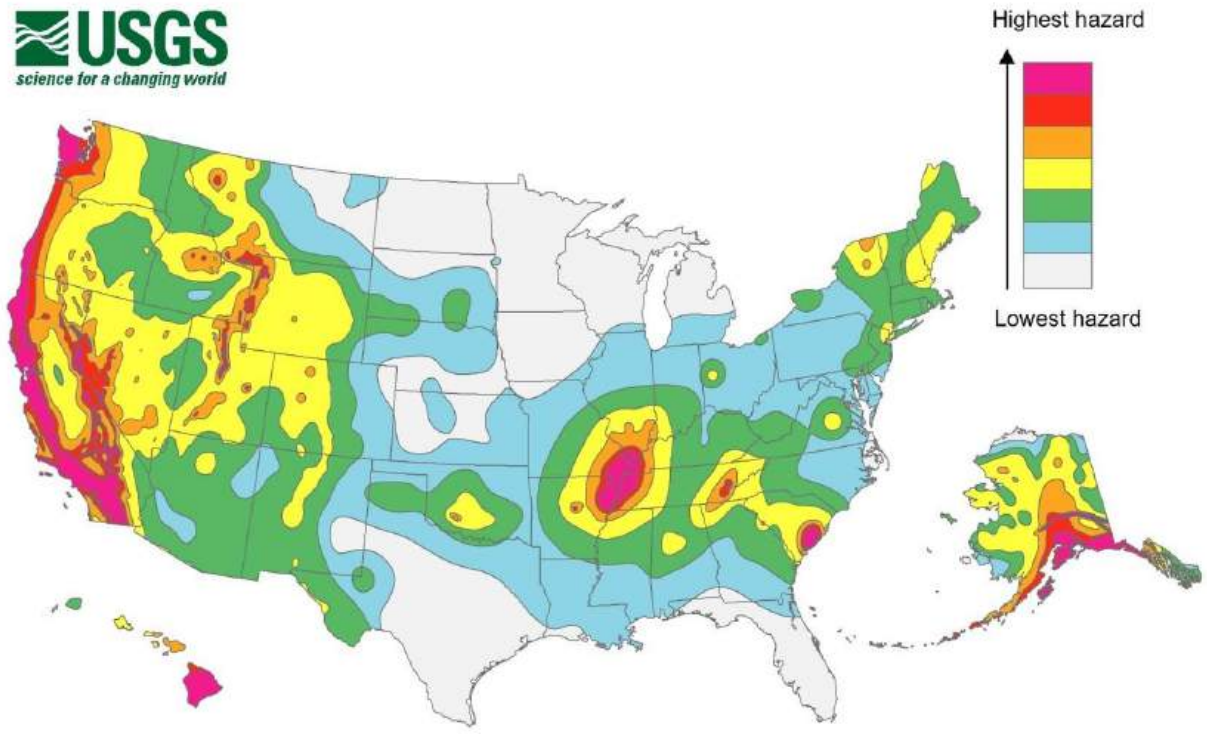
XII Damage is total, and nearly all works of construction are damaged greatly or destroyed. Objects are thrown into the air. The ground moves in waves or ripples. Large amounts of rock may move. Lakes are dammed, waterfalls formed and rivers are deflected.

Intensity is a numerical index describing the effects of an earthquake on the surface of the Earth, on man, and on structures built by man. The intensities shown in these maps are the highest likely under the most adverse geologic conditions. There will actually be a range in intensities within any small area such as a town or county, with the highest intensity generally occurring at only a few sites. Earthquakes of all three magnitudes represented in these maps occurred during the 1811 - 1812 "New Madrid earthquakes." The isoseismal patterns shown here, however, were simulated based on actual patterns of somewhat smaller but damaging earthquakes that occurred in the New Madrid seismic zone in 1843 and 1895.

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EMERGENCY MANAGEMENT AGENCY
P.O. BOX 116
JEFFERSON CITY, MO 65102
Telephone: 573-526-9100

The below map shows the seismic hazards across the United States. The planning area located in the center of the United States is included in zone VII, which is displayed in green.

Figure 3.9 United States Seismic Hazard Map



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. 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.

Previous Occurrences

Historical quakes along the New Madrid Seismic Zone in southeastern Missouri have been some of the largest in U.S. history since European colonization and settlement. The Great New Madrid Earthquake of 1811-1812 was a series of over 2000 quakes which caused destruction over a very large area. According to information from Missouri SEMA's Earthquake Program, some of the quakes measured at least 7.6 in magnitude and five of them measured 8.0 or more.

The 1811-1812 quakes changed the course of the Mississippi River. Some of the shocks were felt as far away as Washington D.C. and Boston.

The first federal disaster relief act was a result of the Great New Madrid Earthquake of 1811-1812. President James Madison signed an act into law which issued "New Madrid Certificates" for government lands in other territories to residents of New Madrid County who wanted to leave the area.

While there have been no large-scale earthquakes felt in the planning area in more than 200 years there are a multitude of shocks undetectable by anything other than special equipment that emanate from the New Madrid region many times throughout the year, but they are so minor they cannot be felt in the planning area.

Probability of Future Events - Moderate

It is difficult to predict the probability of an earthquake occurring along the New Madrid Seismic Zone which would be significant enough to affect the planning area. The following information from MO DNR helps to illustrate why this is difficult:

> The active faults in the NMSZ are poorly understood because they are not expressed at the ground surface where they can be easily studied. The faults are hidden beneath 100- to 200-foot thick layers of soft river deposited soils called alluvium.

Microseismic earthquakes (magnitude less than 1.0 to about 2.0), measured by seismographs but not felt by humans, occur on average every other day in the NMSZ (more than 200 per year).

Active faults that have generated dangerous earthquakes in historic times or the recent geologic past (the last 10,000 years) are not always microseismically active. In fact, in some settings these quiet faults are considered the most dangerous ones because high built up stress has locked the two sides of the fault together thereby preventing the microseismic earthquakes. This is thought to happen as a prelude to a major rupture of the fault. It is not known if faults of this type exist in the NMSZ. If they do exist there is no easy way to locate them.

If one looks strictly at the historical record for earthquakes of 6.5 magnitude or greater, there have been 2 years (1811 and 1812) out of the last 214 years in which such earthquakes have occurred. This equals less than 1% probability in any given year (Probability= 2/214*100= 0.94%). However, there were many serious quakes in just the two years of 1811 and 1812, according to MO DNR.

In 2002, U.S. Geological Survey (USGS) and the Center for Earthquake Research and Information (CERI) at the University of Memphis released the following expectations for earthquakes in the NMSZ in following 50 years:

- 25-40% percent chance of a magnitude 6.0 and greater earthquake.
- 7 -10% chance of a magnitude 7.5 - 8.0 quake (magnitudes similar to those in 1811-1812)

According to information provided by MO SEMA, the above expectations can be translated into the following likelihoods for a given year in the 50 year period:

- 1.0-1.6% likelihood of a magnitude 6.0 and greater earthquake
- 0.28-0.40% likelihood of a magnitude 7.5-8.0 earthquake

According to the MO SEMA 2023 Hazard Mitigation Plan, the annualized frequency of earthquakes in Boone County is 0 – 0.000610. Since a magnitude 6.0 earthquake would affect the planning area (see Figures 4.38-4.39 for an estimate of the effects in the planning area of a 6.7 earthquake in the NMSZ), the probability has been determined to be moderate.

Changing Future Conditions Considerations

According to the MO SEMA 2023 Hazard Mitigation Plan, there may be a connection between changing climate conditions and earthquakes. As ice caps melt and sea levels rise, weight is redistributed over fault lines, which could affect the probability or severity of earthquakes, however this has not been established. Scientists continue to study this relationship to better understand the changing future conditions of earthquake hazards.

Vulnerability

Vulnerability Overview

Severity: High

Potential Impact - Existing Structures

The intensity of an earthquake refers to the potentially damaging effects of a quake at any particular site. An earthquake of a specific magnitude will have different intensities depending on a location's distance from the epicenter of the quake, intervening soil type, and other factors.

Intensity is measured by the Modified Mercalli Intensity Scale (MMI) and expressed by a Roman numeral (Figure 3.23).

According to the USGS, Boone County is one of the 47 counties in Missouri that would be severely impacted by a 7.6 magnitude earthquake with an epicenter on or near the New Madrid Seismic Zone.

The State Emergency Management Agency (SEMA) has made projections of the highest earthquake intensities which would be experienced throughout the state of Missouri should various magnitude quakes occur along the New Madrid Seismic Zone.

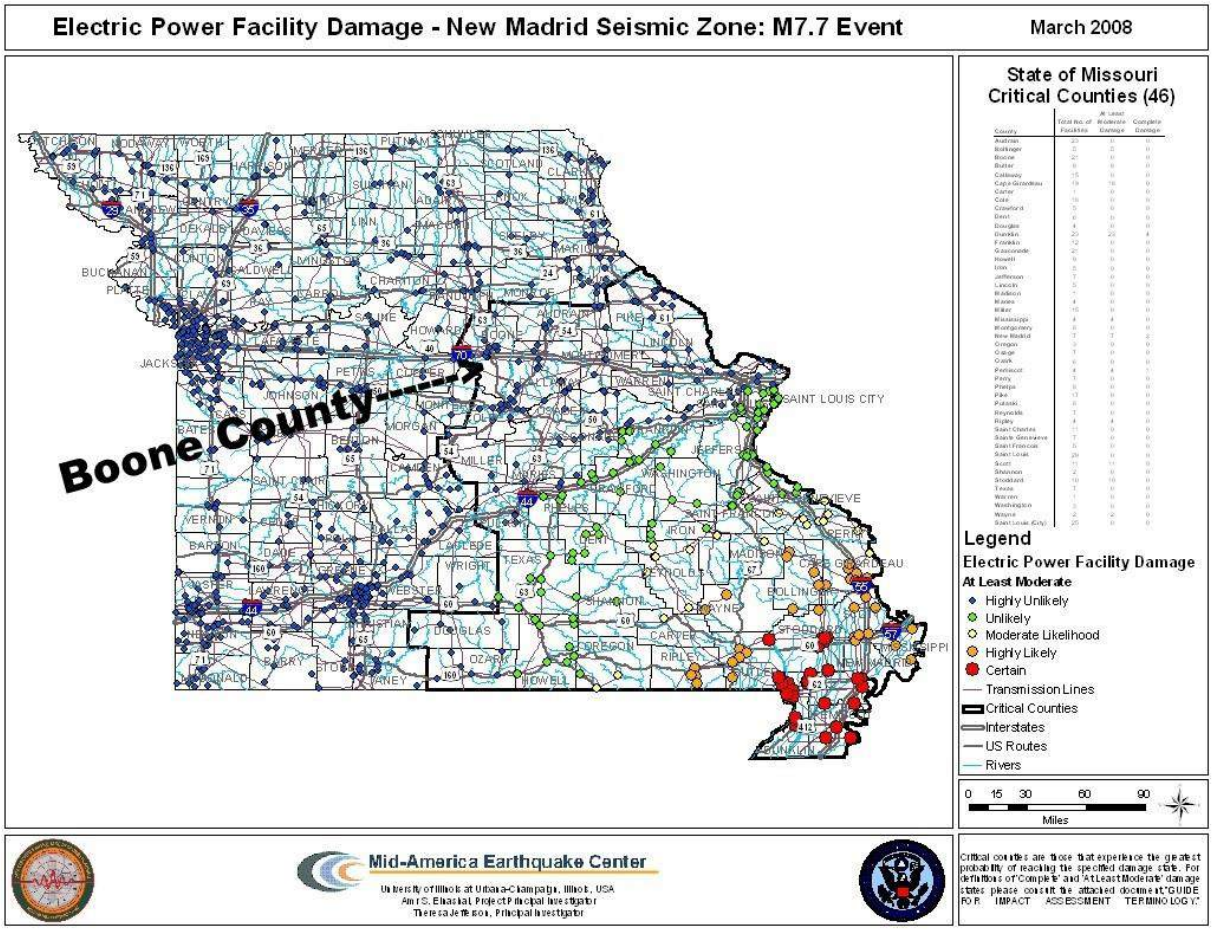
The pertinent information for Boone County is summarized in Table 3.31.

Table 3.31			
Projected Earthquake Hazard for Boone County			
Magnitude at NMSZ	**Probability of Occurrence (2002 -2052)**	**Intensity (MMI)**	**Expected Damage**
6.7	25-40%	VI	Slight
7.6	7-10%	VII	Significant damage to poorly built structures

In 2008, the Mid-America Earthquake Center mapped the expected probability of at least moderate damage to electric power facilities from a 7.7 magnitude earthquake in the NMSZ; such damage was considered "highly unlikely" in the planning area (Figure 3.25). This correlates well with the projected damage to *poorly* built structures from a 7.6 magnitude quake.

Map 3.9 Missouri Power Grid Damage

Figure 3.30



Missouri State Hazard Mitigation Plan (2023) Analysis: Specific modeling of damage and loss from earthquake scenarios has been conducted for the state using HAZUS 6.0 software; the findings are included in the *Missouri State Hazard Mitigation Plan (2023)*. HAZUS software is used by FEMA to compare relative risk from earthquakes and other natural hazards.

The earthquake vulnerability analysis in the *MO State Hazard Mitigation Plan (2023)* used demographic data based on the 2020 Census; site-specific essential facility data was based on the 2011 HSIP inventory data. Two types of analysis were done:

Annualized Loss Scenario based on eight earthquake return periods (100, 200, 500, 750, 1000, 1500, 2000, and 2500 years)

2% Probability of Exceedance in 50 Years Scenario – a "worst case scenario"

Annualized Loss Scenario

The *MO State Hazard Mitigation Plan (2023)* explains the annualized loss scenario as follows:

HAZUS defines annualized loss as the expected value of loss in any one year. The software develops annualized loss estimates by aggregating the losses and their exceedance probabilities from the eight return periods. Annualized loss is the maximum potential annual dollar loss resulting from various return periods averaged on a 'per year' basis. It is the summation of all HAZUS-supplied return periods multiplied by the return period probability (as a weighted calculation).

Table 3.32 Hazus-MH Earthquake Loss Estimate: Annualized Loss Scenario

County	Total Losses, in $ Thousands	Loss Per Capita, in $ Thousands	Loss Ratio, in $ Per Million
Boone	$552	$0.0034	$30

The building inventory in Boone County is both relatively large and high in value so there is the potential for costly damage even at a considerable distance from the New Madrid Fault. However the percentage of buildings sustaining damage and/or the level of damage sustained would be much lower than in a county adjacent to the fault. The loss ratio reflects this and gives an indication of both the potential economic impact of an earthquake and the difficulty of recovery in the county. Boone County is better equipped to deal with the economic loss it would be expected to incur than most other counties in the state.

2% Probability of Exceedance in 50 Years Scenario

This analysis models a worst case scenario using a level of ground shaking recognized in earthquake design. The *MO State Hazard Mitigation Plan (2013)* gives the following explanation of the modeling:

The methodology is based on probabilistic seismic hazard shaking grids developed by the U.S. Geological Survey (USGS) for the National Seismic Hazard Maps that are included with HAZUS-MH. The USGS maps provide estimates of peak ground acceleration and spectral acceleration at periods of 0.3 second and 1.0 second, respectively that have a 2% probability of exceedance in the next 50 years. The International Building Code uses this level of ground shaking for building design in seismic areas. This scenario used a 7.7 driving magnitude in HAZUS-MH, which is the magnitude used for typical New Madrid fault planning scenarios in Missouri. While the 2% probability of exceedance in the next 50 years ground motion maps incorporate the shaking potential from all faults with earthquake potential in and around Missouri, the most severe shaking is predominately generated by the New Madrid Fault.

Table 3.33 HAZUS-MH Earthquake Loss Estimation 2% Probability of Exceedance in 50 Years Scenario Direct Economic Losses

County	Cost Structural Damage	Cost Non-Structural Damage	Cost Content Damage	Inventory Loss	Loss Ratio	Relocation Loss	Capital Related Loss	Wage Losses	Rental Income Loss	Total Loss
Boone	$47,799	$129,199	$44,304	$679	0.96	$29,990	$11,430	$15,490	$14,373	$293,265

It can be seen that in the modeling of a “worst case scenario”, Boone County’s loss ratio and loss ratio rank get higher. In addition, Boone County moves to the #19 rank in estimated building damage in actual dollars.

The modeling suggests that damages from a worst case scenario earthquake in the NMSZ (7.7 magnitude) would be greater in Boone County than the Modified Mercalli map of Missouri suggests. Caution indicates that mitigation and preparedness be focused on the most conservative estimates (in this case, those which predict greater injury and damage) unless these have been shown to be incorrect.

Even a significant earthquake event in the NMSZ which does not cause great damage in Boone County could still very possibly cause cascading economic losses in the county. There is the very real potential for disruption of road and rail traffic to the eastern part of the state, including the metropolitan area of St. Louis. Regions of the state outside of the severely damaged areas would probably be called upon for emergency and recovery assistance.

Potential Impact - Life

The potential for loss of life goes up as the magnitude of the earthquake goes up. Areas with a high rate of older or historical structures with construction methods not designed to withstand such an event pose a higher risk for loss of lives that work or live within such buildings.

The potential for "emotional aftershocks" exists with any earthquake event. Major earthquake events require mental health services for people dealing with loss, stress, anxiety, fear, and other difficult emotions. Even a smaller quake, however, has the potential for emotional repercussions; the sudden movement of something experienced as stable for one's entire life (the earth itself) can be very traumatic.

Potential Impact - Future Development

The standards followed in new construction will impact vulnerability to earthquake damage. Building new structures according to more stringent earthquake resistant codes will lessen the potential damage should an earthquake occur, just as poor construction will increase vulnerability. However, this type of mitigation activity may not be cost effective for many communities.

Hazard Summary by Jurisdiction

Boone County, Ashland, Centralia, Columbia, Hallsville all have building codes so there is a mechanism whereby earthquake resistant codes could be put in place. The Boone County Building Code does cover building earthquake resistant structures.

Harrisburg and Sturgeon have a number of older structures that could be vulnerable to collapse in the event of strong earthquakes. Hartsburg, Huntsdale, and Rocheport have less dense populations but many of their structures are older making them more likely to be vulnerable to collapse in a strong earthquake. Their proximity to the Missouri River though could also make these communities more vulnerable to the effects of potential liquefaction that can occur in some soil structures as a result of strong tremors.

Columbia has a large quantity of historical buildings and multi-story buildings that could be vulnerable to larger magnitude earthquakes. Infrastructure damage to roads would cause transportation backups that could impact much farther from the planning area.

School Districts - The Revised Statutes of MO, Section 160.451 require that:
The governing body of each school district which can be expected to experience an intensity of ground shaking equivalent to a Modified Mercalli of VII or above from an earthquake occurring along the New Madrid Fault with a potential magnitude of 7.6 on the Richter Scale shall establish an earthquake emergency procedure system in every school building under its jurisdiction.

All educational institutions in Boone County are subject to these statutory requirements and must provide training and exercises to students in preparation for a large earthquake. This is implemented throughout the county.

Public Information - The Office of Emergency Management (OEM) maintains materials which address earthquake preparedness. A press release to educate the public about earthquake preparedness and the availability of educational materials was issued in July 2009. OEM focuses on earthquake preparedness in February each year during "Earthquake Awareness Month".

County Bridges - All county bridges are inspected by the MODOT on a 2-year cycle; if an earthquake impacted the planning area, MODOT would be in charge of county bridge inspection post-earthquake.

State-funded buildings - RSMo Section 319.200 requires that, for "cities and counties subject to earthquake", all state-funded buildings built after January 1, 2000 must "comply with the standards for seismic design and construction of the 1990 or later edition of either the uniform building code or the building officials and code administrators code." (The statute established a percentage schedule for state-funded buildings constructed between January 1, 1994 and December 31, 1999 which were also subject to this requirement.) As a result of this statute, many of the newer buildings at the University of MO are built to seismic standards.

PROBLEM STATEMENT

The entire planning area is vulnerable to the risk of damage from an earthquake in the New Madrid Seismic Zone (NMSZ) located in southeastern Missouri. Boone County is one of 46 "critical counties" where school districts are required by state law to establish earthquake emergency procedure systems in every school.

Studies and predictions indicate that there would be significant damage to poorly built structures in the planning area from a 7.6 magnitude (Richter) quake in the NMSZ. In addition to structural damage, and possible injury/loss of life, the planning area could be affected by an influx of people needing sheltering, disruption of the flow of goods, calls for assistance from other areas, and the psychological traumatization of the population.

There is extensive ongoing education and preparation in the planning area for the possibility of an earthquake event. Encouraging new construction buildings and infrastructure to be rated for earthquakes and taking on hardening efforts on existing structures can help minimize damage.

3.4.5 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.

Gradual or sudden land subsidence is a key sign of sinkhole formation. The Boone County Stormwater Design Manual distinguishes between two types of sinkholes associated with karst topography:

- Depression sinkholes which have a defined drainage area and are generally shown as closed contours on a topographic map; best management practices are required to protect groundwater when runoff from development drains into these areas

- Collapse sinkholes are areas of “karst-related subsidence with no defined drainage area when occurring outside of a depression sinkhole. Collapse sinkholes can occur in the bottom of a depression sinkhole and are commonly referred to as the ‘eye’ of the sinkhole”

Construction excavation and well drilling can also cause sinkholes, according to the Missouri Department of Natural Resources (DNR). In addition to being at risk for land subsidence and sinkhole collapse associated with karst topography, the planning area is at risk from land subsidence/collapse associated with underground mining and exploratory drilling for petroleum.

According to the U.S. Geological Survey (USGS), the most damage from sinkholes tends to occur in Florida, Texas, Alabama, Missouri, Kentucky, Tennessee, and Pennsylvania. Fifty-nine

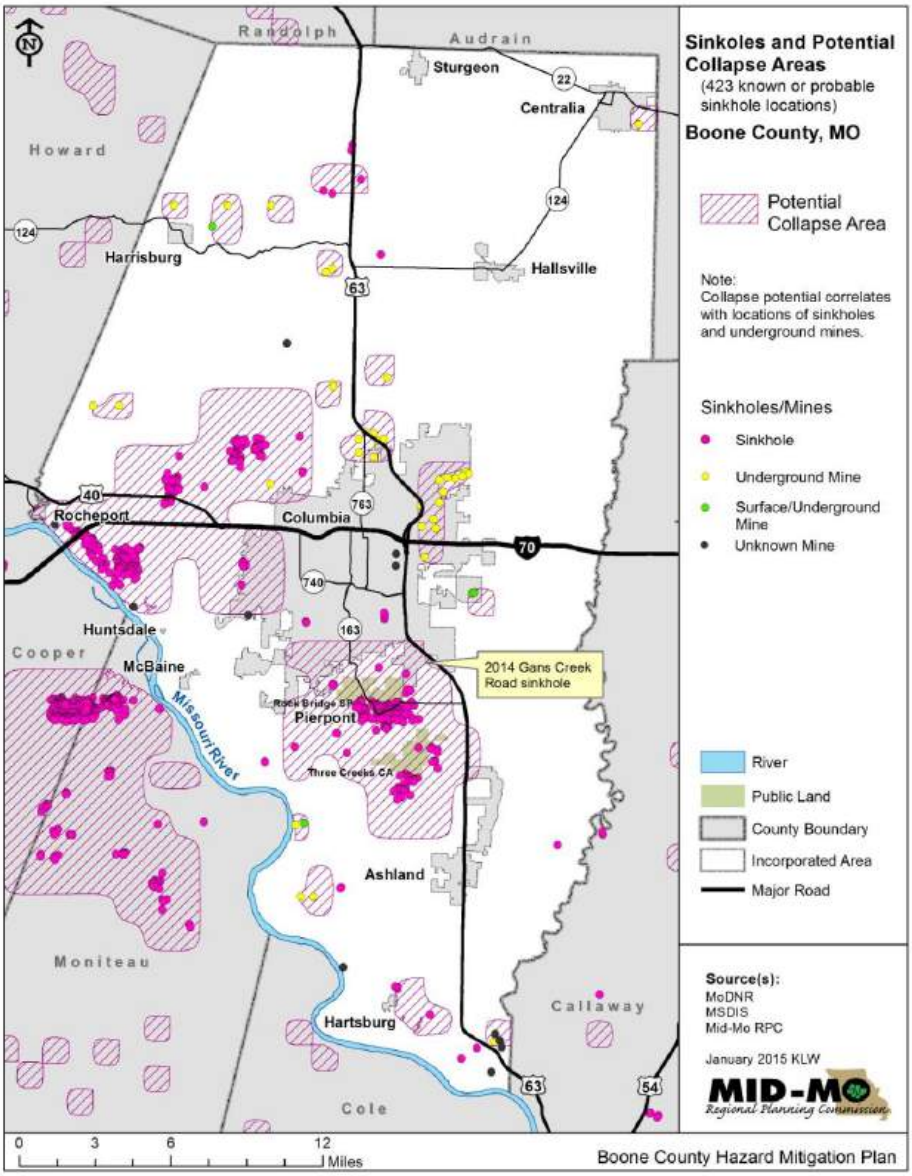
percent of Missouri is underlain by thick, carbonate rock that makes Missouri vulnerable to sinkholes. Sinkholes occur in Missouri on a fairly frequent basis. Most of Missouri‘s sinkholes occur naturally in the State‘s karst regions (areas with soluble bedrock). They are a common geologic hazard in southern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

Location

There are 423 known sinkholes in the planning area. The karst areas of the Ozark Highlands in the western and southern sections of the planning area are where the majority of sinkholes are located (Figure 3.31). Large clusters exist southeast of Rocheport and to the northwest and south of Columbia. Eight known sinkholes are located within the city limits of Columbia.

The MO DNR has mapped potential collapse areas around the known sinkholes and underground mines (Figure 3.31). These may not be the only potential sinkhole collapse areas however; further development may bring to light previously unknown sinkhole areas in the karst regions and also more abandoned underground mines.

Figure 3.31



The potential for collapse from underground mining is primarily in the northern part of Boone County and associated with coal fields (Figure 3.27). Prior to larger open pit mining activities in Boone County, there were numerous "Mom and Pop" underground coal mining operations; these were small mines using a series of tunnels and pillars. There are 200 known mining locations in the planning area.

Figure 3.32



Source: MO DNR

There is very little documentation on where these operations were located; they do not appear, for the most part, on the collapse potential areas mapped by the DNR (Figure 3.31). In 2011, the Missouri Geological Survey (MO DNR) received funding from the Department of the Interior's Office of Surface Mining to "investigate, collect and scan maps of underground coal mines to make the national inventory of Missouri mine lands as complete as possible." They solicited the public's help in finding old mine maps which might be kept in family records through public announcements, including a YouTube video.

In addition to coal mines, there were also test holes for petroleum drilled in northern Boone County in the Browns Station Anticline and a few underground lead mines in the southern part of Boone County.

Strength/Magnitude/Extent

Sinkholes vary in size and location, and these variances will determine the impact of the hazard. Sinkholes can vary "from a few feet to hundreds of acres and from less than one to more than 100 feet deep," according to the USGS. 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.

There have been 15,981 sinkholes identified in the State of Missouri. One hundred and sixty sinkhole collapses examined by the MO Department of Natural Resources between 1970 and 2007 were less than 10 feet in diameter and less than 10 feet deep. However, there were also some very large collapses within the state: one collapse drained a lake near St. Louis, one drained a sewage lagoon in West Plains, and one in Nixa swallowed a garage with a car in it.

Petroleum drill holes such as found in northern Boone County could be the cause for a localized collapse; one would not want to set a foundation on top of one of them.

Previous Occurrences

There is ample evidence of sinkhole collapse in the planning area but most of it is on public land or in less developed areas. A hiking trail in Rockbridge State Park, located south of Columbia, winds its way around collapsed sinkholes; it is aptly named "The Sinkhole Trail". Property owners in this area have noted numerous sinkholes, with one Pierpont resident finding 3 or 4 in his yard alone.

A sinkhole collapse in the planning area did impact the built environment. On May 12, 2014, a sinkhole collapsed a roadway in southern Columbia. East Gans Creek Road between Ponderosa St. and Discovery Parkway was closed for a day by the Columbia Public Works Department for evaluation of the sinkhole and repair of the roadway. Engineers from the Public Works Department measured the sinkhole at about 6 feet in diameter and 8 feet deep and assessed its formation as due to the karst topography in the area. The sinkhole was filled with concrete and rock before the road was repaired.

Probability of Future Occurrences

High – Boone County, Columbia
Low – Ashland, Centralia, Hartsburg, Rocheport, Huntsdale
Not applicable - All other participating jurisdictions

In the last 20 years there has been one major sinkhole collapse that impacted the planning area. (1/20*100 = 5%) If all sinkhole collapses were documented a much higher rate of collapse would be reflected, but many collapses are either minor and go unnoticed or are in areas that are unpopulated and impact little. New analysis and mapping by MO DNR indicates either close proximity to or overlap of potential collapse areas with the jurisdictions of Ashland, Centralia, Hartsburg and Rocheport. In Ashland, Hartsburg and Rocheport, the collapse potential is associated with known sinkholes; in Centralia, it is associated with underground mines.

The City of Rocheport is actually located completely within a mapped collapse potential area associated with a large number of sinkholes. However, according to information from the city, there is no known history of sinkhole collapse within Rocheport.

CHANGING FUTURE CONDITIONS CONSIDERATIONS

With expected rainfall events to happen more frequently and with higher intensity with climate change, instances of sinkhole collapse could go up in the planning area due to erosion from

flooding and severe runoff exposing depressions below. Periods of rain followed by drought also elevate potential for sinkholes to open up with the fluctuating water table.

VULNERABILITY

VULNERABILITY OVERVIEW

Severity: Low to High

The planning area has 423 known sinkholes and 200 known mines dispersed across many jurisdictions. It is very difficult to predict the severity of a sinkhole collapse due to their great variance in size, varying speeds of collapse onset, and proximity to the built environment.

Potential Impact – Life

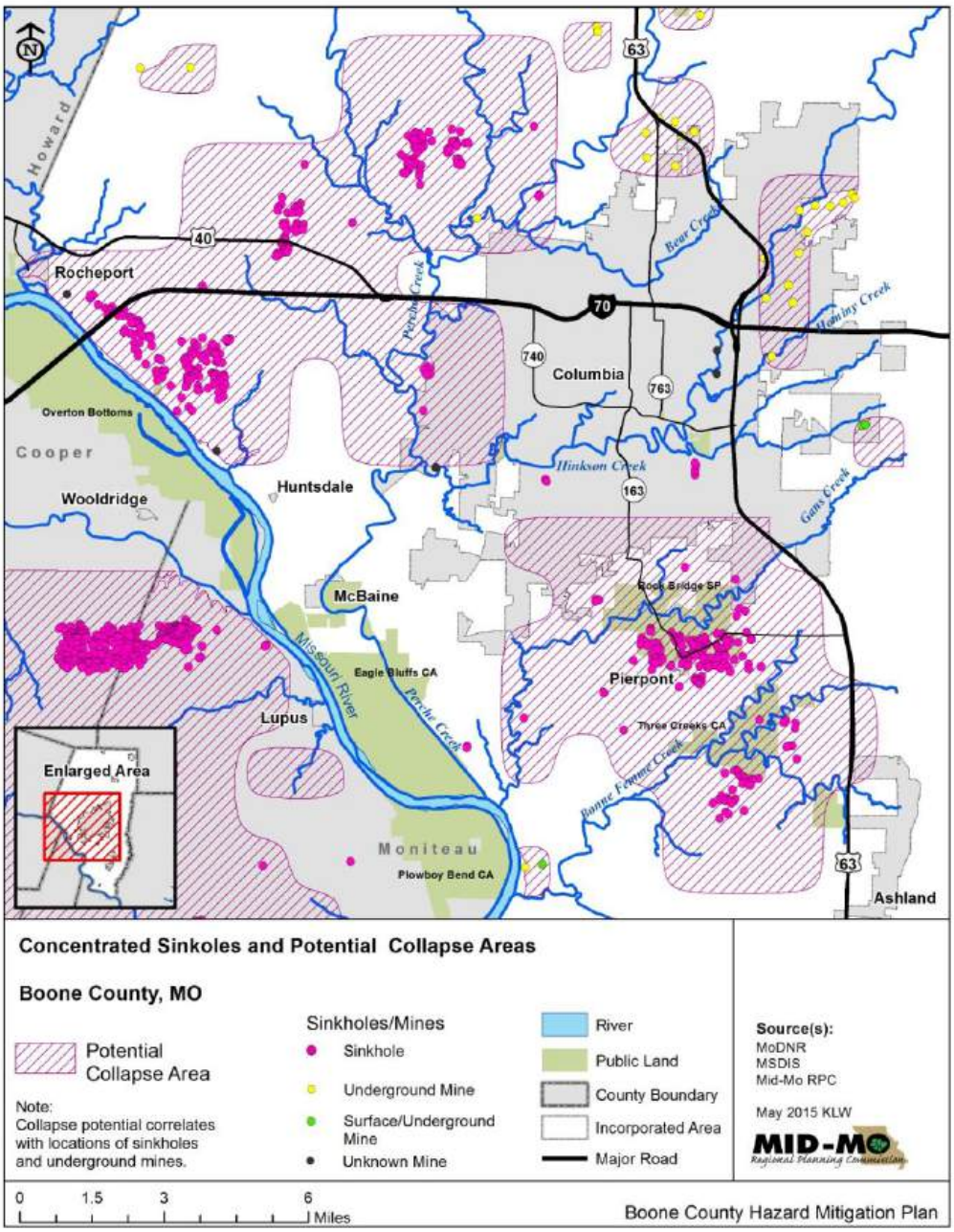
Sinkhole collapse poses a potential threat to human life; there have been numerous news stories in recent years of collapsing sinkholes swallowing up people. In 2013, a man hunting in southern Missouri lost his life when he stepped in a sinkhole which had possibly opened up due to recent heavy rain.

Sinkhole collapse potentially poses a threat to public health via contamination of the water supply. According to information from the Missouri DNR, a 1978 sinkhole collapse in southern Missouri drained the West Plains lagoon, resulting in sewage draining directly into underground water sources. More than 800 local residents reported illness and Mammoth Spring in Arkansas was contaminated.

According to the Boone County Stormwater Design Manual, groundwater in karst systems can move as much as a mile per day; this is contrasted to non-karst areas where groundwater may only move a few feet per year. Obviously, the potential for quick and widespread contamination of groundwater is a major concern in karst areas; “a contaminant may reach some springs or wells within a few hours after entering the groundwater system.”
Another characteristic of karst topography is the presence of losing streams. A losing stream is a surface stream with a direct connection to the groundwater in a local area; this connection has often been formed by the collapse of a sinkhole. According to the Stormwater Design Manual, “Protection of water quality in and near losing streams is critical for protection of groundwater quality in wells and springs.”

The proximity of clusters of sinkholes, and associated potential collapse areas, to losing streams in the planning area is shown in Figure 3.33.

Figure 3.33



Potential losses to existing Development

Sinkholes vary in size and can potentially cause damage to roads, water/sewer lines, buildings, and lagoons. It is difficult to determine the potential impact of land subsidence and sinkholes on existing structures for a number of reasons:

There is a lack of data on historic damages caused by land subsidence and sinkhole collapse in Missouri.

Even with the mapping of known and possible sinkhole locations, it is difficult to predict where a sinkhole will collapse and if the collapse will be significant enough to damage any structures in the vicinity.

Because sinkhole collapse is not predictable there is no direct way to assess a cost impact for this hazard. Vulnerable structures, roads, or property could potentially be impacted by a sudden and usually localized drop in elevation. The resulting damage incurred from the sinkhole could result in broken roads, building collapse, compromises to water sources, environmental impacts, and/or loss of life. While loss of life could occur, it would most likely be minimal.

Potential Impact - Future Development

The threat of sinkhole collapse is poised to potentially become a more serious issue for Boone County and the city of Columbia. Much of this area is considered to have sinkhole collapse potential (Figure 3.33) and there is every reason to believe that the growth trend in these areas will continue.

Construction in these karst topography areas can cause shifts in soil, change drainage patterns, and promote the sinkhole formation. In addition, soil disturbance and changes in drainage patterns may lead to blockage of sinkholes and unforeseen flooding problems.

Hazard by Jurisdiction

The majority of the known sinkholes and potential collapse areas in the planning area are in unincorporated Boone County. The southern part of the planning area is especially vulnerable to this hazard due to the karst topography. Boone County adopted a new Stormwater Ordinance in 2010. The ordinance contains provisions that seek to mitigate the impact of construction on sensitive areas such as sinkholes. The ordinance requires a land disturbance permit for any land disturbance activity within a sinkhole.

A number of the mapped potential collapse areas overlap the boundaries of the City of Columbia. The presence of potential collapse areas in and around the City of Columbia (especially to the south, west, and north) is an important consideration for the jurisdictions of both Boone County and the City of Columbia due to vigorous growth and development in those areas.

Mapped potential collapse areas associated with known sinkholes also overlap the boundaries of a number of other jurisdictions. However, none of these jurisdictions have known sinkholes located within their boundaries.

- Ashland – There is a mapped potential collapse area in the northwest part of the city associated with a large number of known sinkholes.

- Hartsburg – There is mapped potential collapse area in the easternmost part of the city associated with known sinkholes to the north and southeast.

- Rocheport – The city is located within a potential collapse area associated with a large number of sinkholes to the southeast. However, according to city officials, there has never been a known collapse within the city.

PROBLEM STATEMENT

Boone County, Columbia, Ashland, Centralia, Hartsburg, and Rocheport are all vulnerable to land subsidence/sinkholes.

Sinkhole collapse in karst areas poses the threat of contamination of the groundwater over a wide region. The new Boone County Stormwater Ordinance, adopted in 2010, has put permitting regulations in place for any type of land disturbance within sinkhole areas.

Mapped potential collapse areas associated with underground mines exist in the northern part of the planning area. One of these areas lies adjacent to the southeast boundary of the City of Centralia and another within a quarter mile of the northern boundary of the Village of Harrisburg; others lie within the northern and northeastern parts of the City of Columbia.

The potential for land subsidence or collapse from underground mines in northern Boone County is greater than the current mapping would indicate. Historically, there were numerous small underground coal mining operations in the area but the locations of most of these operations are unknown. By tracking new collapse occurrences jurisdictions can more easily discourage land disturbance near potential problem areas.

3.4.6 DROUGHT

DESCRIPTION OF HAZARD

The National Weather Service defines a drought as "a period of abnormally dry weather which persists long enough to produce a serious hydrologic imbalance (for example crop damage, water supply shortage, etc.) The severity of the drought depends upon the degree of moisture deficiency, and the duration and the size of the affected area."

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 focuses 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.

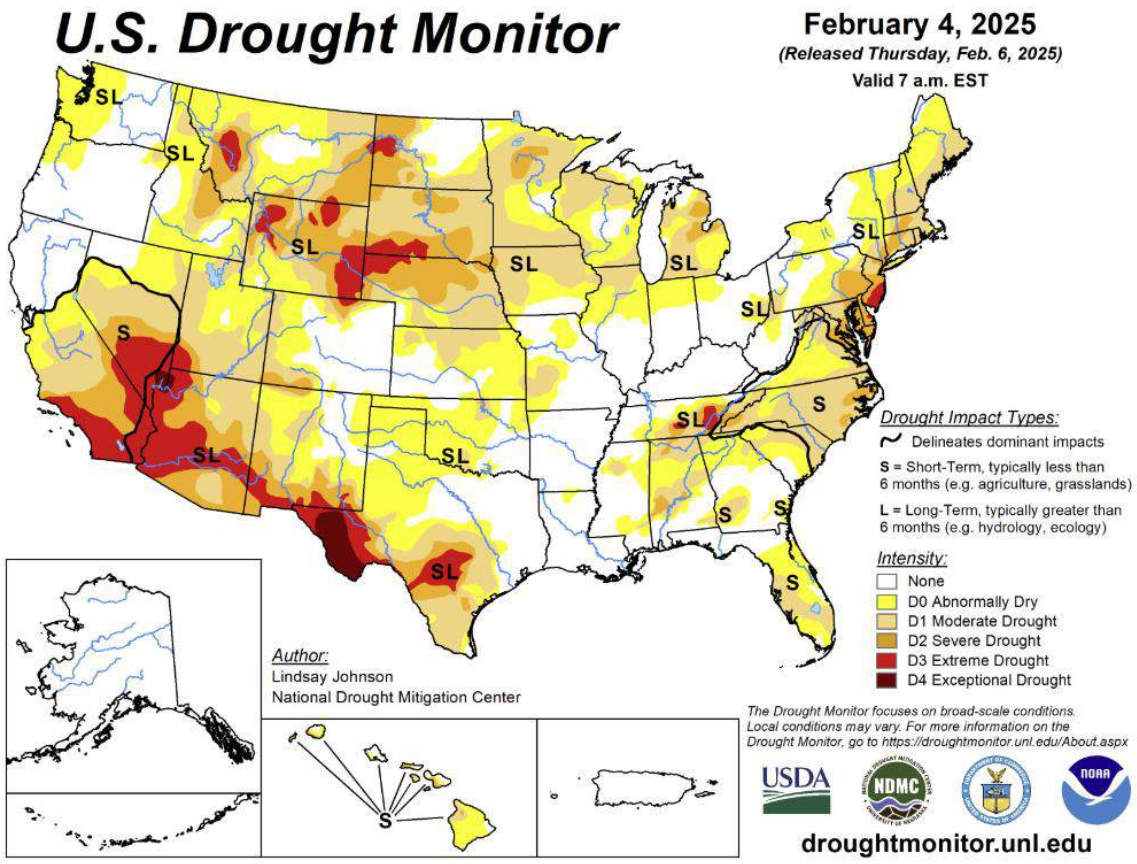
Droughts occur either through a lack of precipitation (supply droughts) or through overuse of water which outpaces what the surrounding environment can naturally support (water use droughts). Water use droughts can theoretically happen anywhere but are generally seen in arid climates, not humid places such as Missouri. At the present time, Missouri is most vulnerable to supply droughts brought on by a lack of precipitation.

The period of lack of precipitation needed to produce a supply drought will vary between regions and the particular manifestations of a drought are influenced by many factors. As an aid to analysis and discussion, the research literature has defined different categories of drought (Table 3.34) The most common type of drought in Mid-Missouri is the agricultural drought.

Geographic Location

The entire planning area is potentially at risk for drought. However, since agricultural drought is most common in Missouri, the unincorporated agricultural areas of Boone County are most at risk. Drought can mean crop failure in these areas and the resulting immediate, and potentially severe, economic loss.

Figure 3.34 U.S. Drought Monitor Map



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

Strength/Magnitude/Extent

Numerous indices have been developed to measure drought severity; each tool has its strengths and weaknesses.

Palmer Drought Severity Index: One of the oldest and most widely used indices is the Palmer Drought Severity Index (PDSI, Figure 4.65), which is published jointly by NOAA and the U.S. Department of Agriculture (USDA). 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.

Table 3.35

Palmer Drought Severity Index (PDSI)

Score	Description	Score	Description
Greater than 4	Extreme moist spell	0 to -0.4	Near normal conditions
3.0 to 3.9	Very moist spell	-0.5 to -0.9	Incipient drought
2.0 to 2.9	Unusual moist spell	-1.0 to -1.9	Mild drought
1.0 to 1.9	Moist spell	-2.0 to -2.9	Moderate drought
0.5 to 0.9	Incipient moist spell	-3.0 to -3.9	Severe drought
0.4 to 0	Near normal conditions	**Below -4.0**	Extreme drought

According to the National Integrated Drought Information System (NIDIS), the PDSI "…uses temperature and precipitation data to calculate water supply and demand, incorporates soil moisture, and is considered most effective for unirrigated cropland. It primarily reflects long-term drought and has been used extensively to initiate drought relief."

Missouri is divided into six regions of similar climactic conditions for PDSI reporting; Boone County is located in the Northeast Region.

Standardized Precipitation Index: A newer index currently being used by The National Drought Mitigation Center (NDMC) is the Standardized Precipitation Index (SPI). This index is based on the probability of precipitation; the time scale used in the probability estimates can be varied and makes the tool very flexible. The SPI is able to identify emerging droughts months sooner than is possible with the PDSI.

The NDMC uses the PDSI, SPI, and three other indicators to classify the severity of droughts throughout the country on a 5-point scale ranging from DO Abnormally Dry to D4 Exceptional Drought for reports on the U.S. Drought Monitor (Table 3.36).

Table 3.36

U.S. Drought Monitor - Drought Severity Classification

Category	Description	Ranges					
		Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Short and Long-term Drought Indicator Blends (Percentiles)
D0	**Abnormally Dry**	Going into drought: short-term dryness slowing planting, growth of crops or pastures. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered	-1.0 to -1.9	21-30	21-30	-0.5 to -0.7	21-30
D1	**Moderate Drought**	Some damage to crops, pastures; streams, reservoirs, or wells low, some water shortages developing or imminent; voluntary water-use restrictions requested	-2.0 to -2.9	11-20	11-20	-0.8 to -1.2	11-20
D2	**Severe Drought**	Crop or pasture losses likely; water shortages common; water restrictions imposed	-3.0 to -3.9	6-10	6-10	-1.3 to -1.5	6-10
D3	**Extreme Drought**	Major crop/pasture losses; widespread water shortages or restrictions	**-4.0 to -4.9**	**3-5**	**3-5**	**-1.6 to -1.9**	**3-5**
D4	**Exceptional Drought**	Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies	**-5.0 or less**	**0-2**	**0-2**	**-2.0 or less**	**0-2**

Source: http://droughtmonitor.unl.edu

Based on the Drought Severity Classification from the NDMC, Boone County is subject to droughts ranging from D1 (Moderate Drought) to D4 (Exceptional Drought). The most common droughts are in the D1-D2 range.

Previous Occurrences

The Dust Bowl years of the 1930s and early 1940s were dry in Missouri but not as dry as the period 1953-57. A major nationwide drought in the late 1980s resulted in low water and decreased barge traffic on the Mississippi and Missouri Rivers. The fall of 1999 was another serious drought period in the state; in October of that year, all counties in Missouri were declared agricultural disaster areas by the USDA.

Information for droughts since the year 2000 is available online via weekly maps prepared by the U.S. Drought Monitor. Drought events for Boone County, and information about their severity, are shown in Figure 4.69.

According to the Drought Impact Report Dashboard by the National Drought Mitigation Center at the University of Nebraska, there have been 3 drought incidents reported in the last 5 years. From 6/16/2023 - 7/16/2023 in Columbia, cattle producers had to raise beef prices because there was not enough grass or hay. Most hay fields that spring produced 25% to 50% of the normal yield, according to a beef nutrition specialist at the University of Missouri Extension. From 10/22/2022 - 10/22/2022 in Rocheport, there was a large brush fire in neighboring Cooper County leading to the closure of Interstate 70 and the Missouri River Bridge at Rocheport. This fire destroyed most of the neighboring community of Wooldridge. Dry vegetation, low humidity levels and windy conditions contributed to dangerous fire conditions in the area. From 6/16/2023 - 10/12/2023, there were drought impacts reported in Hartsburg. As farmers prepared for the annual pumpkin festival, they had to import pumpkins to ensure there were enough for the event due to local shortages after an intense summer of drought. (https://unldroughtcenter.maps.arcgis.com/apps/dashboards/46afe627bb60422f85944d70069c09cf)

According to USDA's Risk Management section there have been crop losses due to drought every year since 2015 in Boone County. In the past 10 years, annual losses have ranged from $2,157.30 in 2015 to $2,914,468.20 in 2023.

Insured Crop Loss Payments in Boone County as a Result of Drought

Year	Total Payments
2024	$428,037.20
2023	$2,914,468.20
2022	$1,025,321.00
2021	$323,935.90
2020	$98,421.00
2019	$5,328.00

2018	$412,512.86
2017	$151,845.37
2016	$2,005.00
2015	$2,157.30

Probability of Future Occurrences
In the 20-year period from 01/01/2005-01/012025, there were 478 months with drought in the planning area, according to the U.S. Drought Monitor. Based on this data, the calculated probability of having a drought in some month of the year is 46%.

Changing Future Conditions Considerations
Droughts are naturally occurring events in the planning area. While overall precipitation is predicted to rise with climate change the intensity of rainfall events at a given time could mean less rainfall at other times throughout the season leading to more frequent droughts and crop failures. Raising global temperatures could lead to more severe droughts.

VULNERABILITY

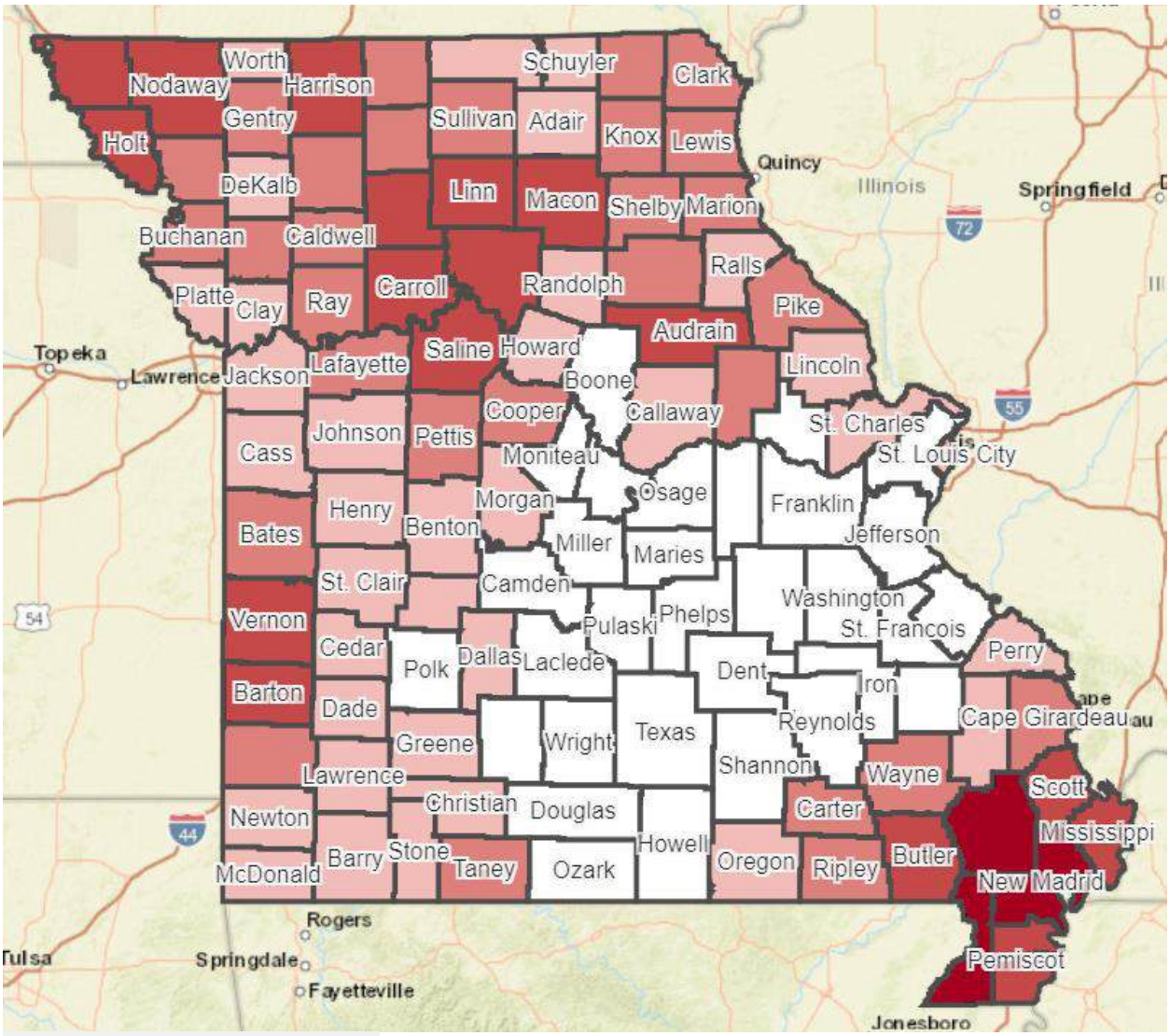
Severity
Moderate – Boone County (unincorporated)
Low - all other participating jurisdictions

The primary affect of drought in the planning area is on the economic livelihood of those in the agricultural sector. Both crops and livestock are at risk from drought. During the past 5 years, there were drought impacts that affected agriculture in Boone County from hay shortages to higher beef prices, to pumpkin shortages. Additionally, rural water districts often experience shortages in Missouri due to drought.

According to the analysis from the 2023 Missouri State Plan, Boone County is located mostly in Region B with a Moderate Susceptibility for droughts with the northwest portion of the planning area in 3.67 Region C indicating a High Susceptibility for droughts, and a Medium-High Vulnerability for droughts.



Source: Missouri State Hazard Mitigation Plan 2023



Source: Missouri Hazard Mitigation Viewer 2023

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.

Excessive drought can also cause damage to roads, streets, water mains, and building foundations. This is especially true in the Claypan Till Plains area (Figure 2.3) which includes the jurisdictions of Ashland, Centralia, Hallsville, Sturgeon and eastern portions of Columbia. The clay soils expand and contract to a high degree depending on moisture or lack thereof; this soil movement can cause structural movement, settlement, and breaks. During the drought of 2012, local media carried stories encouraging homeowners to water their foundations.

The arid conditions created by drought also pose an increased risk of fire and wildfire.

Drought can also have far reaching economic consequences beyond the agricultural sector; businesses dependent upon that sector can also suffer serious losses. A severe drought can affect the economics of an entire region.

Impact of Previous and Future Development

Drought is primarily an issue of water supply for the rural and agricultural parts of the planning area. Almost 55% of the land in Boone County is agricultural and agriculture plays an important role in the life and economy of the area. This makes drought mitigation an especially important concern as population increases.

Boone County experienced 15% population growth between 2010 and 2020, according to the U.S. Census. This growth rate is far above the Missouri state average (2.8%) and the national growth rate of 7.4%. However, census data indicates that almost all of this growth occurred in the incorporated cities. There was only a 5% growth rate in unincorporated Boone County, the area most affected by drought.

Were there to be a large increase in growth in the rural areas of the county, the interconnection of water supplies and good land management techniques would become increasingly important in mitigating the impacts of drought.

Hazard Summary by Jurisdiction

All jurisdictions in the planning area can be impacted by drought. Incorporated cities may see a drain on their water supply in times of extreme drought and wear on roads under cracking and shrinking dry ground can become damaged. The largest impact to drought though comes to

unincorporated Boone County due to the agriculture-based nature of its economy and land usage. Crop losses deal large economic blows and the potential for wildfire pose a risk to those living nearby.

PROBLEM STATEMENT

Drought of some degree is a common occurrence in the planning area. The unincorporated agricultural areas of Boone County are the most vulnerable but all jurisdictions are potentially vulnerable to both direct structural damage and cascading economic effects during extended and serious drought conditions. In addition to damage to crops, produce, livestock, soil and the resulting economic consequences, the arid conditions created by drought pose an increased risk of fire. There is also the risk of damage to infrastructure from drought such as pipes and foundations cracking.

Drought conditions are carefully monitored at the state and national levels; state law requires the Missouri Department of Natural Resources to implement a drought response system to ensure the quantity and quality of available water resources. The agriculture industry is usually the worst hit by drought. Having crop insurance and practicing good water management in growing methods can help mitigate losses.

3.4.7 EXTREME TEMPERATURES

HAZARD PROFILE

DESCRIPTION OF HAZARD

Extreme temperature events, both hot and cold, can impact human health and mortality, natural ecosystems, agriculture, and other economic sector. Extreme heat is the number one weather-related killer in the United States, according to the National Weather Service (Figure 3.30). In contrast to the visible, destructive, and violent nature of floods, hurricanes, and tornadoes, extreme heat is a silent killer. 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 3.11 uses both of these 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

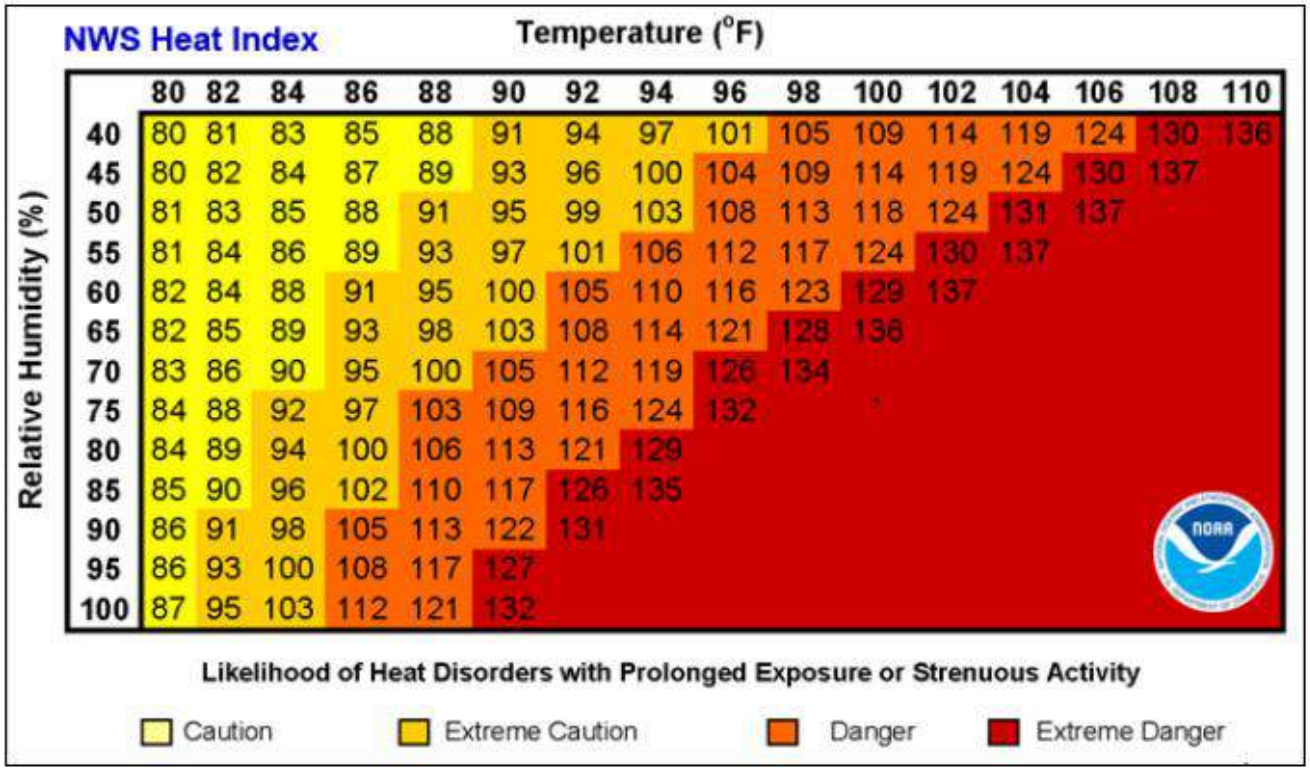
The entire planning area is subject to extreme heat, and there is no variation amongst the participating jurisdictions.

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. July is the hottest month and averages around 88 degrees Fahrenheit with an average relative humidity in the 60% range. With such a heat and humidity combination it doesn't take long to see heat indexes in the extreme caution zone and at least a couple days a year into the danger zone for all jurisdictions in Boone County.

Figure 1.1. Heat Index (HI) Chart



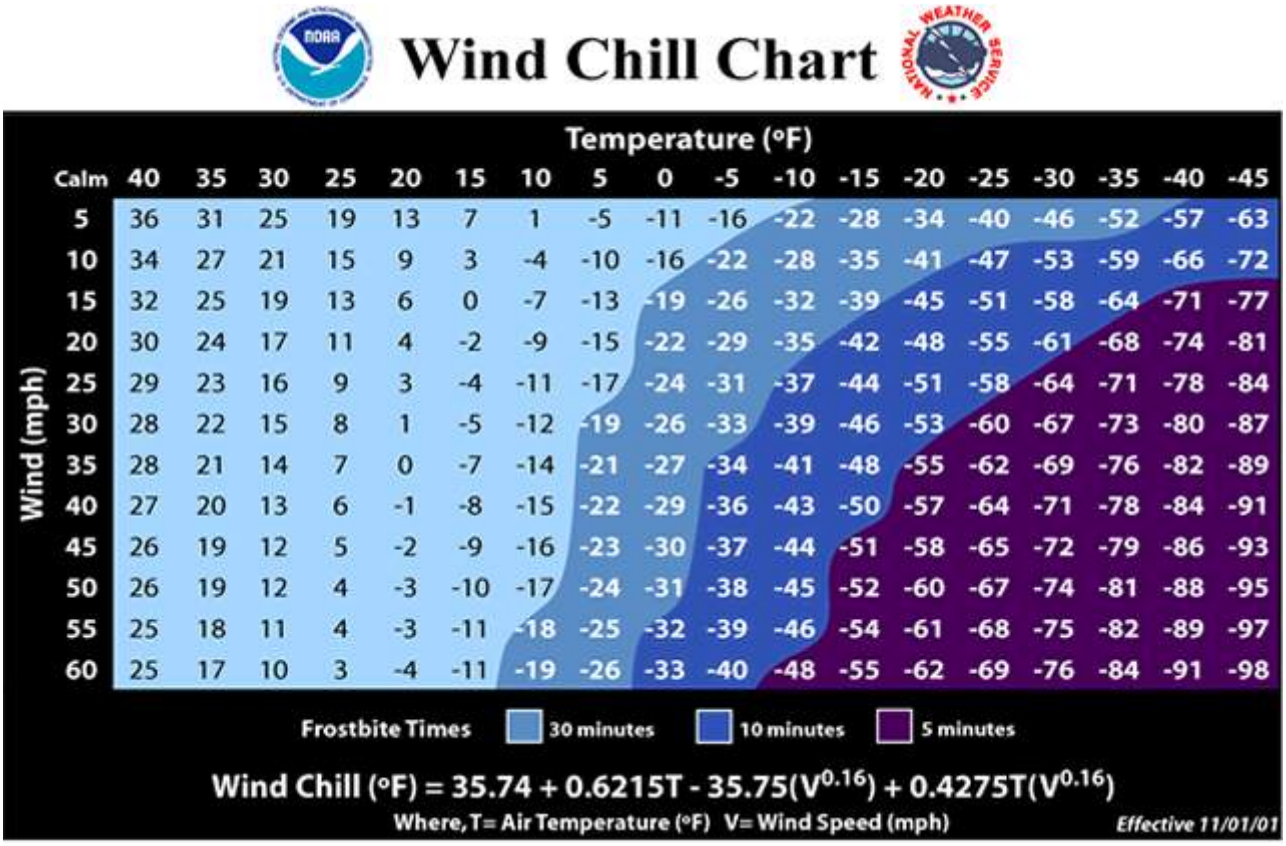
Source: National Weather Service (NWS); https://www.weather.gov/safety/heat-index

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. The figure 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. The average winter low is around 23 degrees with an average wind speed of between 12 and 17mph which can create a feel-like temperature of around 15 degrees. Any time in December, January, or February Boone County will experience actual

low temperatures between 0 and -9 for multiple days. With ambient temperatures this low it takes very little wind at all to cause quick on-set frostbite.

Figure 1.2. Wind Chill Chart



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

Previous Occurrences

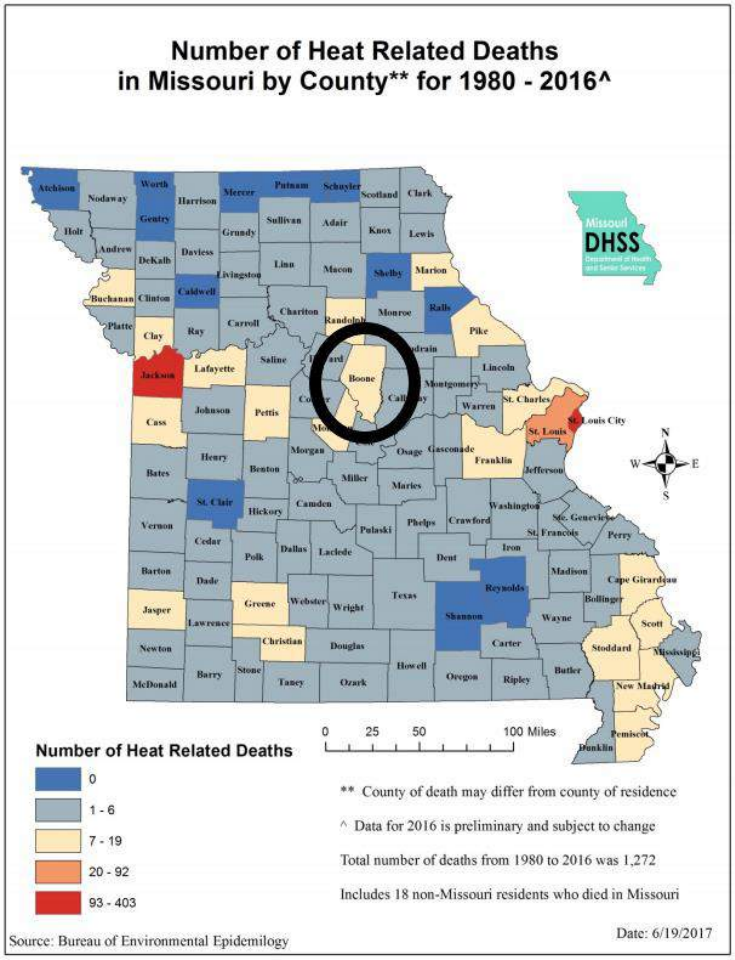
Table 3.38				
Periods of Extreme Heat in Boone County, 2000-2025				
Date	**Air Temp**	**Deaths***	**Injuries***	**Length (days)**
12/16/00	9	0	0	2
08/05/07	100-103	0	0	12
06/21/09	90s	0	0	7
06/18/10	mid 90s	0	0	6
07/14/10	100 - 103	0	0	3
07/17/10	mid-90s	0	0	1
07/22/10	mid-upper 90s	0	0	3
08/02/10	100 -102	0	0	3

08/08/10	upper 90s - 100	0	0	7
07/17/11	lower 90s - 100	0	0	18
06/27/12	100 -109	0	0	11
07/16/12	100 -106	0	0	4
07/22/12	up to 108	0	0	6
08/01/12	105	0	0	2
08/20/14	Upper 90s	0	0	7
07/12/15	Upper 90s	0	0	2
07/17/15	Mid 90s	0	0	1
07/25/15	Mid 90s	0	0	4
07/18/16	Upper 90s	0	0	5
07/18/17	Upper 90s – 108	0	0	5
08/20/2023	118 heat index	0	0	5
Total Deaths/Injuries and Average Length		0	**0**	**5.5**
Source: www.ncdc.noaa.gov/stormevents/ (Available data as of 2/13/2025)				

In recent years, there have been some notable periods of extreme heat and new temperature records set in the planning area:

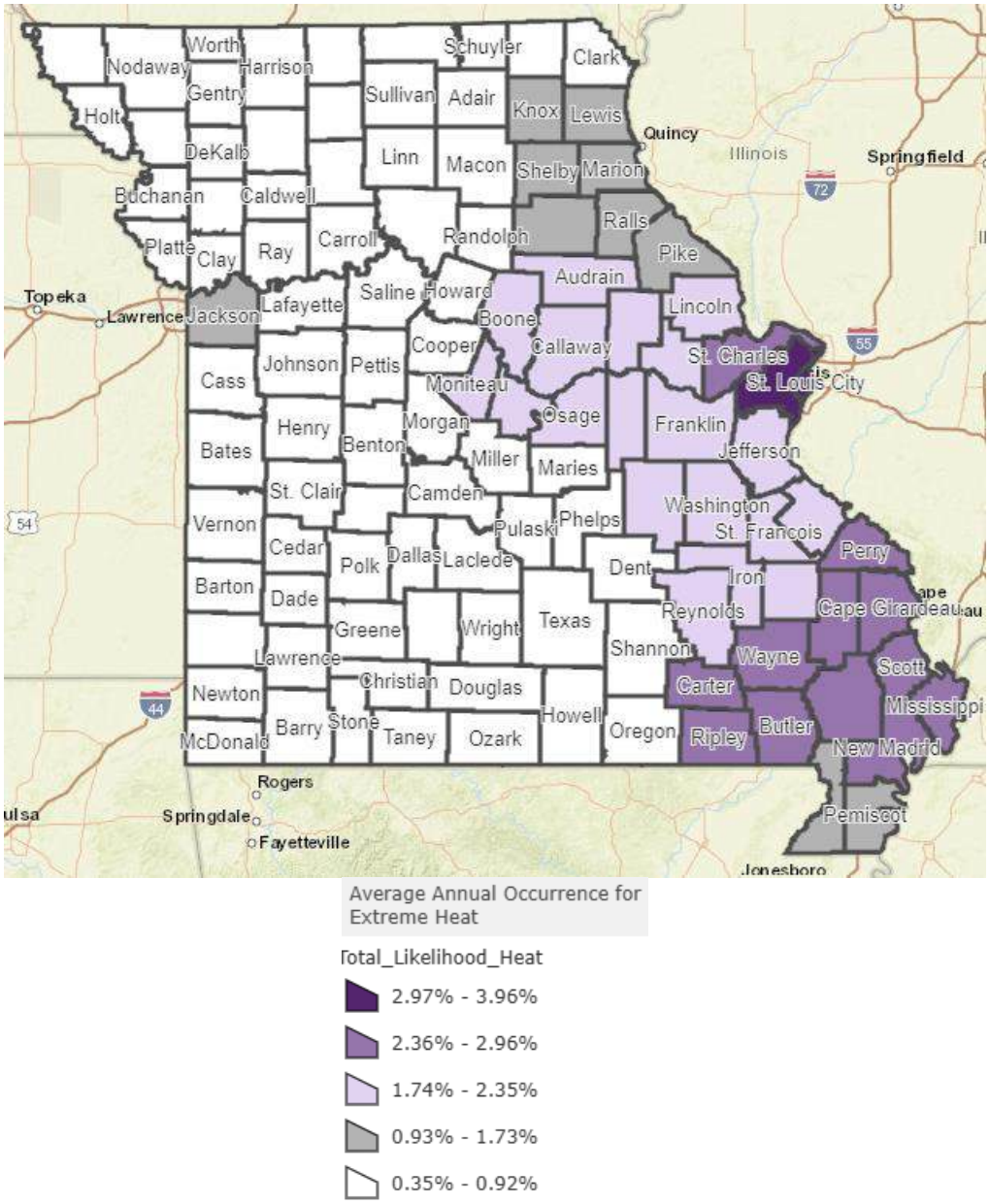
2007 - Over 100 on six days in August (Columbia)
2007 - New record for August 16th of 103 degrees (Columbia)
2011 - New record for August 2nd of 108 degrees (Columbia)
2012 - Over 100 degrees from June 27-July 7 (Columbia)
2023 – Over 118 degree heat index from August 20-25 (Columbia)

Figure 3.38

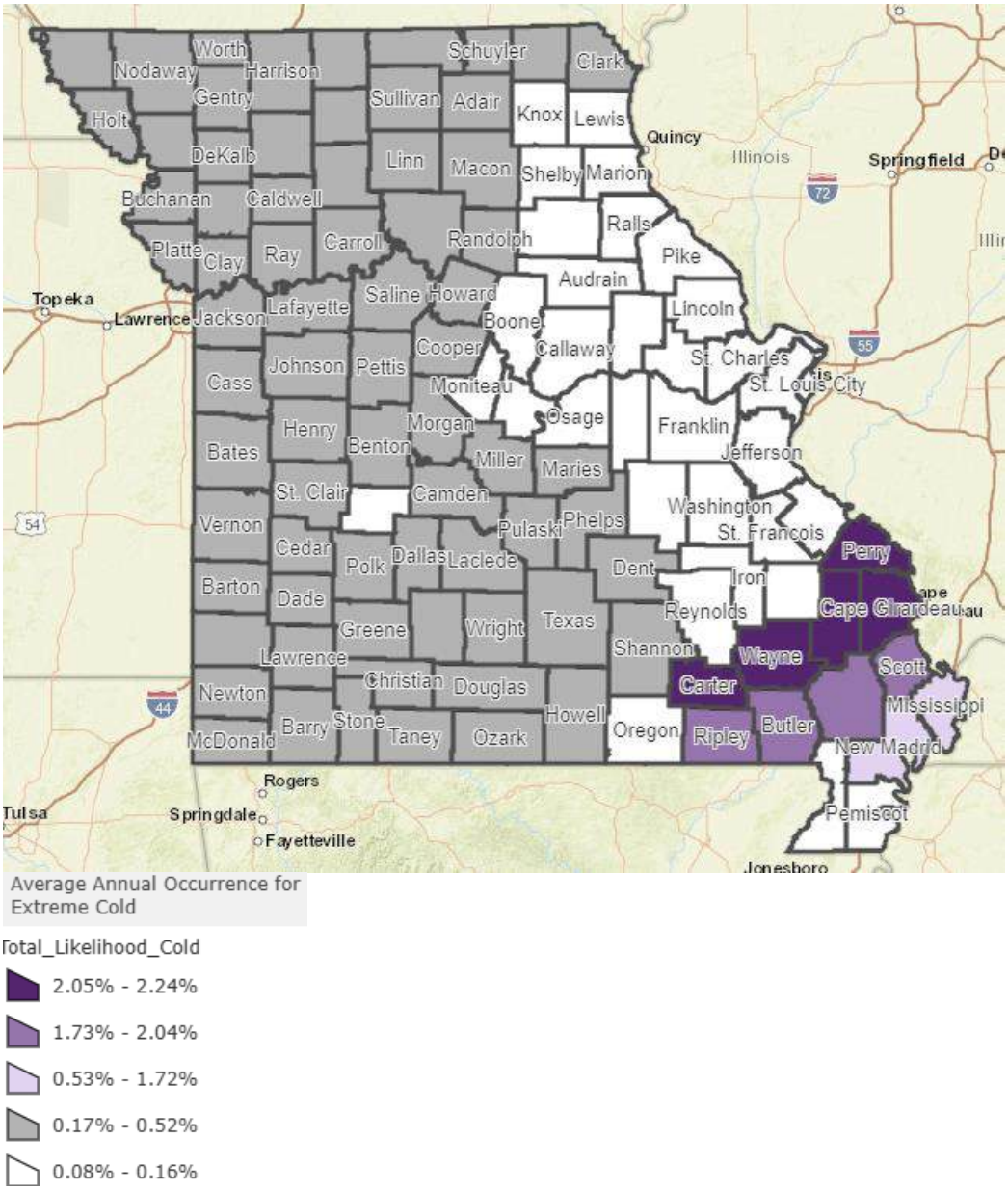


Source: https://health.mo.gov/living/healthcondiseases/hyperthermia/pdf/stat-report.pdf

Figure 3.38



Source: Missouri Hazard Mitigation Viewer



Source: Missouri Hazard Mitigation Viewer

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 2015 to 2024 were $132,299.85, with the vast majority occurring in 2023. 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. During the same period, 0 deaths were

recorded in the planning area, according to NCEI data. The National Weather Service stated that among natural hazards, no other natural disaster—not lightning, hurricanes, tornadoes, floods, or earthquakes—causes more deaths.

Insured Crop Loss Payments in Boone County as a Result of Heat

Year	Total Payments
2024	$ 25,382.00
2023	$ 106,837.00
2022	$ -
2021	$ -
2020	$ -
2019	$ -
2018	$ -
2017	$ 80.85
2016	$ -
2015	$ -

Insured Crop Loss Payments in Boone County as a Result of Cold

Year	Total Payments
2024	$ -
2023	$ 20,768.30
2022	$ 23,784.00
2021	$ 5,049.00
2020	$ 8,437.00
2019	$ 234,542.25
2018	$ 102,634.80
2017	$ 11,463.00
2016	$ -
2015	$ 37,163.00

Probability of Future Occurrence

– High for all participating jurisdictions

NOAA data dating back to 1994 indicates 10 years without extreme heat events (1996, 1997, 2008, 2013, 2018, 2019, 2020, 2021, 2022, and 2024). In most years during that period, there were multiple extreme heat events. Based on this historical data, the calculated probability of an extreme heat event in any year is 66%. (Probability calculation: 1- (10/30) = 0.66)
NOAA data dating back to 1994 indicates that there was only 1 year with an extreme cold event. That event took place in 2000. This makes for a probability of an extreme cold event in any year 1%. (Probability calculation: 1-(1/30) = 0.96)

The chances of an extreme heat event are much higher and happen much more frequently than extreme cold but cool snaps that may not bother humans can bother crops. Insurance claims between 2015 and 2024 show $443,841.35 in damages due to cold weather.

Changing Future Conditions Considerations

According to the Missouri State Hazard Mitigation Plan 2023, the prevalence and intensity of heat waves is expected to increase as temperatures increase due to greenhouse gas emissions. Heat will especially increase in urban areas with more paved areas, less vegetation, and higher concentrations of vulnerable populations.

VULNERABILITY

VULNERABILITY OVERVIEW

Measure of Severity - Moderate for all participating jurisdictions

Potential Impact – Life

Extreme temperatures kill by overloading a body's capacity to regulate its internal temperature. The human body cools itself by perspiring; the evaporation of perspiration carries excess heat from the body. High humidity often accompanies heat in Missouri and increases the danger to warm-blooded humans and animals. High humidity makes it difficult for perspiration to evaporate and thus interferes with this natural cooling mechanism. The body attempts to heat itself through shivering when faced with cold.

The Heat Index devised by the NWS (Table 3.39) is a measure of how hot it really feels. The Heat Index takes into account both air temperature and relative humidity. It also gives an indication of the added risk presented by high humidity to bodies attempting to cool. One known death occurred in the planning area in August 2002 when a 59-year-old Boone County man died from heat exhaustion after collapsing while doing yard work.

Table 3.39 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

Many factors, such as age, general level of health, outdoor activity level, and availability of adequate shelter and clothing, affect the actual risk level. The elderly in general are vulnerable to the effects of extreme temperatures. Hypothermia sets in when internal body temperatures fall below 95 F. While this is most likely to occur when temperatures outside are extremely cold it is

possible to happen slowly at temperatures as high as 40 F if the exposure is prolonged and exacerbated by chill caused by sweat, rain, or submersion into cold water.

With extreme temperatures come more pressure on the power grid as people run heavy electrical load devices such as AC units to cool and space heaters to keep up with heat loss in older and less insulated structures. On extreme temperature days we are vulnerable to rolling blackouts to offset power usage. Losing power at any critical temperature time could have devastating impacts on life.

Extreme temperature events can also result in livestock deaths and fish kills; drought in conjunction with extreme heat exacerbates the situation. Strenuous outdoor activity in extreme cold can also be life threatening. Frostbite can lead to the loss of limbs and hypothermia can result in death.

Potential Impact - Existing Structures

While illness and loss of life are of the most concern with extreme temperatures, structural impacts may also occur. Structural impacts depend on the length of the period of extreme temperature and exacerbating factors such as concurrent drought or heavy precipitation. Road damage and electrical infrastructure damage may occur with intense and prolonged heat. Water pipes may break with steep drops in temperature below freezing and cold temperatures can make materials more brittle and prone to failure.

Potential Impact - Future Development

Thoughtful future development has the potential to include mitigation for extreme temperatures in its design. This is true on all levels ranging from actions by individual homeowners to larger redevelopment projects planned by cities. Properly placed shade trees can contribute greatly to lowering inside temperatures and the load placed on cooling systems. Planning for adequate green space as cities infill allows for air movement and shaded locations. Placing utilities below ground under the freeze line can protect them from bitter cold temperature that could cause failure.

Hazard Summary by Jurisdiction

Those at greatest risk for temperature-related illness and deaths include children under 5 years of age and people over the age of 65. To determine jurisdictions within the planning area with populations more vulnerable to extreme temperatures, demographic data was obtained from the 2018 American Community Survey estimates for populations 5-years-old and younger, as well as ages 65 and older. Since students and faculty of school districts are not typically part of the vulnerable age groups they have been left out of the following table.

Table 3.40: Boone County Population by Age

Jurisdiction	Population Under 5 yrs	Population 65 yrs and over
Unincorporated Boone County	10,403	19,080
Ashland	282	520
Centralia	368	845

Columbia	7,053	11,588
Hallsville	65	215
Harrisburg	33	32
Hartsburg	1	21
Huntsdale	0	5
Rocheport	21	64
Sturgeon	28	190

Source: American Community Survey 5-year Estimates 2012-2017

The City of Columbia, the major population center in the planning area, is well equipped with warming/cooling centers to help protect those most vulnerable. Warnings regarding the dangers of extreme temperatures are widely broadcast during times of threat.

The following locations in Columbia are used as cooling/warming centers during business hours:

- Activity & Recreation Center (ARC)
- Armory Sports and Community Center
- Boone County Government Center
- Columbia/Boone County Health Department
- Columbia Public Library
- Salvation Army
- Salvation Army Harbor House
- St. Francis House

The following departments, agencies, and organizations all are involved in educating the public about the dangers of extreme weather and/ or issuing alerts when the threat of extreme temperatures is imminent:

The Boone County/City of Columbia Health Department alerts the public on the dangers of extreme temperatures.

The Missouri State High School Activities Association (MSHSAA) provides coaches with educational pamphlets on the dangers of excessive heat. Schools in the planning area have air conditioning in their main buildings and many of their detached buildings, but warnings should be taken into consideration for outdoor sports and practices. Many schools in the planning area are closed for summer session during the more hot portions of the summer season.

The Missouri Department of Health and Senior Services announces statewide hot weather health alerts.

The National Weather Service (NWS) has devised a method to warn of advancing heat waves up to seven days in advance. The new Mean Heat Index is a measure of how hot the temperatures actually feel to a person over the course of a full 24 hours. It differs from the traditional Heat Index in that it is an average of the Heat Index from the hottest and coldest times of each day.

The National Weather Service initiates alert procedures when the Heat Index is expected to exceed 105°- 110°F for at least two consecutive days. (The exact Heat Index temperature used depends on specifics of the local climate.)

PROBLEM STATEMENT

All jurisdictions are vulnerable to the effects of extreme temperatures. Extreme heat is already responsible for more weather-related deaths than any other hazard in the country; it is also one of the hazards shown to be increasing with changes in the climate.

Heat stroke and loss of life are the most significant consequences of extreme heat. While heat-related illness and death can occur due to exposure to intense heat in just one afternoon, heat stress on the body has a cumulative effect. The persistence of a heat wave increases the danger.

The elderly in general are vulnerable to the effects of extreme temperatures; the 2010 Census recorded 15,072 citizens in Boone County (9.3% of the population) as 65 years and older. However, any residents without access to air conditioning, or shade and water if outside, are very vulnerable to this hazard. Likewise, frostbite and hypothermia can set in for those who cannot afford to heat their homes or who must be out in extremely cold temperatures. Older structures with less insulation may be at risk for frozen pipes. Outreach to raise awareness amongst the most vulnerable populations and educating those about where warming and cooling centers are located can help mitigate the potential loss of life that can come with extreme temperatures.

In addition to the human toll, prolonged extreme temperatures can result in livestock deaths, fish kills, and infrastructure damage; drought in conjunction with extreme heat exacerbates the situation. Winter weather can also take a toll on crops in the area. Unseasonable cold snaps and late frosts can kill and damage crops costing thousands of dollars in insurance claims.

3.4.8 SEVERE THUNDERSTORMS (INCLUDING DAMAGING WINDS, HAIL, AND LIGHTNING)

DESCRIPTION OF HAZARD

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. Warm, humid climates, such as that in mid-Missouri, are favorable for the formation of thunderstorms. Severe thunderstorms most often occur in Missouri in the spring and summer, during the afternoon and evenings, but can occur at any time.

The average Missourian is well aware of the hazards of the thunderstorm season; these include heavy rains and, potentially, strong winds, tornadoes, hail, and lightning strikes. The effects of heavy rains have been considered in the sections on flooding and tornadoes.

Thunderstorms can range in complexity from single cell storms through multicell cluster storms, multicell line storms (squall lines), and on to supercell storms. A single cell thunderstorm typically lasts 20-30 minutes but when numerous cells are generated, as in a multicell storm, the thunderstorm can last for hours. Supercell storms include rotation and are responsible for the generation of severe tornadoes.

Severe and damaging winds in the planning area are usually, but not always, associated with thunderstorms. A severe thunderstorm can produce winds causing as much damage as a weak tornado. Thunderstorm winds can reach speeds up to 100 mph and produce damage paths for hundreds of miles. According to the National Oceanic and Atmospheric Administration (NOAA), property and crop damage from thunderstorm winds is more common, and can be more severe, than damage from tornadoes. Thunderstorm wind damage accounts for half of all the NOAA reports of severe weather events in the lower 48 states. 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. Thunderstorm winds are often called "straight-line" winds to distinguish them from tornadoes, which have a rotational element. Much of the damage caused by high winds occurs because of falling trees; people, buildings, and vehicles may be damaged by falling trunks and branches. Power lines may be blown or knocked down and people left without electricity. In some cases, roofs are directly blown off buildings and windows are shattered.

A derecho is a widespread, massive, and violent thunderstorm wind event producing straight-line winds in excess of 70 mph and moving quickly over large areas. These are not common events; however, in the spring of 2009, a massive derecho almost as large as the state of Missouri caused extensive damage in southern Missouri and Illinois.

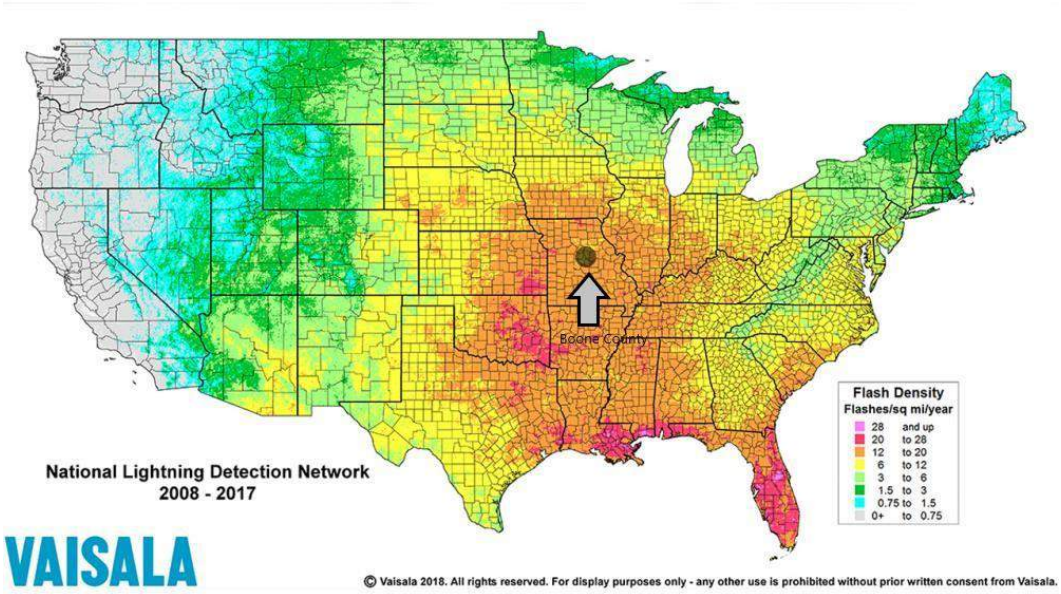
All thunderstorms produce lightning which can strike outside of the area where it is raining and is has been known to fall more than 10 miles away from the rainfall area. Thunder is simply the sound that lightning makes. Lightning is a huge discharge of electricity that shoots through the air causing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

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. Hail, especially large sized hail, can cause severe damage and presents a threat to automobiles, airplanes, roofs, crops, livestock, and even humans.

Location

The entire planning area is at risk from severe thunderstorms and all the related threats accompanying them. Although these events occur similarly throughout the planning area damages are more likely to occur in more densely developed areas and areas with older homes. Boone County is located in central Missouri and has a medium flash density of 6-12 Flashes/square mile/year.

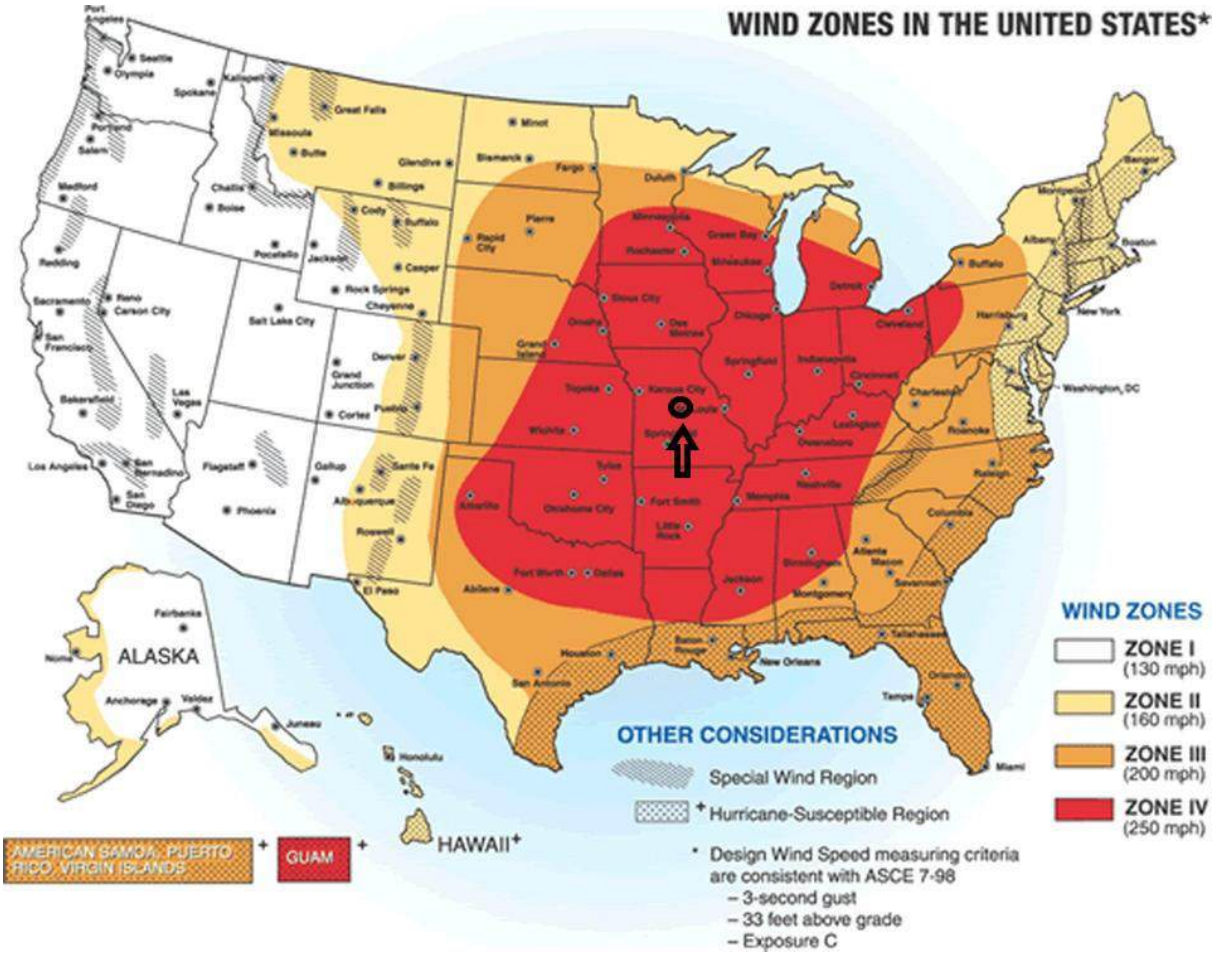
Figure 3.39: Location and Frequency of Lightning in Missouri



Source: National Weather Service, http://www.vaisala.com/en/products/thunderstormandlightningdetectionsystems/Pages/NLDN.aspx . Note: indicate location of planning area with a colored square or arrow.

The Planning area is in a high wind zone according to FEMA. All of the planning area is located in Zone IV and can see winds of 250 mph.

Figure 3.40 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

The National Weather Service considers a thunderstorm "severe" when it includes one or more of the following: winds gusting in excess of 57.5 mph, hail at least 0.75 inch in diameter, or a tornado. The NOAA database records thunderstorm events which fall into this severe classification.

Based on information provided by the Tornado and Storm Research Organization (TORRO), Table 3.41 below describes typical damage impacts of the various sizes of hail.

Table 3.41: Hail Damage by Size

Intensity Category	Diameter (mm)	Diameter (inches)	Size Description	Typical Damage Impacts
Hard Hail	5-9	0.2-0.4	Pea	No damage
Potentially Damaging	10-15	0.4-0.6	Mothball	Slight general damage to plants, crops
Significant	16-20	0.6-0.8	Marble, grape	Significant damage to fruit, crops, vegetation
Severe	21-30	0.8-1.2	Walnut	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
Severe	31-40	1.2-1.6	Pigeon's egg > squash ball	Widespread glass damage, vehicle bodywork damage
Destructive	41-50	1.6-2.0	Golf ball > Pullet's egg	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
Destructive	51-60	2.0-2.4	Hen's egg	Bodywork of grounded aircraft dented, brick walls pitted
Destructive	61-75	2.4-3.0	Tennis ball > cricket ball	Severe roof damage, risk of serious injuries
Destructive	76-90	3.0-3.5	Large orange > Soft ball	Severe damage to aircraft bodywork
Super Hailstorms	91-100	3.6-3.9	Grapefruit	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
Super Hailstorms	>100	4.0+	Melon	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Source: Tornado and Storm Research Organization (TORRO), Department of Geography, Oxford Brookes University

Notes: In addition to hail diameter, factors including number and density of hailstones, hail fall speed and surface wind speeds affect severity. http://www.torro.org.uk/site/hscale.php

According to information from NOAA, a lightning bolt can contain 100 million to 1 billion volts of electricity and billions of watts of energy. This energy can heat the air around the lightning 18,000 to 60,000 °F.

Previous Occurrences

The NCEI is limited in its reporting of lightning due to the fact that only lightning events that result in fatality, injury and/or property and crop damage are in the NCEI. There were no direct reports of lighting for the review period in the planning area. The tables below summarize past crop damages as indicated by crop insurance claims and give insight into the magnitude of the impact on the planning area's agricultural economy.

Table 3.42 Crop Insurance Claims Paid in Boone County from Thunderstorms, 2009-2019

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2016	Corn	Other, storms	58,485
2014	Wheat	Other, storms	1,983
2023	Corn	Other (lightning, snow, etc.)	3,516

2023	Soy	Other (lightning, snow etc.)	5,283
2024	Wheat	Other (lightning, snow, etc.)	9,355
Total			60,468

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

Table 3.43 Crop Insurance Claims Paid in Boone County from High Winds, 2009-2019

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2016	Corn	Wind	185
2011	Corn	Hot Wind	112
Total			297

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

Table 3.44 Crop Insurance Claims Paid in Boone County from Hail, 2009-2019

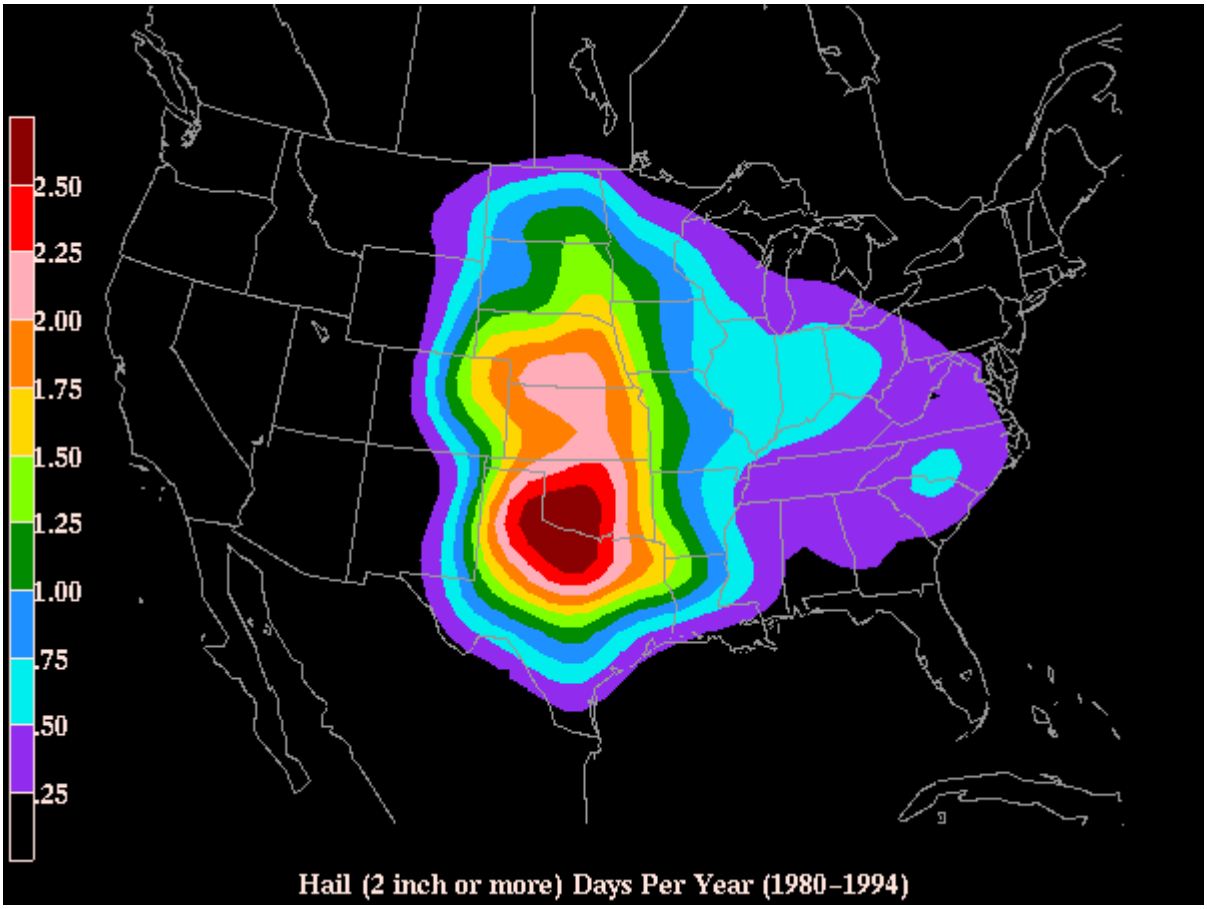
Crop Year	Crop Name	Cause of Loss Description	Insurance Paid
2016	Corn	Hail	926
2011	Wheat	Hail	387
2009	Corn	Hail	317
2022	Soybeans	Hail	9,979
Total			1,630

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

Probability of Future Occurrences

High for damaging winds, hail, and lightning – All participating jurisdictions

Figure 3.41 Annual Hailstorm Probability (2" diameter or larger) 1980-1994

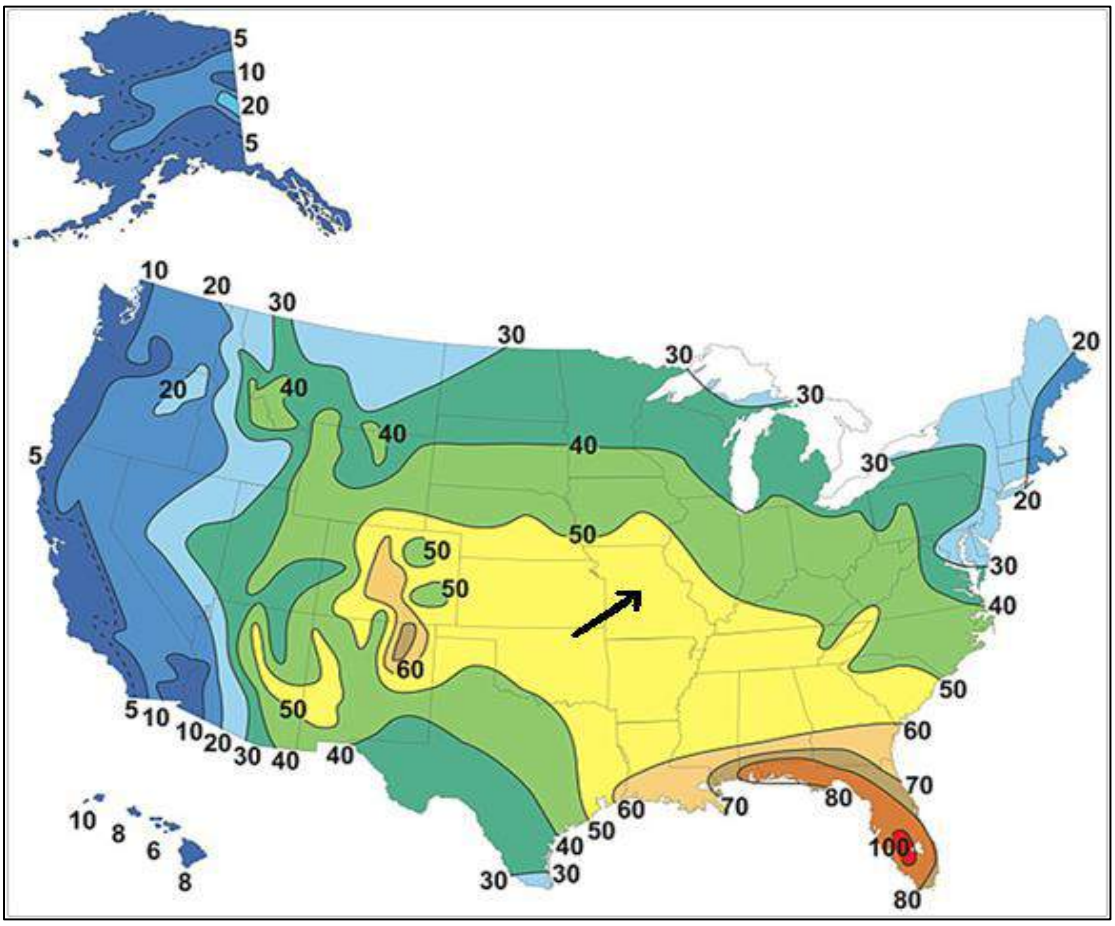


Source: NSSL, http://www.nssl.noaa.gov/users/brooks/public_html/bighail.gif

The planning area is indicated to have at least 1 hailstorm event a year according to NOAA.

National Weather Service data indicates an average 50-60 thunderstorm days per year in Missouri (Figure 3.37).

Figure 3.42 Average Number of Thunderstorm Days Annually in U.S.



Source: NOAA

Data from NOAA for the 10-year period 2014-2024 indicates 59 severe thunderstorm wind events in Boone County. Every year had at least 1 severe thunderstorm wind event. Based on this data, the calculated probability of a future severe thunderstorm wind event in any given year is 100%.

Data from NOAA for the 10-year period 2014-2024 indicates 28 severe hail events in Boone County. There were no hail events in 2021 or 2022, however most other years had multiple events. Based on this data, the calculated probability of a future severe hail event in any given year is 100%.

Data from NOAA for the 10-year period 2014-2024 indicates 2 lightning events in Boone County which caused property damage, injury, or death. There were 8 years during this period without such a reported event in the planning area. Based on this data, the calculated probability of a future lightning event causing property damage, injury, or death in any given year is 20%.

CHANGING FUTURE CONDITIONS CONSIDERATIONS

According to the State Hazard Mitigation Plan 2023, "Predicted increases in temperature could help create atmospheric conditions that are fertile breeding grounds for severe thunderstorms and tornadoes in Missouri." These changing conditions will affect the entire planning area and should be considered when building new structures.

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. In addition, lightning strikes can cause damages to crops, if fields or forested lands are set on fire. Communications equipment and warning transmitters and receivers can also be knocked out by lightning strikes. http://www.vaisala.com/en/products/thunderstormandlightningdetectionsystems/Pages/NLDN.aspx and http://www.lightningsafety.noaa.gov/

Measure of Severity –

Moderate to High for damaging winds, hail, and lightning – all participating jurisdictions

Potential Impact - Life

Severe thunderstorms and their related hazards pose a threat to both people and animals. Windblown debris, falling trees and branches, and lightning are very dangerous to those who are exposed. Excessive damage to utilities can leave people without electricity for long periods – an especially dangerous situation for vulnerable populations.

In the NOAA data examined for Boone County, there were 2 recorded injuries due to damaging winds in a 10-year period. The first person was injured in 2015 when a tree was blown over in a storm onto a mobile home. The person inside suffered multiple broken bones. The second person was injured in 2021 when a tree limb blew off and hit them in the head. They were briefly hospitalized after the incident. Although there have not been any deaths from thunderstorm winds in the past 10 years, there was a fatality in nearby Audrain County in 2024, when a farmer was hit by a power pole that snapped and knocked him off his tractor.

The NOAA data also indicates that a woman was struck and killed by lightning in 2009 while crossing a field at Rocky Forks Conservation area, located north of Columbia. Another woman was injured in 2011 when lightning struck her cell phone in Cosmo Park in Columbia. There have been no deaths or injuries in the past 10 years from lightning.

Hail also presents a potential bodily threat to humans and livestock. In 2000, a man in Texas died from softball size hail. (The 4-inch hail recorded in Harrisburg in 2005 was only slighter smaller than this.) According to NOAA's National Severe Storms Laboratory, it has been estimated that a 3.25 inch hailstone weighing 1.5 pounds has a falling velocity of about 106 mph. There have been no reported hail injuries in the planning area in the last 10 years.

Potential Impact - Existing Structures

In the past 10 years, there have been 7 thunderstorm wind events that damaged property in the County. Damaging wind on July 7, 2014 caused widespread damage in Columbia. Six 80-foot transmission line poles were snapped in half and large trees were uprooted over a widespread area. There were 14,000 residents who lost power in the storm; some were without power for a little over 100 hours/4.5 days. The area most badly hit included commercial businesses. On June 25, 2024, severe thunderstorms caused $50,000 in damages due to downed power lines, mostly around Columbia.

Hail events of a large magnitude do not happen every year in the planning area. When they do, they can cause extensive damage to roofs and windows on buildings, and dent and bust glass on vehicles that cost residents and business owners in repairs.

Property damage due to fires and shorts to electrical systems caused by lightning strikes can cost thousands of dollars per incident and affect electronic equipment located inside buildings and damage crops and farm structures.

Potential Impact - Future Development

There has been a rapid growth in population and housing in the planning area in recent years. A larger population and more extensive built environment increase the risk of injury, loss of life, and damage from severe thunderstorms.

While the housing growth rate might be expected to be somewhat lower since the last plan update, a significant growth rate overall is still expected; construction is once again vigorous. In Columbia, home to the University of Missouri, there has been a recent tremendous growth in housing development for student rental. Recent and planned student housing developments are transforming the downtown area of the city.

It would be wise to consider mitigation strategies for severe thunderstorms during the planning phase of any new development. The type of construction affects vulnerability to damaging winds, hail, lightning, and tornadoes. Design and construction choices, inclusion of safe rooms in projects, adequate warning sirens, and NOAA radios can all save lives.

Hazard Summary by Jurisdiction

Boone County has been recognized by the National Weather Service as a StormReady® Community. In order to become recognized as StormReady®, the Emergency Management Agency is evaluated on its abilities to do the following:

- receive real time weather information from the NWS
- disseminate that information to the public,
- transmit real time information to the NWS
- educate the public regarding weather hazards/protection

Boone County has a large population of Mobile Homes. There is no requirement in Boone County for tie-downs on mobile homes; however, updated electric service cannot be obtained for a mobile home in the county unless the home is tied down.

The City of Columbia is a densely populated area that incurs high costs when damaging storm events move through. While the city has done much to help mitigate losses through underground utilities in portions of the city and educating residents about shelter sites its density and number of aging structures make it vulnerable to storm damage.

There is a storm siren located in or near each jurisdiction in the planning area that can be sounded remotely from the EOC if a storm of damaging proportions is coming.

PROBLEM STATEMENT

Thunderstorms with damaging winds, hail, and lightning are common, dangerous, and often costly occurrences in the planning area. These weather events can be expected almost every year and every jurisdiction is highly vulnerable to these hazards.

Both human life and the built environment are at risk; the impact on the built environment has been quite costly in the past and this can be expected to continue into the future.

Public awareness education, excellent weather coverage by the local media, an excellent outdoor warning system, and regular emergency exercises in the schools help mitigate the risk to human life. However, there is a great need throughout the planning area for more safe rooms to protect from high wind events; this is especially true in the schools. Additionally, more vigorous promotion of NOAA radio use would help protect the general public. Additional generators and

power transfer hookups are needed in case of widespread and/or lengthy power outages. All of these identified needs have been targeted for action in the mitigation strategy; funding remains an issue for the more costly safe rooms and generators/power transfer hookups.

3.4.9 SEVERE WINTER WEATHER

HAZARD PROFILE

Hazard Description

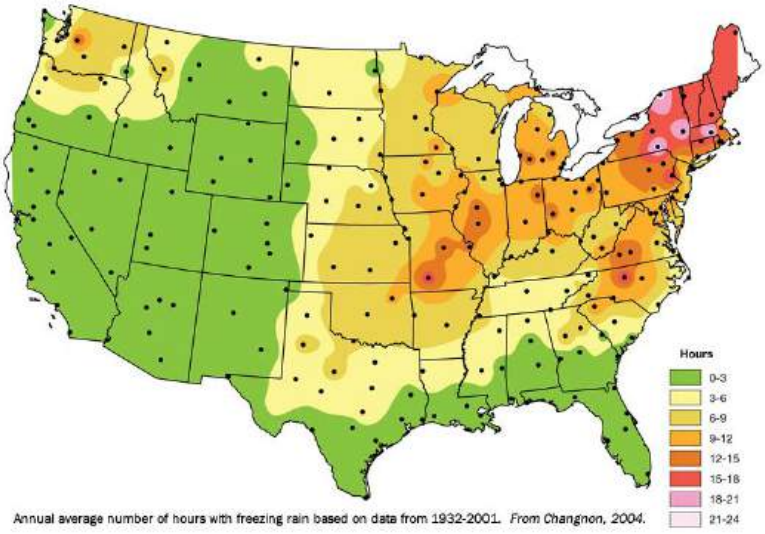
Winter storms in central Missouri contain ice, snow, sleet, and wind; each of these associated factors has the potential to disrupt life in the region by making normal activity difficult and/or dangerous. The National Weather Service describes different types of winter storm events as follows:

- 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 planning area is at risk from severe winter weather. This includes heavy snow, ice, and freezing rain. The planning area falls in the 9-12 hours a year average for freezing rain.

Figure 3.43 Average Hours of Freezing Rain a Year



Source: https://mrcc.illinois.edu/living_wx/icestorms/

Strength/Magnitude/Extent

The entire planning area is at risk for a variety of winter weather. There are various levels of alerts for various conditions of winter weather. 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.

As the duration of a winter weather event goes longer, the potential for increased severity also rises. Prolonged events tax resources for residents and businesses.

Previous Occurrences

Table 3.46 NCEI Boone County Winter Weather Events Summary, 2009-2019

Date	Event Type	Injuries
01/01/2010	Cold/Wind Chill	0
01/06/2010	Winter Weather	0
01/19/2011	Heavy Snow	0
01/31/2011	Winter Storm	0
02/01/2011	Winter Storm	0
02/01/2011	Blizzard	0
02/21/2013	Heavy Snow	0
02/25/2013	Heavy Snow	0
03/24/2013	Heavy Snow	0
12/21/2013	Winter Storm	0
01/05/2014	Winter Storm	0
01/06/2014	Cold/Wind Chill	0
02/04/2014	Winter Storm	0
11/25/2018	Blizzard	0
01/11/2019	Heavy Snow	0
02/06/2019	Ice Storm	0
12/15/2019	Winter Storm	0
01/01/2021	Winter Storm	0
02/01/2022	Heavy Snow	0
02/17/2022	Heavy Snow	0
12/22/2022	Winter Storm	0
1/13/2024	Cold/Wind Chill	0

Source: https://www.ncdc.noaa.gov/stormevents/listevents

Winter weather can also take a toll on crops in the area. Unseasonable cold snaps and late frosts can kill and damage crops costing thousands of dollars in insurance claims.

Table 3.47 Crop Insurance Claims Paid in Boone County as a Result of Cold Conditions and Snow 2014-2024

Crop Year	Crop Name	Cause of Loss Description	Insurance Paid ($)
2014	Wheat	Cold/Winter	1,434

2014	Wheat	Cold/Winter	10,108
2014	Wheat	Cold/Winter	196
2014	Wheat	Cold/Winter	23,558
2014	Wheat	Cold/Winter	214
2014	Wheat	Cold/Wet	6,271
2014	Wheat	Cold/Wet	1,113
2014	Soybeans	Cold/Wet	546
2015	Wheat	Cold/Wet	35,778
2015	Soybeans	Cold/Wet	1,385
2017	Corn	Cold/Wet	6,168
2017	Soybeans	Cold/Wet	5,295
2018	Wheat	Cold/Wet	4,095
2018	Wheat	Cold/Wet	493
2018	Corn	Cold/Wet	7,824
2018	Corn	Cold/Wet	83,377
2018	Grain Sorgham	Cold/Wet	11,364
2018	Soybeans	Cold/Wet	6,845
2019	Wheat	Cold/Wet	128,876
2019	Wheat	Cold/Wet	19,130
2019	Corn	Cold/Wet	47,077
2019	Corn	Cold/Wet	33,792
2019	Soybeans	Cold/Wet	5,667
2020	Wheat	Cold/Wet	6,204
2020	Corn	Cold/Wet	2,233
2021	Corn	Cold/Wet	5,049
2022	Wheat	Cold/Wet	23,784
2023	Wheat	Cold/Wet	20,768

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

Probability of Future Occurrence

– High for all participating jurisdictions

The historical data indicates there were 5 years (2015, 2016, 2017, 2020 and 2023) without a severe winter weather event in the period 2014-2024, a 10-year period; most years witnessed multiple events. Based on this historical data, the calculated probability of a severe winter weather event in any year is 50%. (Probability calculation: 1- (5/10) = 0.5)

Changing Future Conditions Considerations

As temperatures rise and shorten the winter season there could be ecological impacts to plant and animal species that could cause them to shift their native territory. An increase in precipitation events throughout the winter months and a general saturation of the ground could increase the likelihood of flooding events and freezing rain or ice storm events in the planning area.

VULNERABILITY

Vulnerability Overview

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

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

Overhead power lines and infrastructure are also vulnerable to damages from winter storms. In particular ice accumulation during winter storm events damage to power lines due to the ice weight on the lines and equipment. Damages also occur to lines and equipment from falling trees and tree limbs weighted down by ice. Potential losses could include cost of repair or replacement of damaged facilities, and lost economic opportunities for businesses. Secondary effects from loss of power could include burst water pipes in homes without electricity during winter storms. Public safety hazards include risk of electrocution from downed power lines. Specific amounts of estimated losses are not available due to the complexity and multiple variables associated with this hazard. Standard values for loss of service for utilities reported in FEMA's BCA Toolkit 6.0 Release Notes, the economic impact as a result of loss of power is $174 per person per day of lost service.

Measure of Severity - Moderate to High for all participating jurisdictions

Severe winter weather presents a risk to both life and property in the planning area. Some of the damage is direct but some comes in the form of economic losses due to closed businesses and schools and slowed or halted transportation.

Potential Impact - Life

Many deaths and injuries from winter storms are a result of traffic accidents caused by a combination of poor driving surfaces and speeds too fast for the conditions. Accidents during winter storms can be particularly devastating because of multiple car involvement. Response times for emergency vehicles may also be slowed by poor road conditions.

In March 1998, an 84-year old woman in Columbia died of a heart attack while shoveling snow. The elderly are especially vulnerable to excessive and/or prolonged cold or heat.

Potential Losses to Existing Development

Much of the property damage that occurs from severe winter weather is due to some type of utility failure:

> Power Lines - Ice storms often adversely impact consistent power supplies. Ice buildup on wires can cause them to fall; downed tree limbs downed can knock out power lines.

Prolonged power outages can be a threat for those relying on electricity for heat. This is a particular concern for more vulnerable populations such as the elderly.

Water Lines - Winter storms and the associated cold weather can be problematic for water lines, especially if a rapid freeze/thaw cycle is involved. As the ground freezes and thaws, pipes can shift and sometimes break causing a lack of potable water. Broken pipes can cause extensive and expensive damage to property. Frozen and burst water pipes are a real concern for the homeowner; the pipes in many homes in the planning area were not insulated in the past to protect from the low temperatures currently experienced.

Previous and Future Development

Measure have been taken by some jurisdictions to help mitigate future impacts on community growth. The Boone County Electric Cooperative, City of Centralia, and City of Columbia Water and Light Department have policies regarding tree trimming and brush removal around power lines. Consistent maintenance of trees and brush around utility lines limits the possibility of power outages during a severe winter storm. Maintenance also makes financial sense because repairing fallen utility lines and poles is costly and dangerous. Such jurisdictions, including Ashland and Hallsville, also have policies in place regarding moving electrical lines underground when possible. The rapid growth in the planning area, especially in and around the cities of Ashland and Columbia is increasing the vulnerability to severe winter weather. As utility and infrastructure increases, so does the vulnerability to this hazard.

Hazard Summary by Jurisdiction

Unincorporated Boone County is at high risk for winter weather impacts. It has miles of above ground utility lines that can be brought down by heavy snow or ice and even more miles of road network to clear for travelers and first responders. A large portion of Boone County is dedicated to agriculture leaving tender crops susceptible to late season frosts.

The City of Columbia's dense nature leaves a large population vulnerable in the event of a power outage from winter weather. Both Columbia and Ashland have experienced rapid growth opening them up for vulnerability, but also the opportunity to build in resiliency through building codes and the requirement to underground new utilities.

Lack of growth and aging systems in smaller jurisdictions such as Huntsdale, Hartsburg, and Harrisburg leaves them vulnerable to power outages. Older homes can have trouble carrying snow loads during heavier storms.

PROBLEM STATEMENT

Severe winter weather is one of the most common and costly natural hazards to affect the planning area; it has been responsible for three federal Emergency Disaster Declarations and five Presidential Disaster Declarations for Boone County since 2002. In addition, climate data indicates that winter storms are increasing due to changes in the climate. All participating jurisdictions are vulnerable to this hazard.

Some of the worst problems from severe winter weather occur when ice storms affect the area; widespread and lengthy power outages can occur. In addition, traffic accidents are a major source of injuries during severe winter weather.

The planning area has numerous mitigation activities in place which help mitigate the hazards associated with severe winter weather: active tree trimming programs to protect power lines; excellent media coverage of winter weather advisories and warnings; a snowplowing plan whereby streets critical for emergency procedures receive first priority; and abundant Red Cross certified shelters. The further encouragement and effort toward moving utility lines underground will help limit damage to essential utilities during severe winter weather.

3.4.10 TORNADO

DESCRIPTION OF HAZARD

A tornado is a violently rotating column of air which is usually generated by a supercell thunderstorm. The movement speed of a tornado is typically around 10-20 mph but can range from almost stationary to more than 60 mph, according to NOAA's National Severe Storms Laboratory. They often travel from southwest to northeast but can move in any direction.

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. They tend to dissipate as

fast as they form. Unlike a hurricane, which can last for multiple hours, tornadoes are often in one place for no more than a few minutes. The seasonal, temporal, and spatial uncertainties surrounding thunderstorms and tornadoes make widespread and year round preparedness essential.

Location

The entire planning area is at risk from tornadoes. All of Missouri is located in the zone known as Tornado Ally where the occurrence of tornadoes of varying intensities are common.

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.

In addition to estimated wind speeds, averaged data from tornadoes can give an idea of the length and width of tornadoes in the different classifications. 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 3.43) attempts to rank tornadoes according to wind speed based on the damage caused. It is based on engineering studies of the wind effects on 28 different types of structures (buildings, towers, poles, trees). This indirect measurement of speed is used because it is currently not possible to measure ground-level speeds in strong tornadoes; the winds destroy the instruments needed for measurement. 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	EF Number	3 Second Gust
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 EF-Scale has been in use since February 1, 2007. It uses the same ratings as the original Fujita Scale (F-Scale) which it replaced, but the wind speeds have been adjusted to reflect current knowledge and give a more realistic estimate of wind speeds for all tornadoes, including historical ones in the NOAA database. The ratings of tornadoes prior to 2007 were not changed in the NOAA database with the adoption of the EF-Scale.

The wind speeds for the EF scale and damage descriptions are based on information on the NOAA Storm Prediction Center as listed in Table 3.44. 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.

There continue to be limitations even with the EF-Scale since the scale is based on sustained damage. The table below list damage summaries for their respective EF rating.

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

Another issue with tornadoes is speed of onset. Technological advances, such as Doppler radar, computer modeling, and Emergency Warning Systems, have increased the amount of time the general public has to respond to a tornado. 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. Despite these advances, tornadoes can still strike an area with little warning. Often people have no more than a few minutes to get to safety. Being able to quickly get to a safe place is absolutely imperative in order to prevent loss of life. 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

The planning area has experienced thirty-two tornado events since July 1954, as officially recorded by NOAA (Figure 3.48). This includes five "significant" F2 tornadoes and three "severe" F3 tornadoes. There have been no tornados since the last plan update.

The historical record in the planning area over this 60+ period indicates tornadoes in the EF0 to EF3 range. While history is informative, it is not necessarily predictive of the future; there is the possibility that the planning area could experience a tornado above the EF3 level in the future.

There are limitations to the use of NCEI tornado data that must be noted. For example, one tornado may contain multiple segments as it moves geographically. A tornado that crosses a county line or state line is considered a separate segment for the purposes of reporting to the NCEI. Also, a tornado that lifts off the ground for less than 5 minutes or 2.5 miles is considered a separate segment. If the tornado lifts off the ground for greater than 5 minutes or 2.5 miles, it is considered a separate tornado. Tornadoes reported in Storm Data and the Storm Events Database are in segments.

In addition, many historical tornadoes may have been stronger than the data indicates. According to the NOAA website, "…because the only way we can compare all tornadoes is by whatever damage they caused, and EF5/F5 damage is only possible when tornadoes hit well-built structures, the true 'violence' of most historical tornadoes is unknown—especially before the middle to late 20th century."

Table 3.50

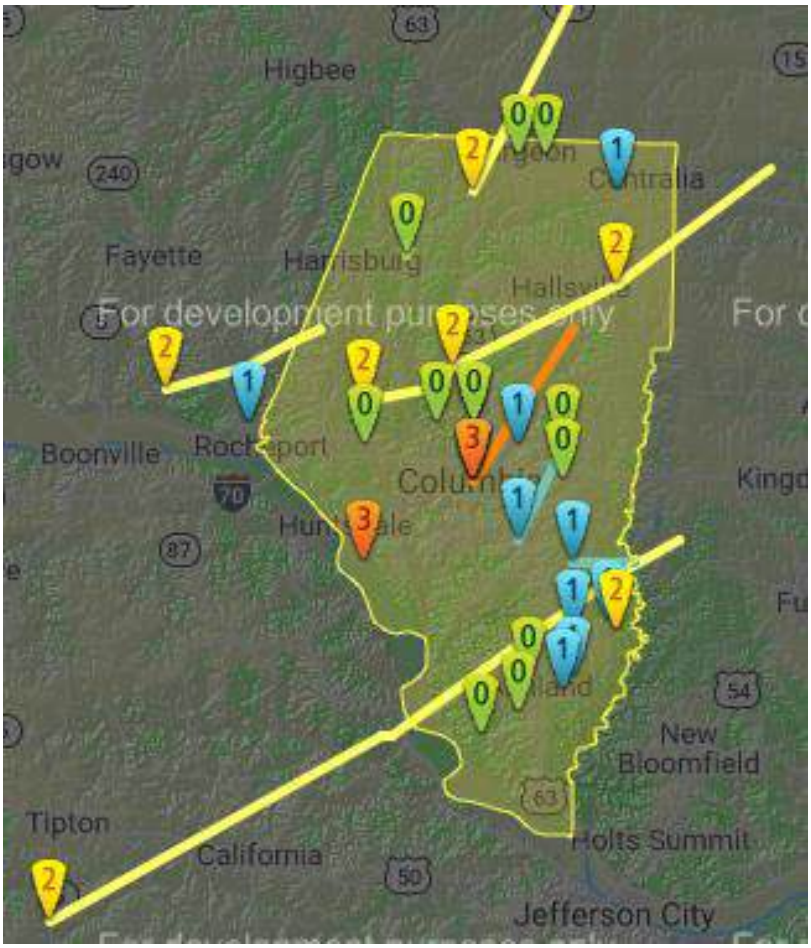
Historical Tornado Occurrences

Location	Date	Length (miles)	Width (Yard)	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Boone County	04/30/54	89.6	100	F2	0	0	50K	0
Boone County	12/04/56	11.1	400	F2	0	0	250K	0
Boone County	09/27/59	6.4	50	F2	0	0	50k	0
Boone County	09/28/59	0.1	10	F1	0	0	3K	0
Boone County	10/04/59	0.2	17	F0	0	0	3K	0
Boone County	10/04/59	0.2	10	F0	0	0	3K	0
Boone County	01/25/65	0.1	10	F0	0	0	0K	0
Boone County	12/08/66	2.5	73	F1	0	0	25K	0
Boone County	09/07/72	0.1	33	F1	0	0	25K	0
Boone County	03/13/73	6.1	50	F1	0	0	25K	0
Boone County	05/26/73	3	50	F2	0	1	250K	0
Boone County	12/04/73	0.1	10	F0	0	0	25K	0
Boone County	05/12/80	42.7	50	F2	0	0	25K	0
Boone County	04/16/82	0.3	50	F0	0	0	0K	0
Boone County	05/29/82	0.1	20	F1	0	0	3K	0
Boone County	04/03/84	0.3	27	F1	0	0	0K	0
Boone County	04/29/84	0.3	10	F1	0	0	25K	0
Boone County	10/16/84	4	50	F1	0	0	25K	0
Boone County	06/17/85	1	100	F1	0	0	2.5M	0
Boone County	06/02/87	1	20	F0	0	1	0K	0
Boone County	11/27/90	1	50	F3	0	0	250K	0
Boone County	11/27/90	12	50	F3	0	3	25.0M	0
Boone County	07/02/92	0.5	50	F1	0	0	250K	0
Boone County	07/02/92	0.2	23	F0	0	0	0K	0
Columbia	07/08/95	0.2	80	F0	0	0	0	0
Columbia	11/10/98	2	70	F3	0	16	6.0M	0
Midway	04/08/99	4	120	F2	0	5	0	0

Hinton	04/08/99	10	120	F2	0	0	0	0
Ashland	02/25/00	0.2	50	F0	0	0	0	0
Centralia	03/26/00	0.3	150	F1	0	0	50K	0
Midway	05/17/01	0.1	50	F0	0	0	0	0
Harrisburg	07/07/16	0.34	50	EF0	0	0	0	0
TOTALS:					**0**	**26**	**34.81M**	**0**

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

Figure 3.44 Boone County Map of Historic Tornado Events



Crop losses from 2014-2024 total around $62,395 for storm and wind damage. While USDA's Risk Management division doesn't list tornado as the cause for any of those damages, high winds and thunderstorm-like conditions often accompany systems that can produce tornados.

Probability of Future Occurrences

High - all participating jurisdictions

For the period 1954-2024, a 70-year period, the NOAA database reports 20 years with at least one tornado event in the planning area. Based on this historical data, the calculated probability of a future tornado event of any magnitude in a year is 29%.

The probabilities of occurrence of the different magnitudes of tornadoes in any given year, based on historical data, has also been calculated (Table 3.51). While the calculated probabilities for an EF4 or EF5 tornado are 0%, this does not mean tornadoes of these magnitudes could not occur in the planning area; it just means they have not occurred in the historical record.

Table 3.51

Probability of Future Tornado Events

EF-Scale	# of years with tornado event (1954-2024)	Probability	Probability Rating
All	20	29%	High
EF0	8	11%	High
EF1	10	14%	High
EF2	6	9%	Moderate
EF3	2	3%	Moderate
EF4	0	0%	Low
EF5	0	0%	Low

Changing Future Conditions Considerations

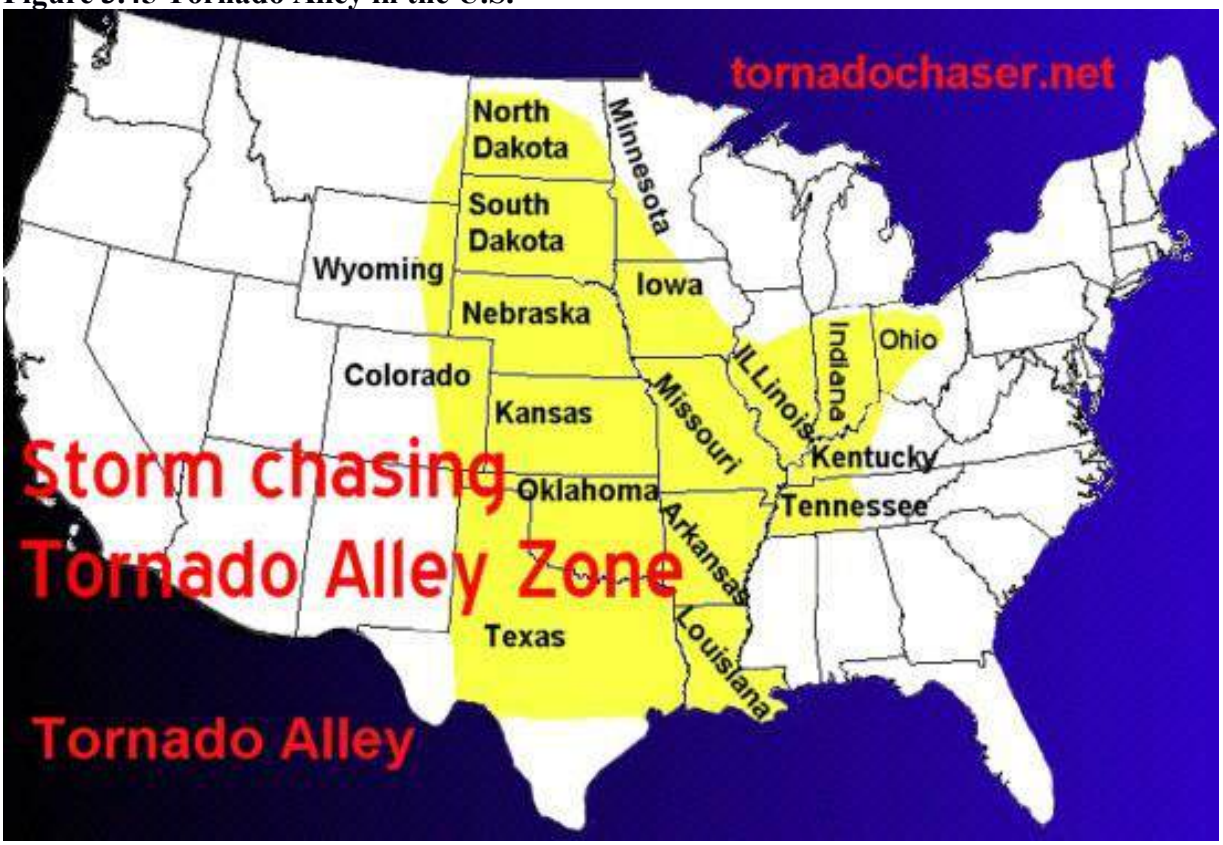
It is not confidently known how the change in climate could impact the frequency or severity of future tornadic activity. While the activity zone has not expanded according to the State Hazard Mitigation Plan 2023 the number of days with large tornado outbreaks and areas of densely concentrated tornados have gone up since the 1950s. More studies will be needed to know the true impact over time.

Vulnerability

Vulnerability Overview

The destructive effects of a tornado depend on the strength of the winds, proximity to people and structures, the strength of structures, and how well a person is sheltered. They are obviously a hazard with the potential to cause both great loss of life and catastrophic destruction. The whole planning area is located in “Tornado Ally” where historically dangerous and destructive tornados occur frequently.

Figure 3.45 Tornado Alley in the U.S.



Potential Losses to Existing Development

Potential Impact - Life

While tornadoes can strike anywhere, there is a greater chance of injury and loss of life (and destruction of property) in population centers. This is especially true of a tornado with a large path.

There have been 26 reported injuries associated with recorded tornadoes in the planning area.

Potential Impact - Existing Structures

Tornadoes cause the most costly physical destruction when they touch ground in urban areas. High winds affect all structure types differently; non-permanent and wood-framed structures are especially vulnerable to destruction.

In addition to a direct hit on a building by a tornado, damage to trees poses a serious threat. People, buildings, power lines, and vehicles are all at risk from falling branches, uprooted trees and windblown debris.

There have been $34.81 million in reported property damages associated with recorded tornadoes in the planning area.

Missouri State Hazard Mitigation Plan (2023) Analysis: The State Hazard Mitigation Plan looked at four variables to determine tornado vulnerability in the counties of Missouri:

- Likelihood of future tornado impacts
- Average annual property loss ratio (total building exposure value divided by average annualized historic losses)
- Population Density
- Social vulnerability
- Percent mobile home

Since tornadoes are random in their location, it was decided to consider the low end of the vulnerability scale to have a Moderate Risk and the high end to have a Very High Risk. The planning area/Boone County was rated as medium vulnerability.

The State Plan set the Total Building Exposure in the planning area at $18,473,209,000.

Previous and Future Development

There has been a rapid growth in population and housing in the planning area in recent years. A larger population and more extensive built environment increase the risk of injury, loss of life, and damage from tornadoes. Census figures indicate an overall population growth rate of 13% in the planning area (Boone County) between 2010 and 2023.

While the housing growth rate might be expected to be somewhat lower between 2020 and 2030 due to a slow recovery from the recent economic recession, a significant growth rate overall is still expected; construction is once again vigorous. In Columbia, home to the University of Missouri, there has been a recent tremendous growth in housing development for student rental. Recent and planned student housing developments are transforming the downtown area of the city.

It would be wise to consider mitigation strategies for tornadoes and other high-wind situations during the planning phase of any new development. The type of construction greatly affects vulnerability to tornadoes and high winds. Design and construction choices and the inclusion of hardened areas for safe rooms can save lives.

Hazard Summary by Jurisdiction

There are various strategies in place in the planning area to inform the public about the threat of tornadoes. Each jurisdiction has a storm siren inside or near its city limits to warn residents of incoming inclement weather. All jurisdictions have a designated shelter place. However, there is a lack of FEMA-rated saferooms in the planning area.

The risks to school districts and colleges in the planning area is high. A direct hit from a large tornado could prove catastrophic to an education center and the community that relies on it for education, jobs, and even shelter during storms. The destruction of a school has regional implications as students would have to be bussed or transfer elsewhere during rebuild and employees would be left without work.

3.9% of homes in Boone County are listed as mobile homes. There is no requirement in Boone County for tie-downs on mobile homes; however, updated electric service cannot be obtained for a mobile home in the county unless the home is tied down.

The City of Hallsville uses the large basement of the Hallsville Baptist Church as a tornado safe room. There is one mobile home park in the city which is located very close to the church; all residents of the park are aware that this is the safe location in event of a tornado. Due to recent concerns about the church's ability to operate the shelter in all tornado events, the City is planning to explore the option of a FEMA safe room.

PROBLEM STATEMENT

The entire planning area is highly vulnerable to the potentially devastating impact of tornadoes. Their random nature and potentially quick speed of onset pose particular risks for human life. Tornadoes of the magnitude known to historically occur in the area can wreak extensive and costly structural damage.

Public awareness education, excellent weather coverage by the local media, an excellent outdoor warning system, and regular emergency exercises in the schools help mitigate the risk to human life. However, there is a great need throughout the planning area for more safe rooms to protect from high wind events; this is especially true in the schools. Additionally, more vigorous promotion of NOAA radio use would help protect the general public. Additional generators and power transfer hookups are needed in case of widespread and/or lengthy power outages. All of these identified needs have been targeted for action in the mitigation strategy; funding remains an issue for the more costly safe rooms and generators/power transfer hookups.

3.4.11 WILDFIRE

HAZARD PROFILE

HAZARD DESCRIPTION

Large and widespread wildfires, such as occur in the western United States, have not been a problem in Boone County in recent history. However, smaller wildfires/natural cover fires occur every year.

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.

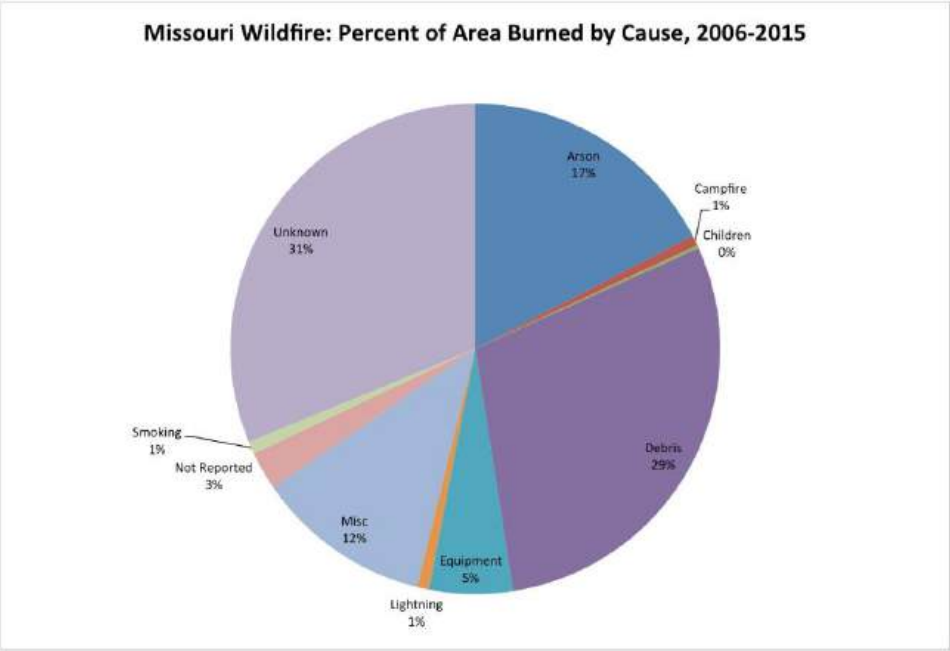
The Forestry Division of the Missouri Department of Conservation (MDC) is responsible for protecting privately owned and state-owned forests and grasslands from wildfires. To accomplish this task, eight forestry regions have been established in Missouri for fire suppression. The Forestry Division works 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.

These fires may take place at any time of the year but the majority occur during the spring fire season (February 15 - May 10). Spring is the time of the year when rural residents burn garden spots and brush piles. Many landowners also believe it is necessary to burn the woods in the spring to grow more grass, kill ticks, and get rid of brush. These factors, combined with low humidity and high winds, result in higher fire danger at this time of year. The spring fire season abates with the growth of the new season’s grasses and other green vegetation.

Numerous fires also occur in October and November due to the dryness associated with fall in Missouri. Many rural residents use this time of year to burn leaves and debris thus raising the possibility of a fire which burns out of control.

The major causes of wildfires in Missouri are various human activities, according to statistics from the Missouri Department of Conservation (Figure 3.46).

Figure 3.46: Missouri Wildfire Source



Source: Missouri Department of Conservation

Geographic Location

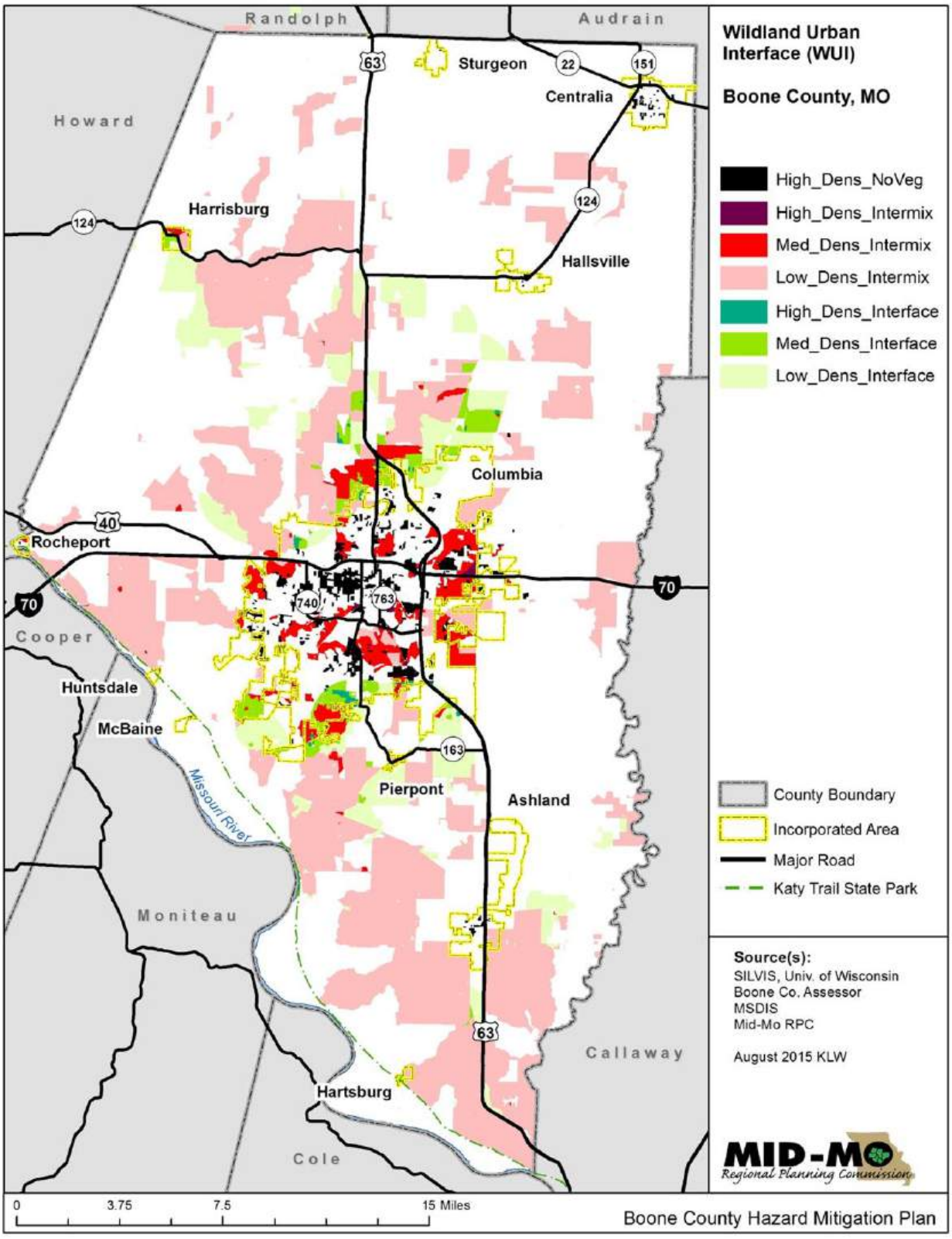
The rural areas of Boone County are most at risk from wildfires because that is where the primary causative factor, debris burning, is most common.

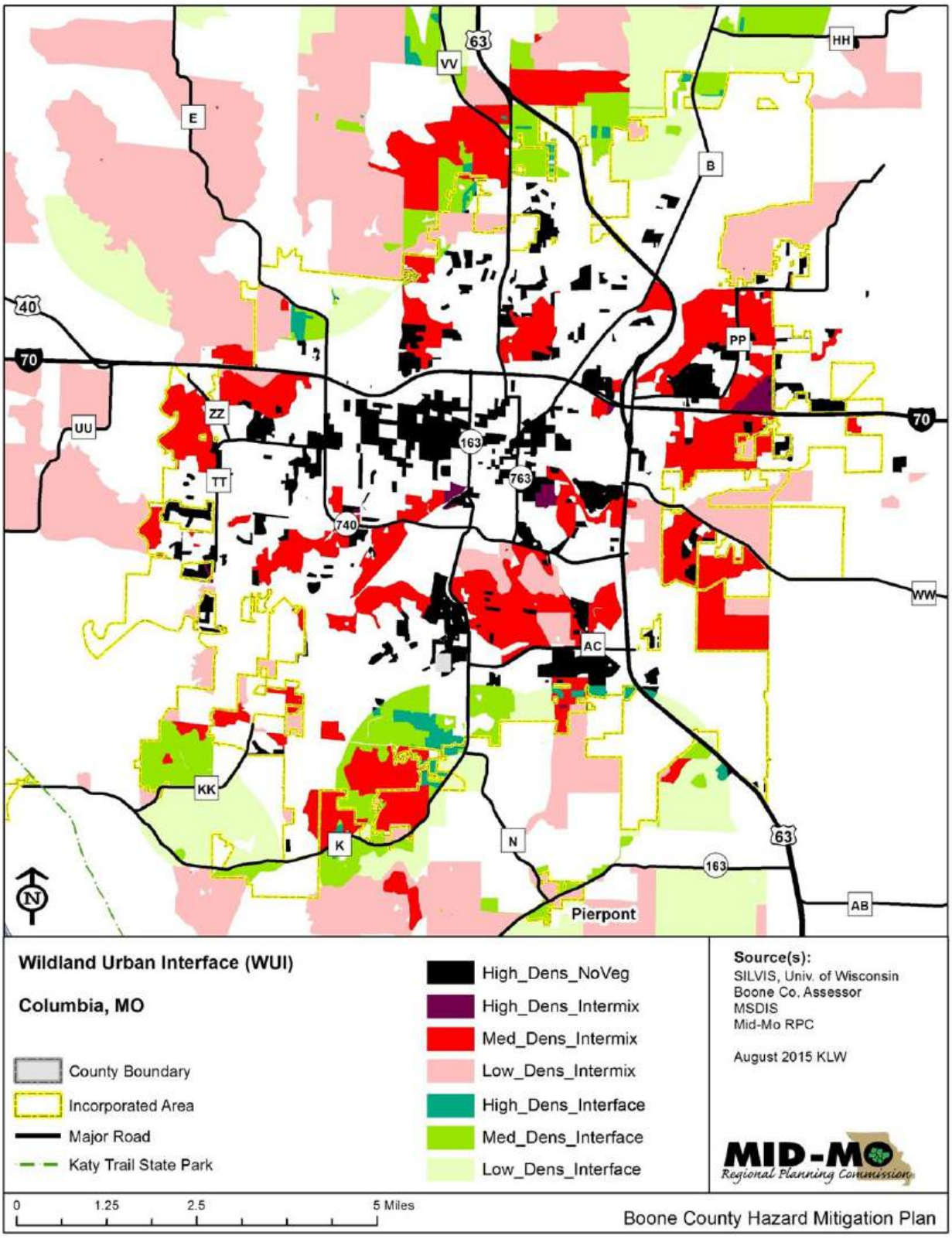
In addition to the risk faced by rural areas, there is an increased risk of wildfire in areas called the Wildland Urban Interface (WUI). The National Wildfire Coordinating Group (NWCG) defines the WUI as "…the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuel."

Within the WUI there are three defined Community types vulnerable to Wildfire:

> Interface Community - Structures directly abut wildland fuels. There is a clear line of demarcation between wildland fuels and residential, business, and public structures. Wildland fuels do not generally continue into the developed area. The development density for an interface community is usually three or more structures per acre, with shared municipal services.
>
> Intermix Community - Structures are scattered throughout a wildland area. There is no clear line of demarcation; wildland fuels are continuous outside of and within the developed area. The development density in the intermix ranges from structures very close together to one structure per 40 acres.
>
> Occluded Community - Often found within a city, structures abut an island of wildland fuels (e.g. park or open space). There is a clear line of demarcation between structures and wildland fuels. The development density is usually similar to those found in the interface community, but the occluded area is usually less than 1,000 acres in size.

An overview of the WUI for the planning area is shown in Figure 3.42. Columbia, Harrisburg, Hartsburg, and Rocheport all incorporate significant areas of medium or high-density wildland interface and/or intermix (Figures 3.47-3.52). Huntsdale incorporates only a small portion of medium density intermix (Figure 3.52).


Wildland Urban Interface (WUI)
Boone County, MO
High_Dens_NoVeg
High_Dens_Intermix
Med_Dens_Intermix
Low_Dens_Intermix
High_Dens_Interface
Med_Dens_Interface
Low_Dens_Interface
County Boundary
Incorporated Area
Major Road
Katy Trail State Park
Source(s):
SILVIS, Univ. of Wisconsin
Boone Co. Assessor
MSDIS
Mid-Mo RPC
August 2015 KLW
MID-MO
Regional Planning Commission
Randolph
Audrain
Howard
Cooper
Moniteau
Callaway
Cole
Sturgeon
Centralia
Harrisburg
Hallsville
Columbia
Rocheport
Huntsdale
McBaine
Pierpont
Ashland
Hartsburg
Missouri River
63
22
151
124
40
70
740
763
163
0
3.75
7.5
15 Miles
Boone County Hazard Mitigation Plan


Wildland Urban Interface (WUI)
Columbia, MO
County Boundary
Incorporated Area
Major Road
Katy Trail State Park
High_Dens_NoVeg
High_Dens_Intermix
Med_Dens_Intermix
Low_Dens_Intermix
High_Dens_Interface
Med_Dens_Interface
Low_Dens_Interface
Source(s):
SILVIS, Univ. of Wisconsin
Boone Co. Assessor
MSDIS
Mid-Mo RPC
August 2015 KLW
MID-MO
Regional Planning Commission
0
1.25
2.5
5 Miles
Boone County Hazard Mitigation Plan
Pierpont
63
VV
HH
E
B
40
70
PP
ZZ
UU
163
763
TT
740
WW
AC
KK
K
N
AB

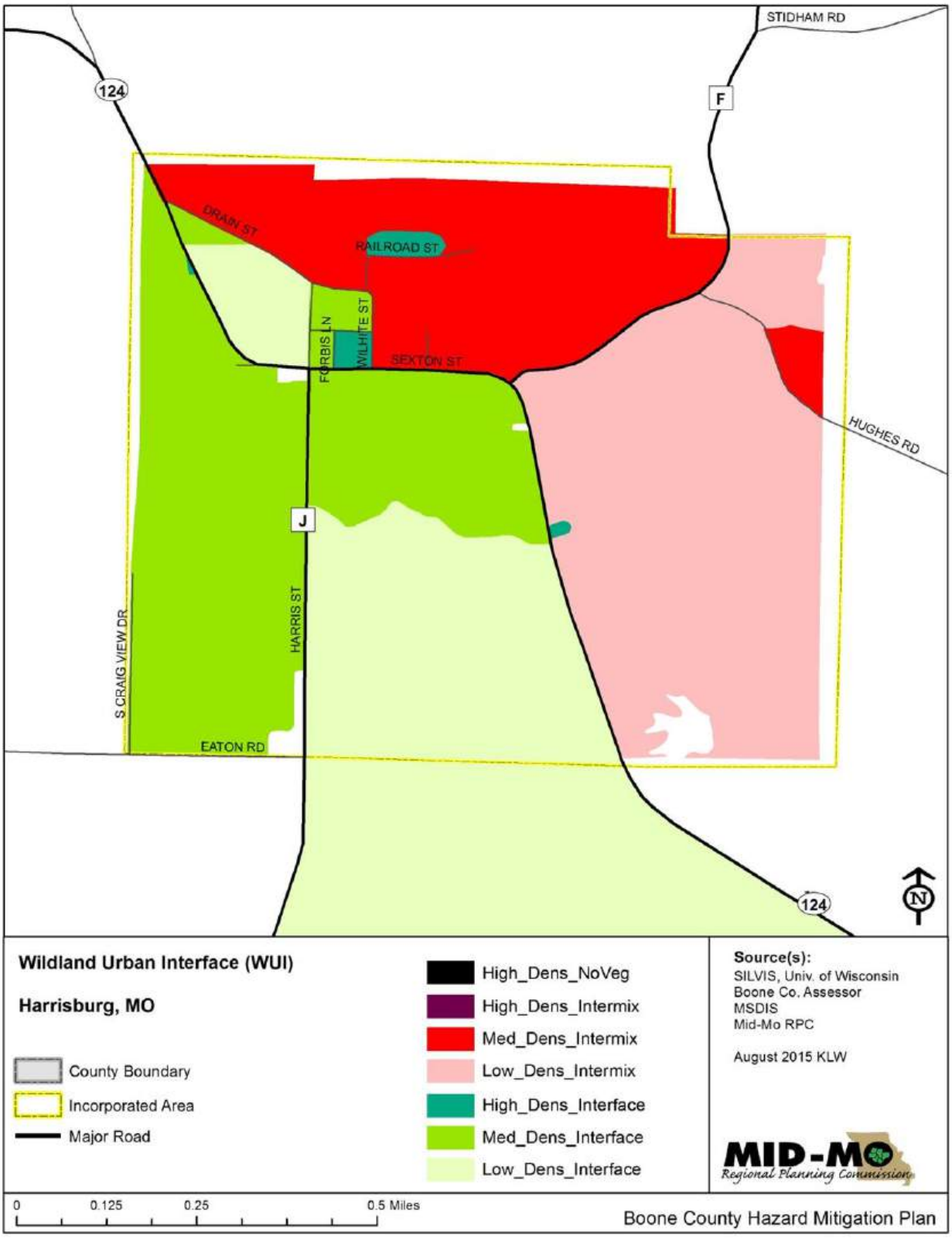

STIDHAM RD
124
F
DRAIN ST
RAILROAD ST
FORBIS LN
WILHITE ST
SEXTON ST
HUGHES RD
J
HARRIS ST
S CRAIG VIEW DR
EATON RD
124
N
Wildland Urban Interface (WUI)
Harrisburg, MO
County Boundary
Incorporated Area
Major Road
High_Dens_NoVeg
High_Dens_Intermix
Med_Dens_Intermix
Low_Dens_Intermix
High_Dens_Interface
Med_Dens_Interface
Low_Dens_Interface
Source(s):
SILVIS, Univ. of Wisconsin
Boone Co. Assessor
MSDIS
Mid-Mo RPC
August 2015 KLW
MID-MO
Regional Planning Commission
0
0.125
0.25
0.5 Miles
Boone County Hazard Mitigation Plan

Figure 3.50

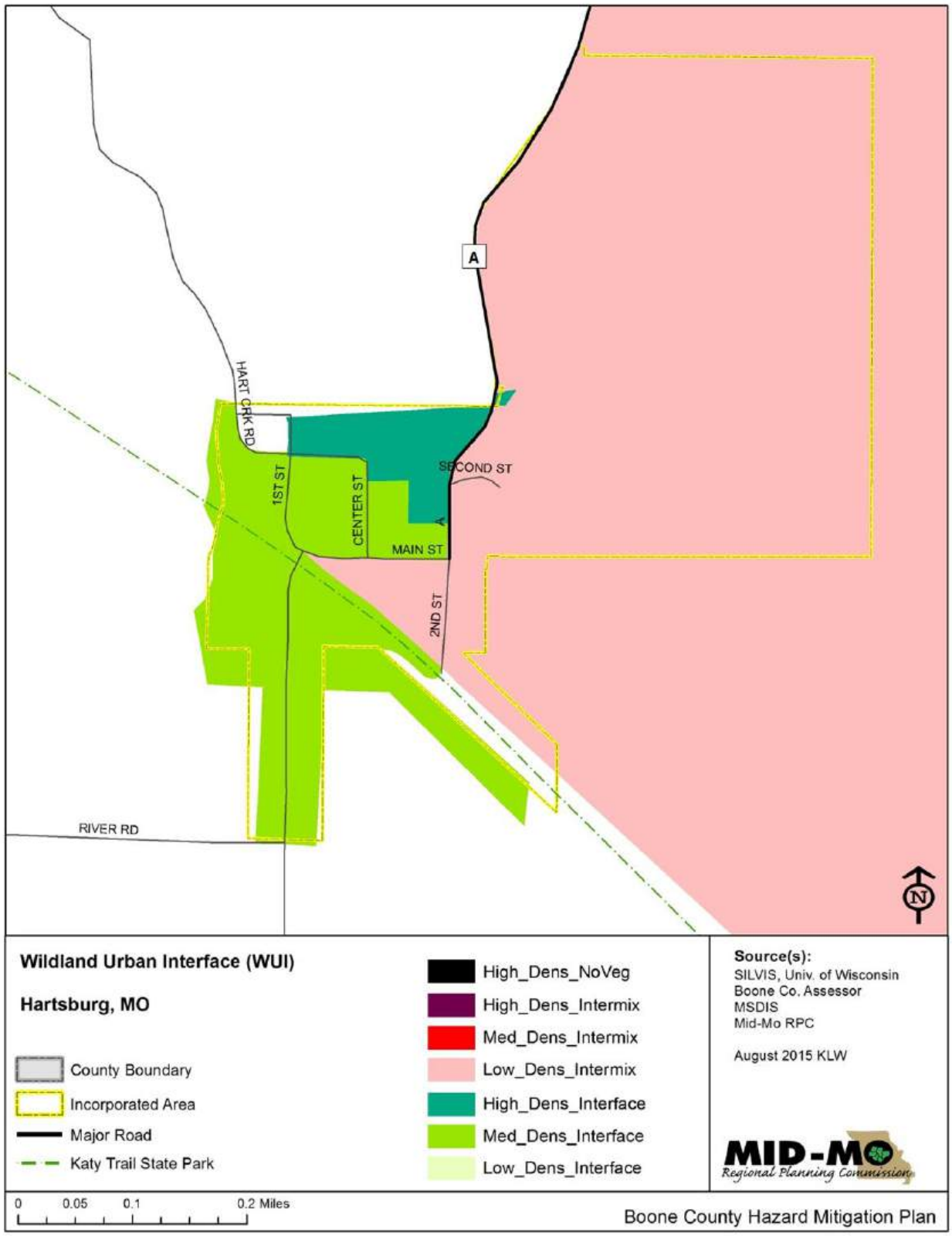

A
HART CRK RD
1ST ST
CENTER ST
SECOND ST
MAIN ST
2ND ST
RIVER RD
N
Wildland Urban Interface (WUI)
Hartsburg, MO
County Boundary
Incorporated Area
Major Road
Katy Trail State Park
High_Dens_NoVeg
High_Dens_Intermix
Med_Dens_Intermix
Low_Dens_Intermix
High_Dens_Interface
Med_Dens_Interface
Low_Dens_Interface
Source(s):
SILVIS, Univ. of Wisconsin
Boone Co. Assessor
MSDIS
Mid-Mo RPC
August 2015 KLW
MID-MO
Regional Planning Commission
0 0.05 0.1 0.2 Miles
Boone County Hazard Mitigation Plan

Figure 3.51

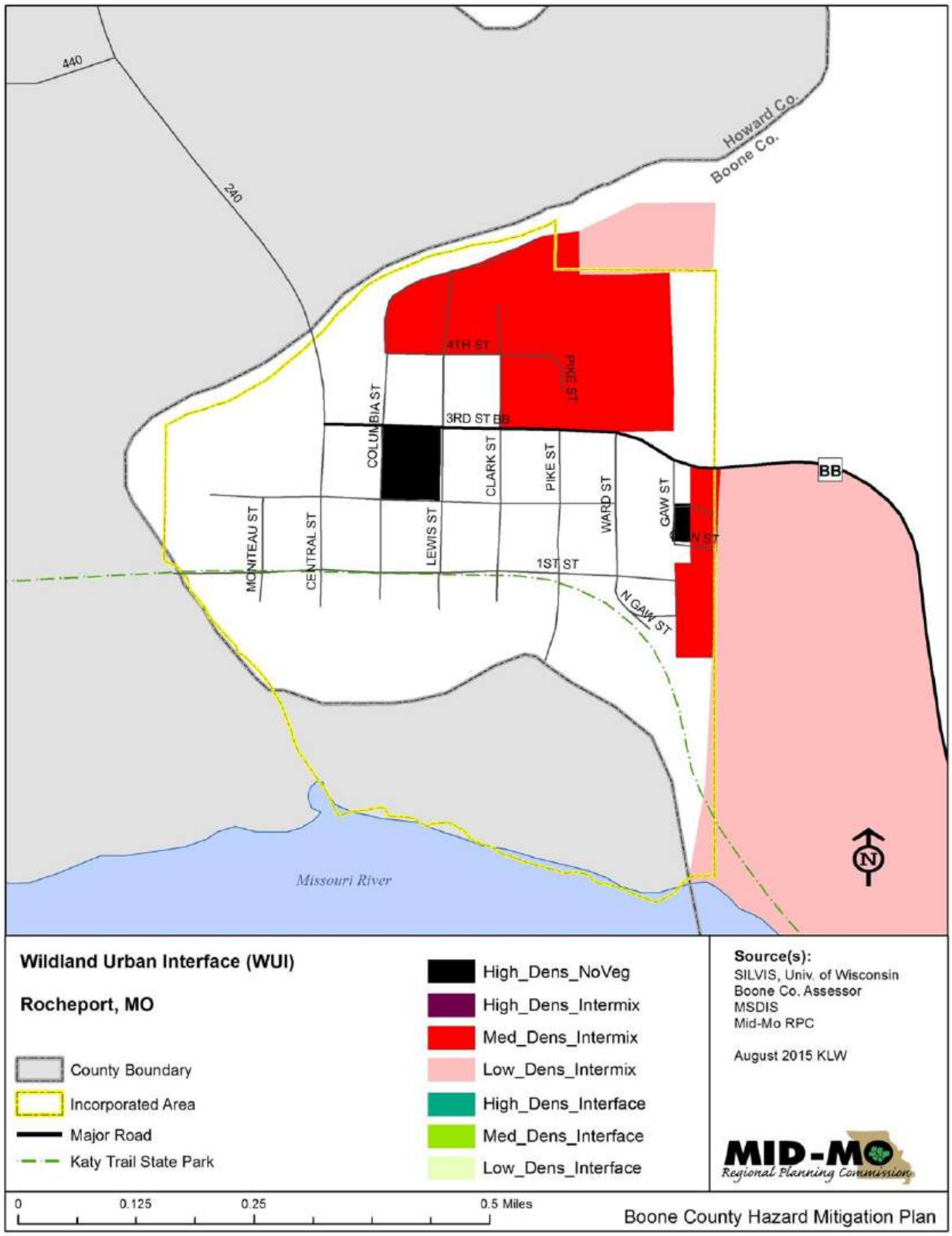
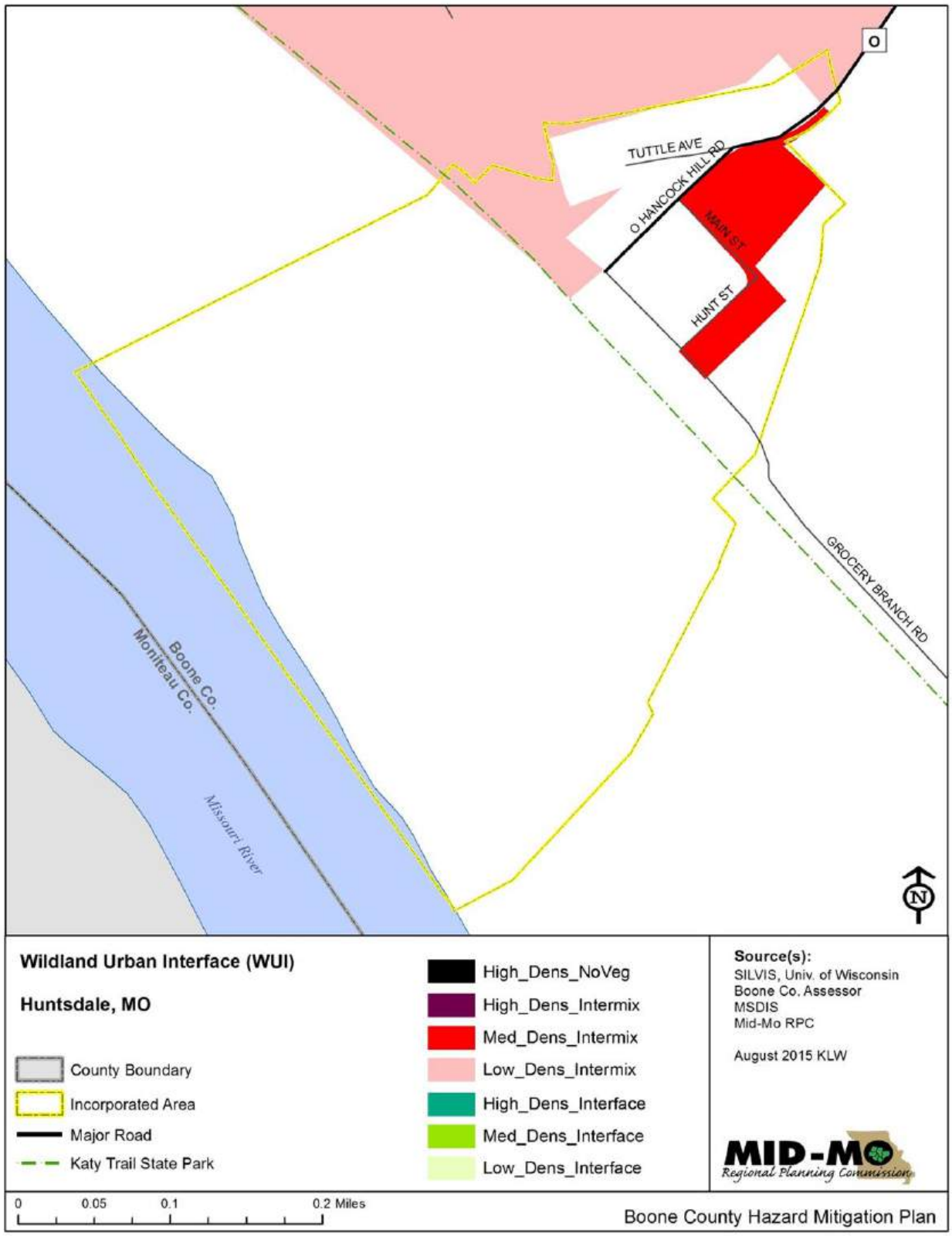

440
240
Howard Co.
Boone Co.
4TH ST
PIKE ST
3RD ST
BB
COLUMBIA ST
CLARK ST
PIKE ST
WARD ST
GAW ST
N ST
MONITEAU ST
CENTRAL ST
LEWIS ST
1ST ST
N GAW ST
Missouri River
N
Wildland Urban Interface (WUI)
Rocheport, MO
County Boundary
Incorporated Area
Major Road
Katy Trail State Park
High_Dens_NoVeg
High_Dens_Intermix
Med_Dens_Intermix
Low_Dens_Intermix
High_Dens_Interface
Med_Dens_Interface
Low_Dens_Interface
Source(s):
SILVIS, Univ. of Wisconsin
Boone Co. Assessor
MSDIS
Mid-Mo RPC
August 2015 KLW
MID-MO
Regional Planning Commission
0
0.125
0.25
0.5 Miles
Boone County Hazard Mitigation Plan

Figure 3.52


O
TUTTLE AVE
HANCOCK HILL RD
MAIN ST
HUNT ST
GROCERY BRANCH RD
Boone Co.
Moniteau Co.
Missouri River
N
Wildland Urban Interface (WUI)
Huntsdale, MO
County Boundary
Incorporated Area
Major Road
Katy Trail State Park
High_Dens_NoVeg
High_Dens_Intermix
Med_Dens_Intermix
Low_Dens_Intermix
High_Dens_Interface
Med_Dens_Interface
Low_Dens_Interface
Source(s):
SILVIS, Univ. of Wisconsin
Boone Co. Assessor
MSDIS
Mid-Mo RPC
August 2015 KLW
MID-MO
Regional Planning Commission
0
0.05
0.1
0.2 Miles
Boone County Hazard Mitigation Plan

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 the large fire storms seen on television news stories.

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

Often wildfires in Missouri go unnoticed by the general public because the sensational fire behavior that captures the attention of television viewers is rare in the state. Yet, from the standpoint of destroying homes and other property, Missouri wildfires can be quite destructive. Most wildfires in the planning area are of limited duration due to the quick response of the fire districts. Wildfires in the area still damage the environment by killing some plants and occasionally animals. Damage to plants can heighten the risk of soil erosion and landslides. Wildfires in the planning area could also impact recreation and tourism, or reduce visibility on roadways with heavy smoke making it dangerous to drive too close to a blaze.

Wildfires are very common in the planning area. According to information from the Boone County Fire Protection District (BCFPD), there are hundreds every year. Most of these fires only require 50' by 50' fire lines; however, there are perhaps ten fires a year which burn over 10 acres. Fires of this size require a large amount of resources to put out.

Previous Occurrences

Wildfires in the planning area typically destroy crops, hay fields, green space, and woods; there have also been losses of barns, farming equipment and trucks from some fires. During the 2012 drought, a grass fire caused fire damage to a house in the City of Columbia.

Probability of Future Occurrences

Probability: High – Boone County
Moderate - Columbia, Harrisburg, Hartsburg, Rocheport
Low – All other participating jurisdictions

The probability of wildfires increases during conditions of excessive heat, dryness, and drought. The probability is also higher in spring and late fall. There's only been 1 reported structure fire caused by a grass fire in the last 20 years for a probability of 5% on any given year.

Changing Future Conditions Considerations

Raising temperatures and more sporadic rains with longer periods of dry between rain events could affect vegetation and the number of days prescribed burns can safely be performed. With increased rainfall can be expected to come an abundance of plant growth that won't be able to be renewed with less prescribed burns making more fuel for fires that potentially get out of control. An increase in droughts and dry vegetation not only in the forest but around homes in the form of depleted landscaping material creates heightened risk for structures to overtaken by wildfires.

VULNERABILITY

Vulnerability Overview

Severity: Moderate – Boone County, Columbia, Harrisburg, Hartsburg, Rocheport
Low – All other participating jurisdictions

There are limitations to the data concerning wildfires. Current presentations utilize data from the National Fire Incident Reporting System (NFIRS) from 2004 to 2008 to determine vulnerability for the State Plan. With only 61 percent of fire departments in Missouri reporting to NFIRS it is hard to get a thorough overview of the rate at which fires happen and how much damage they truly cause.

Potential Losses to Existing Development

While wildfires in the central Missouri area have the potential to destroy buildings, data from the entire Mid-MO RPC region indicates that this is more the exception than the rule. While there has been damage to built structures and vehicles in Boone County, wildfires are usually quickly suppressed and the damage to the built environment is minimal.

Impact of Previous and Future Development

As development proceeds in the planning area, there is the potential for the increase in the Wildland Urban Interface (WUI); this interface puts more of the built environment at risk for structural damage from wildfire.

Hazard Summary by Jurisdiction

Columbia, Harrisburg, Hartsburg, and Rocheport all incorporate significant areas of medium or high-density wildland interface and/or intermix. This makes them more susceptible to damages from out of control burning. Huntsdale incorporates only a small portion of medium density intermix and is slightly less susceptible. Columbia has a burning ordinance in place to help control when, where, and what is being burnt in an effort to promote smart burning practices and good communication to responders if a controlled burn were to become less under control.

Many wildfires in the planning area take place in unincorporated Boone County where burning has less oversight in general. The Missouri Revised Statute 49.266, adopted in August 2013, confers the right of county commissions to adopt an order or ordinance issuing a burn ban.

Emergency response systems**,** well trained fire departments, and numerous county roads improve response times to fire events, thus decreasing the chances of fire spread.

PROBLEM STATEMENT

Wildfire is not a major threat in the planning area; however, all participating jurisdictions are potentially vulnerable. While wildfires occur on a regular basis, they are usually easily suppressed by a quick response from the fire districts and thus limited in their spread and destruction.

The threat is greatest in unincorporated Boone County, where most of the fires occur, and in Columbia, Harrisburg, Hartsburg, and Rocheport which incorporate significant areas of medium or high-density wildland urban interface or intermix. Good forestry management, burn ordinances, and burn bans during dry and windy conditions can help limit or prevent possible wildfire situations.

Chapter 4: Mitigation Strategy

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- 4.2 Identification and Analysis of Mitigation Actions……..……..287
- 4.3 Implementation of Mitigation Actions……..…288

Chapter 4: Mitigation Strategy

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.

The original Project Steering Committee (2004-2005) was charged with developing a comprehensive range of mitigation actions to promote the agreed upon mitigation goals. Objectives were defined under each goal and the mitigation actions were then developed to promote each objective. The following six categories of mitigation were considered in developing the mitigation actions:

- **Prevention tools -** regulatory methods such as planning and zoning, building regulations, open space planning, land development regulations, and storm water management.
- **Property protection measures -** acquisition of land, relocation of buildings, modifying at-risk structures, and flood proofing at-risk structures.
- **Natural resource protection** - erosion and sediment control or wetlands protection.
- **Emergency services measures** – warning systems, response capacity, critical facilities protection, and health and safety maintenance.
- **Structural mitigation** - reservoirs, levees, diversions, channel modifications and storm sewers.
- **Public information** - providing hazard maps and information, outreach programs, real estate disclosure, technical assistance and education.

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.

The hazard mitigation goals first developed during the 2004 planning process were updated in 2015 to reflect the inclusion of technological and human-made disasters in the mitigation plan. The planning committee chose to not change the goals for this update as they felt they were still feasible and relevant to challenges facing the planning area.

The five goals for the Boone County Hazard Mitigation Plan (2025) are:

- Goal 1: Mitigation Planning - Mitigate the effects of future natural, technological, and human-made hazards throughout the County through public and private action.

- Goal 2: Mitigation Policy - Develop policies that limit the impact of natural, technological, and human-made hazards on lives and property.

- Goal 3: Mitigation Programs - Implement cost effective and feasible mitigation programs to protect lives and property of Boone County jurisdictions.

- Goal 4: Public Awareness - Increase public awareness of natural, technological, and human-made hazards in order to make the public a greater partner in hazard mitigation planning.

- Goal 5: Future Development - Promote hazard-proof development in the jurisdictions of Boone County.

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.

Update of Mitigation Actions

The Planning Committee for the 2020 update reviewed and evaluated the status of the mitigation actions from the original plan. In order to ensure that there was a comprehensive mitigation approach to each hazard, there was a discussion of each hazard and the existing actions focused on its mitigation. It was noted that mitigation is a cost-saver when compared to losses sustained repeatedly, but the financial resources are limited for many of the jurisdictions and pursuing many mitigation actions are cost prohibitive. Often which actions are pursued are based more on dollar amount and less on the urgency of the need.

Most actions were retained for the 2020 update; some were deleted as unrealistic or inappropriate and some were removed for completion.

For the 2025 update, the actions in the plan were reviewed by the planning committee and categorized as follows:

- Completed with a description of the progress.
- Some uncompleted actions were removed from the strategy action plan for various reasons.
- Many of the 2020 actions were kept in the 2025 strategy action plan either because they have not yet been completed or because they are ongoing actions which the committee wanted to highlight in the overall plan. Some had to be added to accommodate the change in required actions to show an action per impactful hazard.

Table 4.1 Action Status Summary

Jurisdiction	Completed Actions	Continuing Actions (ongoing or modify)	Deleted Actions
All	1	87	5

Table 4.2 Summary of Completed and Deleted Actions from the previous Plan

Completed Actions	Completion Details
Undergrounding Utilities	City owned utilities are underground and mapped.
Deleted Actions	Reason for Deletion
Perform siren testing	This is the responsibility of the county, not the cities.
Telecom Risk Assessment	No funding source
Weather Asset Management	Combined into several things
Continue to comply with requirements of FAA 139 and TSA 1542 at Columbia Regional Airport.	Being done
Expand stormwater capacity	Community has minimal risk and doesn't feel this is necessary

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 members of their community to finalize 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 committee was asked to take this into account when discussing actions for their jurisdiction. It was decided that projects will be prioritized by when and where damage occurs, available funding, and political will. Details of projects at the planning stage are not in-depth benefit/cost reviews and further details will be refined as there is project development

STAPLEE AND BENEFIT/COST REVIEWS

STAPLEE Review – The process for selecting and prioritizing action items did not change for the update. The Planning Committee conducted a STAPLEE review of the ongoing and possible new mitigation actions using key questions for each of the STAPLEE categories:

Table 4.3: 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) _____

After the actions were evaluated, the following formula was used to calculate the percentage of points scored out of points available for each individual action: % score = (total points/total of applicable criteria) * 100

Benefit/Cost Review

The benefit of each action was evaluated by awarding two (2) points for each of the following *avoided* damages (8 points maximum = highest benefit):

- Injuries and/or casualties (IC)
- Property damages (PD)
- Loss-of-function (LF) – includes loss of utility services, impact of road/bridge closures, loss of income, cost of displacement
- Emergency management costs/community costs (EM)

The cost of each action was according to the following scale (-4 points maximum = highest cost):

- Already in place or easily put into work program (-1)
- Low/moderate cost – could be worked into operating budget (-2)
- Moderate/high cost –help with funding possibly needed depending on specifics of project (-3)
- High cost – outside help with funding definitely needed (-4)

Prioritization

The Planning Committee reviewed the % STAPLEE score and benefit/cost review for all of the actions and prioritized them according to the following scale:

- High – Work should begin as soon as possible; action should be accomplished in the next 5 years
- Medium – Work could begin within the next 5 years, if time and resources allow
- Low – Long-range goal, if time and resources allow; work within the next 5 years is possible but not probable

It was understood that some of these priorities might be changed by the individual jurisdictions due to funding or staffing constraints as they developed their plans for action implementation.

It should be noted that a number of high priority actions scored somewhat low on both the STAPLEE review and the benefit/cost review due to their high cost which figures into both reviews. These actions remain a high priority with the hope that funding will become available.

The mitigation actions suggested for the specific participating jurisdictions were handed over to the representatives or governing bodies of those jurisdictions for implementation and administration decisions.

Unincorporated Boone County

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Information gaps in population location for disaster planning
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.1
Name of Action or Project:	GIS data sharing
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Continue to supply updated GIS base map information to support changing/updating the D-FIRM maps using local, accurate data
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Boone County GIS
Supporting Organization/Department:	Boone County Assessor
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	County/City Funds/NG911
Local Planning Mechanisms to be Used in Implementation, if any:	The County will be meeting with FEMA staff to work on the next step of their digitization project.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This is ongoing and will continue to provide
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Flooding
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.5
Name of Action or Project:	RISK Map
Mitigation Category:	Prevention/Public Education
Action or Project Description:	Continue to participate as a partner in FEMA's RISKMap process.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Resource Management Dept
Supporting Organization/Department:	FEMA
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal funding
Local Planning Mechanisms to be Used in Implementation, if any:	This is an ongoing activity with the Boone County Resource Management Dept
Progress Report	
Action Status:	Ongoing
Report of Progress:	
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Early warning of hazardous events
Action or Project	
Applicable Goal Statement:	4
Action/Project Number:	1.1.3
Name of Action or Project:	Siren Tests
Mitigation Category:	Prevention Public Education
Action or Project Description:	Continue monthly testing of outdoor warning sirens in compliance with procedures set by the Office of Emergency Management.
Estimated Cost:	$73,000 (maintenance)
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	BCJC
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	BCJC conducts monthly tests of the outdoor warning sirens on the first Wednesday of the month (barring inclement weather); a check system is in place to ensure that the sirens went off. An annual maintenance agreement is in place to resolve any mechanical issues that should arise throughout the year.
Progress Report	
Action Status:	Ongoing
Report of Progress:	Regular Testing
Delete, modify, or carry forward unchanged?	Carry Forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Winter Weather, Thunderstorms, Wildfire,
Problem being Mitigated:	Utility outages and road blocking
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Develop and adhere to a routine maintenance schedule for brush cutting and tree trimming to keep branches from overhanging roads.
Estimated Cost:	$100,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Road & Bridge
Supporting Organization/Department:	County
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Ongoing
Report of Progress:	This is currently being done
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Boone County COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$50,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	All stakeholders
Action/Project Priority:	2030
Timeline for Completion:	Ongoing
Potential Fund Sources:	RHSOC, MACOG/EDA Planning grants
Local Planning Mechanisms to be Used in Implementation, if any:	Provide training on benefits of COOP plans for local agencies. Assign OEM Planner to work with local disaster stakeholders to develop individual continuity of operations plans.
Progress Report	
Action Status:	In progress
Report of Progress:	COOP plans are required for each County department to have. Plans are maintained on a cycle.
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	All that can be funded
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.7
Name of Action or Project:	Revolving Local Hazard Mitigation Fund
Mitigation Category:	Prevention Public Education
Action or Project Description:	Establish local source(s) of sustainable mitigation funding to be used by participating jurisdictions in the Boone County Hazard Mitigation Plan as direct project funding and/or as local match for outside grants.
Estimated Cost:	Unknown
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	Boone County, jurisdictions, Economic Development Groups, etc
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	FEMA, EDA
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	Outreach conducted with local stakeholders about mitigation opportunities.
Delete, modify, or carry forward unchanged?	Carry forward.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Winter Weather and Thunderstorms
Problem being Mitigated:	Utility outages during winter weather and thunderstorms
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.8
Name of Action or Project:	Undergrounding Utilities
Mitigation Category:	Structure Infrastructure projects
Action or Project Description:	Require underground utilities where feasible. Move current aboveground utilities underground.
Estimated Cost:	$100 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Resource Management Dept. – Planning Division
Supporting Organization/Department:	Utility Providers, County Commission
Action/Project Priority:	High
Timeline for Completion:	2050 – Ongoing as there's new development
Potential Fund Sources:	HMGP BRIC
Local Planning Mechanisms to be Used in Implementation, if any:	The County and developers work together to underground utilities for new development.
Progress Report	
Action Status:	Ongoing
Report of Progress:	New developments have underground utilities
Delete, modify, or carry forward unchanged?	Carry forward. Updated the appropriate responsible and supporting organization list.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperatures
Problem being Mitigated:	Makes sure that people have access to shelter during extreme temperatures
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.9
Name of Action or Project:	Cooling/Warming Center agreements
Mitigation Category:	Prevention Public Education
Action or Project Description:	Review and formalize relationships with cooling and warming centers in each community.
Estimated Cost:	$0
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	All Jurisdictions
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, Non-profit grants/funds, DHSS grants
Local Planning Mechanisms to be Used in Implementation, if any:	Review listing of current warming/cooling centers and identify gaps within community. Work with stakeholders to fill gaps.
Progress Report	
Action Status:	In progress
Report of Progress:	Relationships formed with The City of Columbia. Working to address gaps both within Columbia and other Boone County municipalities.
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Telecommunications Disruption during storm events
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.10
Name of Action or Project:	Cell on Wheels Agreements
Mitigation Category:	Emergency services
Action or Project Description:	Establish agreements with cellular providers for "Cell on Wheels" units to be made available in case of telecommunications disruption.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	Private Vendors
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	RHSOC
Local Planning Mechanisms to be Used in Implementation, if any:	Work with vendors to establish agreements and request procedures to ensure quick deployment of cellular networks.
Progress Report	
Action Status:	In Progress
Report of Progress:	Agreements have been made with FirstNet (AT&T) to deploy mobile units to Boone County (if resources are available).
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Dam Failure/Flooding
Problem being Mitigated:	Planning for Dam Failure
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.11
Name of Action or Project:	Dam EAPs
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Support and guide Emergency Action Plans (EAPs) development for dams that are not regulated by the State.
Estimated Cost:	$10,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	Dam and Reservoir Safety Program (MO DNR, Rolla)
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	FEMA, Internal, NG911, planning grants
Local Planning Mechanisms to be Used in Implementation, if any:	Use GIS to identify potential unregulated dams throughout the county. Contact landowners and provide an overview of the dam risks and benefits of EAP's. Assign Planner to work with dam owners to develop EAP concurrent with the hazard posed by the dam.
Progress Report	
Action Status:	In Progress
Report of Progress:	Outreach and workshops have been hosted to support EAP development for both unregulated and regulated dams.
Delete, modify, or carry forward unchanged?	Modify – Updated project description to better reflect the role Emergency Management takes in this process.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Prevents development in floodplain
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.12
Name of Action or Project:	Natural Systems Protection
Mitigation Category:	Hazard Mitigation
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Resource Management Dept. – Planning Division
Supporting Organization/Department:	County Commission
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, PA/IA
Local Planning Mechanisms to be Used in Implementation, if any:	This is an ongoing activity within the Planning and Building Department.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This is currently being done.
Delete, modify, or carry forward unchanged?	Carry forward.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Provide guidance for construction against hazards
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.13
Name of Action or Project:	Building Code Update
Mitigation Category:	Prevention Public Education
Action or Project Description:	Review building codes every three years for possible update.
Estimated Cost:	$0
Benefits:	IC, PD, LF, EM
Plan for Implementation	
Responsible Organization/Department:	Resource Management – Inspection Division
Supporting Organization/Department:	County Commission, Resource Management – Planning Division
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	IBC
Local Planning Mechanisms to be Used in Implementation, if any:	Building codes
Progress Report	
Action Status:	In Progress
Report of Progress:	The County is currently in the process of reviewing the most recent code.
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake, Tornado, Extreme Temperatures, Severe Winter Weather, Flooding, Severe Thunderstorms
Problem being Mitigated:	Ensures essential equipment isn't harmed during hazardous events
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.14
Name of Action or Project:	Equipment Locks
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Secure high value, county-owned, equipment (e.g. HVAC, generators, communications equipment) to protect against earthquake, tornado, extreme temperatures, severe winter weather, flooding, and severe thunderstorms.
Estimated Cost:	$10,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Facilities Management
Supporting Organization/Department:	Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	RHSOC
Local Planning Mechanisms to be Used in Implementation, if any:	Coordinate with Emergency Management to identify county-owned critical assets critical for continuity. COOP Plans
Progress Report	
Action Status:	Action modified
Report of Progress:	
Delete, modify, or carry forward unchanged?	Modified – Updated action description, responsible & supporting organizations, and hazards addressed to better represent roles & responsibilities and create a more attainable action objective.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Flooding of roadways and low water crossings
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.15
Name of Action or Project:	Flash Flood Mitigation
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Mitigate the effects of flooding on public infrastructure by raising low water crossings and upgrading stormwater capacity.
Estimated Cost:	$100 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Depts. of Public Works, Resource Management – Planning Division, Resource Management – Engineering Division
Supporting Organization/Department:	County Commission
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	BRIC, BRO, Cost share
Local Planning Mechanisms to be Used in Implementation, if any:	County Development Regulations: County Roadway Regulations, County Subdivision Regulations, County Zoning Regulations.
Progress Report	
Action Status:	In Progress
Report of Progress:	Ongoing projects
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake, Tornado, Extreme Temperatures, Winter Weather
Problem being Mitigated:	Trapped elderly and special needs populations during a disaster event
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.16
Name of Action or Project:	Evacuation Routes
Mitigation Category:	Prevention Public Education
Action or Project Description:	Provide support and guidance for evacuation plan development specifically related to vulnerable population groups (e.g. nursing homes and special needs populations.)
Estimated Cost:	$0
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	Red Cross
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	TEAP
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	Outreach conducted at Services for Independent Living events
Delete, modify, or carry forward unchanged?	Modify – Updated Action description to better match the roles and responsibilities of the Office of Emergency Management

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Tornados, Flooding, Extreme Temperatures,
Problem being Mitigated:	Keeping shelters open in all events that could displace people
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Backup Generators
Mitigation Category:	Emergency Services
Action or Project Description:	Encourage shelter locations to have backup generators to provide alternative heating sources and lighting.
Estimated Cost:	$0
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	Red Cross
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	HMGP, RHSOC
Local Planning Mechanisms to be Used in Implementation, if any:	This is part of the overall Emergency Operations Plan which covers the entire Planning Area.
Progress Report	
Action Status:	In Progress
Report of Progress:	Shelter locations and coordination within Boone County continue to expand.
Delete, modify, or carry forward unchanged?	Modify – modified action description to better match the roles and responsibilities of all participating organizations.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Displaced populations due to Tornados, Floods, utility outages
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for most vulnerable populations; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Columbia/Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2025
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	Continued partnership with and coordination with Columbia Boone/Boone County Department of Public Health and Human Services
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Mental health during hazardous events
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.19
Name of Action or Project:	Mental First Aid
Mitigation Category:	Education and Outreach
Action or Project Description:	Host Psychological First Aid courses in order to create a local Psychological First Aid capacity.
Estimated Cost:	$5,000
Benefits:	IC, LF, EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	All Stakeholders
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	DHSS, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Work with State Department of Health and Senior Services to deliver Psychological First Aid courses to local stakeholders and volunteers. Establish a trained cadre of community members to be utilized during disaster response.
Progress Report	
Action Status:	In progress
Report of Progress:	Ongoing, several classes have occurred.
Delete, modify, or carry forward unchanged?	Carry forward. Adjusted timeline for completion to “ongoing”.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Helps public know what to do to be safer during all hazards
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.20
Name of Action or Project:	Public Education
Mitigation Category:	Education
Action or Project Description:	Continue to educate the public on all hazards.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	Local Media
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Program Funds
Local Planning Mechanisms to be Used in Implementation, if any:	This is an activity of the Office of Emergency Management and is carried out through press releases and available literature.
Progress Report	
Action Status:	In progress
Report of Progress:	Ongoing, the Boone County Ready Campaign has been established. The Office of Emergency Management participates in multiple outreach events a year, and host the annual Boone County Ready Festival.
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Storms, Winter Weather, Tornados, Flooding
Problem being Mitigated:	Warns people of severe weather
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.21
Name of Action or Project:	Weather Radios
Mitigation Category:	Prevention Public Education
Action or Project Description:	Promote the purchase and use of NOAA radios
Estimated Cost:	$5,000
Benefits:	IC, PD, LF, EM
Plan for Implementation	
Responsible Organization/Department:	Office of Emergency Management
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	RHSOC, NWS grants
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	Ongoing. Outreach presentations always outline multiple methods to receive information, with NOAA radios included.
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Promotes Readiness in the even evacuation is necessary
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.22
Name of Action or Project:	Ready-in-3
Mitigation Category:	Education and Outreach
Action or Project Description:	Promote Ready-in-3 materials in-house at the Columbia/Boone County Dept. of Public Health and Human Services and at public events.
Estimated Cost:	$1,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Columbia/Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	OEM, community-based organizations, MO DHSS
Action/Project Priority:	Medium
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, EDEN
Local Planning Mechanisms to be Used in Implementation, if any:	Ensure material is available and on display at the Columbia/Boone County Dept. of Public Health and Human Services. Identify community events for distribution; explore Medical Reserve Corps potential role in distribution; make plan for distribution and distribute at events.
Progress Report	
Action Status:	In Progress
Report of Progress:	Ongoing. outreach has been conducted with these materials. Outreach continues to be conducted with these materials.
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Tornados, Severe weather
Problem being Mitigated:	Lack of shelter
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Retrofit/build tornado safe rooms in Boone County owned facilities
Estimated Cost:	Over $1 million
Responsible Organization/Department:	Facilities Management
Supporting Organization/Department:	Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA Hazard Mitigation Assistance Grants, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Coordinate with Emergency Management to secure grant funding for these improvements.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Need to maintain power at critical facilities during severe weather
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generators
Mitigation Category:	Emergency Services
Action or Project Description:	Backup generators for county facilities
Estimated Cost:	Over $1million
Responsible Organization/Department:	Facilities Management
Supporting Organization/Department:	Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA Hazard Mitigation Assistance Grants, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Coordinate with Emergency Management to secure grant funding for these improvements.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake
Problem being Mitigated:	Earthquake damage to county-owned facilities
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.23
Name of Action/Project:	Vulnerability Assessment
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Conduct a seismic vulnerability assessment on county-owned facilities
Estimated Cost:	Over $5 million
Responsible Organization/Department:	Facilities Management
Supporting Organization/Department:	Emergency Management
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Internal, FEMA Hazard Mitigation Assistance Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Coordinate with Emergency Management to secure grant funding for these improvements.

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Development occurring without adequate quality roadways
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.24
Name of Action/Project:	Development roadway standards
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Dependable all weather quality rural road network: Require all development roadways be constructed to the same standards of quality to allow predictable access at all times.
Estimated Cost:	$ 1 million
Responsible Organization/Department:	County Resource Management – Planning Division
Supporting Organization/Department:	County Commission
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, FEMA Hazard Mitigation Assistance Grants
Local Planning Mechanisms to be Used in Implementation, if any:	County Development Regulations: County Roadway Regulations, County Subdivision Regulations, County Zoning Regulations

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Increasing rural population with only a single non-standard access roadway
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.25
Name of Action/Project:	Enhanced road access
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Enhanced access to developing land to increase chance of access in bad weather or emergency: Require all development to provide a minimum of two quality roadway connections to the rural road network to allow predictable access at all times.
Estimated Cost:	$ 1 million
Responsible Organization/Department:	County Resource Management – Planning Division
Supporting Organization/Department:	County Commission
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, FEMA Hazard Mitigation Assistance Grants
Local Planning Mechanisms to be Used in Implementation, if any:	County Development Regulations: County Roadway Regulations, County Subdivision Regulations, County Zoning Regulations

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Help ensure continuity of power supply to 911/Dispatch operations
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.26
Name of Action/Project:	Portable Generator Receptacles
Mitigation Category:	Structure and Infrastructure Projects
Action or Project Description:	Install receptacles that can accept portable generator power at the ECC and Backup Dispatch Center to allow for supplemental power supply in the event of primary generator backup failure.
Estimated Cost:	$ 1 million
Responsible Organization/Department:	Boone County Joint Communications
Supporting Organization/Department:	County Commission
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, FEMA HMGP, RHSOC
Local Planning Mechanisms to be Used in Implementation, if any:	BCJC Continuity of Operations Plan

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting county-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000,000
Responsible Organization/Department:	County Commission/Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, EPA grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Brush and combustible materials near structures
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal Program
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Create a brush removal program for residents and educate them on how to remove brush and use designated city burn areas
Estimated Cost:	$0
Responsible Organization/Department:	Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	MDC, DNR grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Boone County
Risk / Vulnerability	
Hazard(s) Addressed:	Sinkholes, Dam Failure, earthquake
Problem being Mitigated:	Potential for building collapse
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	3.1.6
Name of Action or Project:	GIS Data mapping of hazard areas
Mitigation Category:	Prevention Public Education
Action or Project Description:	Survey and map old mines, Levee failure and potential dam inundation zones, and geologically unstable areas in the City and identify potential hazards for consideration during new construction
Estimated Cost:	$10,000
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	Public Works
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	EPA - Thriving Communities; FEMA - HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and Zoning Commission review

Ashland

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Sinkholes
Problem being Mitigated:	All hazards are reviewed and planned for
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Ashland COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Hall
Supporting Organization/Department:	RPC
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	City Administration, MACOG/EDA planning grant
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not yet started
Report of Progress:	Not yet started due to capacity and funding constraints.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Storms, Tornados, Winter Weather
Problem being Mitigated:	Mitigates power outages during storms
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.8
Name of Action or Project:	Undergrounding Utilities
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Require underground utilities where feasible. Relocate current above ground utilities underground as funding is available.
Estimated Cost:	$50 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Public Works
Supporting Organization/Department:	Utility Companies – Ameren and Boone Electric
Action/Project Priority:	High
Timeline for Completion:	2050 - Ongoing
Potential Fund Sources:	MO DNR Grid Resilience Grant, BRIC
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and zoning ordinance
Progress Report	
Action Status:	In Progress
Report of Progress:	Ongoing
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Mitigates flood damage to existing and future development
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.12
Name of Action or Project:	Floodplain management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Zoning
Supporting Organization/Department:	Boone County
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, FMA
Local Planning Mechanisms to be Used in Implementation, if any:	Zoning ordinances
Progress Report	
Action Status:	In progress
Report of Progress:	The floodplain management ordinance is being enforced in compliance with NFIP requirements.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados
Problem being Mitigated:	Loss of life from storms
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	2.1.4
Name of Action or Project:	FEMA Safe Rooms
Mitigation Category:	Structures Infrastructure Project
Action or Project Description:	Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards and equip to serve as warming/cooling center as needed.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	School District, community groups
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	FEMA HMGP, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	The City is working with the school district to update the district's facility master plan in accordance with local building codes and incorporate safe rooms where possible. The City is also evaluating the possibility of updating building codes to require tornado safe rooms for new construction of school buildings.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Flash flooding in streets and parking areas
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.5
Name of Action or Project:	Stormwater Upgrade
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Expand stormwater capacity to mitigate water backups into streets and erosion of existing drainage ditches.
Estimated Cost:	$1 million
Benefits:	PD, LF, EM
Plan for Implementation	
Responsible Organization/Department:	City Public Works
Supporting Organization/Department:	Mid-Missouri Regional Planning Commission
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	FEMA BRIC, City Public Works
Local Planning Mechanisms to be Used in Implementation, if any:	Stormwater Capital Plan
Progress Report	
Action Status:	In Progress
Report of Progress:	The Stormwater Division of Ashland Public Works Department inspects new development to ensure stormwater infrastructure meets the City of Ashland standards. This division is funded by the Parks and Stormwater Sales Tax that was passed by voters in 2018. In June 2024, the Boone County Commission awarded $290,000 in ARPA funds to the City to support stormwater improvement projects.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Power outage due to natural disaster
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generator
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Provide backup power generation to critical infrastructure
Estimated Cost:	$100,000
Responsible Organization/Department:	City Administration, Public Works Department
Supporting Organization/Department:	DNR, SEMA, FEMA
Action/Project Priority:	Medium
Timeline for Completion:	2040
Potential Fund Sources:	FEMA HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Complete master planning efforts for City owned utilities, identify critical facilities and backup power generation needs, evaluate funding mechanisms and inject plans into a CIP

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for most vulnerable populations; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Columbia/Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	Survey for preparedness levels and obstacles to preparedness; analyze obstacles and develop strategy to overcome.
Progress Report	
Action Status:	Not Started
Report of Progress:	This was not completed due to funding constraints. The City received an MRC grant for other activities and may reapply for MRC funding to support this action.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Sinkholes
Problem being Mitigated:	Information gaps in population location for disaster planning
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.1
Name of Action or Project:	GIS mapping of geologically unstable areas
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Update GIS data to show unstable geological locations for reference when approving new construction.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Administration/Public Works
Supporting Organization/Department:	Planning and Zoning
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	City Funds/NG911
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and Zoning ordinances
Progress Report	
Action Status:	New
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting city-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000,000
Responsible Organization/Department:	City Council/Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, EPA grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Ashland
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Brush and combustible materials near structures
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal Program
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Create a brush removal program for residents and educate them on how to remove brush and use designated city burn areas
Estimated Cost:	$0
Responsible Organization/Department:	Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	MDC, DNR grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Centralia

Action Worksheet	
Name of Jurisdiction:	Centralia
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Analyze preparedness for all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Centralia COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP)
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Administrator
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, MACOG/EDA planning grant
Local Planning Mechanisms to be Used in Implementation, if any:	Comprehensive Plan (update in progress)
Progress Report	
Action Status:	In Progress
Report of Progress:	Started by previous City Admin and will be picked up by the new City Administrator.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Centralia
Risk / Vulnerability	
Hazard(s) Addressed:	Winter Weather, Severe Storms, Tornados
Problem being Mitigated:	Utility outages during major storm events
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.8
Name of Action or Project:	Undergrounding Utilities
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Require underground utilities where feasible. Relocate current above ground utilities underground as funding is available.
Estimated Cost:	$ 50 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2050
Potential Fund Sources:	FEMA – HMGP; DNR – Grid Resilience; City – Electric Distribution Fund
Local Planning Mechanisms to be Used in Implementation, if any:	Building ordinance
Progress Report	
Action Status:	In Progress
Report of Progress:	All new developments require underground utilities. The City has set aside $25,000 for funding. The City has a Planning and Zoning Commission to review new development proposals. The City has adopted the County's building code.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Centralia
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Flooding of homes and businesses
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.12
Name of Action or Project:	Floodplain management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Administrator
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	This is an ongoing process when issuing building permits and reviewing subdivision plans.
Progress Report	
Action Status:	In Progress
Report of Progress:	The City continues to enforce NFIP requirements.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Centralia
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Wildfires caused by burning trash or yard waste
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	3.1.5
Name of Action or Project:	Burn Ban and Permits
Mitigation Category:	Prevention Public Education
Action or Project Description:	Develop policy and enforcement regulations concerning burning and permits.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Administrator
Supporting Organization/Department:	Volunteer Fire Department
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Regulations are in place concerning when and how burning can take place.
Progress Report	
Action Status:	In Progress
Report of Progress:	Burning regulations are in place allowing the fire chief to issue burn bans. The City continues to evaluate an ordinance requiring burn permits for sizable burns.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Centralia
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding/Flash Flooding
Problem being Mitigated:	Flash flooding of city streets and properties
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.5
Name of Action or Project:	Stormwater Upgrade
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Expand stormwater capacity to mitigate water backups and erosion of existing drainage ditches. Increasing the size of culverts and ditches as well as fall to increase velocity.
Estimated Cost:	$1 million
Benefits:	PD, LF, EM
Plan for Implementation	
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	Public Works
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	CDBG, City Storm Drainage Fund
Local Planning Mechanisms to be Used in Implementation, if any:	Comprehensive plan and capital improvement plans, as well as subdivision regulations
Progress Report	
Action Status:	In Progress
Report of Progress:	The City is planning a project each year to improve stormwater drainage starting in 2026. Property owners can request free culvert installation if the property owner pays for the materials.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	City of Centralia
Risk / Vulnerability	
Hazard(s) Addressed:	Sinkholes, Dam Failure, earthquake
Problem being Mitigated:	Potential for building collapse
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	3.1.6
Name of Action or Project:	GIS Data mapping of hazard areas
Mitigation Category:	Prevention Public Education
Action or Project Description:	Survey and map old mines and potential dam inundation zones, and geologically unstable areas in the City and identify potential hazards for consideration during new construction
Estimated Cost:	$10,000
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	Public Works
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	EPA - Thriving Communities; FEMA - HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and Zoning Commission review

Action Worksheet	
Name of Jurisdiction:	City of Centralia
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire, Extreme Temperatures, Thunderstorms, Tornado, Winter Weather, Drought
Problem being Mitigated:	Damaged trees pose a fire hazard. Trees removed could increase the urban heat island effect.
Action or Project	
Applicable Goal Statement:	4
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	The City will conduct a tree inventory. Damaged, dangerous city-owned trees will be removed. For each tree removed, a minimum of one healthy tree will be planted and the new locations will consider potential hazards to structures and infrastructure as well as the need for shade. The City will create an educational program for citizens in partnership with MDC about responsible tree removal and planting.
Estimated Cost:	$1.5 million
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	City Tree Board
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	MDC - TRIM, City, EPA – Thriving Communities
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Centralia
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting city-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000,000
Responsible Organization/Department:	City Council/Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, EPA grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Centralia
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Brush and combustible materials near structures
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal Program
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Create a brush removal program for residents and educate them on how to remove brush and use designated city burn areas
Estimated Cost:	$0
Responsible Organization/Department:	Public Works/City FD
Supporting Organization/Department:	None
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	MDC, DNR grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Columbia

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Information gaps in population location for disaster planning
Action or Project	
Applicable Goal Statement:	
Action/Project Number:	1.1.1
Name of Action or Project:	GIS Data Sharing
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Continue to supply updated GIS base map information to support changing/updating the D-FIRM maps using local, accurate data
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Columbia Stormwater Utility
Supporting Organization/Department:	IT - GIS/Boone County/Community Development Department
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, NG911
Local Planning Mechanisms to be Used in Implementation, if any:	Stormwater Utility staff will provide flood plain modeling info and Community Development staff will provide Letter of Map Review (LOMR) applications to SEMA as they come available.
Progress Report	
Action Status:	In Progress
Report of Progress:	GIS data is supplied. The City regularly updates its flood maps with updated FEMA data.
Delete, modify, or carry forward unchanged?	Carry forward with change from Public Works to Stormwater Utility as the responsible organization.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Flooding
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.5
Name of Action or Project:	RISK Map
Mitigation Category:	Prevention Public Education
Action or Project Description:	Continue to participate as a partner in FEMA's RISKMap process.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Community Development Department
Supporting Organization/Department:	FEMA/Boone County/SEMA/Public Works/Sustainability Office
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal funding
Local Planning Mechanisms to be Used in Implementation, if any:	Attend meetings and contribute as possible.
Progress Report	
Action Status:	Ongoing
Report of Progress:	The City attended a meeting in March about the flood risk review maps and is reviewing and commenting on the maps.
Delete, modify, or carry forward unchanged?	Carry forward with change of the responsible organization to the Community Development Department and additional supporting departments.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Columbia COOP
Mitigation Category:	Education and Outrach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$150,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Committee; City Manager's Office; Enterprise Departments
Supporting Organization/Department:	All City Departments
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, FEMA HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In progress
Report of Progress:	Each department is required to have a COOP. Four departments currently have functional COOPs. The City initiated a city-wide COOP, however, work was stalled due to COVID-19 and staff turnover.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperatures
Problem being Mitigated:	Makes sure that people have access to shelter during extreme temperatures
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.9
Name of Action or Project:	Cooling/Warming Center Agreements
Mitigation Category:	Prevention Public Education
Action or Project Description:	Review and formalize relationships with cooling and warming centers in each community.
Estimated Cost:	$90,000
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	Columbia/Boone County Department of Health & Human Services
Supporting Organization/Department:	Local non-profits and service organizations; Sustainability Office
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal – Contractual Services, DHSS
Local Planning Mechanisms to be Used in Implementation, if any:	Review listing of current warming/cooling centers and identify gaps within community. Work with stakeholders to fill gaps.
Progress Report	
Action Status:	In progress
Report of Progress:	The City is identifying gaps. The City has a map of shelters online. Some agreements were terminated due to COVID-19 and other disruptions. The City is evaluating incentive programs to encourage more facilities, especially along bus routes, to participate. The City is also developing kits and informational resources to offer at select locations and local events such as Boone Ready festival.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Prevents development in floodplain
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.12
Name of Action or Project:	Floodplain Management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Community Development Department
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Community Development staff reviews all development plans to ensure ordinances are followed.
Progress Report	
Action Status:	Ongoing
Report of Progress:	Community Development staff reviews all development plans to ensure ordinances are followed.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Provide guidance for construction against hazards
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.13
Name of Action or Project:	Building Code Update
Mitigation Category:	Prevention Public Education
Action or Project Description:	Review building codes every three years for possible update.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Community Development Department
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, IBC
Local Planning Mechanisms to be Used in Implementation, if any:	Staff will review codes along with Building Code Commission and adopt current regulations as directed.
Progress Report	
Action Status:	In Progress
Report of Progress:	The City continues to regularly review and updates codes.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Dam Failure
Problem being Mitigated:	The loss of infrastructure due to dam failure
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	4.1.2
Name of Action or Project:	Dam Road Regulation
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Develop regulations for roads on dams.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Public Works Department
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Staff will develop ordinance for City Council consideration that addresses the placement of public roadways on non-regulated dams.
Progress Report	
Action Status:	In Progress
Report of Progress:	The City is still evaluating potential regulations for roads on dams.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake, Tornado
Problem being Mitigated:	Ensures essential equipment isn't harmed during earthquakes or tornados
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.14
Name of Action or Project:	Equipment Locks
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Lock down high value equipment located outside of municipal buildings (e.g. HVAC, generators, communication equipment) to protect against earthquake or tornado damage
Estimated Cost:	$10,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Public Works
Supporting Organization/Department:	Utilities, Parks & Recreation
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, RHSOC, bonds, FEMA HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Facilities Planning as new facilities are built
Progress Report	
Action Status:	In Progress
Report of Progress:	High value equipment is protected against tornadoes and earthquakes per code
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for most vulnerable populations; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Columbia/Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	Survey for preparedness levels and obstacles to preparedness; analyze obstacles and develop strategy to overcome.
Progress Report	
Action Status:	Not Started
Report of Progress:	This was not completed due to funding constraints. The City received an MRC grant for other activities and may reapply for MRC funding to support this action.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Promotes Readiness in the even evacuation is necessary
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.22
Name of Action or Project:	Ready-in-3
Mitigation Category:	Education and Outreach
Action or Project Description:	Promote Ready-in-3 materials in-house at the Columbia/Boone County Dept. of Public Health and Human Services and at public events.
Estimated Cost:	$1,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Columbia/Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	OEM, community-based organizations, MO DHSS
Action/Project Priority:	Medium
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, ASPR MRC STRRONG Grant
Local Planning Mechanisms to be Used in Implementation, if any:	Ensure material is available and on display at the Columbia/Boone County Dept. of Public Health and Human Services. Identify community events for distribution; explore Medical Reserve Corps potential role in distribution; make plan for distribution and distribute at events.
Progress Report	
Action Status:	In Progress
Report of Progress:	The City implements this each year and is evaluating what can be done better. Recently, Public Health participated in the MRC STTRONG grant through the State of Missouri.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding/Flash Flooding
Problem being Mitigated:	Property damage where flooding/flash flooding occurs
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	4.1.5
Name of Action or Project:	Flood Buyout
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Target Repetitive Loss Properties for flood buyout.
Estimated Cost:	$1.25 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Stormwater Utility
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, FEMA FMA, CDBG
Local Planning Mechanisms to be Used in Implementation, if any:	Columbia Storm Water Utility will evaluate properties that are repeatedly flooded and make decision whether to buy out or improve drainage systems.
Progress Report	
Action Status:	In progress
Report of Progress:	Stormwater Utility bought one property in the last five years. Although the property had experienced flood damage in the past, it was actually purchased as it made a stormwater project more feasible to design and construct.
Delete, modify, or carry forward unchanged?	Carry forward with revised cost estimate.

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding/Flash Flooding
Problem being Mitigated:	Stormwater backups
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	4.1.6
Name of Action or Project:	Overland Flow
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Identify and address areas where overland overflow for flood water is limited and implement projects to provide overflow such as upgraded culverts and ditches.
Estimated Cost:	$100,000-$5 million
Benefits:	IC, PD. LF, EM
Plan for Implementation	
Responsible Organization/Department:	Stormwater Utility
Supporting Organization/Department:	Community Development, Office of Sustainability
Action/Project Priority:	Medium
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal, CDBG, HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Columbia Storm Water Utility will search for areas where lack of overland flow paths for floods which exceed storm system design standards exacerbates flood risks.
Progress Report	
Action Status:	In Progress
Report of Progress:	
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	City of Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado, Severe Winter Weather, Severe Storms
Problem being Mitigated:	Powerlines falling due to severe weather
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.8
Name of Action or Project:	Undergrounding Utilities
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Bury electric lines
Estimated Cost:	$50 million
Responsible Organization/Department:	Columbia Utilities
Supporting Organization/Department:	Planning and Zoning, Boone Electric Coop
Action/Project Priority:	High
Timeline for Completion:	2050
Potential Fund Sources:	DNR Grid Resilience Grant; City - Enterprise
Local Planning Mechanisms to be Used in Implementation, if any:	

Action Worksheet	
Name of Jurisdiction:	City of Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Roads and low water crossings posing a flood hazard during rain events
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	4.1.9
Name of Action or Project:	Road and Bridge Elevation
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Elevate roads and low water crossings posing a flood hazard
Estimated Cost:	$1 million
Responsible Organization/Department:	Public Works
Supporting Organization/Department:	Columbia Utilities; Planning and Zoning
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	FEMA HMGP; CDBG, Missouri Bridge Program
Local Planning Mechanisms to be Used in Implementation, if any:	

Action Worksheet	
Name of Jurisdiction:	City of Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire/Structure Fire
Problem being Mitigated:	Brush and dry vegetation that could become fuel for wildfires around city owned/operated buildings and residential housing
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal Program
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Develop a brush removal program for city-owned/operated buildings and public areas, and a program for city residents.
Estimated Cost:	$5,000
Responsible Organization/Department:	Public Works
Supporting Organization/Department:	Columbia Fire Department
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	EPA – Thriving Communities; USDA Community Wildfire Defense Grant
Local Planning Mechanisms to be Used in Implementation, if any:	

Action Worksheet	
Name of Jurisdiction:	City of Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire/Structure Fire
Problem being Mitigated:	Structures and infrastructure damages due to fires caused by those trying to stay warm outside
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	4.1.8
Name of Action or Project:	Warming Fire Safety
Mitigation Category:	Prevention Public Education
Action or Project Description:	Develop a program to identify and deploy measures to mitigate hazards to lives and property from warming fires, such as fire safety resources and education, increasing access to warming centers, shelters, and housing, and other solutions that may be identified.
Estimated Cost:	$5,000
Responsible Organization/Department:	Columbia Fire Department
Supporting Organization/Department:	Turning Point, Columbia Police Department Homeless Outreach Team
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA – Fire Prevention and Safety Grant; USDA Community Wildfire Defense Grant
Local Planning Mechanisms to be Used in Implementation, if any:	

Action Worksheet	
Name of Jurisdiction:	City of Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire/Structure Fire
Problem being Mitigated:	Need for planning and training for wildfire mitigation and response
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	4.1.7
Name of Action or Project:	Wildfire Protection Plan and Training
Mitigation Category:	Emergency Services
Action or Project Description:	Develop a program to develop a community wildfire protection plan and train staff on wildfire mitigation and response
Estimated Cost:	$150,000
Responsible Organization/Department:	Columbia Fire Department
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA – Staffing for Adequate Fire and Emergency Response; USDA - Community Wildfire Defense Grant
Local Planning Mechanisms to be Used in Implementation, if any:	

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting city-owned properties to low flow toilets and faucets
Estimated Cost:	$5,000,000
Responsible Organization/Department:	City Council/Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, EPA grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Columbia
Risk / Vulnerability	
Hazard(s) Addressed:	Sinkholes, Dam Failure, earthquake, Levee Failure
Problem being Mitigated:	Potential for building collapse
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	3.1.6
Name of Action or Project:	GIS Data mapping of hazard areas
Mitigation Category:	Prevention Public Education
Action or Project Description:	Survey and map old mines and potential dam and levee failure inundation zones, and geologically unstable areas in the City and identify potential hazards for consideration during new construction
Estimated Cost:	$100,000
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	GIS Dept.
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	EPA - Thriving Communities; FEMA - HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and Zoning Commission review

Hallsville

Action Worksheet	
Name of Jurisdiction:	Hallsville
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Levees, Dams, Sinkholes
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Hallsville COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen
Supporting Organization/Department:	Mid-MO RPC
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, FEMA, MACOG/EDA planning grant
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	BOA approves development of a plan, a work session of the BOA will be held along with the appropriate commissions to determine the process for developing the COOP.
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Hallsville
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding/Flash Flooding
Problem being Mitigated:	Flash flooding of city streets and properties
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.5
Name of Action or Project:	Stormwater Upgrade
Mitigation Category:	Structure Infrastructure
Action or Project Description:	Expand stormwater capacity to mitigate water backups into streets and erosion of existing drainage ditches.
Estimated Cost:	$1 million
Benefits:	PD, LF, EM
Plan for Implementation	
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	Public Works
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	FEMA, CDBG, Grants
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Hallsville
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados , extreme temperatures
Problem being Mitigated:	Loss of life from storms
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structure Infrastructure
Action or Project Description:	Build and equip tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards to be used during storms and as warming/cooling centers during extreme temperatures.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	City Administrator
Supporting Organization/Department:	School District, community groups
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Hallsville
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Prevents development in floodplain
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.12
Name of Action or Project:	Floodplain Management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	SEMA
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Public Works staff reviews all development plans to ensure ordinances are followed.
Progress Report	
Action Status:	Ongoing
Report of Progress:	
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Hallsville
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for most vulnerable populations; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services, Hallsville Police
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	Survey for preparedness levels and obstacles to preparedness; analyze obstacles and develop strategy to overcome.
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Hallsville
Risk / Vulnerability	
Hazard(s) Addressed:	Sinkholes, Dam Failure, earthquake
Problem being Mitigated:	Potential for building collapse
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	3.1.6
Name of Action or Project:	GIS Data mapping of hazard areas
Mitigation Category:	Prevention Public Education
Action or Project Description:	Survey and map old mines and potential dam inundation zones and geologically unstable areas in the City and identify potential hazards for consideration during new construction
Estimated Cost:	$10,000
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	Public Works
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	EPA - Thriving Communities; FEMA - HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and Zoning Commission review

Action Worksheet	
Name of Jurisdiction:	Hallsville
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting city-owned properties to low flow toilets and faucets
Estimated Cost:	$100,000
Responsible Organization/Department:	City Council/Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, EPA grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Hallsville
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Brush and combustible materials near structures
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal Program
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Create a brush removal program for residents and educate them on how to remove brush and use designated city burn areas
Estimated Cost:	$0
Responsible Organization/Department:	Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	MDC, DNR grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Hallsville
Risk / Vulnerability	
Hazard(s) Addressed:	Winter Weather, Severe Storms, Tornados
Problem being Mitigated:	Utility outages during major storm events
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.8
Name of Action or Project:	Undergrounding Utilities
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Require underground utilities where feasible. Relocate current above ground utilities underground as funding is available.
Estimated Cost:	$ 10 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	FEMA
Action/Project Priority:	Medium
Timeline for Completion:	2050
Potential Fund Sources:	FEMA BRIC, Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Building ordinance
Progress Report	
Action Status:	In Progress
Report of Progress:	New utilities are underground
Delete, modify, or carry forward unchanged?	Modify

Harrisburg

Action Worksheet	
Name of Jurisdiction:	Harrisburg
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Harrisburg COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Clerk and Board of Trustees
Supporting Organization/Department:	Boone County Emergency Management, Mid-MO RPC
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	Internal, FEMA, MACOG/EDA Planning grant
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	Boone County Emergency Management to provide support for further development of COOP plans.
Delete, modify, or carry forward unchanged?	Carry forward

Action Worksheet	
Name of Jurisdiction:	Harrisburg
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Prevents development in floodplain
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.12
Name of Action or Project:	Floodplain Management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	SEMA
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Public Works staff reviews all development plans to ensure ordinances are followed.
Progress Report	
Action Status:	Ongoing
Report of Progress:	This is being complied with.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Harrisburg
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados
Problem being Mitigated:	Loss of life from storms
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	City Administrator
Supporting Organization/Department:	School District, community groups
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Discuss at Strategic Planning Meeting
Progress Report	
Action Status:	Not Started
Report of Progress:	Not started due to lack of grant funding
Delete, modify, or carry forward unchanged?	Carry Forward

Action Worksheet	
Name of Jurisdiction:	Harrisburg
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Power outage due to natural disaster
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generators
Mitigation Category:	Emergency Services
Action or Project Description:	Backup generators for Harrisburg-owned facilities.
Estimated Cost:	$200,000
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	Harrisburg R-VIIISchool District
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	Internal, FEMA HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	COOP Plans.

Action Worksheet	
Name of Jurisdiction:	Harrisburg
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Need for upgraded communication equipment during a natural disaster
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	5.1.1
Name of Action or Project:	Backup Radios
Mitigation Category:	Emergency Services
Action or Project Description:	Purchase backup radios for city staff to use in case of power failure
Estimated Cost:	$5,000
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	RHSOC, State Farm Foundation
Local Planning Mechanisms to be Used in Implementation, if any:	

Action Worksheet	
Name of Jurisdiction:	Harrisburg
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Need for upgraded communication equipment during a natural disaster
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.10
Name of Action or Project:	Cell on Wheels (COW)
Mitigation Category:	Emergency Services
Action or Project Description:	Cell on Wheels (COW) acting as redundant communication for the public in the event of a disruption
Estimated Cost:	$100,000
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	RHSOC
Local Planning Mechanisms to be Used in Implementation, if any:	

Action Worksheet	
Name of Jurisdiction:	Harrisburg
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting city-owned properties to low flow toilets and faucets
Estimated Cost:	$100,000
Responsible Organization/Department:	City Council/Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, EPA grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Harrisburg
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Brush and combustible materials near structures
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal Program
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Create a brush removal program for residents and educate them on how to remove brush and use designated city burn areas
Estimated Cost:	$0
Responsible Organization/Department:	Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	MDC, DNR grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Hartsburg

Action Worksheet	
Name of Jurisdiction:	Hartsburg
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Prevents development in floodplain
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.12
Name of Action or Project:	Floodplain management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Clerk
Supporting Organization/Department:	SEMA
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
	Public Works staff reviews all development plans to ensure ordinances are followed.
Progress Report	
Action Status:	Ongoing
Report of Progress:	In progress, we have public works come down regularly to review development plans. Levee district helps maintain flood mitigation.
Delete, modify, or carry forward unchanged?	Modify

Action Worksheet	
Name of Jurisdiction:	Hartsburg
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Sewer station being flooded during historic floods
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	7.1.1
Name of Action or Project:	Sewer Inundation Mitigation
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Raise sewer pump station to mitigate possible future flooding. Update 2/2025- sewer pump did not need to be raised. We have received Arpa funds to consult with sewer district engineering to find alternative to pump waste water to meet future EPA guidelines.
Estimated Cost:	$300,000
Benefits:	
Plan for Implementation	
Responsible Organization/Department:	City administration
Supporting Organization/Department:	Boone County Sewer district
Action/Project Priority:	High
Timeline for Completion:	2028
Potential Fund Sources:	Internal, County, FEMA, CDBG, and ARPA Grant
	We are working with Boone County sewer district to facilitate coordination of several plans.
Progress Report	
Action Status:	In progress
Report of Progress:	We were awarded $300,000 in ARPA funds. We signed the Wastewater operations and maintenance agreement to have Boone County Regional Sewer district handle grant writing and overall engineering project to address waste water system.
Delete, modify, or carry forward unchanged?	Modify

Action Worksheet	
Name of Jurisdiction:	Hartsburg
Risk / Vulnerability	
Hazard(s) Addressed:	Winter Weather, Severe Storms, Tornados
Problem being Mitigated:	Utility outages during major storm events
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.8
Name of Action or Project:	Undergrounding Utilities
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Require underground utilities where feasible. Relocate current above ground utilities underground as funding is available.
Estimated Cost:	$ 10 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	FEMA
Action/Project Priority:	Medium
Timeline for Completion:	2050
Potential Fund Sources:	FEMA BRIC, Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Building ordinance, Fiber internet was installed underground.
Progress Report	
Action Status:	In Progress
Report of Progress:	New utilities are underground
Delete, modify, or carry forward unchanged?	Modify

Action Worksheet	
Name of Jurisdiction:	Hartsburg
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, drought, extreme temperatures, severe thunderstorms, tornado, wildfire, levee, sink holes, dam failure
Problem being Mitigated:	Need for community shelter and education location
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	2.1.4
Name of Action or Project:	Community Safe Room
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Establish and equip Legion hall as FEMA rated community safety location that can be used during storms and as a warming/Cooling center.
Estimated Cost:	$6,000 annually
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	DNR, FEMA, SEMA
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA Grants, ARPA Funds
Local Planning Mechanisms to be Used in Implementation, if any:	We will maintain Legion hall functioning to support community needs. Internet is installed to provide access to hazard education materials.

Action Worksheet	
Name of Jurisdiction:	Hartsburg
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding/Levee Failure
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for most vulnerable populations; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Hartsburg
Risk / Vulnerability	
Hazard(s) Addressed:	Sinkholes, Dam Failure, earthquake, Levee Failure
Problem being Mitigated:	Potential for building collapse
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	3.1.6
Name of Action or Project:	GIS Data mapping of hazard areas
Mitigation Category:	Prevention Public Education
Action or Project Description:	Survey and map old mines and potential dam and levee failure inundation zones, and geologically unstable areas in the City and identify potential hazards for consideration during new construction
Estimated Cost:	$10,000
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	Public Works
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	EPA - Thriving Communities; FEMA - HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and Zoning Commission review

Action Worksheet	
Name of Jurisdiction:	Hartsburg
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting city-owned properties to low flow toilets and faucets
Estimated Cost:	$100,000
Responsible Organization/Department:	City Council/Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, EPA grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Hartsburg
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Brush and combustible materials near structures
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal Program
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Create a brush removal program for residents and educate them on how to remove brush and use designated city burn areas
Estimated Cost:	$0
Responsible Organization/Department:	Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	MDC, DNR grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Huntsdale

Action Worksheet	
Name of Jurisdiction:	Huntsdale
Risk / Vulnerability	
Hazard(s) Addressed:	Winter Weather, Severe Storms, Tornados
Problem being Mitigated:	Utility outages during major storm events
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.8
Name of Action or Project:	Undergrounding Utilities
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Require underground utilities where feasible. Relocate current above ground utilities underground as funding is available.
Estimated Cost:	$ 5 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen
Supporting Organization/Department:	Boone Electric Co-op
Action/Project Priority:	High
Timeline for Completion:	2050
Potential Fund Sources:	FEMA, Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Building ordinance. Partnership with Electric Co-Op
Progress Report	
Action Status:	In Progress
Report of Progress:	Boone Electric installs underground utilities in the County
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Huntsdale
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Prevents loss of development in floodplain
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.12
Name of Action or Project:	Floodplain Management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Floodplain Manager
Supporting Organization/Department:	SEMA
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Floodplain ordinance
Progress Report	
Action Status:	Ongoing
Report of Progress:	ongoing
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Huntsdale
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Levees, Dams, Sinkholes
Problem being Mitigated:	Disruption in operations due to natural hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Huntsdale COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP)
Estimated Cost:	$5,000
Responsible Organization/Department:	Mayor's Office
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	MACOG/EDA planning grant, resiliency grants
Local Planning Mechanisms to be Used in Implementation, if any:	

Action Worksheet	
Name of Jurisdiction:	Huntsdale
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding/Flash Flooding
Problem being Mitigated:	Flash flooding of city streets and properties
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.5
Name of Action or Project:	Stormwater Upgrade
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Expand stormwater capacity to mitigate water backups into streets and erosion of existing drainage ditches.
Estimated Cost:	$1 million
Benefits:	PD, LF, EM
Plan for Implementation	
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	FEMA, CDBG, Grants
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not started yet due to the need for staff and funding, including ability to match grant funds.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Huntsdale
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Levee Failure
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for most vulnerable populations; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Huntsdale
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting city-owned properties to low flow toilets and faucets
Estimated Cost:	$10,000
Responsible Organization/Department:	City Council/Public Works
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, EPA grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Huntsdale
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperatures, Severe Thunderstorms, and Tornado
Problem being Mitigated:	Extreme Temperatures, Severe Thunderstorms, and Tornado
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.4
Name of Action or Project:	City shelter\saferoom
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Equip city shelter for use as a warming/cooling center during extreme temperature events as well as FEMA tornado safe room.
Estimated Cost:	$500,000
Responsible Organization/Department:	City Council
Supporting Organization/Department:	Boone County
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	City capital improvements funds, FEMA HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Huntsdale
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Brush and combustible materials near structures
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal Program
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Create a brush removal program for residents and educate them on how to remove brush and use designated city burn areas
Estimated Cost:	$0
Responsible Organization/Department:	City of Rocheport
Supporting Organization/Department:	None
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	MDC, DNR grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Huntsdale
Risk / Vulnerability	
Hazard(s) Addressed:	Sinkholes, Dam Failure, earthquake, Levee Failure
Problem being Mitigated:	Potential for building collapse
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	3.1.6
Name of Action or Project:	GIS Data mapping of hazard areas
Mitigation Category:	Prevention Public Education
Action or Project Description:	Survey and map old mines and potential dam and levee failure inundation zones, and geologically unstable areas in the City and identify potential hazards for consideration during new construction
Estimated Cost:	$10,000
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	Public Works
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	EPA - Thriving Communities; FEMA - HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and Zoning Commission review

Rocheport

Action Worksheet	
Name of Jurisdiction:	Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Winter Weather, Severe Storms, Tornados
Problem being Mitigated:	Utility outages during major storm events
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.8
Name of Action or Project:	Undergrounding Utilities
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Require underground utilities where feasible. Relocate current above ground utilities underground as funding is available.
Estimated Cost:	$ 5 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Board of Aldermen
Supporting Organization/Department:	Boone Electric Co-op
Action/Project Priority:	High
Timeline for Completion:	2050
Potential Fund Sources:	FEMA BRIC
	Building ordinance. Partnership with Electric Co-Op
Progress Report	
Action Status:	In Progress
Report of Progress:	New utilities are underground
Delete, modify, or carry forward unchanged?	Carry forward unchanged

Action Worksheet	
Name of Jurisdiction:	Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Prevents loss of development in floodplain
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.12
Name of Action or Project:	Floodplain management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Mayor and City Aldermen
Supporting Organization/Department:	Planning and Zoning
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
	Floodplain ordinance
Progress Report	
Action Status:	Ongoing
Report of Progress:	The flood damage prevention/floodplain management ordinances is being enforced in compliance with NFIP requirements.
Delete, modify, or carry forward unchanged?	Carry forward unchanged

Action Worksheet	
Name of Jurisdiction:	Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Flood
Problem being Mitigated:	Flood damage to existing and future construction
Action or Project	
Applicable Goal Statement:	5
Action/Project Number:	4.1.5
Name of Action or Project:	Flood Buyout
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Acquire properties susceptible to flood damage as funds are available.
Estimated Cost:	$0-$100,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	City Aldermen
Supporting Organization/Department:	Planning and Zoning Commission
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Internal, FMA
Progress Report	
Action Status:	In Progress
Report of Progress:	Acquisition of 4 lots, turned into a children's park
Delete, modify, or carry forward unchanged?	Carry forward unchanged

Action Worksheet	
Name of Jurisdiction:	Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Sewer station being flooded during historic floods
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	7.1.1
Name of Action or Project:	Sewer Inundation Mitigation
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Raise sewer pump station to mitigate possible future flooding.
Estimated Cost:	$400,000
Benefits:	
Plan for Implementation	
Responsible Organization/Department:	City
Supporting Organization/Department:	Boone County Sewer district
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, County, FEMA, CDBG
Progress Report	
Action Status:	Not Started
Report of Progress:	None yet due to lack of capacity and funds
Delete, modify, or carry forward unchanged?	Carry forward, with adjusted cost and timeline

Action Worksheet	
Name of Jurisdiction:	City of Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting city-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000
Responsible Organization/Department:	City of Rocheport
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	City capital improvement funds, CDBG
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	City of Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes and sinkholes
Problem being Mitigated:	Public awareness of these hazards
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	7.1.2
Name of Action or Project:	Earthquake and Sinkhole Awareness Education
Mitigation Category:	Education and Awareness
Action or Project Description:	Create an outreach program including classes with presentations on mitigating earthquake and sinkhole hazards at home
Estimated Cost:	$500
Responsible Organization/Department:	City of Rocheport
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Low
Timeline for Completion:	2027
Potential Fund Sources:	Boone County Emergency Management Office
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	City of Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Extreme Temperatures, Severe Thunderstorms, and Tornado
Problem being Mitigated:	Extreme Temperatures, Severe Thunderstorms, and Tornado
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.4
Name of Action or Project:	City shelter\saferoom
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Equip city shelter for use as a warming/cooling center during extreme temperature events as well as FEMA tornado safe room.
Estimated Cost:	$500,000
Responsible Organization/Department:	City of Rocheport
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	City capital improvements funds, FEMA HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	City of Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Lack of sufficient hydrants
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.9
Name of Action or Project:	New Fire Hydrants
Mitigation Category:	Emergency Services
Action or Project Description:	Add new hydrants in areas that are not close enough to the existing hydrants
Estimated Cost:	$50,000
Responsible Organization/Department:	City of Rocheport
Supporting Organization/Department:	Consolidated Public Water Supply District No. 1 of Boone County
Action/Project Priority:	Medium
Timeline for Completion:	2035
Potential Fund Sources:	FEMA HMGP, Fire Funds
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	City of Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Brush and combustible materials near structures
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal Program
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Create a brush removal program for residents and educate them on how to remove brush and use designated city burn areas
Estimated Cost:	$0
Responsible Organization/Department:	City of Rocheport
Supporting Organization/Department:	None
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	MDC, DNR grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	City of Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Culverts backing up
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.5
Name of Action or Project:	Stormwater upgrade
Mitigation Category:	Structure and Infrastructure
Action or Project Description:	Upsize culverts throughout town to accommodate larger flows
Estimated Cost:	$700,000
Responsible Organization/Department:	City of Rocheport
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2035
Potential Fund Sources:	FEMA BRIC, CDBG
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	City of Rocheport
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	River flooding buildings and homes
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	7.1.3
Name of Action or Project:	Flood Wall
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Build a flood wall to protect residences, businesses, and city buildings
Estimated Cost:	$850,000
Responsible Organization/Department:	City of Rocheport
Supporting Organization/Department:	None
Action/Project Priority:	High
Timeline for Completion:	2035
Potential Fund Sources:	FEMA HMGP, EDA
Local Planning Mechanisms to be Used in Implementation, if any:	None

Sturgeon

Action Worksheet	
Name of Jurisdiction:	Sturgeon
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Sturgeon COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Mayor
Supporting Organization/Department:	City Staff, Mid-MO RPC
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, FEMA, MACOG Planning grants
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	This is in progress; most city documents are now backed up on the Cloud;
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon
Risk / Vulnerability	
Hazard(s) Addressed:	Winter Weather, Severe Storms, Tornados
Problem being Mitigated:	Utility outages during major storm events
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.8
Name of Action or Project:	Undergrounding Utilities
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Require underground utilities where feasible. Relocate current above ground utilities underground as funding is available.
Estimated Cost:	$ 5 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Mayor/Board of Aldermen
Supporting Organization/Department:	AmerenUE
Action/Project Priority:	High
Timeline for Completion:	2050
Potential Fund Sources:	FEMA BRIC, Grants
Local Planning Mechanisms to be Used in Implementation, if any:	Building ordinance. Partnership with Electric Co-Op
Progress Report	
Action Status:	In Progress
Report of Progress:	New utilities are underground
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Prevents loss of development in floodplain
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.12
Name of Action or Project:	Floodplain Management
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Enforce flood damage prevention/floodplain management ordinances in compliance with NFIP requirements.
Estimated Cost:	$0
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Mayor and Board of Aldermen
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	Ongoing
Potential Fund Sources:	Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Floodplain ordinance
Progress Report	
Action Status:	Ongoing
Report of Progress:	
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire, Drought
Problem being Mitigated:	Ensuring proper water pressure for fighting structure or wild fires.
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	10.1.1
Name of Action or Project:	Waterline Replacement
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Replace 2, 3, and 4 inch water lines with 6 inch lines to ensure adequate supply for fire flow as well as mitigating possible leaks for water conservation
Estimated Cost:	$2.5 million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Mayor/Board of Aldermen
Supporting Organization/Department:	WD #10, Mid-MO RPC
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	Bonds
Local Planning Mechanisms to be Used in Implementation, if any:	talk with the water district to ensure that fire flow is considered in decisions re: location of line upgrades
Progress Report	
Action Status:	In Progress
Report of Progress:	Water District #10 has passed a $2.5 Million bond issue and will be putting in bigger lines
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados
Problem being Mitigated:	Loss of life from storms
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Build and equip tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards that can be used as a warming/cooling center as well as a storm shelter when needed.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	School District, community groups
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not started due to lack of funding.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding/Flash Flooding
Problem being Mitigated:	Flooded Sewer system
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	7.1.1
Name of Action or Project:	Sewer Inundation Mitigation
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Flood Mitigation for Sewer system/lift station. Raise sewer components.
Estimated Cost:	$500,000-$1.2 million
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Maintenance Department
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	CDBG, FEMA, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	Scoping for solution
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding/Flash Flooding
Problem being Mitigated:	Flooded roadways and erosion of current stormwater facilities
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.5
Name of Action or Project:	Stormwater Upgrade
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Added Storm water capacity for Flash flood mitigation for flooding of roadways and erosion of current stormwater carrying facilities.
Estimated Cost:	$500,000-$1.2 million
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Maintenance Department
Supporting Organization/Department:	
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	CDBG, FEMA, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In progress
Report of Progress:	Environmental Review being developed.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for most vulnerable populations; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Sturgeon
Risk / Vulnerability	
Hazard(s) Addressed:	Sinkholes, Dam Failure, earthquake
Problem being Mitigated:	Potential for building collapse
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	3.1.6
Name of Action or Project:	GIS Data mapping of hazard areas
Mitigation Category:	Prevention Public Education
Action or Project Description:	Survey and map old mines and potential dam inundation zones, and geologically unstable areas in the City and identify potential hazards for consideration during new construction
Estimated Cost:	$10,000
Responsible Organization/Department:	City Administration
Supporting Organization/Department:	Public Works
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	EPA - Thriving Communities; FEMA - HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Planning and Zoning Commission review

Centralia School District

Action Worksheet	
Name of Jurisdiction:	Centralia School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Severe Thunderstorms, Severe Winter Weather, Tornado, Extreme Temperatures
Problem being Mitigated:	Power outages due to severe weather
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generators
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Add generators to all school buildings
Estimated Cost:	$600,000
Responsible Organization/Department:	School Board
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2028
Potential Fund Sources:	FEMA HMGP, internal match
Local Planning Mechanisms to be Used in Implementation, if any:	COOP

Action Worksheet	
Name of Jurisdiction:	Centralia School District
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados, severe winter weather, extreme temperatures
Problem being Mitigated:	Loss of life from extreme weather
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards to protect students and residents of the district in the event of severe weather and to use as a warming or cooling center in case of power outage during extreme temperatures.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	Centralia School Administration
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP, Internal
Progress Report	
Action Status:	Not started
Report of Progress:	
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Centralia School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Sinkholes
Problem being Mitigated:	All hazards are reviewed and planned for
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	COOP plan
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Administration
Supporting Organization/Department:	RPC
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	Administration, MACOG Planning grant
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not yet started
Report of Progress:	Not yet started due to capacity and funding constraints.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Centralia School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Need for better communication systems between buildings
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	15.1.1
Name of Action or Project:	Communication System Upgrade
Mitigation Category:	Prevention Public Education
Action or Project Description:	Upgrade raptor communication systems and train staff
Estimated Cost:	$40,000
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Information Technology
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	School Violence Prevention Program, State Farm Foundation, Firehouse Subs
Local Planning Mechanisms to be Used in Implementation, if any:	COOP

Action Worksheet	
Name of Jurisdiction:	Centralia School District
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting district-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000,000
Responsible Organization/Department:	School Board/Maintenance
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, Bonds
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Centralia School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for vulnerable student body; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Centralia School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Lack of knowledge on natural hazard prevention and safety
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	9.1.2
Name of Action or Project:	Natural Hazard Education
Mitigation Category:	Education and Awareness
Action or Project Description:	Provide Education to students' families and teachers about how to mitigate risks from natural hazards in the region.to protect life and property. Incorporate into social media and district newsletter campaign.
Estimated Cost:	0
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Boone County Office of Emergency Management
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Columbia Public Schools

Action Worksheet	
Name of Jurisdiction:	Columbia Public Schools
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Levees, Dams, Sinkholes
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Columbia Public Schools COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Columbia Public Schools Administration
Supporting Organization/Department:	School Board
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, MACOG Planning grant
Progress Report	
Action Status:	Not Started
Report of Progress:	This has not been started yet due to staff turnover
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia Public Schools
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados, severe winter weather, extreme temperatures
Problem being Mitigated:	Loss of life from extreme weather
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards to protect students and residents of the district in the event of severe weather and to use as a warming or cooling center in case of power outage during extreme temperatures.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	Columbia Public Schools Administration
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP, Internal
Progress Report	
Action Status:	In Progress
Report of Progress:	Newly constructed buildings have tornado shelters. Since 2020, 3 schools have added safe rooms – Jeff Middle, Rock Bridge Elementary, and Russell Elementary. CPS is also building a new elementary school, Eagle Bluffs, which will have a tornado safe room. Each shelter has a battery back up for life saving equipment and elevators. Due to the limited capacity of the batteries, the district is planning to replace them with generators at the end of their useful lives.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Columbia Public Schools
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Severe Thunderstorms, Severe Winter Weather, Tornado, extreme temperatures
Problem being Mitigated:	Power outages due to severe weather
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generators
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Add generators to all school buildings
Estimated Cost:	$600,000
Responsible Organization/Department:	Facilities
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	FEMA HMGP, internal match
Local Planning Mechanisms to be Used in Implementation, if any:	COOP

Action Worksheet	
Name of Jurisdiction:	Columbia Public Schools
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Need for better communication systems between buildings
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	15.1.1
Name of Action or Project:	Communication System Upgrade
Mitigation Category:	Prevention Public Education
Action or Project Description:	Upgrade raptor communication systems and train staff
Estimated Cost:	$40,000
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Information Technology
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	School Violence Prevention Program, State Farm Foundation, Firehouse Subs
Local Planning Mechanisms to be Used in Implementation, if any:	COOP

Action Worksheet	
Name of Jurisdiction:	Columbia Public Schools
Risk / Vulnerability	
Hazard(s) Addressed:	Unwanted Intruder
Problem being Mitigated:	Unwanted intruder
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	8.1.1
Name of Action or Project:	Weapons Detection Lanes
Mitigation Category:	Prevention Public Education
Action or Project Description:	Weapons detection lanes
Estimated Cost:	$400,000
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2029
Potential Fund Sources:	Stop School Violence Grant, School Violence Prevention Program, State Farm Foundation
Local Planning Mechanisms to be Used in Implementation, if any:	Weapons policy

Action Worksheet	
Name of Jurisdiction:	Columbia Public Schools
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquake
Problem being Mitigated:	Damage to buildings due to earthquakes
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.23
Name of Action or Project:	Vulnerability Assessment
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Conduct an earthquake vulnerability assessment for all buildings
Estimated Cost:	$1 million
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Facilities
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	COOP

Action Worksheet	
Name of Jurisdiction:	Columbia Public Schools
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting district-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000,000
Responsible Organization/Department:	School Board/Maintenance
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, Bonds
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Columbia Public Schools
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for vulnerable student body; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Columbia Public Schools
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Lack of knowledge on natural hazard prevention and safety
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	9.1.2
Name of Action or Project:	Natural Hazard Education
Mitigation Category:	Education and Awareness
Action or Project Description:	Provide Education to students' families and teachers about how to mitigate risks from natural hazards in the region.to protect life and property. Incorporate into social media and district newsletter campaign.
Estimated Cost:	0
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Boone County Office of Emergency Management
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Hallsville School District

Action Worksheet	
Name of Jurisdiction:	Hallsville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Unwanted Intruder
Problem being Mitigated:	Unwanted Intruder in school buildings
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.1
Name of Action or Project:	Active Shooter Mitigation
Mitigation Category:	Prevention Public Education
Action or Project Description:	Increase capacity to prevent and respond to unwanted intruder/active shooter events.
Estimated Cost:	$10,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Hallsville Administration
Supporting Organization/Department:	Hallsville Police and Boone County Sheriff's Department
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, School Violence Program, State Farm
Local Planning Mechanisms to be Used in Implementation, if any:	School Policy
Progress Report	
Action Status:	In Progress
Report of Progress:	Lockdown procedures. Limited entry points.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Hallsville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Levees, Dams, Sinkholes
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Hallsville School District COOP
Mitigation Category:	Prevention Public Education
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Hallsville Administration
Supporting Organization/Department:	School Board
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Internal, MACOG Planning Grants
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	This is in progress; most documents are now backed up on the Cloud;
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Hallsville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados , severe winter weather, extreme temperatures
Problem being Mitigated:	Loss of life from storms
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structures Infrastructure Projects
Action or Project Description:	Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards to protect students and residents of the district in the event of severe weather and to use as a warming or cooling center in case of power outage during extreme temperatures.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	Hallsville Administration
Supporting Organization/Department:	City of Hallsville
Action/Project Priority:	Medium
Timeline for Completion:	2025
Potential Fund Sources:	HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Hallsville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting district-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000,000
Responsible Organization/Department:	School Board/Maintenance
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, Bonds
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Hallsville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for vulnerable student body; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Hallsville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Severe Thunderstorms, Severe Winter Weather, Tornado, extreme temperatures
Problem being Mitigated:	Power outages due to severe weather
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generators
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Add generators to all school buildings
Estimated Cost:	$600,000
Responsible Organization/Department:	Facilities
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	FEMA HMGP, internal match
Local Planning Mechanisms to be Used in Implementation, if any:	COOP

Action Worksheet	
Name of Jurisdiction:	Hallsville R-IV
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Lack of knowledge on natural hazard prevention and safety
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	9.1.2
Name of Action or Project:	Natural Hazard Education
Mitigation Category:	Education and Awareness
Action or Project Description:	Provide Education to students' families and teachers about how to mitigate risks from natural hazards in the region.to protect life and property. Incorporate into social media and district newsletter campaign.
Estimated Cost:	0
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Boone County Office of Emergency Management
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Harrisburg School District

Action Worksheet	
Name of Jurisdiction:	Harrisburg R-VIII
Risk / Vulnerability	
Hazard(s) Addressed:	Unwanted Intruder
Problem being Mitigated:	Unwanted Intruder in school buildings
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	11.1.1
Name of Action or Project:	Active Shooter Mitigation
Mitigation Category:	Prevention Public Education
Action or Project Description:	Increase capacity to prevent and respond to unwanted intruder/active shooter events such as bullet resistant film and access control systems.
Estimated Cost:	$10,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Harrisburg Administration
Supporting Organization/Department:	Boone County Sheriff's Department
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, School Violence grant, State Farm
Local Planning Mechanisms to be Used in Implementation, if any:	School Policy
Progress Report	
Action Status:	In Progress
Report of Progress:	Lockdown procedures and limited entry points are in place.
Delete, modify, or carry forward unchanged?	Carry forward with the addition of bullet resistant film.

Action Worksheet	
Name of Jurisdiction:	Harrisburg R-VIII
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Harrisburg School District COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Harrisburg Administration
Supporting Organization/Department:	School Board
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Internal, FEMA, MACOG Planning grants
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	This is in progress; most documents are now backed up on the Cloud;
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Harrisburg R-VIII
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados, severe winter weather, extreme temperatures
Problem being Mitigated:	Loss of life from storms
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards to protect students and residents of the district in the event of severe weather and to use as a warming or cooling center in case of power outage during extreme temperatures.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	Harrisburg Administration
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	The City and the school district are discussing potential plans.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Harrisburg R-VIII
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting district-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000,000
Responsible Organization/Department:	School Board/Maintenance
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, Bonds
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Harrisburg R-VIII
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for vulnerable student body; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Harrisburg R-VIII
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Severe Winter Weather, Tornado, Earthquakes, Wildfire
Problem being Mitigated:	Need for better communication between buildings as well as notifications that are accessible to people with disabilities
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	15.1.1
Name of Action or Project:	Upgrade Communications Systems
Mitigation Category:	Prevention Public Education
Action or Project Description:	Upgrade internal communications systems in all buildings, including lighting and message boards.
Estimated Cost:	$1 million
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Mid-Missouri Regional Planning Commission
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	School Violence Prevention Program, State Farm Foundation
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Action Worksheet	
Name of Jurisdiction:	Harrisburg R-VIII
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Severe Thunderstorms, Severe Winter Weather, Tornado, extreme temperatures
Problem being Mitigated:	Power outages due to severe weather
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generators
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Add generators to all school buildings
Estimated Cost:	$600,000
Responsible Organization/Department:	Facilities
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	FEMA HMGP, internal match
Local Planning Mechanisms to be Used in Implementation, if any:	COOP

Action Worksheet	
Name of Jurisdiction:	Harrisburg R-VIII
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Lack of knowledge on natural hazard prevention and safety
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	9.1.2
Name of Action or Project:	Natural Hazard Education
Mitigation Category:	Education and Awareness
Action or Project Description:	Provide Education to students' families and teachers about how to mitigate risks from natural hazards in the region.to protect life and property. Incorporate into social media and district newsletter campaign.
Estimated Cost:	0
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Boone County Office of Emergency Management
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Southern Boone School District

Action Worksheet	
Name of Jurisdiction:	Southern Boone
Risk / Vulnerability	
Hazard(s) Addressed:	Unwanted Intruder
Problem being Mitigated:	Unwanted Intruder in school buildings
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	11.1.1
Name of Action or Project:	Active Shooter Mitigation
Mitigation Category:	Prevention Public Education
Action or Project Description:	Increase capacity to prevent and respond to unwanted intruder/active shooter events.
Estimated Cost:	$20,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Southern Boone Administration
Supporting Organization/Department:	Ashland Police and Boone County Sheriff's Department
Action/Project Priority:	High
Timeline for Completion:	2028
Potential Fund Sources:	Internal, School Violence Grant, State Farm
Local Planning Mechanisms to be Used in Implementation, if any:	School Policy, District Safety Committee
Progress Report	
Action Status:	In Progress
Report of Progress:	District Safety Plan, Building Safety Communication, Creation of District Safety Committee, Threat Assessment Training for Staff, Facility Improvements and Security Camera Installation, Increase Public Awareness and Communication, annual ALICE training
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Southern Boone
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Southern Boone School District COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP) to consider all natural hazards.
Estimated Cost:	$30,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Southern Boone Administration
Supporting Organization/Department:	School Board
Action/Project Priority:	High
Timeline for Completion:	2028
Potential Fund Sources:	Internal, FEMA, MACOG Planning grants
Local Planning Mechanisms to be Used in Implementation, if any:	District Safety Committee, Reunification Sub Committee Planning, Facility Master Planning
Progress Report	
Action Status:	In Progress
Report of Progress:	Electronic offsite storage of documents, District Safety Plan, Building Safety Communication, Regular Safety Reports to Board of Education and Facility Improvements, Security Camera Installation, Increase Public Awareness and Communication
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Southern Boone
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados, severe winter weather, extreme temperatures
Problem being Mitigated:	Loss of life from storms
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards to protect students and residents of the district in the event of severe weather and to use as a warming or cooling center in case of power outage during extreme temperatures.
Estimated Cost:	$5 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	Southern Boone Administration
Supporting Organization/Department:	City of Ashland, Private Organizations
Action/Project Priority:	Medium
Timeline for Completion:	2029
Potential Fund Sources:	FEMA HMGP, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Facility Master Planning, Review of district bonding capacity to align with student learning needs
Progress Report	
Action Status:	In Progress
Report of Progress:	Development of Facility Master Plan in conjunction with Design and Engineering Team, Incorporate updated building codes as applicable, Increase Public Awareness and Communication
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Southern Boone School District
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting district-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000,000
Responsible Organization/Department:	School Board/Maintenance
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, Bonds
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Southern Boone School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for vulnerable student body; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Southern Boone School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Severe Thunderstorms, Severe Winter Weather, Tornado, extreme temperatures
Problem being Mitigated:	Power outages due to severe weather
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generators
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Add generators to all school buildings
Estimated Cost:	$600,000
Responsible Organization/Department:	Facilities/School Board
Supporting Organization/Department:	City of Ashland/YMCA
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	FEMA HMGP, internal match
Local Planning Mechanisms to be Used in Implementation, if any:	COOP

Action Worksheet	
Name of Jurisdiction:	Southern Boone School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Lack of knowledge on natural hazard prevention and safety
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	9.1.2
Name of Action or Project:	Natural Hazard Education
Mitigation Category:	Education and Awareness
Action or Project Description:	Provide Education to students' families and teachers about how to mitigate risks from natural hazards in the region.to protect life and property. Incorporate into social media and district newsletter campaign.
Estimated Cost:	0
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Boone County Office of Emergency Management
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Sturgeon School District

Action Worksheet	
Name of Jurisdiction:	Sturgeon School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Disruption in operations due to emergency
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	9.1.1
Name of Action or Project:	Emergency Operations Plan
Mitigation Category:	Emergency Services
Action or Project Description:	Emergency Operations Plan
Estimated Cost:	$2,000
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Administration, Center for Educational Safety, Boone County Sheriff, Ameren, Boone County Office of Emergency Management
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	District funds, RHSOC
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan, Unwanted Intruder Plan

Action Worksheet	
Name of Jurisdiction:	Sturgeon School District
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Lack of knowledge on natural hazard prevention and safety
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	9.1.2
Name of Action or Project:	Natural Hazard Education
Mitigation Category:	Education and Awareness
Action or Project Description:	Provide Education to students' families and teachers about how to mitigate risks from natural hazards in the region.to protect life and property. Incorporate into social media and district newsletter campaign.
Estimated Cost:	0
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Boone County Office of Emergency Management
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Action Worksheet	
Name of Jurisdiction:	Sturgeon School District
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Severe Winter Weather, Tornado, Earthquakes, Wildfire
Problem being Mitigated:	Need for better communication between buildings as well as notifications that are accessible to people with disabilities
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	15.1.1
Name of Action or Project:	Upgrade Communications Systems
Mitigation Category:	Prevention Public Education
Action or Project Description:	Upgrade internal communications systems in all buildings, including lighting and message boards.
Estimated Cost:	$1 million
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Mid-Missouri Regional Planning Commission
Action/Project Priority:	High
Timeline for Completion:	2026
Potential Fund Sources:	School Violence Prevention Program, State Farm Foundation
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Action Worksheet	
Name of Jurisdiction:	Sturgeon R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Unwanted Intruder
Problem being Mitigated:	Unwanted Intruder in school buildings
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	11.1.1
Name of Action or Project:	Active Shooter Mitigation
Mitigation Category:	Prevention Public Education
Action or Project Description:	Increase capacity to prevent and respond to unwanted intruder/active shooter events.
Estimated Cost:	$10,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Sturgeon Administration
Supporting Organization/Department:	Boone County Sheriff's Department
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, School violence fund, State Farm
Local Planning Mechanisms to be Used in Implementation, if any:	School Policy
Progress Report	
Action Status:	In Progress
Report of Progress:	Lockdown procedures. Limited entry points.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Sturgeon School District COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Sturgeon Administration
Supporting Organization/Department:	School Board, Boone County Emergency Management Office
Action/Project Priority:	High
Timeline for Completion:	2025
Potential Fund Sources:	Administration, MACOG Planning Grant
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan
Progress Report	
Action Status:	In Progress
Report of Progress:	This is in progress; most documents are now backed up on the Cloud.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados, severe winter weather, extreme temperatures
Problem being Mitigated:	Loss of life from storms
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structures Infrastructure Projects
Action or Project Description:	Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards to provide district residents a safe space during extreme weather events and provide heating and cooling in case of power outage during extreme temperatures.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	Sturgeon Administration
Supporting Organization/Department:	Mid-Missouri Regional Planning Commission
Action/Project Priority:	Medium
Timeline for Completion:	2025
Potential Fund Sources:	FEMA HMGP, Administration
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	A safe room was added at the high school to shelter students. The district is exploring locations to add a safe room and/or fortify parts of the existing buildings at the elementary/middle school complex, ideally to serve the school and nearby community.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Sturgeon R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting district-owned properties to low flow toilets and faucets
Estimated Cost:	$1,000,000
Responsible Organization/Department:	School Board/Maintenance
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, Bonds
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Sturgeon R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for vulnerable student body; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Sturgeon R-V
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Severe Thunderstorms, Severe Winter Weather, Tornado, extreme temperatures
Problem being Mitigated:	Power outages due to severe weather
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generators
Mitigation Category:	Structures and Infrastructure
Action or Project Description:	Add generators to all school buildings
Estimated Cost:	$600,000
Responsible Organization/Department:	Facilities/School Board
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	FEMA HMGP, internal match
Local Planning Mechanisms to be Used in Implementation, if any:	COOP

University of Missouri

Action Worksheet	
Name of Jurisdiction:	University of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Storms, Tornados
Problem being Mitigated:	Environmental damage in the event of impact from storms
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	18.1.1
Name of Action or Project:	Salt Dome Relocation
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Move the salt dome at the University of Missouri to protect Hinkson Creek in case of damage from high winds or tornadoes.
Estimated Cost:	$ 1 Million
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Campus Facilities
Supporting Organization/Department:	MU Division of Design & Construction, City of Columbia
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Insurance funds (University is self-insured)
Local Planning Mechanisms to be Used in Implementation, if any:	The MU Division of Design & Construction will research a new location for the salt dome, taking into account such things as ingress/egress, laws and regulations, and safety of new location. Engineering plans will be developed for new facility.
Progress Report	
Action Status:	In Progress
Report of Progress:	Research in progress
Delete, modify, or carry forward unchanged?	Carry forward with adjusted estimated cost.

Action Worksheet	
Name of Jurisdiction:	University of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados, severe winter weather, extreme temperatures
Problem being Mitigated:	Loss of life from storms
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structure Infrastructure project
Action or Project Description:	Build tornado safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards for use during extreme weather events and provide heating and cooling during power outages in extreme temperature events.
Estimated Cost:	$15 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	MU Emergency Management
Supporting Organization/Department:	MU Division of Finance
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP, PDM, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	Research and apply for grants for hardening select parts of existing buildings or constructing new buildings to FEMA 361 standards.
Progress Report	
Action Status:	Not Started
Report of Progress:	None have been added so far due to funding constraints. The University would like to add at least 3 tornado safe rooms.
Delete, modify, or carry forward unchanged?	Carry forward, with increased scope and cost estimate.

Action Worksheet	
Name of Jurisdiction:	University of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Unwanted Intruder
Problem being Mitigated:	Unwanted Intruder in school buildings
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	11.1.1
Name of Action or Project:	Active Shooter Mitigation
Mitigation Category:	Prevention Public Education
Action or Project Description:	Increase capacity to prevent and respond to unwanted intruder/active shooter events.
Estimated Cost:	$20,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	MU Police Dept.
Supporting Organization/Department:	Columba Police and Boone County Sheriff's Department
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, state farm grant
	School Weapons Policy
Progress Report	
Action Status:	In Progress
Report of Progress:	Lockdown procedures. Limited entry points.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	University of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Tornado
Problem being Mitigated:	Advanced warning protects life from all hazards
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	18.1.2
Name of Action or Project:	Warning System Upgrade
Mitigation Category:	Prevention Public Education
Action or Project Description:	Enhance alert and warning capabilities. Improve the software and hardware associated with the current system. Add 3 more tornado sirens.
Estimated Cost:	$500,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	MU Emergency Management
Supporting Organization/Department:	MU Division of Information Technology, Boone OEM
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, FEMA HMGP
Progress Report	
Action Status:	In Progress
Report of Progress:	Software updates
Delete, modify, or carry forward unchanged?	Carry forward with the change of adding 3 new tornado sirens.

Action Worksheet	
Name of Jurisdiction:	University of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Winter Weather, Tornado, Thunderstorm
Problem being Mitigated:	Loss of power due to extreme weather
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.17
Name of Action or Project:	Generators
Mitigation Category:	Emergency services
Action or Project Description:	Replace aging generators, up to 20.
Estimated Cost:	$2 million
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	Facilities
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP
Local Planning Mechanisms to be Used in Implementation, if any:	Emergency Plan

Action Worksheet	
Name of Jurisdiction:	University of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding, Dam Failure, Levee Failure, Sinkholes
Problem being Mitigated:	Disruption in operations due to natural hazard event.
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	MU COOP
Mitigation Category:	Education and Outreach
Action or Project Description:	Update the Continuity of Operations Plan (COOP)
Estimated Cost:	$20,000
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	Missouri University Police Department
Action/Project Priority:	High
Timeline for Completion:	2027
Potential Fund Sources:	MU Emergency Management
Local Planning Mechanisms to be Used in Implementation, if any:	Existing COOP and Emergency Plan

Action Worksheet	
Name of Jurisdiction:	University of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Wildfire
Problem being Mitigated:	Combustible materials posing a fire hazard to University buildings
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	1.1.4
Name of Action or Project:	Brush Removal
Mitigation Category:	Natural Systems Protection
Action or Project Description:	Create a brush removal schedule and train staff on implementation around wildland interfacing infrastructure
Estimated Cost:	$5,000
Responsible Organization/Department:	Emergency Management
Supporting Organization/Department:	Facilities
Action/Project Priority:	Medium
Timeline for Completion:	2027
Potential Fund Sources:	FireHouse Subs Foundation, State Farm Foundation, USDA Community Wildfire Defense Grant
Local Planning Mechanisms to be Used in Implementation, if any:	

Action Worksheet	
Name of Jurisdiction:	University Of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting district-owned properties to low flow toilets and faucets
Estimated Cost:	$5,000,000
Responsible Organization/Department:	School Board/Maintenance
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, Resiliency grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	University Of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for vulnerable student body; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	University Of Missouri
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Lack of knowledge on various natural hazard prevention and safety
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	9.1.2
Name of Action or Project:	Natural Hazard Education
Mitigation Category:	Education and Awareness
Action or Project Description:	Provide Natural Hazard Education to the students' families and teachers along with ways to mitigate their impacts on life and property. Incorporate into social media and district newsletter campaign.
Estimated Cost:	0
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Boone County Office of Emergency Management
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Stephen's College

Action Worksheet	
Name of Jurisdiction:	Stephen's College
Risk / Vulnerability	
Hazard(s) Addressed:	Unwanted Intruder
Problem being Mitigated:	Unwanted Intruder in school buildings
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	11.1.1
Name of Action or Project:	Active Shooter Mitigation
Mitigation Category:	Prevention Public Education
Action or Project Description:	Increase capacity to prevent and respond to unwanted intruder/active shooter events.
Estimated Cost:	$20,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Campus Security and the Emergency Management Team
Supporting Organization/Department:	Columba Police and Boone County Sheriff's Department
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, State Farm
Local Planning Mechanisms to be Used in Implementation, if any:	School Policy
Progress Report	
Action Status:	In Progress
Report of Progress:	Lockdown procedures. Limited entry points.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Stephen's College
Risk / Vulnerability	
Hazard(s) Addressed:	All Hazards
Problem being Mitigated:	Potential weaknesses in response to all hazards
Action or Project	
Applicable Goal Statement:	2
Action/Project Number:	1.1.2
Name of Action or Project:	Stephen's College COOP
Mitigation Category:	Prevention Public Education
Action or Project Description:	Develop a Continuity of Operations Plan (COOP).
Estimated Cost:	$5,000
Benefits:	IC,PD,LF,EM
Plan for Implementation	
Responsible Organization/Department:	Campus Security and the Emergency Management Team
Supporting Organization/Department:	School Board
Action/Project Priority:	High
Timeline for Completion:	2030
Potential Fund Sources:	Internal, FEMA, grants
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	In Progress
Report of Progress:	Several portions of the plan are in place waiting to be combined into one reviewable document.
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Stephen's College
Risk / Vulnerability	
Hazard(s) Addressed:	Severe Thunderstorms, Tornados, severe winter weather, extreme temperatures
Problem being Mitigated:	Loss of life from extreme weather
Action or Project	
Applicable Goal Statement:	3
Action/Project Number:	2.1.4
Name of Action or Project:	Safe Room
Mitigation Category:	Structure Infrastructure Project
Action or Project Description:	Build safe room(s) or harden part(s) of existing structure(s) to FEMA 361 standards to be used during hazardous weather events and provide heating and cooling during extreme temperatures or the event of a power outage.
Estimated Cost:	$2 million
Benefits:	IC,EM
Plan for Implementation	
Responsible Organization/Department:	Campus Security and the Emergency Management Team
Supporting Organization/Department:	
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	FEMA HMGP, Internal
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	
Delete, modify, or carry forward unchanged?	Carry forward unchanged.

Action Worksheet	
Name of Jurisdiction:	Stephen's College
Risk / Vulnerability	
Hazard(s) Addressed:	Drought
Problem being Mitigated:	Reducing water usage during drought
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	11.1.5
Name of Action or Project:	Low Flow Toilets and Faucets
Mitigation Category:	Structure Infrastructure Projects
Action or Project Description:	Converting district-owned properties to low flow toilets and faucets
Estimated Cost:	$5,000,000
Responsible Organization/Department:	School Board/Maintenance
Supporting Organization/Department:	None
Action/Project Priority:	Medium
Timeline for Completion:	2030
Potential Fund Sources:	General Revenue, Resiliency grants
Local Planning Mechanisms to be Used in Implementation, if any:	None

Action Worksheet	
Name of Jurisdiction:	Stephen's College
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Displaced population supplies during major disasters
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	1.1.18
Name of Action or Project:	Supply Cache
Mitigation Category:	Emergency Services
Action or Project Description:	Develop strategy for preparedness planning and 72-hour provisions for vulnerable student body; include strategies for food, water, hygiene, and medical supplies.
Estimated Cost:	$10,000
Benefits:	IC, EM
Plan for Implementation	
Responsible Organization/Department:	Boone County Dept. of Public Health and Human Services
Supporting Organization/Department:	Office of Emergency Management; community-based organizations; faith-based organizations
Action/Project Priority:	Low
Timeline for Completion:	2030
Potential Fund Sources:	Grants; the Medical Reserve Corps (MRC) Capacity Building Grant is one potential funding source
Local Planning Mechanisms to be Used in Implementation, if any:	
Progress Report	
Action Status:	Not Started
Report of Progress:	Not Started
Delete, modify, or carry forward unchanged?	

Action Worksheet	
Name of Jurisdiction:	Stephen's College
Risk / Vulnerability	
Hazard(s) Addressed:	Earthquakes, Drought, Extreme Temperatures, Severe Thunderstorms, Severe Winter Weather, Tornado, Wildfire, Flooding
Problem being Mitigated:	Lack of knowledge on natural hazard prevention and safety
Action or Project	
Applicable Goal Statement:	1
Action/Project Number:	9.1.2
Name of Action or Project:	Natural Hazard Education
Mitigation Category:	Education and Awareness
Action or Project Description:	Provide Education on natural hazards in the region to students' families and teachers along with ways to mitigate or reduce their impacts on life and property. Incorporate into social media and district newsletter campaign.
Estimated Cost:	0
Responsible Organization/Department:	Safety and Security
Supporting Organization/Department:	Boone County Office of Emergency Management
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	Boone County Office of Emergency Management
Local Planning Mechanisms to be Used in Implementation, if any:	Crisis Response Plan

Boone County Regional Sewer District

Action Worksheet	
Name of Jurisdiction:	Boone County Regional Sewer District Regional Sewer District
Risk / Vulnerability	
Hazard(s) Addressed:	Flooding
Problem being Mitigated:	Sewer pump inundation
Action or Project	
Applicable Goal Statement	2
Action/Prj. #	3.1.2
Action or Project Description:	Pump Station Rehab
Estimated Cost:	$220,000
Responsible Organization/Department:	BCRSD
Supporting Organization/Department:	Village of Rocheport
Action/Project Priority:	Medium
Timeline for Completion:	2026
Potential Fund Sources:	ARPA
Local Planning Mechanisms to be Used in Implementation, if any:	

Table 4.4 Mitigation Action Matrix							
#	**Action**	**Priority**	**Goals Addressed**	**Hazards Addressed**	**Address Current Development**	**Address Future Development**	**Continued Compliance with NFIP**
	Prevention Public Education						
18.1.2	Upgrade Warning Systems/sirens	H	1	F	X	X	X
1.1.9	Add heating/cooling center	H	1	ET, WW	X	X	
1.1.21	Purchase Weather Radios	H	4	T, TS, FL	X	X	
15.1.1	Phone/PA System Upgrade	H	4	All	X	X	
1.1.5	Participate in the RiskMap Process	H	4	WF, T	X	X	
1.1.3	Siren Testing	H	4	TS, T,	X	X	
1.1.7	Revolving Hazard Mitigation Loan Fund	H	1	All	X	X	
1.1.13	Building Code Update	H	3	All	X	X	X
1.1.16	Evacuation Routes	H	1	T, FL	X	X	
1.1.20	Public Education	H	1	All	X	X	
3.1.5	Burn Permits	H	3	WF	X	X	
3.1.6	Mine Survey	L	3	SH	X	X	
4.1.2	Dam Road Regulation	H	1	DF	X	X	
4.1.8	Warming Fire Safety Education	M	3	WF		X	
7.1.2	Earthquake/Sinkhole Education	L	1	SH, EQ	X	X	

Table 4.4 Mitigation Action Matrix							
#	**Action**	**Priority**	**Goals Addressed**	**Hazards Addressed**	**Address Current Development**	**Address Future Development**	**Continued Compliance with NFIP**
8.1.1	Active Shooter Mitigation	H	1	AS	X	X	
	Structure and Infrastructure Projects						
2.1.4	Build Safe Rooms	**H**	1	T,TS	X	X	
11.1.1	Weapons Detection Lanes	**M**	1	AS	X	X	
1.1.24	Roadway Standards	**H**	3	All	X	X	X
1.1.15	Flash Flood Mitigation	**H**	1	FL	X	X	X
11.1.5	Low Flow Toilets/Faucets	**M**	1	D	X	X	
1.1.1	GIS Data Sharing	**H**	3	All	X	X	
1.1.25	Enhance Road Access	**H**	1	All	X	X	
1.1.23	Vulnerability Assessment	**L**	3	EQ	X		
2.1.5	Stormwater Upgrade	**H**	3	FL	X	X	X
4.1.6	Overland Flow (culvert upgrades)	**M**	3	FL	X		
4.1.9	Road & Bridge Elevation upgrades	**H**	1	FL	X		
7.1.1	Sewer Inundation	**H**	3	FL	X		X
7.1.3	Floodwall	**H**	3	FL	X	X	
18.1.1	Salt Dome Relocation	**H**	3	T, TS	X		

Table 4.4 Mitigation Action Matrix							
#	**Action**	**Priority**	**Goals Addressed**	**Hazards Addressed**	**Address Current Development**	**Address Future Development**	**Continued Compliance with NFIP**
3.1.2	Sump Pump Rehab	**H**	3	FL	X		X
1.1.8	Undergrounding Utilities	**H**	1	T, TS, WW	X	X	
	Natural Systems Protection						
1.1.1	Enforce NFIP	H	2	FL	X	X	X
1.1.11	Dam EAPs	**L**	5	FL	X	X	
7.1.3	Buyout hazard damage properties	**H**	3	FL, T	X	X	X
1.1.4	Brush Management	**H**	4	WF	X	X	
3.1.3	Critical utility inventory	**H**	5	T, TS, WW	X	X	
	Emergency Services						
1.1.3	Backup Generators	**H**	3	WW, T, TS	X	X	
1.1.10	Cell on Wheels	**H**	2	All	X	X	

1.1.9	Install Fire Hydrants	**H**	3	WF	X	X	
10.1.1	Upgrade pipes and hydrants for fire flow	**H**	5	WF	X	X	
5.1.1	Backup radios	**H**	2	All	X	X	
4.1.7	Wildfire Protection Plan	**M**	3	WF	X	X	
9.1.1	Emergency Operations Plan	**H**	2	All	X	X	
	Education and Outreach						
1.1.2	COOP Plans	**M**	3	All	X	X	
11.1.1	Hazard training for FPD	**H**	1	All			
11.1.6	Maintain Mutual Aid Agreements	**H**	1	All			
11.1.7	Emergency supply kit program	**H**	4	All	X	X	
1.1.19	Mental First Aid	**H**	1	All	X	X	
9.1.2	Natural Hazards Education	**M**	1	All	X	X	
1.1.22	Ready-In-3 Education	**M**	1	All	X	X	

Chapter 5: PLAN MAINTENANCE PROCESS

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Chapter 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 MPC has served as an advisory committee for the duration of the update and is not a standing committee. Oversight responsibility could fall to such entities as the Boone County emergency management agency, The Regional Planning Commission, or local jurisdiction representatives. Responsibility for maintenance falls to the local emergency management officials.

Maintenance should involve agreement of the participating jurisdictions, including school 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 or other designated responsible entity) 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[10(a)]. 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

The MPC agrees to meet annually or after a state or federally declared hazard event as appropriate to monitor progress and update the mitigation strategy. The Boone 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, the Emergency Management Director will be responsible for initiating a five-year written update of the plan to be submitted to the Missouri State Emergency Management Agency (SEMA) and FEMA Region VII per Requirement §201.6(c)(4)(i) of the Disaster Mitigation Act of 2000, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule.

5.1.3 Plan Maintenance Process

Progress on the proposed actions can be monitored by evaluating changes in vulnerabilities identified in the plan. The MPC during the annual meeting 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 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 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 deems appropriate and necessary. Changes will be approved by the Boone County Commission and the governing boards of the other participating jurisdictions.

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. Those existing plans and programs were described in Section 2 of this plan. Based on the capability assessments of the participating jurisdictions, communities in Boone 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.

The MPC members involved in updating these existing planning mechanisms will be responsible for integrating the findings and actions of the mitigation plan, as appropriate. The MPC is also responsible for monitoring this integration and incorporation of the appropriate information into the five-year update of the multi-jurisdictional hazard mitigation plan.

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

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

Jurisdiction	Planning Mechanisms	Integration Process for Previous Plan	Integration Process for Current Plan
Unincorporated Boone	Annual Budget Process, EOP	Annual Budget Process, Floodplain Ordinances, Generator acquired through RHSOC	Actions identified Over 4 meetings and added to Emergency Operations Plan then addressed in Annual Budget Process
Ashland	Annual Budget Process	Annual Budget Process, Floodplain ordinances, Building codes, saferoom planning, generator acquired through FEMA HMGP	Attended 2 meetings and identified actions at 2 more meetings. Reviewed by BOA during annual budget. Added to Capital Improvement Program and Comprehensive Plan
Centralia	Annual Budget Process, Ordinances	Annual Budget Process, building codes	Attended 2 meetings and identified actions at 2 more meetings. Annual Budget Process. Review for Comprehensive Plan and Subdivision regulations.
Columbia	Annual Budget Process, Ordinances	Annual Budget Process, building codes, floodplain ordinances, sustainability regulations	Attended 3 meetings and identified actions at another meeting. Capital Improvement Project Annual Budget Process
Hallsville	Annual Budget Process	Annual Budget Process, building codes,	Attended 3 meetings. City work plan and Annual Budget Process. Comprehensive plan.
Harrisburg	Annual Budget Process	Annual Budget Process, floodplain ordinances	2 Email/phone meetings plus identified actions at another meeting. Annual Budget Process and Strategic Plan

Hartsburg	Annual Budget Process	Annual Budget Process, floodplain ordinances	Email/Phone meetings Annual Budget Process and city ordinances
Huntsdale	Annual Budget Process	Annual Budget Process, floodplain ordinances	Attended 1 meeting plus emails. Annual Budget Process and city ordinances
Rocheport	Annual Budget Process	Annual Budget Process, floodplain ordinances	Attended 1 meeting plus calls and emails. Capital Improvement Project Annual Budget Process
Sturgeon	Annual Budget Process, Ordinances	Annual Budget Process, city ordinances, public works maintenance program	2 Phone/Email meetings. Capital Improvement Project, Annual Budget Process, CDBG stormwater project
Centralia R-IV	Centralia R-IV District Planning Committee & Board of Education	Annual Budget process, updated policy, system testing	Attended 1 phone/email meeting. Safety committee annual budget meeting, building policy updates, staff training
Columbia Public Schools	Columbia Public Schools District Planning Committee & Board of Education	Annual budget process, policy updates, updated emergency alert system	Attended 3 meetings and identified actions over another meeting. Added to Emergency response plans. Reviewed by Board of Education
Hallsville R-IV	Hallsville R-IV Planning Committee & Board of Education	Updated policy	Attended 2 phone/email meetings. Added to School Improvement Plan, staff training, policy update
Southern Boone School District	Southern Boone School Planning Committee & Board of Education	Policy update, staff training	Attended 3 phone/email meetings. Update Facilities Plan,
Sturgeon R-V	Sturgeon R-V Planning Committee & Board of Education	Policy updated, staff training, notification system upgrade	Attended 1 meeting and identified actions over another meeting. Sturgeon R-V Long-Range Plan update

Stephens College	Stephens College Planning Committee & Board of Education	Updated policy, notification system upgrade	Attended 3 meetings Stephens College Planning Committee & Planning/Facilities Documents
University of Missouri	MU Planning Committee & Board of Education	Updated policy, notification system upgrade	Attended 2 meetings and identified actions over another meeting. Emergency management department policies. Budget process.

5.3 Continued Public Involvement

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

The hazard mitigation plan update process provides an opportunity to publicize success stories resulting from the plan's implementation and seek additional public comment. Information about the annual reviews will be posted on the Boone county website following each annual review of the mitigation plan and will solicit comments from the public based on the annual review. When the MPC reconvenes for the five-year update, it will coordinate with all stakeholders participating in the planning process. Included in this group will be those who joined the MPC after the initial effort, to update and revise the plan. Public notice will be posted and public participation will be actively solicited, at a minimum, through available website postings and press releases to local media outlets, primarily newspapers.

Appendix A: Adoption Resolutions

Kip Kendrick, Presiding Commissioner
Justin Aldred, District I Commissioner
Janet M. Thompson, District II Commissioner

Roger B. Wilson
Boone County Government Center
801 East Walnut, Room 333
Columbia, MO 65201-7732
573-886-4307 • FAX 573-886-4311

Boone County Commission

June 11, 2025

Missouri State Emergency Management Agency
2302 Militia Drive
Jefferson City, MO 65101

To Whom It May Concern,

Boone County Government has participated in the preparation of a multi-jurisdictional local hazard mitigation plan for Boone County, in accordance with the Disaster Mitigation Act.

The Boone County Commission will consider the plan for adoption of the plan once it has been approved by FEMA.

Please do not hesitate to reach out if you have any questions.

Sincerely,

Kip Kendrick

RESOLUTION 2025-35

A RESOLUTION OF THE CITY OF ASHLAND ADOPTING THE BOONE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION *PLAN*

WHEREAS the City of Ashland Board of Aldermen recognizes the threat that natural hazards pose to people and property within the City of Ashland; and

WHEREAS the City of Ashland Board of Aldermen has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Boone County Multi-Jurisdictional Hazard Mitigation Plan, hereafter referred to as the *Plan,* in accordance with the Disaster Mitigation Act of 2000; and

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

WHEREAS the City of Ashland Board of Aldermen recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Ashland Board of Aldermen will endeavor to integrate the *Plan* into the comprehensive planning process and

WHEREAS adoption by the City of Ashland Board of Aldermen demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan.*

NOW THEREFORE, BE IT RESOLVED BY THE City of Ashland, in the State of Missouri, THAT:
In accordance with the City of Ashland Code, the City of Ashland Board of Aldermen adopts the final FEMA-*approved plan*.

ADOPTED by a vote of 4 in favor and_____against, and_____abstaining, this 20th day of May, 2025.

By (Sig): _____ Print name: Dorise Slinker

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

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

BILL NO. 2578 RESOLUTION NO. R-25-06

BILL TO CREATE A RESOLUTION ENTITLED:

A RESOLUTION OF THE CITY OF CENTRALIA, MISSOURI ADOPTING THE BOONE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN.

WHEREAS, the Centralia Board of Aldermen recognizes the threat that natural hazards pose to people and property within the City of Centralia, Missouri; and

WHEREAS, the Centralia Board of Aldermen has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Boone County Hazard Mitigation Plan 2020, 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 City of Centralia, Missouri, from impacts of future hazards and disasters; and

WHEREAS, the Centralia Board of Aldermen recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Centralia Board of Aldermen will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS, adoption by the Centralia Board of Aldermen demonstrates their commitment to hazard mitigation and achieving the goals outlines in the *Plan*.

NOW, THEREFORE, BE IT RESOLVED BY the Board of Aldermen of the City of Centralia, in the State of Missouri, THAT:

In accordance with Section 7-6 of the Centralia City Code, the Centralia Board of Aldermen adopts the final *FEMA-approved Plan.*

RESOLVED this 19th day of May, 2025 by the Board of Alderman of the City of Centralia, Missouri.

Alderman Wilkins: Yes
Alderman Hudson: Yes
Alderwoman Orsini: Yes
Alderman Deckerd: Yes
Alderman Rodgers: Yes
Alderman Magley: Yes

Mayor, Chris Cox

ATTEST:

City Clerk, Marilyn Dick

city of
Columbia
Fire Department

May 22, 2025

Missouri State Emergency Management Agency
2302 Militia Drive
Jefferson City, MO 65101

To whom it may concern,

The City of Columbia has participated in the preparation of a multi-jurisdictional local hazard mitigation plan for Boone County, in accordance with the Disaster Mitigation Act. The Columbia City Council will vote on adoption of the plan once it has been approved by FEMA.

Sincerely yours,



Brian Schaeffer
Fire Chief

573.874.7391
573.874.7446 *fax*
201 Orr Street
Columbia, Missouri 65201
CoMo.gov

RESOLUTION NO. 2025-02

A RESOLUTION OF THE CITY OF HALLSVILLE ADOPTING THE BOONE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

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

WHEREAS, the City of Hallsville has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Boone County Multi-Jurisdictional Hazard Mitigation Plan, hereafter referred to as the *Plan,* in accordance with the Disaster Mitigation Act of 2000; and

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

WHEREAS, the City of Hallsville recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Hallsville will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS, adoption by the City of Hallsville demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan.*

NOW THEREFORE, BE IT RESOLVED BY THE CITY OF HALLSVILLE , in the State of Missouri, THAT:

In accordance with the Board of Aldermen, the City of Hallsville adopts the final FEMA-*approved plan.*

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 19 day of May, 2025

By (Sig): J. Kate Boatright

Print name: J. Kate Boatright

ATTEST:

By (Sig.): Kenyetta Ridgway-Sample

Print name: Kenyetta Ridgway-Sample

APPROVED AS TO FORM:

By (Sig.):

Print name: Jackie L Rodgers Jr.

Village of Harrisburg Missouri

RESOLUTION NO. R-33-25

A RESOLUTION OF THE VILLAGE OF HARRISBURG, MISSOURI ADOPTING THE BOONE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION *PLAN*

WHEREAS the Village of Harrisburg recognizes the threat that natural hazards pose to people and property within the Village of Harrisburg, Missouri; and

WHEREAS the Village of Harrisburg, Missouri has participated in the preparation of a multi- hazard mitigation plan, hereby known as the Boone County Multi-Jurisdictional Hazard Mitigation Plan, hereafter referred to as the *Plan,* in accordance with the Disaster Mitigation Act of 2000; and

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

WHEREAS the Village of Harrisburg, Missouri recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Village of Harrisburg, Missouri will endeavor to integrate the *Plan* into the comprehensive planning process and

WHEREAS adoption by the Village of Harrisburg, Missouri demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*

NOW THEREFORE, BE IT RESOLVED BY THE Village of Harrisburg, Missouri, in the State of Missouri, THAT:

In accordance with adoption by vote by the Village of Harrisburg, Missouri Board of Trustees adopts the final FEMA-*approved plan.*

ADOPTED by a vote of 4 in favor and 0 against, and 0 abstaining, this 20th day of May, 2025.

By (Sig): _____

Print name: Joe Dick

ATTEST:

By (Sig.): Kathy Wilhite

Print name: Kathy Wilhite

APPROVED AS TO FORM:

By (Sig.): _____

Print name: _____

POSTED: May 19, 2025 3:34 P.M.
K.W.

MEETING OF THE TOWN OF HARRISBURG BOARD OF TRUSTEES

TUESDAY, MAY 20, 2025

7:00 PM

HARRISBURG RVIII ADMINISTRATION BUILDING

AGENDA

Roll call

Visitor Response

Payment of Bills

Approval of Minutes

Sewer Dept

- Discussion on rates

Police Dept

Street Dept

- Short Street Update
- Sidewalk project update
- R-O-W paving on Sexton St

Old Business

- Discussion on rent-hardware store

New Business

- Mitigation Plan Resolution
- FEMA Letter

Adjourn

May 20, 2025

Meeting was called to order at 7:00 PM at Harrisburg RVIII Administration Building.

Roll call: Lindsey Wilhite-present, Charles Roller-present, Kevin Fearn-present, Jeff Arp-present, Susan Bell-absent.

Visitor Response-none.

Charles made motion to pay bills as presented. Second by Lindsey. All in favor. Motion carried.

Kevin made motion to approve minutes from April 14, 2025 meeting. Second by Lindsey. All in favor. Motion carried.

Sewer Dept

Discussion on funds in state budget for sewer expansion. Governor will decide in July.

Discussion on rates-tabled.

Police Dept

Kevin is waiting to hear back from Flock about r-o-w issue. All deputies are now trained and have access to cameras.

Street Dept

Discussion on engineer's drawing for sidewalk project.

Discussion on milling down and paving parking areas on each side of 124 through center of town at the Town's expense when MoDot does the driving lanes. Members would like to see estimate.

Discussion on Short St Project. Members approve drawings for Short St and speed humps on Drane St.

Old Business

Discussion on Boone County Hazard Mitigation Plan. Charles made motion to adopt Boone County Hazard Mitigation Resolution #33-25. Second by Kevin. All in favor. Motion carried. Vote: Jeff-yea, Kevin-yea, Charles-yea, Lindsey-yea, Susan-absent. Resolution ##33-25 adopted.

Discussion on FEMA letter, Jeff will call tomorrow.

Discussion on letter sent to Johnson Cebie Hassan about debris on property at N Harris and Drane St. He did not respond, clerk will have attorney send letter.

Kevin made motion to adjourn. Second by Charles. All in favor. Motion carried. Meeting adjourned at 8:07 PM.

Minutes prepared by Kathy Wilhite, City Clerk pending approval at next Board of Trustees Meeting scheduled for June 17, 2025.

Missouri State Emergency Management Agency

2302 Militia Dr

Jefferson City, MO 65101

To Whom it May Concern,

The Village of Hartsburg has participated in the preparation of the milti-jurisdictional local hazard mitigation plan for Boone County, in accordance with the Disaster Mitigation Act.

The Village of Hartsburg will consider the plan for adoption once it has been approved by FEMA.

Please do not hesitate to reach out if you have any questions.

Respectfully,

Joel E. Pautz, Clerk, Village of Hartsburg

The VILLAGE OF HUNTSDALE, Missouri **RESOLUTION NO. 6** (RE-ADOPTED 2025)

A RESOLUTION OF THE *VILLAGE OF HUNTSDALE* ADOPTING THE Boone Hazard Mitigation Plan 2025.

WHEREAS the *VILLAGE OF HUNTSDALE* recognizes the threat that natural hazards pose to people and

property within the (local governing body/school district); and

WHEREAS the *VILLAGE OF HUNTSDALE* has participated in the preparation of a multi-jurisdictional local

hazard mitigation plan, hereby known as the Boone Hazard Mitigation Plan 2025 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 *VILLAGE OF HUNTSDALE* from the impacts of future hazards and disasters;

and

WHEREAS the *VILLAGE OF HUNTSDALE* recognizes that land use policies have a major impact on whether

people and property are exposed to natural hazards, the *VILLAGE OF HUNTSDALE* will endeavor to

integrate the Plan into the comprehensive planning process; and

WHEREAS adoption by the *VILLAGE OF HUNTSDALE* demonstrates their commitment to hazard mitigation

and achieving the goals outlined in the Plan.

NOW THEREFORE, BE IT RESOLVED BY THE *VILLAGE OF HUNTSDALE*, in the State of Missouri, THAT:

In accordance with village bylaws the VILLAGE OF HUNTSDALE adopts the final

FEMA-approved Plan.

ADOPTED by a vote of **5** in favor and **0** against, and **0** abstaining, this

day of, *August 15, 2025*

By (Sig): Debby Lancaster

Print name: Debby Lancaster

ATTEST: Dallas Lancaster

By (Sig.): Dallas Lancaster

Print name: DALLAS LANCASTER

City of Rocheport, Missouri RESOLUTION NO. __

A RESOLUTION OF THE City of Rocheport ADOPTING THE Boone Hazard Mitigation Plan 2025.

WHEREAS the City of Rocheport recognizes the threat that natural hazards pose to people and property within the City of Rocheport; and

WHEREAS the City of Rocheport has participated in the preparation of a multi-jurisdictional local hazard mitigation plan, hereby known as the Boone Hazard Mitigation Plan 2025 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 City of Rocheport from the impacts of future hazards and disasters; and

WHEREAS the City of Rocheport recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the City of Rocheport will endeavor to integrate the *Plan* into the comprehensive planning process; and

WHEREAS adoption by the City of Rocheport demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*.

NOW THEREFORE, BE IT RESOLVED BY THE City of Rocheport , in the State of Missouri, THAT:

In accordance with (*local rule for adopting resolutions*), the City of Rocheport adopts the final *FEMA-approved Plan*.

ADOPTED by a vote of 3 in favor and 0 against, and 0 abstaining, this 7th day of ~~July~~ 2025

By (Sig): _____
Print name: John S Zondca

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

City of Sturgeon
P.O. Box 387–303 Station Drive
Sturgeon, Missouri 65284
(573) 687-3321–Fax (573) 687-3474

July 25, 2025
Missouri State Emergency Management Agency
2302 Militia Drive
Jefferson City, MO 65101

To Whom It May Concern,

The **City of Sturgeon** has participated in the preparation of a multi-jurisdictional local hazard mitigation plan for **Boone County**, in accordance with the **Disaster Mitigation Act.**

The **Sturgeon City Council** will consider the plan for adoption once it has been approved by **FEMA.**

Please do not hesitate to reach out if you have any questions.

Sincerely,
Seth Truesdell
Mayor
City of Sturgeon
Mayor@sturgeon-mo.org

CENTRALIA R-VI SCHOOL DISTRICT
Dr. Steven Chancellor
Superintendent
steven.chancellor@cr6.org
www.cr6.org
123 N. Rollins
Centralia, Missouri 65240
(p) 573-682-3561
(f) 573-682-2181

June 17, 2025

Missouri State Emergency Management Agency
2302 Militia Drive
Jefferson City, MO 65101

To Whom It May Concern,

Centralia R-VI School District has participated in the preparation of a multi-jurisdictional local hazard mitigation plan for Boone County, in accordance with the Disaster Mitigation Act.

The Centralia R-VI Board of Education will consider the plan for adoption of the plan once it has been approved by FEMA.

Please do not hesitate to reach out if you have any questions.

Sincerely,

Steven Chancellor

Columbia
PUBLIC SCHOOLS

Vision: To be the best school district in our state
Mission: To provide an excellent education for all our students

ASLIN ADMINISTRATION BUILDING
1818 West Worley Street
Columbia, MO 65203
(573) 214-3400
Fax: (573) 214-3401

Dr. Helen Porter
Chief Schools Officer

May 22, 2025

Missouri State Emergency Management Agency
2302 Militia Drive
Jefferson City, MO 65101

To Whom it May Concern,

Columbia Public Schools has participated in the preparation of a multi-jurisdictional local hazard mitigation plan for Boone County, in accordance with the Disaster Mitigation Act. The Columbia Public Schools Board will vote on the approval of the plan on July 14th, 2025.

Sincerely,

Helen Porter

Helen Porter
Chief Schools Officer

(*Hallsville Board of Education*), Missouri

RESOLUTION NO. _____

A RESOLUTION OF THE (*HALLSVILLE R-IV SCHOOL DISTRICT*) ADOPTING THE [SHOW-ME] COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION *PLAN*

WHEREAS the (*Hallsville R-IV School District*) recognizes the threat that natural hazards pose to people and property within the (*Hallsville R-IV School District*); and

WHEREAS the (*Hallsville R-IV School District)* has participated in the preparation of a multi- hazard mitigation plan, hereby known as the [Show-Me] County Multi-Jurisdictional Hazard Mitigation Plan, hereafter referred to as the *Plan,* in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the (*Hallsville R-IV School District*) from the impacts of future hazards and disasters; and

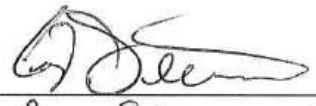
WHEREAS the (*Hallsville R-IV School District)* recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the (*Hallsville R-IV School District*) will endeavor to integrate the *Plan* into the comprehensive planning process and

WHEREAS adoption by the (*Hallsville R-IV School District*) demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*

NOW THEREFORE, BE IT RESOLVED BY THE (*Hallsville R-IV School District*), in the State of Missouri, THAT:

In accordance with (*Policy 0310*), the (*Hallsville R-IV School District*) adopts the final FEMA-*approved plan*.

ADOPTED by a vote of 7 in favor and 0 against, and 0 abstaining, this 20th day of May, 2025

By (Sig): 

Print name: Craig Stevenson

ATTEST:

By (Sig.): _____

Print name: _____

APPROVED AS TO FORM:

By (Sig.): _____

Print name: _____

Southern Boone County R-I School District

A RESOLUTION OF THE Southern Boone County R-I School District ADOPTING THE BOONE COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION *PLAN*

WHEREAS the Southern Boone County R-I School District recognizes the threat that natural hazards pose to people and property within the (*local governing body/school district*); and

WHEREAS the Southern Boone County R-I School District has participated in the preparation of a multi- hazard mitigation plan, hereby known as the Boone County Multi-Jurisdictional Hazard Mitigation Plan, hereafter referred to as the *Plan,* in accordance with the Disaster Mitigation Act of 2000; and

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

WHEREAS the Southern Boone County R-I School District recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the Southern Boone County R-I School District will endeavor to integrate the *Plan* into the comprehensive planning process and

WHEREAS adoption by the Southern Boone County R-I School District demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*

NOW THEREFORE, BE IT RESOLVED BY THE Southern Boone County R-I School District, in the State of Missouri, THAT:

In accordance with Southern Boone Board Policy BBA, the Southern Boone County R-I School District adopts the final FEMA-*approved plan*.

ADOPTED by a vote of 6 in favor and 0 against, and 0 abstaining, this 30 day of July, 2025.

By (Sig): Tim Roth, Superintendent

Print name: Tim Roth

ATTEST:

By (Sig.): _____

Print name: _____

APPROVED AS TO FORM:

By (Sig.): _____

Print name: _____

Southern Boone School District

July 30, 2025 SBC BOE Monthly Open Session
07/30/2025 - 06:30 PM
5275 West Red Tail Drive
Ashland, MO 65010

AGENDA

I. **Call Open Session to Order**
   A. Roll Call
II. **Pledge of Allegiance**
III. **Recognitions**
IV. **Visitor Comments and Communications**
V. **Construction Update Report**
VI. **CTA/PTA/Learning Garden/Athletic Booster Club Update**
VII. **Program Evaluation Review**
   A. Extra-Curricular Program Evaluation
VIII. **Approval of Consent Agenda**
   A. Curriculum Approvals
      a. Provisional Approvals
         1. HS Agriculture - Food and Natural Resources (P)
         2. HS Agriculture - Plant Science(P)
         3. HS Electives - GYO Pathways to Teaching (P)
         4. HS Fine Arts - Art 1 (P)
         5. HS Math - Intro to Algebra 1 (P)
         6. HS Science - PLTW Intro to Engineering Designs (P)
         7. HS Science - PLTW Engineering Essentials (P)
         8. HS Science - Biology (P)
         9. HS Social Studies - Vikings (P)
         10. HS Social Studies - Government (P)
         11. HS World Languages - Spanish III
         12. MS 7&8 - Intro to Weights (P)
         13. MS 5 - Reading (P)
         14. MS 5 - Counseling (P)
         15. EL 4 - ELA (P)
         16. EL 3&4 - Library (P)
         17. PR 2 - ELA (P)
      b. Completed Approval Action Items
         1. HS Business and Computers - Business Leadership
         2. HS Math - DC College Algebra
         3. MS 6 - Writing
         4. MS 6 - Reading
         5. MS 5 - Math
         6. EL 3 - Science
   B. Employment
      a. New Hires
         1. Cole Gresham: 2025-2026 MS Paraprofessional
         2. Sarah Bartel: 2025-2026 Bus Driver
      b. Resignations/Retirements
      c. Stipend Hires/Resignations
         1. Cole Gresham - 2025-2026 MS Assistant Football Coach Hire

2. Ananiah Talton: 2025-2026 High School Track Assistant Coach Hire
3. Brian Ash: 2025-2026 Middle School Activities Director

IX. Minutes

X. Financial Review

A. Authorize Payments of Bills

XI. Reports

A. Superintendent's Report
   a. Four-Day School Week Update
   b. Boone County Hazard Mitigation Resolution

B. Assistant Superintendent's Report

XII. New Business

A. Approve District Handbooks
   a. 2025-2026 Building Staff Handbooks
   b. 2025-2026 Opportunities for Excellence Handbook
   c. 2025-2026 Professional Development Plan Handbook
   d. 2025-2026 Community Engagement Plan

B. Approve 2025-2027 Contract with Advantage Nursing Services

C. Approve 2025-2026 Contract with High Road School of Boone County

D. Approve 2025-2026 Contract with MO Educational Counseling - Brandy VandeRiet

E. Approve 2025-2026 Speech Language Therapy Services Contract - Carrie Schwoerer

F. Approve 2025-2026 Occupational Therapist Contract - Susan Blackburn

G. Approve 2025-2026 MOU with University of Missouri Bridge Program

H. Approve 2025-2026 Contract with Meadors Vision Consulting LLC

I. Approve Bus Purchase Financing

J. Approve Phone System Purchase and Financing

K. Approve Surplus Sale of HS Student Desks

XIII. Old Business

A. Review Board Goals

B. Approval of Updated Perpetual Calendar

XIV. Continuing Business/Consensus Item

A. Proposed August Agenda Items/Administrative Reports
   a. Certification of Levy/Tax Rate Hearing
   b. Approval of Tuition Rates
   c. Approval of Transportation Routes/Guidelines
   d. State Transportation Aid
   e. Curriculum Development Plan
   f. Review Facilities Plan
   g. Technology Report

XV. Executive Session

A. Held pursuant to Section 610.021 Subsection 1, 3, 6 13 and 14
   a. Executive Minutes
   b. Call to Order
   c. Adjournment of Executive Session Held pursuant to Section 610.021 Subsection 1, 3, 6 13 and 14

XVI. Adjournment of Open Session

Current Board Members: President Amy Begemann (23-26), Vice President Barrett Glascock (25-28), Karen Bill (23-26), Heather Brown (25-28), Chris Felmlee (23-26), Jeremy Galloway (24-27), April Georgetti (24-27)

STURGEON R-V SCHOOL DISTRICT, Missouri

RESOLUTION NO. _____

A RESOLUTION OF THE *STURGEON R-V SCHOOL DISTRICT* ADOPTING THE [BOONE] COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION *PLAN*

WHEREAS the *STURGEON R-V SCHOOL DISTRICT* recognizes the threat that natural hazards pose to people and property within the *STURGEON R-V SCHOOL DISTRICT*; and

WHEREAS the *STURGEON R-V SCHOOL DISTRICT* has participated in the preparation of a multi-hazard mitigation plan, hereby known as the BOONE County Multi-Jurisdictional Hazard Mitigation Plan, hereafter referred to as the *Plan,* in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the *Plan* identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the *STURGEON R-V SCHOOL DISTRICT* from the impacts of future hazards and disasters; and

WHEREAS the *STURGEON R-V SCHOOL DISTRICT)* recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, the *STURGEON R-V SCHOOL DISTRICT* will endeavor to integrate the *Plan* into the comprehensive planning process and

WHEREAS adoption by the *STURGEON R-V SCHOOL DISTRICT* demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan*

NOW THEREFORE, BE IT RESOLVED BY THE *STURGEON R-V SCHOOL DISTRICT*, in the State of Missouri, THAT:

In accordance with school board policy, the *STURGEON R-V SCHOOL DISTRICT* adopts the final FEMA-*approved plan.*

ADOPTED by a vote of 6 in favor and 0 against, and 0 abstaining, this 18th day of June, 2025.

By (Sig): Freedom Pollard
Print name: Freedom Pollard

ATTEST:
By (Sig.): Peggy Leerhoff
Print name: Peggy Leerhoff

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

Stephens College, Missouri RESOLUTION NO. 20250520

A RESOLUTION OF Stephens College adopting the Boone County Hazard Mitigation Plan 2025.

WHEREAS Stephens College recognizes the threat that natural hazards pose to people and property within the Boone County area; and

WHEREAS Stephens College has participated in the preparation of a multi-hazard mitigation plan, hereby known as the Boone County Multi-Jurisdictional Hazard Mitigation Plan 2025, 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 at Stephens College from the impacts of future hazards and disasters; and

WHEREAS Stephens College recognizes that land use policies have a major impact on whether people and property are exposed to natural hazards, Stephens College will endeavor to integrate the *Plan* into the comprehensive planning process and

WHEREAS adoption by Stephens College demonstrates their commitment to hazard mitigation and achieving the goals outlined in the *Plan.*

NOW THEREFORE, BE IT RESOLVED, in the State of Missouri, THAT:

In accordance with the Boone County Hazard Mitigation Plan 2025, Stephens College adopts the final FEMA-*approved plan*.

Stephens College adopts the final **FEMA**-approved Plan on May 20, 2025.

By (Sig): Dianne Lynch

Print name: Dianne Lynch

Appendix B: Sign-In Sheets

MID-MO Regional Planning Commission

Boone County Hazard Mitigation Plan Meeting 2
Location: Boone County Emergency Communications Center, 2145 County Drive, Columbia MO 65202
Date: 1/7/2025 Time: 9:00 – 11:00 AM

Name	Position/Representing	Miles Traveled (2-Way) or Location of Origin	Phone	Email
Chris Lewis	Planner / OEM	0	954-279-4316	Clewis@boonecountymo.org
Jerry Jenkins	MU BEM	20	(573) 819-5308	Jenkinsjer@missouri.edu
Rich Harrell	CT, CPD	0	573-289-7148	richard.harrell@como.gov
DEMOND TAUBER	STEPHENS COLLEGE	10	573 268-9087	dtauber@stephens.edu
VINEET KAPILA	CITY OF COLUMBIA PW	5	573-823-9312	VINEET.KAPILA@COMO.GOV
Jon Logan	CPS	6	573-819-7821	Jologan@CPSK12.org
Ken Gregory	CPS	3	573 825 7286	Kgregory@cpsK12.org
James Creel	Ashland PW	15	573 657-2091	jcreel@ashlandmo.us
Chris Kelley	BCOEM	0	573-268-0107	ckelley@boonecountymo.org
Rebecca Estes	Columbia/Boone PHHS	0	573-338-1051	Rebecca.Estes@como.gov

MID-MO Regional Planning Commission

Boone County Hazard Mitigation Plan Kickoff Meeting
Location: Boone County Emergency Communications Center, 2145 County Drive, Columbia MO 65202
Date: 10/17/2024 Time: 9:00 – 10:30 AM

Name	Position/Representing	Miles Traveled (2-Way) or Location of Origin	Phone	Email
Jake Waller	Boone County OEM	0	573-356-1677	jwaller@boonecountymo.org

MID-MO Regional Planning Commission

Boone County Hazard Mitigation Plan Kickoff Meeting
Location: Boone County Emergency Communications Center, 2145 County Drive, Columbia MO 65202
Date: 10/17/2024 Time: 9:00 – 10:30 AM

Name	Position/Representing	Miles Traveled (2-Way) or Location of Origin	Phone	Email
Miriam Bouallegue	Planner/Mid MO RPC	14	573-657-9779	miriambouallegue@midmorpc.org
Brian Wager	Columbia College	7	573-875-7315	bewager@ccis.edu
Scott Young	Ashland PD	40	573-673-2985	~~scottyoung1977~~ syoung@ashlandmo.com
Jon Loga	CPS	Ø	573-814-9821	sologa@cpsk12.org
Tara Strain	Centralia	40	573-682-2159	tara@centraliamo.org
James Creel	Ashland	40	573-530-5911	jcreel@ashlandmo.us
VINEET KAPILA	CITY OF COLUMBIA PW	5±	573-874-6358	VINEET.KAPILA@COMO.GOV
BRIAN SCHAEFER	CFD	1	489 3400	brian-schaefer@como.gov
Andrew Worrell	APD	40	573 397 3625	aworrell@ashlandmo.us
Rebecca Estes	PHHS/Planner	—	573 338 1051	Rebecca@Estes@como.gov
Jeff Carr	Sturgeon R-5 School District	42	573-881-3034	jcarr@sturgeon.k12.mo.us
Jerry Jenkins	Emergency Manager MU Campus	1	573-819-5308	JenkinsJE@missouri.edu
John Ambra	CFD	1	573 489.1365	John.Ambra@Como.gov
Scott Olsen	BCFPD	5	573 268 5942	solsen@bcfdmo.com
Lily White	Columbia Chamber		573 874 1132	Lily@comochamber.com
Lazell Ofield	CPS	5	573-810-7560	lofield@cpsk12.org
Helen Porter	CPS	5	573-814-0255	hporter@cpsk12.org
David Dittmer	city of Columbia	6	573 874 7489	dave.dittmer@como.gov

MID-MO Regional Planning Commission

Boone County Hazard Mitigation Plan Meeting 3
Location: Boone County Emergency Communications Center, 2145 County Drive, Columbia MO 65202
Date: 3/5/2025 Time: 9:00 – 10:00 AM

Name	Position/Representing	Miles Traveled (2-Way) or Location of Origin	Phone	Email
THAD YONKE	BoCo. PLANNING		573-886-4337	tyonke@boonecountymo.org
Jo- Logan	CPS		573-819-9821	Jologan@CPSK12.org
Andy Muscato	Columbia Police		573-823-6257	andy.muscato@como.gov
DEMOND TAUBER	STEPHENS COLLEGE		573268-[illegible]7	demondtauber@Hotmail.com
Beth Boos	Deputy Director IT Boone County			
Anna Foster	Systems Support Mgr II			
Jeff McCann	BooneCo Engineering		886-4478	jmccann@boonecountymo.org
Elizabeth Thompson	SEMA		573-644-3728	Elizabeth.Thompson@sema.dps.mo.gov

Via Teams Call: Debbie Lancaster, City of Huntsdale 573-268-5940

MID-MO Regional Planning Commission

Boone County Hazard Mitigation Plan Meeting 2
Location: Boone County Emergency Communications Center, 2145 County Drive, Columbia MO 65202
Date: ~~1/7/2025~~ 1/15/25 Time: ~~9:00 – 11:00 AM~~ 3:30 - 5:00

Name	Position/Representing	Miles Traveled (2-Way) or Location of Origin	Phone	Email
Trynton Roberts	Emergency Mang. Coord City of Hallsville	54	573-476-2933	~~trynton.roberts@~~ troberts@hallsvillemo.org

MID-MO Regional Planning Commission

Boone County Hazard Mitigation Plan Meeting 2
Location: Boone County Emergency Communications Center, 2145 County Drive, Columbia MO 65202
Date: ~~1/7/2025~~ 1/15/25 Time: ~~9:00 – 11:00 AM~~ 3:30 - 5:00

Name	Position/Representing	Miles Traveled (2-Way) or Location of Origin	Phone	Email
Trynton Roberts	Emergency Mang. Coord City of Hallsville	54	573-476-2933	~~trynton.roberts@~~ troberts@hallsvillemo.org

MID-MO Regional Planning Commission

Boone County Hazard Mitigation Plan Meeting 3
Location: Boone County Emergency Communications Center, 2145 County Drive, Columbia MO 65202
Date: 3/24/2025 Time: 8:15 – 9:15 AM 9:45

Name	Position/Representing	Miles Traveled (2-Way) or Location of Origin	Phone	Email
Jerry Jenkins	MU Office of Emergency Management	MU Campus	573 819-5308	jenkinsje@missouri.edu
Chris Lewis	Boone M&A Specialist	0	954 279-4818	clewin@boonecountymo.org

MID-MO Regional Planning Commission

Boone County Hazard Mitigation Plan Meeting 2
Location: 703 1st St, Rocheport, MO 65279
Date: 1/30/2025 Time: 11:00 AM – 12:00 PM

Name	Position/Representing	Miles Traveled (2-Way) or Location of Origin	Phone	Email
John Zondca	Mayor Rocheport Mo		573-289-0051	JZondca@yahoo.com
JANICE ORTON	City Clerk		573-698-3245	RCityHall@AOL.COM

Appendix C: Questionnaires

Multi-Jurisdictional

Hazard Mitigation Plan

Data Collection Questionnaire

For Local Governments

County: Boone

Jurisdiction: _____

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Chris Lewin
Phone: 573-554-7918
Email: clewin@boonecountymo.org
Date: March 24, 2025

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission,
ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update.

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments
Planning Capabilities		
Comprehensive Plan	Date: 2025	Boone County Master Plan
Builder's Plan	Date: No	
Capital Improvement Plan	Date:	2025 Proposed Budget Plan (Beginning on page 122)
City Emergency Operations Plan	Date: N/A	
County Emergency Operations Plan	Date: Yes 2021 Next Update (2025)	Boone County EOP
Local Recovery Plan	Date: N/A	
County Recovery Plan	Date: In Progress	Expected 2025
City Mitigation Plan	Date: N/A	
County Mitigation Plan	Date:	2020 Hazard Mitigation Plan
Debris Management Plan	Date: 2020	Emergency Operations Plan (Beginning on page 91)
Economic Development Plan	Date:	Partnered with REDI
Transportation Plan	Date: 2022	MID-MO RPC Regional Transportation Plan
Land-use Plan	Date: 2025	Boone County Master Plan (Chapter 4)
Flood Mitigation Assistance (FMA) Plan	Date: No	
Watershed Plan	Date: 2023	Greater Bonne Femme Watershed-Based Plan
Firewise or other fire mitigation plan	Date: No	

Element	Yes, No, N/A	Comments
Critical Facilities Plan (Mitigation/Response/Recovery)	Date: Yes	Each department is required to develop and implement a Continuity of Operations Plan
Policies/Ordinance		
Zoning Ordinance	Yes	Zoning Ordinance for Boone County
Building Code	Version: 2015	2015 International Code
Floodplain Ordinance	Date: 2025	Zoning Ordinance for Boone County (Section 22, Article 1)
Subdivision Ordinance	Yes	Boone County Land Use Regulations
Tree Trimming Ordinance	No	
Nuisance Ordinance	Yes	Public Health Hazards and Public Nuisances
Storm Water Ordinance	Yes	
Drainage Ordinance	Yes	Boone County Stormwater Ordinance
Site Plan Review Requirements	Yes	2015 International Code
Historic Preservation Ordinance	Yes	Zoning Ordinance for Boone County
Landscape Ordinance	Yes	Zoning Ordinance for Boone County
Program		
Zoning/Land Use Restrictions	Yes	Resource Management
Codes Building Site/Design	Yes	Resource Management
Hazard Awareness Program	Yes	Boone County Ready
National Flood Insurance Program	Yes	Resource Management
Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)?	If so, what is your current level rating? No	
National Weather Service (NWS) Storm Ready Certification	Yes	NWS Storm Ready
Firewise Community Certification	No	
Building Code Effectiveness Grading (BCEGs)	No	
ISO Fire Rating	Rating: Variable	
Economic Development Program	Yes	Partnered with REDI
Land Use Program	Yes	
Public Education/Awareness	Yes	Several Boone County led initiatives
Property Acquisition	Yes	
Planning/Zoning Boards	Yes	Planning & Zoning Commission
Stream Maintenance Program	Yes	Joint Stormwater Management Program
Tree Trimming Program	Yes	Managed by Boone County Facilities Maintenance Landscape & Turf Division
Engineering Studies for Streams (Local/County/Regional)	Yes	Joint Stormwater Management Program
Mutual Aid Agreements	Yes	The Boone County EOP (Page 61) Identifies statewide mutual aid radio frequencies
Studies/Reports/Maps		
Hazard Analysis/Risk Assessment (City)	N/A	
Hazard Analysis/Risk Assessment (County)	No	
Evacuation Route Map	Yes	Emergency Operations Plan (Page 67)

Element	Yes, No, N/A	Comments
Critical Facilities Inventory	No	
Vulnerable Population Inventory	Yes	2023 Columbia/Boone County Community Health Assessment
Land Use Map	Yes	Boone County Master Plan (Page 76)

Staff/Department		Full Time or Part Time?
Building Code Official	Yes	Full Time
Building Inspector	Yes	Full Time
Mapping Specialist (GIS)	Yes	Full Time
Engineer	Yes	Full Time
Development Planner	Yes	Full Time
Public Works Official	Yes	Full Time
Emergency Management Coordinator	Yes	Full Time
NFIP Floodplain Administrator	Yes	Full Time
Bomb and/or Arson Squad	Yes	Multi-jurisdictional
Emergency Response Team	No	
Hazardous Materials Expert	No	
Local Emergency Planning Committee	Yes	Full Time
County Emergency Management Commission	Yes	Full Time
Sanitation Department	No	
Transportation Department	Yes	Boone County Road & Bridge maintains and improves over 700 miles of county roads.
Economic Development Department	Yes	Partnered with Regional Economic Development Inc (REDI)
Housing Department	N/A	
Historic Preservation	No	
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross	Yes	Red Cross
Salvation Army	Yes	Salvation Army
Veterans Groups	Yes	
Local Environmental Organization	Yes	Multiple
Homeowner Associations	Yes	
Neighborhood Associations	Yes	Multiple
Chamber of Commerce	Yes	Multiple
Community Organizations (Lions, Kiwanis, etc.	Yes	Multiple
Financial Resources	Is your jurisdiction able to? Yes or No	
Apply for Community Development Block Grants	Yes	
Fund projects thru Capital Improvements funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	N/A	
Incur debt through general obligation bonds	N/A	

Element	Yes, No, N/A	Comments
Incur debt through special tax bonds	N/A	
Incur debt through private activities	N/A	
Withhold spending in hazard prone areas	N/A	

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	The Boone County Master Plan directly references and prioritizes mitigation strategies outlined in the 2020 Hazard Mitigation Plan.
Builder's Plan	N/A
Capital Improvement Plan	N/A
Local Recovery Plan	N/A
County Recovery Plan	In Progress – Expected 2025. This plan incorporates hazards and strategies identified in the 2020 Hazard Mitigation Plan
Debris Management Plan	The Debris Management Plan incorporates hazards discussed in the Mitigation Plan to implement debris forecasting and estimation.
Economic Development Plan	N/A
Transportation Plan	N/A
Land-use Plan	See Boone County Master Plan
Watershed Plan	The Plan outlines outreach and infrastructure strategies to reduce flooding – an identified hazard in the 2020 Hazard Mitigation Plan.
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	N/A

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)

   The Boone County Commission has 3 members. Presiding Commissioner, District I, and District II.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

   Boone County Ready – Household/family disaster preparedness
   Upward Mobility – Economic opportunities
   Stormwater Education – Waterway and environmental education

3. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

   N/A

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.

5. How many outdoor warning sirens are in your community?

   103

   How are they activated (indicate responsible department/personnel)?

   Joint Communications – Emergency Communication Center

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe them.

   Smart 911, Rave Alerts, FEMA Integrated Public Alert & Warning System

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards?

   Please provide address locations:

   No public, county-owned, shelters exist at this time.

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

   Since 2000, Boone County has experienced:

   - 17% Growth in developed areas
   - 1% loss in deciduous forest
   - 34% population growth
   - 25% – 31% of job growth
   - 8% – 31% increase in traffic volume

Source Boone County Master Plan

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

   Boone County Resource Management maintains the County Flood Insurance Rate Maps and enforces the Flood Plain Regulations. All

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

    1.) Public Safety Childcare Center – The Center will provide extended access to childcare for first responders within Boone County Government
    2.) Boone County Sheriff's Office Training Annex – Training facility for the Boone County Sheriffs Office and partner response agencies.
    3.) Various infrastructure projects:
        a. Rural Gravel Road Stabilization
        b. Richland Road Project
        c. Bonne Femme Project
        d. Bridge Improvement Projects

11. Please list major employers in your jurisdiction with an estimated number of employees.

    See attached list below. *Source (REDI, Boone County Largest Employers)*

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

    Previous planning committee members included representatives Boone County, Centralia, City of Columbia, Sturgeon, Rocheport, Hallsville, Ashland, Hartsburg, Harrisburg, Huntsdale, University of Missouri, Stephens College, Hallsville School District, Sturgeon School District, Southern Boone School District, Columbia Public Schools, and Centralia School District.

    Group Meetings did not continue due to the Covid-19 pandemic. Each department internally reviewed and made progress on identified actions.

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

    Boone County participates in the National Flood Insurance Program. Compliance is enforced through Section 22 of the Zoning Ordinance for Boone County, Missouri

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the hazard specific column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Riverine Flooding (Major & Flash)-**RF**
Dam Failure-**DF**
Levee Failure-**LF**
Earthquake-**EQ**
Land Subsidence / Sinkholes-**LSS**
Severe Thunderstorm (incl. winds, hail, lightning)-**ST**
Tornadoes-**T**
Severe Winter Weather (incl. snow, ice, severe cold)-**SWW**
Droughts-**D**
Extreme Temperatures-**ET**
Fires (structural, urban, and wild)-**F**
Attack (nuclear, conventional, chemical, and biological)-**A**
Civil Disorder-**CD**
Cyber Disruption-**CyD**
Hazardous Materials Release (fixed facility, accidents)-**HM**
Mass Transportation Accident-**MTA**
Nuclear Power Plants (emergencies & accidents)-**NPP**
Public Health Emergencies/Environmental Issues-**PH**
Special Events-**SE**
Terrorism-**TX**
Utilities (interruptions & system failures)-**U**

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities	**High Potential Loss Facilities**	**Transportation and Lifeline**
Hospitals and other medical facilities	Power plants	Highways, bridges, and tunnels
Police stations	Dams/levees	Railroads and facilities
Fire station	Military installations	Bus facilities
Emergency Operations Centers	Hazardous material sites	Airports
	Schools	Water treatment facilities
	Shelters	Natural gas facilities and pipelines
	Day care centers	Oil facilities and pipelines
	Nursing homes	Communications facilities
	Main government buildings	

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						
Emergency Operations Center						
Juvenile Justice Center						
Centralia Health Clinic						
Courthouse						
PHHS						
Sherrif Substation South						
Alternative Sentencing Center						
Sherrif Dept Annex						
Boone County Annex						
Jail						
Government Center						
Road & Bridge						
(103) Sirens	Siren Location Information					
Community Services						

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
High Potential Loss Facilities such as power plants, dams/levees, military installations, hazardous materials sites, shelters, day care centers, nursing homes, main government buildings (Do not include schools—they will be reported by the school districts)						
See GIS Information						
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
See GIS Information						

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards
University of Missouri		Education		9998	Earthquake, Tornado, Extreme Temperature
MU Health Care		Health Care		8103	Earthquake, Tornado, Extreme Temperature
Columbia Public Schools		Education		3014	Earthquake, Tornado, Extreme Temperature
Veterans United Home Loans		Financial		2847	Earthquake, Tornado, Extreme Temperature
Harry S. Truman Memorial Veterans' Hospital		Health Care		2074	Earthquake, Tornado, Extreme Temperature
City of Columbia		Government		1442	Earthquake, Tornado, Extreme Temperature
Boone Health		Health Care		1400	Earthquake, Tornado, Extreme Temperature

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction. Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	Boone County
Type of event	Man-made
Nature and magnitude of event	Protest, localized
Location	Columbia
Date of event	6/2/2020 – 6/7/2020
Injuries	Minimal
Deaths	No reported deaths
Property damage	None
Infrastructure damage	None
Crop damage	None
Business/economic impacts	Minimal
Road/school/other closures	Some roads closed.
Other damage	N/A
Insured losses	None
Federal/state disaster relief funding	N/A
Opinion on likelihood of occurring again	Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2020-06-001

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Pandemic, Global
Location	Global
Date of event	2020 - 2021
Injuries	Unknown
Deaths	Multiple (ongoing)
Property damage	N/A
Infrastructure damage	N/A
Crop damage	N/A
Business/economic impacts	Major Disruptions
Road/school/other closures	Major Disruptions
Other damage	N/A
Insured losses	N/A
Federal/state disaster relief funding	Yes
Opinion on likelihood of occurring again	Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2020-03-001 DR 4490

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Flooding
Location	Boone County
Date of event	2020 - 2021

Injuries	Unknown
Deaths	Multiple (ongoing)
Property damage	Significant
Infrastructure damage	Significant
Crop damage	Unknown
Business/economic impacts	Major Disruptions
Road/school/other closures	Major Disruptions
Other damage	N/A
Insured losses	Yes
Federal/state disaster relief funding	Yes
Opinion on likelihood of occurring again	Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2020-006-0001 DR 4612 https://krcgtv.com/news/local/june-2021-flooding-in-mid-missouri-part-of-a-billion-dollar-weather-disaster

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Severe Winter Weather
Location	Boone County
Date of event	2/2 – 2/5/2022
Injuries	None reported
Deaths	None Reported
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	Minimal Disruptions

Road/school/other closures	Hazardous road conditions
Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Extremely Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2022-02-001

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Severe Winter Weather
Location	Boone County
Date of event	1/24/2023
Injuries	None reported
Deaths	None Reported
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	Minimal Disruptions
Road/school/other closures	Hazardous road conditions
Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Extremely Likely
Source of information	Boone County Office of Emergency Management

Comments	Incident # BC2023-01-001

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Severe Thunderstorms
Location	Boone County
Date of event	3/31/2023
Injuries	None reported
Deaths	None Reported
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	None Reported
Road/school/other closures	No
Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Extremely Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2023-03-002

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Severe Weather
Location	Boone County

Date of event	4/4/2023
Injuries	None reported
Deaths	None Reported
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	None Reported
Road/school/other closures	No
Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Extremely Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2023-04-003 - Baseball sized Hail reported in Sturgeon

Jurisdiction	Boone County
Type of event	Technological
Nature and magnitude of event	Explosion/Fire
Location	University of Missouri
Date of event	1/26/2023
Injuries	2
Deaths	None
Property damage	Yes
Infrastructure damage	Yes
Crop damage	N/A

Business/economic impacts	Minimal
Road/school/other closures	Surrounding building evacuated.
Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Unlikely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2024-01-001 https://www.columbiamissourian.com/news/local/two-people-injured-after-fire-possible-explosion-at-mu-medical-school/article_87eca8bb-532c-5363-a5bc-7cf63514b31f.html

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Severe Weather
Location	Boone County
Date of event	3/14/24
Injuries	None Reported
Deaths	None Reported
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	Minimal
Road/school/other closures	None Reported
Other damage	N/A
Insured losses	No

Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Extremely Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2024-03-001

Jurisdiction	Boone County
Type of event	Man-made
Nature and magnitude of event	Plane Crash
Location	Hartsburg
Date of event	4/16/24
Injuries	None Reported
Deaths	1
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	Minimal
Road/school/other closures	Yes
Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Unlikely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2024-04-001 https://www.komu.com/news/midmissourinews/hartsburg-plane-crash-had-a-near-vertical-impact-ntsb-preliminary-report-says/article_3342c36c-0992-11ef-8a5d-0bfdbecd2fb4.html

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Severe Winter Weather
Location	Boone County
Date of event	1/4/25
Injuries	None Reported
Deaths	None Reported
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	Minimal
Road/school/other closures	Yes
Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Extremely Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2025-01-001

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Severe Winter Weather
Location	Boone County
Date of event	2/12/25
Injuries	None Reported

Deaths	None Reported
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	Minimal
Road/school/other closures	Yes
Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Extremely Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2025-02-001

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Severe Winter Weather
Location	Boone County
Date of event	2/18/25
Injuries	None Reported
Deaths	None Reported
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	Minimal
Road/school/other closures	Yes

Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Extremely Likely
Source of information	Boone County Office of Emergency Management
Comments	Incident # BC2025-02-002

Jurisdiction	Boone County
Type of event	Natural
Nature and magnitude of event	Severe Weather/Fire
Location	Boone County & Wilton, MO
Date of event	3/14/25
Injuries	None Reported
Deaths	None Reported
Property damage	None Reported
Infrastructure damage	None Reported
Crop damage	None Reported
Business/economic impacts	None
Road/school/other closures	Yes
Other damage	N/A
Insured losses	No
Federal/state disaster relief funding	No
Opinion on likelihood of occurring again	Likely
Source of information	Boone County Office of Emergency Management

Comments	Incident # BC2025-03-001 https://www.komu.com/news/midmissourinews/fire-crews-continue-effort-in-southern-boone-county-amid-voluntary-evacuations/article_0d8c20fa-0135-11f0-abbd-ebf4b3293664.html Residents near the Hart Creek Conservation Area were issued a voluntary evacuation notice.

Multi-Jurisdictional

Hazard Mitigation Plan

Data Collection Questionnaire

For Local Governments

County: Boone

Jurisdiction: Ashland, MO

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: _____
Phone: _____
Email: _____
Date: _____

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission,
ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update.

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments
Planning Capabilities		
Comprehensive Plan	Date: Yes, 2019	
Builder's Plan	Date: N/A	
Capital Improvement Plan	Date: N/A	
City Emergency Operations Plan	Date: Yes	
County Emergency Operations Plan	Date: Yes	
Local Recovery Plan	Date: N/A	
County Recovery Plan	Date: In Progress	
City Mitigation Plan	Date: N/A	
County Mitigation Plan	Date: 2015	
Debris Management Plan	Date: N/A	
Economic Development Plan	Date: N/A	
Transportation Plan	Date: Yes, 2025 update	
Land-use Plan	Date: Yes, 2019	
Flood Mitigation Assistance (FMA) Plan	Date: N/A	
Watershed Plan	Date: N/A	
Firewise or other fire mitigation plan	Date: N/A	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date: N/A	

Element	Yes, No, N/A	Comments
Policies/Ordinance		
Zoning Ordinance	Yes, 2024	
Building Code	Yes, 2012	
Floodplain Ordinance	Yes, 12/7/2010	
Subdivision Ordinance	Yes, 2024	
Tree Trimming Ordinance	N/A	
Nuisance Ordinance	N/A	
Storm Water Ordinance	Yes	
Drainage Ordinance	N/A	
Site Plan Review Requirements	Yes	
Historic Preservation Ordinance	N/A	
Landscape Ordinance	Yes, 2024	
Program		
Zoning/Land Use Restrictions	Yes, 2024	
Codes Building Site/Design	Yes, 2024	
Hazard Awareness Program	N/A	
National Flood Insurance Program	Yes	
Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)?	If so, what is your current level rating? N/A	
National Weather Service (NWS) Storm Ready Certification	N/A	
Firewise Community Certification	No	
Building Code Effectiveness Grading (BCEGs)	N/A	
ISO Fire Rating	Rating: 4	
Economic Development Program	N/A	
Land Use Program	N/A	
Public Education/Awareness	N/A	
Property Acquisition	N/A	
Planning/Zoning Boards	Yes	
Stream Maintenance Program	Yes	
Tree Trimming Program	N/A	
Engineering Studies for Streams (Local/County/Regional)	Bonne Femme Watershed	
Mutual Aid Agreements	Yes, Boone County countywide	
Studies/Reports/Maps		
Hazard Analysis/Risk Assessment (City)	N/A	
Hazard Analysis/Risk Assessment (County)	N/A	
Evacuation Route Map	County	
Critical Facilities Inventory	N/A	
Vulnerable Population Inventory	N/A	
Land Use Map	Yes	

Element	Yes, No, N/A	Comments
Staff/Department		Full Time or Part Time?
Building Code Official	Darin Ratermann, Community Development	Full time
Building Inspector	Darin Ratermann, Community Development	Full time
Mapping Specialist (GIS)	N/A	
Engineer	Christina Lubbert, Lubbert Engineering	Full time
Development Planner	Darin Ratermann, Community Development	Full time
Public Works Official	Yes, Public Works	Full time
Emergency Management Coordinator	Scott Young, Police Chief	Full time
NFIP Floodplain Administrator	Darin Ratermann, Community Development	Full time
Bomb and/or Arson Squad	N/A	
Emergency Response Team	N/A	
Hazardous Materials Expert	N/A	
Local Emergency Planning Committee	N/A	
County Emergency Management Commission	N/A	
Sanitation Department	Republic Services	
Transportation Department	James Creel, Public Works	
Economic Development Department	Kyle Michel, City Administrator	
Housing Department	N/A	
Historic Preservation	No	
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross	N/A	
Salvation Army	N/A	
Veterans Groups	American Legion Post 152	
Local Environmental Organization	N/A	
Homeowner Associations	N/A	
Neighborhood Associations	N/A	
Chamber of Commerce	Southern Boone Chamber of Commerce	
Community Organizations (Lions, Kiwanis, etc.	Lions, Ashland Optimist Club	
Financial Resources	Is your jurisdiction able to? Yes or No	
Apply for Community Development Block Grants	Yes,	Not currently LMI
Fund projects thru Capital Improvements funding	Yes	
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Incur debt through private activities	Yes	
Withhold spending in hazard prone areas	Yes	

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	Includes recommendations for managing the City's growth to minimize hazards such as stormwater, flooding, and sinkholes.
Builder's Plan	
Capital Improvement Plan	
Local Recovery Plan	
County Recovery Plan	
Debris Management Plan	
Economic Development Plan	
Transportation Plan	Includes maintenance recommendations to manage stormwater damage to transportation infrastructure
Land-use Plan	
Watershed Plan	
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)

Mayor, and 6 Alderman.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

The City uses social media to inform residents about weather alerts and road closures.

3. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

The City currently has an HMGP for a generator at city hall.

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.

   The City's population is about 25% elderly and there are no known specific hazard-related concerns or issues.
5. How many outdoor warning sirens are in your community?
   1
   How are they activated (indicate responsible department/personnel)?
   Boone County OEM

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe them.
   Text alert sign up on City website. This is not being used by most residents.

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards? No.

   Please provide address locations:

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

   There have been about 500 new homes and 1 industrial facility constructed since the last plan update.

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

Growth is expected to continue as the City processes approximately 70 residential permits per year. No new development is expected to occur in any floodplains or known hazard areas.

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

The City is planning a $25 million wastewater treatment plant expansion at 408 East Liberty Lane.

11. Please list major employers in your jurisdiction with an estimated number of employees.

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

Previously, James Creel, Public Works served during the development of the previously approved plan. He is no longer with the City.

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

Ashland participates in NFIP and enforces the local ordinance.

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the hazard specific column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Riverine Flooding (Major & Flash)-**RF**
Dam Failure-**DF**
Levee Failure-**LF**
Earthquake-**EQ**
Land Subsidence / Sinkholes-**LSS**
Severe Thunderstorm (incl. winds, hail, lightning)-**ST**
Tornadoes-**T**
Severe Winter Weather (incl. snow, ice, severe cold)-**SWW**
Droughts-**D**
Extreme Temperatures-**ET**
Fires (structural, urban, and wild)-**F**
Attack (nuclear, conventional, chemical, and biological)-**A**
Civil Disorder-**CD**
Cyber Disruption-**CyD**
Hazardous Materials Release (fixed facility, accidents)-**HM**
Mass Transportation Accident-**MTA**
Nuclear Power Plants (emergencies & accidents)-**NPP**
Public Health Emergencies/Environmental Issues-**PH**
Special Events-**SE**
Terrorism-**TX**
Utilities (interruptions & system failures)-**U**

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities	**High Potential Loss Facilities**	**Transportation and Lifeline**
Hospitals and other medical facilities	Power plants	Highways, bridges, and tunnels
Police stations	Dams/levees	Railroads and facilities
Fire station	Military installations	Bus facilities
Emergency Operations Centers	Hazardous material sites	Airports
	Schools	Water treatment facilities
	Shelters	Natural gas facilities and pipelines
	Day care centers	Oil facilities and pipelines
	Nursing homes	Communications facilities
	Main government buildings	

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						
City Hall, police station	101 W. Broadway					EQ, ST, T, SWW, D, F

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
High Potential Loss Facilities such as power plants, dams/levees, military installations, hazardous materials sites, shelters, day care centers, nursing homes, main government buildings (Do not include schools—they will be reported by the school districts)						
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction. Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Boone County Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire For Local Governments

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. If you are unsure about the answer to a question, contact the individual in your jurisdiction who is responsible for the element. If you are signed in to a Google account, you may close the questionnaire and Google Forms will save your work. If you have any questions about the questions, contact Miriam Bouallegue at miriam.bouallegue@midmorpc.org.

Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Email *

tara@centraliamo.gov

Please select your jurisdiction from the list. *

- ○ Unincorporated Boone County
- ○ City of Columbia
- ○ City of Ashland
- ○ City of Sturgeon
- ○ Village of Hartsburg
- ○ Village of Pierpont
- ○ Village of McBaine
- ○ Village of Huntsdale
- ○ City of Hallsville
- ◉ City of Centralia
- ○ Village of Harrisburg
- ○ City of Rocheport
- ○ Boone County Sewer Department
- ○ Hallsville Police Department
- ○ Boone County Sheriff
- ○ Centralia Police Department

- [ ] Columbia Fire Department
- ○ Southern Boone Fire Protection District
- ○ Boone County Fire Protection District
- ○ Ashland Police Department
- ○ Columbia Regional Airport
- ○ Other: _____

First and Last Name *

Tara Strain

Phone Number *

573-682-2139

Date

MM DD YYYY

12 / 20 / 2024

CAPABILITY ASSESSMENT&INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update. Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column.

Comprehensive Plan

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a comprehensive plan, please state the date of the plan.

MM DD YYYY

07 / 26 / 2018

Comments:

Builder's Plan

- ○ Yes
- ○ No
- ◉ N/A

If your jurisdiction has a builder's plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Capital Improvement Plan

- ○ Yes
- ○ No
- ◉ N/A

If your jurisdiction has a capital improvement plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

City or County Emergency Operations Plan

- ○ Yes - City
- ◉ Yes - County
- ○ No
- ○ N/A

If your jurisdiction has a city or county emergency operations plan, please state the date of the plan.

MM DD YYYY

/ /

Comments

Local or County Recovery Plan

- ○ Yes - Local
- ◉ Yes - County
- ○ No
- ○ N/A

If your jurisdiction has a local recovery plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

The County is working on the Recovery Plan

Mitigation Plan

- ○ Yes - City
- ○ Yes - County
- ○ No
- ◉ N/A

If your jurisdiction has a mitigation plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Debris Management Plan

- ○ Yes
- ○ No
- ◉ N/A

If your jurisdiction has a debris management plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Economic Development Plan

- ○ Yes
- ◉ No
- ○ N/A

If your jurisdiction has an economic development plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Transportation Plan

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a transportation plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Regional Transportation Plan (Mid-MO)

Land Use Plan

- ○ Yes
- ○ No
- ◉ N/A

If your jurisdiction has a land use plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Flood Mitigation Assistance (FMA) Plan

- ○ Yes
- ○ No
- ◉ N/A

If your jurisdiction has a flood mitigation plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Watershed Plan

- ○ Yes
- ○ No
- ◉ N/A

If your jurisdiction has a watershed plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Firewise or other fire mitigation plan

- ○ Yes
- ◉ No
- ○ N/A

If your jurisdiction has a firewise or other fire mitigation plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Critical Facilities Plan (Mitigation/Response/Recovery)

- ○ Yes
- ○ No
- ◉ N/A

If your jurisdiction has a Critical Facilities Plan (Mitigation/Response/Recovery) please state the date of the plan.

MM DD YYYY

/ /

Comments:

Zoning Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Building Code

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a building code, please state the version of the code. (e.g. ICC IBC-2021)

ICC IBC 2015

If your jurisdiction has a building code, please state the date of the code.

MM DD YYYY

04 / 01 / 2017

Comments:

We follow Boone County's plan

Floodplain Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a floodplain ordinance, please state the date of the ordinance.

MM DD YYYY

01 / 15 / 2001

Comments:

Subdivision Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Tree Trimming Ordinance

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Nuisance Ordinance

- ◉ Yes
- ○ No
- ○ N/A

Comments:

Storm Water Ordinance

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Drainage Ordinance

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Site Plan Review Requirements

- ◉ Yes
- ○ No
- ○ N/A

Comments:

Historic Preservation Ordinance

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Landscape Ordinance

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Zoning/Land Use Restrictions

- ◉ Yes
- ○ No
- ○ N/A

Comments:

Codes Building Site/Design

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Hazard Awareness Program

- ○ Yes
- ○ No
- ◉ N/A

Comments:

National Flood Insurance Program

- ◉ Yes
- ○ No
- ○ N/A

Comments:

Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)

- (●) Yes
- ( ) No
- ( ) N/A

If so, what is your current level rating?

Comments:

National Weather Service (NWS) Storm Ready Certification

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Firewise Community Certification

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Building Code Effectiveness Grading (BCEGs)

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Unknown

Please state your jurisdiction's ISO fire rating.

5

Comments:

Economic Development Program

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

REDI

Land Use Program

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Public Education/Awareness

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Property Acquisition

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Planning/Zoning Boards

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Stream Maintenance Program

- ( ) Yes
- ( ) No
- (●) N/A

Comments:

Tree Trimming Program

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Engineering Studies for Streams (Local/County/Regional)

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Mutual Aid Agreements

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Hazard Analysis/Risk Assessment (City)

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Hazard Analysis/Risk Assessment (County)

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Evacuation Route Map

- ◉ Yes
- ○ No
- ○ N/A

Comments:

County

Critical Facilities Inventory

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Vulnerable Population Inventory

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Land Use Map

- ○ Yes
- ○ No
- ◉ N/A

Comments:

Building Code Official

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

County

Building Inspector

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

County

Mapping Specialist (GIS)

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Engineer

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Development Planner

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Public Works Official

- ◉ Yes - Full-time
- ○ Yes - Part-time
- ○ No
- ○ N/A

Comments:

Emergency Management Coordinator

- (●) Yes - Full-time
- ( ) Yes - Part-time
- ( ) No
- ( ) N/A

Comments:

Appointed County EMC

NFIP Floodplain Administrator

- (●) Yes - Full-time
- ( ) Yes - Part-time
- ( ) No
- ( ) N/A

Comments:

This is a job duty of the City Administrator

Bomb and/or Arson Squad

- ( ) Yes - Full-time
- ( ) Yes - Part-time
- (●) No
- ( ) N/A

Comments:

Emergency Response Team

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Hazardous Materials Expert

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Local Emergency Planning Committee

- ○ Yes - Full-time
- ◉ Yes - Part-time
- ○ No
- ○ N/A

Comments:

County Emergency Management Commission

- ○ Yes - Full-time
- ○ Yes - Part-time
- ○ No
- ◉ N/A

Comments:

Sanitation Department

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Transportation Department

- ◉ Yes - Full-time
- ○ Yes - Part-time
- ○ No
- ○ N/A

Comments:

Economic Development Department

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Housing Department

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Historic Preservation Staff

- ○ Yes - Full-time
- ◉ Yes - Part-time
- ○ No
- ○ N/A

Comments:

Is there a local chapter of the American Red Cross?

- ○ Yes
- ◉ No

Comments:

Is there a local chapter of the Salvation Army?

- ○ Yes
- ◉ No

Comments:

Is there a local chapter of Veterans Groups?

- (●) Yes
- ( ) No

Comments:

Is there a local environmental organization?

- ( ) Yes
- (●) No

Comments:

Are there local homeowner associations?

- (●) Yes
- ( ) No

Comments:

Are there local neighborhood associations?

- ( ) Yes
- (●) No

Comments:

Is there a local chamber of commerce?

- (●) Yes
- ( ) No

Comments:

Are there other local community organizations (lions, kiwanis, etc.)? If so, please specify in the comments.

- (●) Yes
- ( ) No

Comments:

Kiwanis, Rotary

Is your jurisdiction able to apply for Community Development Block Grants (CDBG)?

- (●) Yes
- ( ) No

Comments:

Is your jurisdiction able to fund projects through capital improvements funding?

- (●) Yes
- ( ) No

Comments:

Does your jurisdiction have authority to levy taxes for specific purposes?

- (●) Yes
- ( ) No

Comments:

Is your jurisdiction able to set fees for water, sewer, gas, or electric services?

- (●) Yes
- ( ) No

Comments:

Is your jurisdiction able to incur debt through general obligation bonds?

- (●) Yes
- ( ) No

Comments:

Is your jurisdiction able to incur debt through special tax bonds?

- (●) Yes
- ( ) No

Comments:

Is your jurisdiction able to incur debt through private activities?

- ○ Yes
- ◉ No

Comments:

Is your jurisdiction able to withhold spending in hazard prone areas?

- ○ Yes
- ◉ No

Comments:

Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. For each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Comprehensive Plan

The previous mitigation plan was considered during the comprehensive plan process. Unfortunately it was not documented and I don't have any details.

Builder's Plan

N/A

Capital Improvement Plan

N/A

Local Recovery Plan

N/A

County Recovery Plan

In Progress

Debris Management Plan

County

Economic Development Plan

N/A

Transportation Plan

Regional Transportation Plan (Mid-MO)

Land Use Plan

N/A

Watershed Plan

N/A

Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan

N/A

Additional Questions

How is your government structure organized? (Commission, Mayor/City Council, how many members)

Mayor/City Council

List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

We post educational info grams on our City Facebook page pertaining to responsible Water & Electric use.

List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

N/A

Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.

N/A

How many outdoor warning sirens are in your community? How are they activated (indicate responsible department/personnel)?

3, County activated

Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe them.

N/A

Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards? Please provide address locations.

No

List residential, commercial and industrial development in your jurisdiction since last plan update.

Many single family homes and duplexes have been in the past 4 years. Centralia has seen growth of approx. 167 residents in that time. We have not had any new commercial or industrial development

Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

No development is expected in the 100-year floodplain, nor is there any new development expected in any hazard areas.

Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

None

Please list major employers in your jurisdiction with an estimated number of employees.

Hubbell

Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

The previous City Administrator served previously. I am unaware of any details.

Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

The City Administrator is the Floodplain Administrator for Centralia. I stay educated on floodplain management and check building permits to ensure compliance. Centralia has a floodplain ordinance as well.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. Indicate hazards to which the assets are vulnerable.
If not applicable, enter "N/A"). Add as many facilities as needed.

Critical Facilities and Infrastructure
A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities

Hospitals and other medical facilities

Police stations

Fire station

Emergency Operations Centers

High Potential Loss Facilities

Power plants

Dams/levees

Military installations

Hazardous material sites

Schools

Shelters

Day care centers

Nursing homes

Main government buildings

Transportation and Lifeline

Highways, bridges, and tunnels

Railroads and facilities

Bus facilities

Airports

Water treatment facilities

Natural gas facilities and pipelines

Oil facilities and pipelines

Communications facilities

*If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

Are your jurisdiction's critical facilities available in GIS format?

Yes

Name and address of critical facility asset 1

Police Station 114 S Rollins St

Critical facility asset 1 type (refer to the list in the instructions)

- (●) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 1

1620

Replacement value (insured) of critical facility asset 1

240000

Contents value of critical facility asset 1

140000

Occupancy/Capacity number of critical facility asset 1

Unknown

Hazards to which critical facility asset 1 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 2

Fire Station 208 W Sneed St

Critical facility asset 2 type (refer to the list in the instructions)

- (●) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 2

3575

Replacement value (insured) of critical facility asset 2

392000

Contents value of critical facility asset 2

256000

Hazards to which critical facility asset 2 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 3

Chance Elementary School 510 S Rollins St

Critical facility asset 3 type (refer to the list in the instructions)

- ( ) Critical essential facility
- (•) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 3

Unknown

Replacement value (insured) of critical facility asset 3

Unknown

Contents value of critical facility asset 3

Unknown

Occupancy/Capacity number of critical facility asset 3

Unknown

Hazards to which critical facility asset 3 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 4

Centralia Intermediate School 550 W Lakeview

Critical facility asset 4 type (refer to the list in the instructions)

- ( ) Critical essential facility
- (•) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 4

Unknown

Replacement value (insured) of critical facility asset 4

Unknown

Contents value of critical facility asset 4

Unknown

Occupancy/Capacity number of critical facility asset 4

Unknown

Hazards to which critical facility asset 4 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 5

Chester Boren Middle School 110 N Jefferson St

Critical facility asset 5 type (refer to the list in the instructions)

- ( ) Critical essential facility
- (•) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 5

Unknown

Replacement value (insured) of critical facility asset 5

Unknown

Contents value of critical facility asset 5

Unknown

Occupancy/Capacity number of critical facility asset 5

Unknown

Hazards to which critical facility asset 5 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 6

Centralia High School 629 S Jefferson St

Critical facility asset 6 type (refer to the list in the instructions)

- ( ) Critical essential facility
- (•) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 6

Unknown

Replacement value (insured) of critical facility asset 6

Unknown

Contents value of critical facility asset 6

Unknown

Occupancy/Capacity number of critical facility asset 6

Unknown

Hazards to which critical facility asset 6 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 7

Stuart House Retirement Home 117 S Hickman

Critical facility asset 7 type (refer to the list in the instructions)

- ( ) Critical essential facility
- (•) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 7

Unknown

Replacement value (insured) of critical facility asset 7

Unknown

Contents value of critical facility asset 7

Unknown

Occupancy/Capacity number of critical facility asset 7

Unknown

Hazards to which critical facility asset 7 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 8

Heritage Hall Retirement Home 750 E Hwy 22

Critical facility asset 8 type (refer to the list in the instructions)

- ( ) Critical essential facility
- (•) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 8

Unknown

Replacement value (insured) of critical facility asset 8

Unknown

Contents value of critical facility asset 8

Unknown

Occupancy/Capacity number of critical facility asset 8

Unknown

Hazards to which critical facility asset 8 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 9

Centralia City Hall 114 S Rollins St

Critical facility asset 9 type (refer to the list in the instructions)

- ( ) Critical essential facility
- (•) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 9

6750

Replacement value (insured) of critical facility asset 9

4000000

Contents value of critical facility asset 9

400000

Occupancy/Capacity number of critical facility asset 9

Hazards to which critical facility asset 9 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 10

Hwy 22

Critical facility asset 10 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- (•) Transportation and lifeline

Square footage of critical facility asset 10

Unknown

Replacement value (insured) of critical facility asset 10

Unknown

Contents value of critical facility asset 10

Unknown

Occupancy/Capacity number of critical facility asset 10

Unknown

Hazards to which critical facility asset 10 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 11

Hwy 124

Critical facility asset 11 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- (•) Transportation and lifeline

Square footage of critical facility asset 11

Unknown

Replacement value (insured) of critical facility asset 11

Unknown

Contents value of critical facility asset 11

Unknown

Occupancy/Capacity number of critical facility asset 11

Unknown

Hazards to which critical facility asset 11 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [x] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 12

BNSF and Norfolk & Southern Rail lines

Critical facility asset 12 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- (•) Transportation and lifeline

Square footage of critical facility asset 12

Unknown

Replacement value (insured) of critical facility asset 12

Unknown

Replacement value (insured) of critical facility asset 12

Unknown

Contents value of critical facility asset 12

Unknown

Occupancy/Capacity number of critical facility asset 12

Unknown

Hazards to which critical facility asset 12 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [x] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 13

Water Treatment Facilities

Critical facility asset 13 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- (•) Transportation and lifeline

Square footage of critical facility asset 13

4000

Replacement value (insured) of critical facility asset 13

7342000

Contents value of critical facility asset 13

587000

Occupancy/Capacity number of critical facility asset 13

8

Hazards to which critical facility asset 13 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 14

Natural Gas Pipeline

Critical facility asset 14 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- (•) Transportation and lifeline

Square footage of critical facility asset 14

Unknown

Replacement value (insured) of critical facility asset 14

Unknown

Contents value of critical facility asset 14

Unknown

Hazards to which critical facility asset 14 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 15

_____

Critical facility asset 15 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 15

_____

Replacement value (insured) of critical facility asset 15

_____

Contents value of critical facility asset 15

_____

Occupancy/Capacity number of critical facility asset 15

_____

Hazards to which critical facility asset 15 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 16

_____

Critical facility asset 16 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 16

_____

Replacement value (insured) of critical facility asset 16

_____

Contents value of critical facility asset 16

_____

Occupancy/Capacity number of critical facility asset 16

_____

Hazards to which critical facility asset 16 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 17

_____

Critical facility asset 17 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 17

_____

Replacement value (insured) of critical facility asset 17

_____

Contents value of critical facility asset 17

_____

Occupancy/Capacity number of critical facility asset 17

_____

Hazards to which critical facility asset 17 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 18

_____

Critical facility asset 18 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 18

_____

Replacement value (insured) of critical facility asset 18

_____

Contents value of critical facility asset 18

_____

Occupancy/Capacity number of critical facility asset 18

_____

Hazards to which critical facility asset 18 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 19

_____

Critical facility asset 19 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 19

_____

Replacement value (insured) of critical facility asset 19

_____

Contents value of critical facility asset 19

_____

Occupancy/Capacity number of critical facility asset 19

_____

Hazards to which critical facility asset 19 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 20

_____

Critical facility asset 20 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 20

_____

Replacement value (insured) of critical facility asset 20

_____

Contents value of critical facility asset 20

_____

Occupancy/Capacity number of critical facility asset 20

_____

Hazards to which critical facility asset 20 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 21

_____

Critical facility asset 21 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 21

_____

Replacement value (insured) of critical facility asset 21

_____

Contents value of critical facility asset 21

_____

Occupancy/Capacity number of critical facility asset 21

_____

Hazards to which critical facility asset 21 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 22

_____

Critical facility asset 22 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 22

_____

Replacement value (insured) of critical facility asset 22

_____

Contents value of critical facility asset 22

_____

Occupancy/Capacity number of critical facility asset 22

_____

Hazards to which critical facility asset 22 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 23

_____

Critical facility asset 23 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 23

_____

Replacement value (insured) of critical facility asset 23

_____

Contents value of critical facility asset 23

_____

Occupancy/Capacity number of critical facility asset 23

_____

Hazards to which critical facility asset 23 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 24

_____

Critical facility asset 24 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 24

_____

Replacement value (insured) of critical facility asset 24

_____

Replacement value (insured) of critical facility asset 24

_____

Contents value of critical facility asset 24

_____

Occupancy/Capacity number of critical facility asset 24

_____

Hazards to which critical facility asset 24 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 25

_____

Critical facility asset 25 type (refer to the list in the instructions)

- ○ Critical essential facility
- ○ High potential loss facility
- ○ Transportation and lifeline

Square footage of critical facility asset 25

_____

Replacement value (insured) of critical facility asset 25

_____

Contents value of critical facility asset 25

_____

Occupancy/Capacity number of critical facility asset 25

_____

Hazards to which critical facility asset 25 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Economic Assets (Major Employers, etc)

Please list economic assets, the product/service, value (if known), and number of employees. Indicate hazards to which the assets are vulnerable. If not applicable, enter “N/A”). Add as many assets as needed.

Does your jurisdiction have economic assets in GIS format?

No

Name and address of economic asset 1

Hubbell Industries, 210 N Allen St Centralia MO 65240

Product/service of economic asset 1

Manufacturing

Value (if known) of economic asset 1

Unknown

Number of employees of economic asset 1

Unknown

Hazards to which economic asset 1 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [x] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of economic asset 2

_____

Product/service of economic asset 2

_____

Value (if known) of economic asset 2

_____

Number of employees of economic asset 2

_____

Hazards to which economic asset 2 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 3

_____

Product/service of economic asset 3

_____

Value (if known) of economic asset 3

_____

Number of employees of economic asset 3

_____

Hazards to which economic asset 3 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 4

_____

Product/service of economic asset 4

_____

Value (if known) of economic asset 4

_____

Number of employees of economic asset 4

_____

Hazards to which economic asset 4 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 5

_____

Product/service of economic asset 5

_____

Value (if known) of economic asset 5

_____

Number of employees of economic asset 5

_____

Hazards to which economic asset 5 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 6

_____

Product/service of economic asset 6

_____

Value (if known) of economic asset 6

_____

Number of employees of economic asset 6

_____

Hazards to which economic asset 6 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 7

_____

Product/service of economic asset 7

_____

Value (if known) of economic asset 7

_____

Number of employees of economic asset 7

_____

Hazards to which economic asset 7 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Historic Hazard Events

Please fill out the sheet on the next page for each significant hazard event that affected your jurisdiction. **Complete as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed in the previous section that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type, nature, and magnitude of event 1

Ice Storm, Broken tree limbs and downed power lines

Date and location of event 1

Jan 1 2021

Injuries and deaths from event 1

None

Property damage, infrastructure damage, and crop damage from event 1

Significant Power line Damage

Business/Economic Impacts from event 1

None

Road/school/other closures from event 1

None

Other damage from event 1

None

Insured losses from event 1

None

Federal/state disaster relief funding for event 1

None

Opinion on likelihood of event 1 occurring again

High

Source of information for event 1

Comments on event 1

Type, nature, and magnitude of event 2

Date and location of event 2

Injuries and deaths from event 2

Property damage, infrastructure damage, and crop damage from event 2

Business/Economic Impacts from event 2

Road/school/other closures from event 2

Other damage from event 2

Insured losses from event 2

Federal/state disaster relief funding for event 2

Opinion on likelihood of event 2 occurring again

Source of information for event 2

Comments on event 2

Type, nature, and magnitude of event 3

Date and location of event 3

Injuries and deaths from event 3

Property damage, infrastructure damage, and crop damage from event 3

Business/Economic Impacts from event 3

Road/school/other closures from event 3

Other damage from event 3

Insured losses from event 3

Federal/state disaster relief funding for event 3

Opinion on likelihood of event 3 occurring again

Source of information on event 3

Comments on event 3

Type, nature, and magnitude of event 4

Date and location of event 4

Injuries and deaths from event 4

Property damage, infrastructure damage, and crop damage from event 4

Business/Economic Impacts from event 4

Road/school/other closures from event 4

Other damage from event 4

Insured losses from event 4

Federal/state disaster relief funding for event 4

Opinion on likelihood of event 4 occurring again

Source of information on event 4

Comments on event 4

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Multi-Jurisdictional

Hazard Mitigation Plan

Data Collection Questionnaire

For Local Governments

County: Boone

Jurisdiction: City of Columbia

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Rebecca Estes, PHHS
Phone: 573-338-1051
Email: Rebecca.estes@como.gov
Date: 11/14/2024

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission,
ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update.

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments
Planning Capabilities		
Comprehensive Plan	Date: June 2021	https://www.como.gov/wp-content/uploads/2021/09/Final_StrategicPlanReport-2021-9-8.pdf
Builder's Plan	Date:	N/A
Capital Improvement Plan	Date: FY 2024	https://www.como.gov/wp-content/uploads/2024/03/fy-2024-capital-improvement-projects.pdf
City Emergency Operations Plan	Date:	Currently the City of Columbia is an included entity in the County Emergency Operations Plan.
County Emergency Operations Plan	Date:2021	https://www.showmeboone.com/oem/common/pdf/BooneCountyEOP.pdf
Local Recovery Plan	No	
County Recovery Plan	Date:	A separate Recovery Plan is in draft form and is actively worked on by stakeholders. At present, recovery is included in the County Emergency Operations Plan.
City Mitigation Plan	Date:	Currently the City of Columbia is an included entity in the County Risk Management Plan

Element	Yes, No, N/A	Comments
County Mitigation Plan	Date: 2020	https://www.showmeboone.com/OEM/common/pdf/2020BooneCoHazardMitigation Plan.pdf
Debris Management Plan	Date:	Appendix 2 of Boone County Emergency Response Plan
Economic Development Plan	Date:	
Transportation Plan	Date:2025	https://www.como.gov/wp-content/uploads/2020/08/20200821_2025-Transportation-Plan_CMD.pdf
Land-use Plan	Date:2013	https://www.como.gov/wp-content/uploads/2021/02/ColumbiaImagined-FINAL.pdf
	Five Year Status Report: 2020	https://www.como.gov/community-development/planning-development/columbia-imagined/
Flood Mitigation Assistance (FMA) Plan	Date:	Included in the Risk Management Plan
Watershed Plan	Date: 2022 2018	Stormwater Management Plan https://ehs.missouri.edu/swmp/ Columbia Wasterwater and Stormwater Integrated Management Plan https://www.como.gov/wp-content/uploads/2021/05/Final-Columbia-Wastewater-and-Stormwater-IMP_Full-Report.pdf
Firewise or other fire mitigation plan	Date:	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date:	Each department in the City is required to have a Business Continuity Plan.
Policies/Ordinance		
Zoning Ordinance	Yes	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=CO ORCOMI_CH29UNDECO
Building Code	Version:	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=PTII COOR_CH6BUBURE_ARTIIBUCO
Floodplain Ordinance	Date:	Included in Unified Development Code
Subdivision Ordinance	Yes	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=CO ORCOMI_CH29UNDECO_ART5SU
Tree Trimming Ordinance	Yes	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=CO ORCOMI_CH24STSIPUPL_ARTIINGE_S24-6OVBRLIET
Nuisance Ordinance	Yes	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=PTII COOR_CH11HESA_ARTXSATOALNIPRVAPRESTORELI_S11-319PUNU
Storm Water Ordinance	Yes	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=PTII COOR_CH12ALAPR_ARTVSTMA
Drainage Ordinance	Yes	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=PTII COOR_CH12ALAPR_ARTIVERCORE_S12A-67SIGRDRPL

Element	Yes, No, N/A	Comments
Site Plan Review Requirements	Yes	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=PTII COOR_CH12ALAPR_ARTIILADIPERE_S12A-33SIDEPL
Historic Preservation Ordinance	Yes	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=CO ORCOMI_CH29UNDECO_ART1GEPR_S29-1.11DERUCO See letter d
Landscape Ordinance	Yes	https://library.municode.com/mo/columbia/codes/code_of_ordinances?nodeId=PTII COOR_CH11HESA_ARTVIINU_DIV4LAMA
Program		
Zoning/Land Use Restrictions	Yes	City of Columbia has a Planning and Zoning Commission
Codes Building Site/Design	Yes	Community Development- Building and Site Development Program unit houses the Building and Permits Information Program and works with the City of Columbia's Building and Construction Codes Commission
Hazard Awareness Program	Yes	The City of Columbia's community members refer to "Boone County Ready" for Hazard Awareness Program. Additionally, the City of Columbia has a Risk Management Division to address hazard awareness that employees may encounter, and the public may encounter when they are on City property.
National Flood Insurance Program	Yes	Community Development Office- Building and Site Development Program unit houses the Flood Plain Development Program
Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)?	If so, what is your current level rating?	We are eligible, but don't have a rating
National Weather Service (NWS) Storm Ready Certification		Boone County is, and Columbia is located in Boone County
Firewise Community Certification	NO	
Building Code Effectiveness Grading (BCEGs)		Commercial 77.41 (class 3) Residential 70.71 (class 4)
ISO Fire Rating	Rating:02/ 2X	Columbia Fire Department 2019 Annual Report
Economic Development Program		Regional Economic Development Inc. (REDI) is a non-profit, public/private partnership committed to creating jobs for our community by attracting new business, supporting existing business, and helping entrepreneurs grow startups. Founded in 1988, REDI is funded by the City of Columbia, Boone County, the University of Missouri and many local private businesses.
Land Use Program		City of Columbia has a Planning and Zoning Commission

Element	Yes, No, N/A	Comments
Public Education/Awareness		Each City Department in the City of Columbia has staff working on Public Education and Awareness. The position Engagement and public Communications Manager is the primary POC for this.
Property Acquisition		The City's Public Work's Department's Engineering Division handles Acquisition of Private Property for Public Improvement . https://www.como.gov/public-works/engineering/private-property/
Planning/Zoning Boards		City of Columbia has a Planning and Zoning Commission
Stream Maintenance Program		Stream's that are in the City of Columbia's jurisdiction are maintained by Columbia Parks and Recreation
Tree Trimming Program		City of Columbia "Water and Light" division within the Utilities Department is charged with providing or contracting with a provider for Tree Trimming
Engineering Studies for Streams (Local/County/Regional)		
Mutual Aid Agreements		Several departments have mutual aid agreements.
Studies/Reports/Maps		
Hazard Analysis/Risk Assessment (City)		
Hazard Analysis/Risk Assessment (County)		City of Columbia is included in the 2020 Boone County Hazard Mitigation Plan. Section 2-10 of the plan addresses city of Co 3 identifies the Risk Assessment.
Evacuation Route Map	No	
Critical Facilities Inventory	No	
Vulnerable Population Inventory	Yes	The 2023 Columbia/Boone County Community Health Assessment includes information about vulnerable populations in the ' Assessment under Demographic Characteristics and Socioeconomic Characteristics.
Land Use Map	Yes	https://www.como.gov/CMS/app_directory/description.php?id=67

Staff/Department		Full Time or Part Time?
Building Code Official	Yes	In the Community Development Department, Full Time
Building Inspector	Yes	In the Community Development Department, Full Time
Mapping Specialist (GIS)	Yes	In the City of Columbia IT- Full time
Engineer	Yes	In the Community Development Department, Full Time
Development Planner	Yes	In the Community Development Department- Full Time
Public Works Official	Yes	In the Public Works Department- Full Time
Emergency Management Coordinator	Yes	Chris Kelley
NFIP Floodplain Administrator	Yes	Tim Teddy

Element	Yes, No, N/A	Comments
Bomb and/or Arson Squad	Yes	Bomb and Arson Squads are comprised of multi-agency representatives with the Boone County Sherriff, Boone County Fire, Columbia Police, and MU Police.
Emergency Response Team	Yes	Fire and Police have Emergency Response Teams
Hazardous Materials Expert	Yes	Housed within the Columbia Fire Department
Local Emergency Planning Committee	Yes	Several departments in the City of Columbia send a representative and are members of the Boone County LEPC, including F Human Services, Fire and Police Department.
County Emergency Management Commission	Yes	Boone County Office of Emergency Management
Sanitation Department	Yes	The City of Columbia has a Utilities Department that is charged with Water, Sewer, and Trash and Recycling Services. The C and Human Services Department employs several Environmental Health Specialists.
Transportation Department	Yes	The Public Works Department oversees the Bus Services, and there is staff dedicated to the Columbia Regional Airport.
Economic Development Department	Yes	Contracted with REDI
Housing Department	Yes	Housing Programs Division is staffed in the City of Columbia Housing and Neighborhood Services Department
Historic Preservation	Yes	A Commission
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross	Yes	
Salvation Army	Yes	
Veterans Groups	Yes	
Local Environmental Organization	Yes	Several
Homeowner Associations	Yes	
Neighborhood Associations	Yes	Several
Chamber of Commerce	Yes	Several
Community Organizations (Lions, Kiwanis, etc.	Yes	Several
Financial Resources	Is your jurisdictio n able to? Yes or No	
Apply for Community Development Block Grants	Yes	
Fund projects thru Capital Improvements funding	Yes	

Element	Yes, No, N/A	Comments
Authority to levy taxes for specific purposes	Yes	
Fees for water, sewer, gas, or electric services	Yes	
Impact fees for new development	Yes	
Incur debt through general obligation bonds	Yes	
Incur debt through special tax bonds	Yes	
Incur debt through private activities	Yes	
Withhold spending in hazard prone areas	Yes	

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	In the strategic Priority Area of Safe Neighborhoods, Objective 4, states "Improve City's overall emergency response and preparedness capabilities.
Builder's Plan	N/A
Capital Improvement Plan	The City of Columbia's Capital Improvement Program (CIP) is a multi-year plan for capital investments in the City's infrastructure, facilities, and equipment. It is designed to address the challenges of supporting future infrastructure needs, while also addressing the City's current facility requirements. It includes items such as roads, bridges, sidewalks, public utilities, drainage projects, recreational facilities, building, and equipment.
Local Recovery Plan	N/A
County Recovery Plan	This plan is being created to be a stand alone document. It will include incorporation of the mitigation plan.
Debris Management Plan	Refer to County.
Economic Development Plan	A primary strategy in the REDI Strategic Plan is to "Improve Infrasturcture"
Transportation Plan	Goal 7, Objective 1 "Enhanced collaboration in the development and implementation of Emergency Response and Hazard Mitigation Plans"
Land-use Plan	Referenced in Columbia Imagined include Floodplain Regulation, Stormwater Regulation, Stormwater Management all of which are covered in the previous Hazard Mitigation Plan. Additionally, a proposed policy "promote community safety" describes how the land use and growth management plan can enhance public safety as growth management and population projections allow for more efficient and proactive siting of police and fire stations, emergency response and disaster preparedness technology, safety zones and disaster shelters, and mitigation of environmental hazards.
Watershed Plan	The stormwater management plan has focused on education to reduce the release of illicit material into the stormwater run offs, and how to properly dispose of hazardous material. There was not an opportunity to include the Hazard Risk Mitigation Plan.
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)
    a. The City of Columbia has an elected Mayor and 7 members of City Council. Additionally, the city has a City Manager.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.
    a. Columbia/Boone County Public Health and Human Services supports the DHSS/SEMA "Ready in 3" program for promoting household preparedness.
    b. The City Fire Department participates in several campaigns throughout the year highlighting the importance of Fire Safety.
    c. Environmental Education is largely provided through the Sustainability Office, focusing on "Show Me The Heat" / "Show Me Relief" campaigns.
    d. Responsible water use is managed through Utilities/Water and Light/Office of Sustainability.

3. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.
    a. Overall the concern with working with vulnerable and special needs population is identifying tools that can assist those populations in understanding the risks and hazards in the community, the impact it may have on them, and what resources they may need to be prepared.
    b. Identification of stakeholder organizations, such as Refugee Organizations, associations related to specific cultural needs, and organizations that serve the disability community has assisted in this process, but there continues to be a lack of resources that meets portions of these populations basic needs during non-disaster times. This just becomes exacerbated during response and recovery.

5. How many outdoor warning sirens are in your community? There are 103 outdoor warning sirens in Boone County, approximately 75 of those are within City of Columbia's boundaries.

    How are they activated (indicate responsible department/personnel)? Boone County's Office of Emergency Management is responsible for the activation.

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe them.
    a. Smart 9-1-1/RAVE Alert, where community members can self enroll to receive notifications/emergency warnings.

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards?

   Please provide address locations: No

8. List residential, commercial and industrial development in your jurisdiction since the last plan update.
   Permit report form provided to Miriam, it contains 1385 entries.

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

10. Are any new facilities or infrastructure planned for the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

    City of Columbia voters recently passed a 1/4 percent Capital Improvement Sales Tax (CIST) extension through 2035 to fund future infrastructure projects over the next ten years. These future projects include:

    - Clark Lane Improvements
    - State Farm Parkway and Nifong Intersection
    - New Haven Road Improvements, Nifong Boulevard Improvements
    - St. Charles Road Improvements
    - Richland to Grace Lane
    - Blue Ridge Road and Providence Road Intersection
    - St. Charles Road Improvements - Keene to Richland
    - Discovery Parkway and New Haven Road Intersection
    - Bethel Road and Green Meadows Road Intersection
    - Rice Road Improvements
    - Fairview Road and Worley Street Intersection
    - Sinclair Road Improvements
    - South Salt Dome on Sinclair Road
    - Renovations to North Salt Dome on Big Bear
    - Renovations to Grissum Building
    - Fire Station #10
    - Molly Thomas Bowden Neighborhood Policing Center Phase II construction
    - Phase 1 of New Downtown Police Headquarters and Additional Evidence Storage.

11. Please list major employers in your jurisdiction with an estimated number of employees.
    a. From the 2023 Boone County Community Health Assessment

Employer	Number Employed
University of Missouri	8,612
University Hospital and Clinics	5,217
Veterans United Home Loans	3,505
Columbia Public Schools	2,666
Harry S. Truman Memorial Veterans' Hospital	1,602
Boone Hospital Center	1,517
Shelter Insurance Companies	1,336
City of Columbia	1,299
Joe Machens Dealerships	777
Hubbell Power Systems Inc.	750

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?
    a. Rebecca Estes- Public Health and Human Services and Eric Hemphill- Sustainability
    b. Due to COVID -19 the process for monitoring the implementation of the prior mitigation plan was difficult to achieve, however, there were opportunities to report achievements and met goals through the facilitation of Boone County OEM.

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.
    a. A Floodplain Development Permit is needed anytime work is performed within a regulatory floodplain. The City participates in the National Flood Insurance Program which requires city ordinance and enforcement of floodplain development regulations. The boundaries of the floodplains are established by the Federal Emergency Agency FEMA. Floodplain maps are published by FEMA. Community Development reviews applications for floodplain development. Any land disturbing activity within the regulatory floodplain requires a permit. The city ordinances pertaining to floodplain regulations are found in Section 29-2.3(d). For information regarding floodplain development permits, contact the Building and Site Development at 573.874.7474

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the hazard specific column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Riverine Flooding (Major & Flash)-**RF**
Dam Failure-**DF**
Levee Failure-**LF**
Earthquake-**EQ**
Land Subsidence / Sinkholes-**LSS**
Severe Thunderstorm (incl. winds, hail, lightning)-**ST**
Tornadoes-**T**

Severe Winter Weather (incl. snow, ice, severe cold)-**SWW**
Droughts-**D**
Extreme Temperatures-**ET**
Fires (structural, urban, and wild)-**F**
Attack (nuclear, conventional, chemical, and biological)-**A**
Civil Disorder-**CD**
Cyber Disruption-**CyD**

Hazardous Materials Release (fixed facility, accidents)-**HM**
Mass Transportation Accident-**MTA**
Nuclear Power Plants (emergencies & accidents)-**NPP**
Public Health Emergencies/Environmental Issues-**PH**
Special Events-**SE**
Terrorism-**TX**
Utilities (interruptions & system failures)-**U**

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities	**High Potential Loss Facilities**	**Transportation and Lifeline**
Hospitals and other medical facilities	Power plants	Highways, bridges, and tunnels
Police stations	Dams/levees	Railroads and facilities
Fire station	Military installations	Bus facilities
Emergency Operations Centers	Hazardous material sites	Airports

Schools
Shelters
Day care centers
Nursing homes
Main government buildings

Water treatment facilities
Natural gas facilities and pipelines
Oil facilities and pipelines
Communications facilities

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						
University of Missouri Hospital						
Compass Health						
Boone Hospital						
VA Hospital						
Rusk						
Landmark						
Police Station (main)						
Police Station (East Campus)						
Fire stations						

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
High Potential Loss Facilities such as power plants, dams/levees, military installations, hazardous materials sites, shelters, day care centers, nursing homes, main government buildings (Do not include schools—they will be reported by the school districts)						
City Power Plant						
Cooling/Warming Centers						
Day Care Centers						
City of Columbia Buildings						
Skilled Nursing Facilities						
Food bank						
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
Hwy 70						
Hwy 63						
Wabash						
COU						
Water Treatment						
Electric Power plant						
Refuse Center/Landfill						

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards
See Major Employer list to inform					

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction. Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Boone County Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire For Local Governments

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. If you are unsure about the answer to a question, contact the individual in your jurisdiction who is responsible for the element. If you are signed in to a Google account, you may close the questionnaire and Google Forms will save your work. If you have any questions about the questions, contact Miriam Bouallegue at miriam.bouallegue@midmorpc.org.

Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Email *

kridgway@hallsvillemo.org

Please select your jurisdiction from the list. *

- ○ Unincorporated Boone County
- ○ City of Columbia
- ○ City of Ashland
- ○ City of Sturgeon
- ○ Village of Hartsburg
- ○ Village of Pierpont
- ○ Village of McBaine
- ○ Village of Huntsdale
- ◉ City of Hallsville
- ○ City of Centralia
- ○ Village of Harrisburg
- ○ City of Rocheport
- ○ Boone County Sewer Department
- ○ Hallsville Police Department
- ○ Boone County Sheriff
- ○ Centralia Police Department

- [ ] Columbia Fire Department
- [ ] Southern Boone Fire Protection District
- [ ] Boone County Fire Protection District
- [ ] Ashland Police Department
- [ ] Columbia Regional Airport
- [ ] Other: _____

First and Last Name *

Kenyetta Ridgway

Phone Number *

573-696-3885

Date

MM DD YYYY

01 / 27 / 2025

CAPABILITY ASSESSMENT&INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update. Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column.

Comprehensive Plan

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a comprehensive plan, please state the date of the plan.

MM DD YYYY

04 / 10 / 2023

Comments:

Builder's Plan

- ○ Yes
- ◉ No
- ○ N/A

If your jurisdiction has a builder's plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Capital Improvement Plan

- ○ Yes
- ◉ No
- ○ N/A

If your jurisdiction has a capital improvement plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

City or County Emergency Operations Plan

- ○ Yes - City
- ◉ Yes - County
- ○ No
- ○ N/A

If your jurisdiction has a city or county emergency operations plan, please state the date of the plan.

MM DD YYYY

11 / 10 / 2022

Comments

The City is also working on a EOP for Public Water Supplies

Local or County Recovery Plan

- ○ Yes - Local
- ◉ Yes - County
- ○ No
- ○ N/A

If your jurisdiction has a local recovery plan, please state the date of the plan.

MM DD YYYY

12 / 31 / 2020

Comments:

Mitigation Plan

- ○ Yes - City
- ◉ Yes - County
- ○ No
- ○ N/A

If your jurisdiction has a mitigation plan, please state the date of the plan.

MM DD YYYY

12 / 31 / 2020

Comments:

Debris Management Plan

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a debris management plan, please state the date of the plan.

MM DD YYYY

11 / 10 / 2022

Comments:

In the Boone County Emergency Operations Plan

Economic Development Plan

- ○ Yes
- ◉ No
- ○ N/A

If your jurisdiction has an economic development plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Transportation Plan

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a transportation plan, please state the date of the plan.

MM DD YYYY

04 / 10 / 2023

Comments:

In City of Hallsville's Comprehensive Plan

Land Use Plan

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a land use plan, please state the date of the plan.

MM DD YYYY

04 / 10 / 2023

Comments:

In City of Hallsville's Comprehensive Plan

Flood Mitigation Assistance (FMA) Plan

- ○ Yes
- ◉ No
- ○ N/A

If your jurisdiction has a flood mitigation plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Watershed Plan

- ○ Yes
- ◉ No
- ○ N/A

If your jurisdiction has a watershed plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Firewise or other fire mitigation plan

- ○ Yes
- ◉ No
- ○ N/A

If your jurisdiction has a firewise or other fire mitigation plan, please state the date of the plan.

MM DD YYYY

/ /

Comments:

Critical Facilities Plan (Mitigation/Response/Recovery)

- ○ Yes
- ◉ No
- ○ N/A

If your jurisdiction has a Critical Facilities Plan (Mitigation/Response/Recovery) please state the date of the plan.

MM DD YYYY

/ /

Comments:

Zoning Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Building Code

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a building code, please state the version of the code. (e.g. ICC IBC-2021)

There is hereby adopted the Boone County Building Code, including: the International Residential Code 2015; the International Plumbing Code 2015; the International Mechanical Code 2015; the International Fuel Gas Code 2015; the International Existing Building Code 2015; the International Energy Conservation Code 2015 and the National Electric Code 2014, all of which are adopted as amended, including appendixes and referenced standards, as recommended by the Boone County Building Code Commission.

If your jurisdiction has a building code, please state the date of the code.

MM DD YYYY

01 / 10 / 2022

Comments:

Floodplain Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

If your jurisdiction has a floodplain ordinance, please state the date of the ordinance.

MM DD YYYY

12 / 12 / 2016

Comments:

Subdivision Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Tree Trimming Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Nuisance Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Storm Water Ordinance

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Drainage Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Site Plan Review Requirements

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Historic Preservation Ordinance

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Landscape Ordinance

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Zoning/Land Use Restrictions

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Codes Building Site/Design

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Hazard Awareness Program

- ○ Yes
- ◉ No
- ○ N/A

Comments:

National Flood Insurance Program

- ◉ Yes
- ○ No
- ○ N/A

Comments:

Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)

- ○ Yes
- ◉ No
- ○ N/A

If so, what is your current level rating?

Comments:

National Weather Service (NWS) Storm Ready Certification

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Firewise Community Certification

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Building Code Effectiveness Grading (BCEGs)

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Please state your jurisdiction's ISO fire rating.

Comments:

Economic Development Program

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Land Use Program

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Public Education/Awareness

- ( ) Yes
- (●) No
- ( ) N/A

Comments:

Property Acquisition

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Planning/Zoning Boards

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Stream Maintenance Program

- ( ) Yes
- (●) No
- ( ) N/A

Comments:

Tree Trimming Program

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Engineering Studies for Streams (Local/County/Regional)

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Mutual Aid Agreements

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Hazard Analysis/Risk Assessment (City)

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Hazard Analysis/Risk Assessment (County)

- (●) Yes
- ( ) No
- ( ) N/A

Comments:

Evacuation Route Map

- ( ) Yes
- (●) No
- ( ) N/A

Comments:

Critical Facilities Inventory

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Vulnerable Population Inventory

- ○ Yes
- ◉ No
- ○ N/A

Comments:

Land Use Map

- ◉ Yes
- ○ No
- ○ N/A

Comments:

In Comprehensive Plan done in 2022.

Building Code Official

- (●) Yes - Full-time
- ( ) Yes - Part-time
- ( ) No
- ( ) N/A

Comments:

Building Inspector

- (●) Yes - Full-time
- ( ) Yes - Part-time
- ( ) No
- ( ) N/A

Comments:

Mapping Specialist (GIS)

- ( ) Yes - Full-time
- ( ) Yes - Part-time
- (●) No
- ( ) N/A

Comments:

Engineer

- ( ) Yes - Full-time
- ( ) Yes - Part-time
- (•) No
- ( ) N/A

Comments:

Hire engineer as needed.

Development Planner

- ( ) Yes - Full-time
- ( ) Yes - Part-time
- (•) No
- ( ) N/A

Comments:

Public Works Official

- (•) Yes - Full-time
- ( ) Yes - Part-time
- ( ) No
- ( ) N/A

Comments:

Emergency Management Coordinator

- ○ Yes - Full-time
- ◉ Yes - Part-time
- ○ No
- ○ N/A

Comments:

An Alderman serves as the Emergency Management Coordinator.

NFIP Floodplain Administrator

- (●) Yes - Full-time
- ( ) Yes - Part-time
- ( ) No
- ( ) N/A

Comments:

Bomb and/or Arson Squad

- ( ) Yes - Full-time
- ( ) Yes - Part-time
- (●) No
- ( ) N/A

Comments:

Emergency Response Team

- (●) Yes - Full-time
- ( ) Yes - Part-time
- ( ) No
- ( ) N/A

Comments:

Hazardous Materials Expert

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Local Emergency Planning Committee

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

County Emergency Management Commission

- (●) Yes - Full-time
- ( ) Yes - Part-time
- ( ) No
- ( ) N/A

Comments:

Sanitation Department

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Contract out with Dayne's Waste Disposal out of Mexico, MO.

Transportation Department

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Economic Development Department

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Housing Department

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Historic Preservation Staff

- ○ Yes - Full-time
- ○ Yes - Part-time
- ◉ No
- ○ N/A

Comments:

Hallsville has a Historial Society.

Is there a local chapter of the American Red Cross?

- ○ Yes
- ◉ No

Comments:

Is there a local chapter of the Salvation Army?

- ○ Yes
- ◉ No

Comments:

Is there a local chapter of Veterans Groups?

- ○ Yes
- ◉ No

Comments:

Is there a local environmental organization?

- ○ Yes
- ◉ No

Comments:

Are there local homeowner associations?

- (●) Yes
- ( ) No

Comments:

Are there local neighborhood associations?

- ( ) Yes
- (●) No

Comments:

Is there a local chamber of commerce?

- (●) Yes
- ( ) No

Comments:

Hallsville Area Chamber of Commerce

Are there other local community organizations (lions, kiwanis, etc.)? If so, please specify in the comments.

- (●) Yes
- ( ) No

Comments:

Masons

Is your jurisdiction able to apply for Community Development Block Grants (CDBG)?

- (●) Yes
- ( ) No

Comments:

Is your jurisdiction able to fund projects through capital improvements funding?

- ( ) Yes
- (●) No

Comments:

Does your jurisdiction have authority to levy taxes for specific purposes?

- (●) Yes
- ( ) No

Comments:

Is your jurisdiction able to set fees for water, sewer, gas, or electric services?

- (●) Yes
- ( ) No

Comments:

Water only

Is your jurisdiction able to incur debt through general obligation bonds?

- (●) Yes
- ( ) No

Comments:

Is your jurisdiction able to incur debt through special tax bonds?

- (●) Yes
- ( ) No

Comments:

Is your jurisdiction able to incur debt through private activities?

- ○ Yes
- ◉ No

Comments:

Is your jurisdiction able to withhold spending in hazard prone areas?

- ○ Yes
- ◉ No

Comments:

Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. For each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Comprehensive Plan

Did not incorporate. Could only afford to do Comprehensive Plan that was for Hallsville.

Builder's Plan

No Builder's Plan.

Capital Improvement Plan

No Capital Improvement Plan.

Local Recovery Plan

No Local Recovery Plan.

County Recovery Plan

Boone County Emergency Operations Plan 2022

Debris Management Plan

Boone County Emergency Operations Plan 2022

Economic Development Plan

No

Transportation Plan

City of Hallsville Comprehensive Plan 2022

Land Use Plan

City of Hallsville Comprehensive Plan 2022

Watershed Plan

No

Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan

No

Additional Questions

How is your government structure organized? (Commission, Mayor/City Council, how many members)

Mayor/Board of Aldermen/City Administrator

List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

No

List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

New generator installed at City Hall and a generator installed at the City's Community Center both paid for by ARPA funds.

Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.

We need to get a list of those that are on oxygen and are not able to get out of homes.

How many outdoor warning sirens are in your community? How are they activated (indicate responsible department/personnel)?

Two sirens that are activated by Boone County Emergency Management.

Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe them.

No.

Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards? Please provide address locations.

There are three shelters. None are constructed in accordance with FEMA standards. 1. Hallsville Baptist Church: 115 Elizabeth St. 2. New Heights Church: 408 N. Rte B 3. Red Top Christian Church: 14355 N Rte U.

List residential, commercial and industrial development in your jurisdiction since last plan update.

Echo Ridge Subdivision off of Ricketts Rd.

Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

No new development is expected in the floodplain.

Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

No new facilities are planned. The extension of Echo Ridge Subdivision and Douglas Pointe Subdision will probably continue.

Please list major employers in your jurisdiction with an estimated number of employees.

Hallsville School District is the only large employer in Hallsville with approximately 200 staff.

Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

Kenyetta Ridgway-Sample, City Administrator and Logan Carter, Mayor and Emergency Management Director. Committee did not meet as much as specified as the City Administrator was the only employee in the office for the majority of the time between 2022 - 2024

Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

Advise those that purchase homes if they are in the floodplain or not.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. Indicate hazards to which the assets are vulnerable.
If not applicable, enter "N/A"). Add as many facilities as needed.

Critical Facilities and Infrastructure
A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities

Hospitals and other medical facilities

Police stations

Fire station

Emergency Operations Centers

High Potential Loss Facilities

Power plants

Dams/levees

Military installations

Hazardous material sites

Schools

Shelters

Day care centers

Nursing homes

Main government buildings

Transportation and Lifeline

Highways, bridges, and tunnels

Railroads and facilities

Bus facilities

Airports

Water treatment facilities

Natural gas facilities and pipelines

Oil facilities and pipelines

Communications facilities

*If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

Are your jurisdiction's critical facilities available in GIS format?

No.

Name and address of critical facility asset 1

Police Department/Main Government Center 202 Hwy 124-E Hallsville, MO 65255

Critical facility asset 1 type (refer to the list in the instructions)

- (●) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 1

3,600

Replacement value (insured) of critical facility asset 1

513,392

Contents value of critical facility asset 1

75,000

Occupancy/Capacity number of critical facility asset 1

300

Hazards to which critical facility asset 1 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [x] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [x] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 2

Dam: Andy and Scott Lake at 6200 Hwy 124-E Hallsville, MO 65255

Critical facility asset 2 type (refer to the list in the instructions)

- ( ) Critical essential facility
- (•) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 2

Not federally inspected.

Replacement value (insured) of critical facility asset 2

Unknown

Contents value of critical facility asset 2

Unknown

Hazards to which critical facility asset 2 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [x] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 3

Public Works Building 14260 Allison Industrial Dr Hallsville, MO 65255

Critical facility asset 3 type (refer to the list in the instructions)

- ( ) Critical essential facility
- (•) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 3

9.600

Replacement value (insured) of critical facility asset 3

525,433

Contents value of critical facility asset 3

172,605

Occupancy/Capacity number of critical facility asset 3

500

Hazards to which critical facility asset 3 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [x] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [x] Droughts-D
- [x] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [x] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [x] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 4

N/A

Critical facility asset 4 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 4

Replacement value (insured) of critical facility asset 4

_____

Contents value of critical facility asset 4

_____

Occupancy/Capacity number of critical facility asset 4

_____

Hazards to which critical facility asset 4 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 5

N/A

Critical facility asset 5 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 5

Replacement value (insured) of critical facility asset 5

_____

Contents value of critical facility asset 5

_____

Occupancy/Capacity number of critical facility asset 5

_____

Hazards to which critical facility asset 5 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 6

N/A

Critical facility asset 6 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 6

Replacement value (insured) of critical facility asset 6

_____

Contents value of critical facility asset 6

_____

Occupancy/Capacity number of critical facility asset 6

_____

Hazards to which critical facility asset 6 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 7

N/A

Critical facility asset 7 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 7

Replacement value (insured) of critical facility asset 7

_____

Contents value of critical facility asset 7

_____

Occupancy/Capacity number of critical facility asset 7

_____

Hazards to which critical facility asset 7 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 8

N/A

Critical facility asset 8 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 8

Replacement value (insured) of critical facility asset 8

_____

Contents value of critical facility asset 8

_____

Occupancy/Capacity number of critical facility asset 8

_____

Hazards to which critical facility asset 8 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 9

N/A

Critical facility asset 9 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 9

Replacement value (insured) of critical facility asset 9

_____

Contents value of critical facility asset 9

_____

Occupancy/Capacity number of critical facility asset 9

_____

Hazards to which critical facility asset 9 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 10

N/A

Critical facility asset 10 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 10

Replacement value (insured) of critical facility asset 10

_____

Contents value of critical facility asset 10

_____

Occupancy/Capacity number of critical facility asset 10

_____

Hazards to which critical facility asset 10 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 11

N/A

Critical facility asset 11 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 11

Replacement value (insured) of critical facility asset 11

_____

Contents value of critical facility asset 11

_____

Occupancy/Capacity number of critical facility asset 11

_____

Hazards to which critical facility asset 11 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 12

N/A

Critical facility asset 12 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 12

Replacement value (insured) of critical facility asset 12

_____

Replacement value (insured) of critical facility asset 12

_____

Contents value of critical facility asset 12

_____

Occupancy/Capacity number of critical facility asset 12

_____

Hazards to which critical facility asset 12 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 13

N/A

Critical facility asset 13 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 13

Replacement value (insured) of critical facility asset 13

_____

Contents value of critical facility asset 13

_____

Occupancy/Capacity number of critical facility asset 13

_____

Hazards to which critical facility asset 13 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 14

N/A

Critical facility asset 14 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 14

Replacement value (insured) of critical facility asset 14

_____

Contents value of critical facility asset 14

_____

Hazards to which critical facility asset 14 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 15

N/A

Critical facility asset 15 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 15

Replacement value (insured) of critical facility asset 15

_____

Contents value of critical facility asset 15

_____

Occupancy/Capacity number of critical facility asset 15

_____

Hazards to which critical facility asset 15 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 16

N/A

Critical facility asset 16 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 16

Replacement value (insured) of critical facility asset 16

_____

Contents value of critical facility asset 16

_____

Occupancy/Capacity number of critical facility asset 16

_____

Hazards to which critical facility asset 16 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 17

N/A

Critical facility asset 17 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 17

Replacement value (insured) of critical facility asset 17

_____

Contents value of critical facility asset 17

_____

Occupancy/Capacity number of critical facility asset 17

_____

Hazards to which critical facility asset 17 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 18

N/A

Critical facility asset 18 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 18

Replacement value (insured) of critical facility asset 18

_____

Contents value of critical facility asset 18

_____

Occupancy/Capacity number of critical facility asset 18

_____

Hazards to which critical facility asset 18 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 19

N/A

Critical facility asset 19 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 19

Replacement value (insured) of critical facility asset 19

_____

Contents value of critical facility asset 19

_____

Occupancy/Capacity number of critical facility asset 19

_____

Hazards to which critical facility asset 19 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 20

N/A

Critical facility asset 20 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 20

Replacement value (insured) of critical facility asset 20

_____

Contents value of critical facility asset 20

_____

Occupancy/Capacity number of critical facility asset 20

_____

Hazards to which critical facility asset 20 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 21

N/A

Critical facility asset 21 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 21

Replacement value (insured) of critical facility asset 21

_____

Contents value of critical facility asset 21

_____

Occupancy/Capacity number of critical facility asset 21

_____

Hazards to which critical facility asset 21 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 22

N/A

Critical facility asset 22 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 22

Replacement value (insured) of critical facility asset 22

_____

Contents value of critical facility asset 22

_____

Occupancy/Capacity number of critical facility asset 22

_____

Hazards to which critical facility asset 22 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 23

N/A

Critical facility asset 23 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 23

Replacement value (insured) of critical facility asset 23

_____

Contents value of critical facility asset 23

_____

Occupancy/Capacity number of critical facility asset 23

_____

Hazards to which critical facility asset 23 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 24

N/A

Critical facility asset 24 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 24

Replacement value (insured) of critical facility asset 24

_____

Replacement value (insured) of critical facility asset 24

_____

Contents value of critical facility asset 24

_____

Occupancy/Capacity number of critical facility asset 24

_____

Hazards to which critical facility asset 24 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of critical facility asset 25

N/A

Critical facility asset 25 type (refer to the list in the instructions)

- ( ) Critical essential facility
- ( ) High potential loss facility
- ( ) Transportation and lifeline

Square footage of critical facility asset 25

Replacement value (insured) of critical facility asset 25

_____

Contents value of critical facility asset 25

_____

Occupancy/Capacity number of critical facility asset 25

_____

Hazards to which critical facility asset 25 is vulnerable

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Economic Assets (Major Employers, etc)

Please list economic assets, the product/service, value (if known), and number of employees. Indicate hazards to which the assets are vulnerable. If not applicable, enter “N/A”). Add as many assets as needed.

Does your jurisdiction have economic assets in GIS format?

Yes

Name and address of economic asset 1

Within City Limits of Hallsville

Product/service of economic asset 1

Water

Value (if known) of economic asset 1

Number of employees of economic asset 1

2

Hazards to which economic asset 1 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [x] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [x] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [x] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [x] Cyber Disruption-CyD
- [x] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [x] Nuclear Power Plants (emergencies & accidents)-NPP
- [x] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [x] Terrorism-TX
- [x] Utilities (interruptions & system failures)-U

Name and address of economic asset 2

N/A

Product/service of economic asset 2

Value (if known) of economic asset 2

Number of employees of economic asset 2

Hazards to which economic asset 2 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 3

N/A

Product/service of economic asset 3

Value (if known) of economic asset 3

Number of employees of economic asset 3

Hazards to which economic asset 3 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 4

N/A

Product/service of economic asset 4

Value (if known) of economic asset 4

Number of employees of economic asset 4

Hazards to which economic asset 4 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 5

N/A

Product/service of economic asset 5

Value (if known) of economic asset 5

Number of employees of economic asset 5

Hazards to which economic asset 5 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 6

_____

Product/service of economic asset 6

_____

Value (if known) of economic asset 6

_____

Number of employees of economic asset 6

_____

Hazards to which economic asset 6 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of economic asset 7

N/A

Product/service of economic asset 7

Value (if known) of economic asset 7

Number of employees of economic asset 7

Hazards to which economic asset 7 is vulnerable:

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH

- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Historic Hazard Events

Please fill out the sheet on the next page for each significant hazard event that affected your jurisdiction. **Complete as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed in the previous section that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type, nature, and magnitude of event 1

Pandemic, Public Health, low manitude for Hallsville

Date and location of event 1

2020 Global

Injuries and deaths from event 1

Uncertain of "injuries" as not public information.

Property damage, infrastructure damage, and crop damage from event 1

N/A

Business/Economic Impacts from event 1

No economic impact.

Road/school/other closures from event 1

Schools closed.

Other damage from event 1

N/A

Insured losses from event 1

None.

Federal/state disaster relief funding for event 1

ARPA funding

Opinion on likelihood of event 1 occurring again

Slim

Source of information for event 1

Present during event.

Comments on event 1

None.

Type, nature, and magnitude of event 2

N/A

Date and location of event 2

Injuries and deaths from event 2

Property damage, infrastructure damage, and crop damage from event 2

Business/Economic Impacts from event 2

Road/school/other closures from event 2

Other damage from event 2

Insured losses from event 2

Federal/state disaster relief funding for event 2

Opinion on likelihood of event 2 occurring again

Source of information for event 2

Comments on event 2

Type, nature, and magnitude of event 3

N/A

Date and location of event 3

Injuries and deaths from event 3

Property damage, infrastructure damage, and crop damage from event 3

Business/Economic Impacts from event 3

Road/school/other closures from event 3

Other damage from event 3

Insured losses from event 3

Federal/state disaster relief funding for event 3

Opinion on likelihood of event 3 occurring again

Source of information on event 3

Comments on event 3

Type, nature, and magnitude of event 4

N/A

Date and location of event 4

Injuries and deaths from event 4

Property damage, infrastructure damage, and crop damage from event 4

Business/Economic Impacts from event 4

Road/school/other closures from event 4

Other damage from event 4

Insured losses from event 4

Federal/state disaster relief funding for event 4

Opinion on likelihood of event 4 occurring again

Source of information on event 4

Comments on event 4

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Google Forms

Public Survey: [: Boone County Multi-jurisdictional Hazard Mitigation Plan

The federal government requires all states and local governments to have hazard mitigation plans approved by FEMA that are consistent with the Disaster Mitigation Act of 2000. Approved mitigation plans are required to maintain eligibility for certain types of federal Hazard Mitigation Assistance Grants.

A planning committee comprised of representatives from Boone County, the incorporated cities, and the public school districts is currently developing an update to the comprehensive Boone County Multi-jurisdictional Hazard Mitigation Plan with a strategy to reduce the vulnerability of people and property in the planning area to the impacts of hazards and to remain eligible for mitigation funding programs from FEMA.

One of the key components of a hazard mitigation plan is public input during the planning process. The planning committee will be evaluating information on the hazards that impact each jurisdiction within Boone County. The committee is seeking your input on the hazards that will be evaluated as well as your opinions on the types of activities that should be considered to reduce future impacts. Your comments will be considered by your community's representatives on the planning committee as the plan is developed. Please take a few moments to answer the following questions. Thank you for your participation.

1. Please select your jurisdiction from the list. You may only select one jurisdiction for each survey completed. If you belong to more than one jurisdiction in this list, please complete multiple surveys.

- ❑ Unincorporated Boone County
- ❑ City of Harrisburg
- ❑ Other:
  Please specify_____

2. The hazards addressed in the Multi-jurisdictional Hazard Mitigation Plan Update are listed below. Please indicate your opinion on the likelihood for each hazard to impact YOUR JURISDICTION (identified above). **Please rate <u>EACH</u> hazard 1 through 4 as follows: 1=Unlikely, 2=Occasional, 3=Likely, 4=Highly Likely**

- ❑ Dam Failure
- ❑ Drought
- ❑ Earthquakes
- ❑ Extreme Heat
- ❑ Fires
- ❑ Flooding (Flash and River)
- ❑ Land Subsidence/Sinkholes
- ❑ Tornado
- ❑ Winter Weather/Snow/Ice/Severe Cold
- ❑ Levee Failure
- ❑ Thunderstorm/High Winds/Lightning/Hail

Public Survey: [: Boone County Multi-jurisdictional Hazard Mitigation Plan

3. Please indicate your opinion on the potential magnitude of each hazard's impact on YOUR JURISDICTION (identified above). **Please rate EACH hazard 1 through 4 as follows: 1=Negligible, 2=Limited, 3=Critical, 4=Catastrophic**

- ❑ Dam Failure
- ❑ Drought
- ❑ Earthquakes
- ❑ Extreme Heat
- ❑ Fires
- ❑ Flooding (Flash and River)
- ❑ Land Subsidence/Sinkholes
- ❑ Tornado
- ❑ Winter Weather/Snow/Ice/Severe Cold
- ❑ Levee Failure
- ❑ Thunderstorm/High Winds/Lightning/Hail

4. FEMA Hazard Mitigation Assistance Grants are administered by the State Emergency Management Agency. Listed below are some types of projects considered. **Please check all those that could benefit your jurisdiction, in your opinion:**

- ❑ Flood-prone Property Acquisition & Structure Demolition /Relocation
- ❑ Flood-Prone Structure Elevation
- ❑ Dry Floodproofing of Historical Residential Structures and/or Non-residential Structures
- ❑ Minor Localized Flood Reduction Projects (storm water management or localized flood control projects)
- ❑ Structural Retrofitting of Existing Buildings to Add a Tornado Safe Room
- ❑ Retrofitting of Existing Buildings, and Facilities from Wind Damage.
- ❑ New Tornado Safe Room Construction
- ❑ Electrical Utilities Infrastructure Retrofit
- ❑ Soil Erosion Stabilization
- ❑ Wildfire Mitigation
- ❑ Other (please specify)

_____

5. Please comment on any other issues that the Boone County Hazard Mitigation Planning Committee should consider in developing a strategy to reduce future losses caused by hazard events.

Return / Contact Information: [Insert Name], [Insert Title], [Insert Organization], phone: [Insert Phone Number], fax: [Insert Fax Number], [Insert Address]

Multi-Jurisdictional

Hazard Mitigation Plan

Data Collection Questionnaire

For Local Governments

County: Boone

Jurisdiction:

Hartsburg

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Tim Hentz
Phone:
Email: villageofhartsburgmo@gmail.com
Date: _____

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission,
ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update.

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

NO UPDATES TO THIS SECTION

Element	Yes, No, N/A	Comments
Planning Capabilities		
Comprehensive Plan	Date:	
Builder's Plan	Date:	
Capital Improvement Plan	Date:	
City Emergency Operations Plan	Date:	
County Emergency Operations Plan	Date:	
Local Recovery Plan	Date:	
County Recovery Plan	Date:	
City Mitigation Plan	Date:	
County Mitigation Plan	Date:	
Debris Management Plan	Date:	
Economic Development Plan	Date:	
Transportation Plan	Date:	
Land-use Plan	Date:	
Flood Mitigation Assistance (FMA) Plan	Date:	
Watershed Plan	Date:	
Firewise or other fire mitigation plan	Date:	
Critical Facilities Plan	Date:	

Element	Yes, No, N/A	Comments
(Mitigation/Response/Recovery)		
Policies/Ordinance		
Zoning Ordinance		
Building Code	Version:	
Floodplain Ordinance	Date:	
Subdivision Ordinance		
Tree Trimming Ordinance		
Nuisance Ordinance		
Storm Water Ordinance		
Drainage Ordinance		
Site Plan Review Requirements		
Historic Preservation Ordinance		
Landscape Ordinance		
Program		
Zoning/Land Use Restrictions		
Codes Building Site/Design		
Hazard Awareness Program		
National Flood Insurance Program		
Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)?	If so, what is your current level rating?	
National Weather Service (NWS) Storm Ready Certification		
Firewise Community Certification		
Building Code Effectiveness Grading (BCEGs)		
ISO Fire Rating	Rating:	
Economic Development Program		
Land Use Program		
Public Education/Awareness		
Property Acquisition		
Planning/Zoning Boards		
Stream Maintenance Program		
Tree Trimming Program		
Engineering Studies for Streams (Local/County/Regional)		
Mutual Aid Agreements		
Studies/Reports/Maps		
Hazard Analysis/Risk Assessment (City)		
Hazard Analysis/Risk Assessment (County)		
Evacuation Route Map		
Critical Facilities Inventory		
Vulnerable Population Inventory		
Land Use Map		

Element	Yes, No, N/A	Comments
Staff/Department		Full Time or Part Time?
Building Code Official		
Building Inspector		
Mapping Specialist (GIS)		
Engineer		
Development Planner		
Public Works Official		
Emergency Management Coordinator		
NFIP Floodplain Administrator		
Bomb and/or Arson Squad		
Emergency Response Team		
Hazardous Materials Expert		
Local Emergency Planning Committee		
County Emergency Management Commission		
Sanitation Department		
Transportation Department		
Economic Development Department		
Housing Department		
Historic Preservation		
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross		
Salvation Army		
Veterans Groups		
Local Environmental Organization		
Homeowner Associations		
Neighborhood Associations		
Chamber of Commerce		
Community Organizations (Lions, Kiwanis, etc.		
Financial Resources	Is your jurisdiction able to? Yes or No	
Apply for Community Development Block Grants		
Fund projects thru Capital Improvements funding		
Authority to levy taxes for specific purposes		
Fees for water, sewer, gas, or electric services		
Impact fees for new development		
Incur debt through general obligation bonds		
Incur debt through special tax bonds		
Incur debt through private activities		
Withhold spending in hazard prone areas		

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	n/a
Builder's Plan	n/a
Capital Improvement Plan	n/a
Local Recovery Plan	n/a
County Recovery Plan	n/a
Debris Management Plan	n/a
Economic Development Plan	n/a
Transportation Plan	n/a
Land-use Plan	n/a
Watershed Plan	n/a
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	n/a

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)
   Board of Trustees with a chairman selected by the board.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.
   Missouri Organic Association provides public education at no cost.

3. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.
   ARPA funds are being utilized to address our sewer system so we do not have negative impact on the environment during a natural disaster. We built a structure to cover our UV plant to avoid critical damage/failure.

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.
   We do not have any concerns at this time.

5. How many outdoor warning sirens are in your community?
   We have 1.

How are they activated (indicate responsible department/personnel)?
They are activated by BEMA remotely.

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe them.
   Community Facebook group. Boone Emergency Services can do reverse 911 capability.

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards?
   We do not have a formal public shelter/saferoom.

Please provide address locations:

8. List residential, commercial and industrial development in your jurisdiction since last plan update.
   We built the structure over our uv lamp at the sewer station.

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.
   No there is no expected growth.

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.
    We are planning with the Boone County Sewer district to implement sewer improvements by 2028. This is being evaluated by their engineers currently.

11. Please list major employers in your jurisdiction with an estimated number of employees.
    N/A

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?
    Members: Tim Hentz, Bill Molendorp, Vince Barner, Dave Reeder, Bruce Begemann
    Yes, the plans were adhered too. The City Administration has monthly meetings to address community hazards. Why- because we meet monthly.

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.
    FEMA maps provide guidance on flood insurance requirement on properties where applicable. All future construction of homes or businesses in the flood plain must meet local and federal requirements.

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the hazard specific column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Riverine Flooding (Major & Flash)-**RF**	Severe Winter Weather (incl. snow, ice, severe cold)-**SWW**	Hazardous Materials Release (fixed facility, accidents)-**HM**
Dam Failure-**DF**	Droughts-**D**	Mass Transportation Accident-**MTA**
Levee Failure-**LF**	Extreme Temperatures-**ET**	Nuclear Power Plants (emergencies & accidents)-**NPP**
Earthquake-**EQ**	Fires (structural, urban, and wild)-**F**	Public Health Emergencies/Environmental Issues-**PH**
Land Subsidence / Sinkholes-**LSS**	Attack (nuclear, conventional, chemical, and biological)-**A**	Special Events-**SE**
Severe Thunderstorm (incl. winds, hail, lightning)-**ST**	Civil Disorder-**CD**	Terrorism-**TX**
Tornadoes-**T**	Cyber Disruption-**CyD**	Utilities (interruptions & system failures)-**U**

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss

facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities	High Potential Loss Facilities	Transportation and Lifeline
Hospitals and other medical facilities	Power plants	Highways, bridges, and tunnels
Police stations	Dams/levees	Railroads and facilities
Fire station	Military installations	Bus facilities
Emergency Operations Centers	Hazardous material sites	Airports
	Schools	Water treatment facilities
	Shelters	Natural gas facilities and pipelines
	Day care centers	
	Nursing homes	Oil facilities and pipelines
	Main government buildings	Communications facilities

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						
n/a						

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
High Potential Loss Facilities such as power plants, dams/levees, military installations, hazardous materials sites, shelters, day care centers, nursing homes, main government buildings (Do not include schools—they will be reported by the school districts)						
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards
n/a					

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction. Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members)

   Board of Trustees with a chairman selected by the board.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

   Missouri Organic Association provides public education at no cost.

3. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

   ARPA funds are being utilized to address our sewer system so we do not have negative impact on the environment during a natural disaster. We built a structure to cover our UV plant to avoid critical damage/failure.

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.

   We do not have any concerns at this time.

5. How many outdoor warning sirens are in your community?

   We have 1.

How are they activated (indicate responsible department/personnel)?

They are activated by BEMA remotely.

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe them.

   Community Facebook group. Boone Emergency Services can do reverse 911 capability.

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards?

   We do not have a formal public shelter/saferoom.

Please provide address locations:

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

   We built the structure over our uv lamp at the sewer station.

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

   No there is no expected growth.

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known.

    We are planning with the Boone County Sewer district to implement sewer improvements by 2028. This is being evaluated by their engineers currently.

11. Please list major employers in your jurisdiction with an estimated number of employees.

N/A

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

    Members: Tim Hentz, Bill Molendorp, Vince Barner, Dave Reeder, Bruce Begemann

    Yes, the plans were adhered too. The City Administration has monthly meetings to address community hazards. Why- because we meet monthly.

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally.

    FEMA maps provide guidance on flood insurance requirement on properties where applicable. All future construction of homes or businesses in the flood plain must meet local and federal requirements.

2.2.8 HUNTSDALE

The Mayor and the Board of Aldermen are the policy making bodies of the government. Some aldermen members have attended training to be CERT certified through the county. The Village of Huntsdale doesn't own any buildings or vehicles.

An engineering firm was hired to redesign the streets and stormwater ditches throughout the village. The project began in 2007 and construction was completed in 2012.

Since the last update The Nature Conservancy and Missouri River Relief have inherited 163.3 acres between the Missouri River and the MKT Trail. The lower portion of land within the city limits and the 163.3 acres along the river fall within the 100-year flood plain whereas the development on the North side of Sarr Street fall in the 500-year flood plain. Levees were built after the Flood of 93. The Katy Trail draws hikers and cyclists through, and a boat ramp now owned by the Missouri Department of Conservation allows visitors and residents to have access to the Missouri River.

Table 2.14: Huntsdale Mitigation Capabilities

Capabilities	Status Including Date of Document or Policy
Planning Capabilities	
Comprehensive Plan	No: county
Builder's Plan	No
Capital Improvement Plan	No
City Emergency Operations Plan	N/A
County Emergency Operations Plan	Annual Review
Local Recovery Plan	N/A
County Recovery Plan	In Progress
City Mitigation Plan	N/A
County Mitigation Plan	Yes: 2015
Debris Management Plan	N/A
Economic Development Plan	N/A
Transportation Plan	Regional Transportation Plan: 2015
Land-Use Plan	N/A
Flood Mitigation Assistance (FMA) Plan	N/A
Watershed Plan	N/A
Firewise or other fire mitigation plan	No
School Mitigation Plan	No

Critical Facilities Plan (Mitigation/Response/Recover)	N/A
Policies/Ordinance	
Zoning Ordinance	Yes
Building Code	Yes
Floodplain Ordinance	Yes
Subdivision Ordinance	N/A
Tree Trimming Ordinance	N/A
Nuisance Ordinance	N/A
Stormwater Ordinance	N/A
Drainage Ordinance	N/A
Site Plan Review Requirements	N/A
Historic Preservation Ordinance	N/A
Landscape Ordinance	N/A
Seismic Construction Ordinance	No
Program	
Zoning/Land Use Restrictions	Yes
Codes Building Site/Design	Yes – follow IBC with exception
Hazard Awareness Program	No
National Flood Insurance Program (NFIP)	Yes
NFIP Community Rating System (CRS) Program	N/A
National Weather Service (NWS) Storm Ready	No
Firewise Community Certification	No
Building Code Effectiveness Grading (BCEGs)	No
ISO Fire Rating	10
Economic Development Program	No
Land Use Program	No
Public Education/Awareness	No
Property Acquisition	No
Planning/Zoning Boards	Yes
Stream Maintenance Program	No

Tree Trimming Program	No
Engineering Studies for Streams (Local/County/Regional)	N/A
Mutual Aid Agreements	N/A
Studies/Reports/Maps	
Hazard Analysis/Risk Assessment (Local)	N/A
Hazard Analysis/Risk Assessment (County)	N/A
Flood Insurance Maps	No
FEMA Flood Insurance Study (Detailed)	Yes
Evacuation Route Map	County
Critical Facilities Inventory	N/A
Vulnerable Population Inventory	N/A
Land Use Map	N/A
Staff/Department	
Building Code Official	Yes
Building Inspector	No
Mapping Specialist (GIS)	No
Engineer	No
Development Planner	No
Public Works Official	Yes: Part-time Volunteer
Emergency Management Director	Yes: County
NFIP Floodplain Administrator	Yes: Part-time Volunteer
Emergency Response Team	Yes: BCFPD
Hazardous Materials Expert	Yes: BCFPD
Local Emergency Planning Committee	Yes: County
County Emergency Management Commission	N/A
Sanitation Department	Yes: local trash service
Transportation Department	No
Economic Development Department	No
Housing Department	No
Historic Preservation	No

Non-Governmental Organizations (NGOs)	
American Red Cross	No
Salvation Army	No
Veterans Groups	No
Local Environmental Organization	No
Homeowners Associations	No
Chamber of Commerce	No
Community Organizations (Lions, Kiwanis, Etc.)	No
Local Funding Availability	
Apply for Community Development Block	Yes
Fund projects through Capital	Yes
Authority to levy taxes for a specific purpose	Yes
Fees for water, sewer, gas, or electric services	No
Impact fees for new development	N/A
Ability to incur debt through general obligation bonds	Yes
Ability to incur debt through special tax bonds	Yes
Ability to incur debt through private activities	N/A
Withhold spending in hazard prone areas	N/A

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members) 1 MAYOR 4 COUNCIL

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education. NONE

3. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.
NONE AT THIS TIME

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers. NONE

5. How many outdoor warning sirens are in your community? ONE

How are they activated (indicate responsible department/personnel)? BOONE COUNTY OFF OF EMERGENCY MGMT

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe them. Cable override / 911 Reverse Look up Boone County Esc

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards?

Please provide address locations:

8. List residential, commercial and industrial development in your jurisdiction since last plan update. None

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas. None

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known. None

11. Please list major employers in your jurisdiction with an estimated number of employees. NONE

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not? John Zondca Mayor

yes

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally. Mayor is Flood Plain Administrator

Multi-Jurisdictional

Hazard Mitigation Plan

Data Collection Questionnaire

For Local Governments

County: Boone

Jurisdiction: Sturgeon

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: __Seth Truesdell_____
Phone: _537-682-3321_____
Email: Mayor@stugeon-mo.org_____
Date: _____02/25/2025_____

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission,
ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update.

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments
Planning Capabilities		
Comprehensive Plan	Date: Yes	
Builder's Plan	Date: Boone County, Mo.	
Capital Improvement Plan	Date: No	
City Emergency Operations Plan	Date: No	
County Emergency Operations Plan	Date: 2025	
Local Recovery Plan	Date: No	
County Recovery Plan	Date: 2025	
City Mitigation Plan	Date: No	
County Mitigation Plan	Date: 2025	
Debris Management Plan	Date: No	
Economic Development Plan	Date: Regional Economic Development Inc,	
Transportation Plan	Date: No	
Land-use Plan	Date: Planning & Zoning Committee	
Flood Mitigation Assistance (FMA) Plan	Date: No	
Watershed Plan	Date: No	
Firewise or other fire mitigation plan	Date: No	
Critical Facilities Plan (Mitigation/Response/Recovery)	Date: No	
Policies/Ordinance		

Element	Yes, No, N/A	Comments
Zoning Ordinance	Yes	
Building Code	Version: ICC 2012	
Floodplain Ordinance	Date:	
Subdivision Ordinance	Yes	
Tree Trimming Ordinance	N/A	
Nuisance Ordinance	Yes	
Storm Water Ordinance	Yes	
Drainage Ordinance	N/A	
Site Plan Review Requirements	Yes	
Historic Preservation Ordinance	NO	
Landscape Ordinance	NO	
Program		
Zoning/Land Use Restrictions	Yes	
Codes Building Site/Design	Yes	
Hazard Awareness Program	N/A	
National Flood Insurance Program	Yes	
Community Rating System (CRS) program under the National Flood Insurance Program (NFIP)?	If so, what is your current level rating?	
National Weather Service (NWS) Storm Ready Certification	N/A	
Firewise Community Certification	N/A	
Building Code Effectiveness Grading (BCEGs)	N/A	
ISO Fire Rating	Rating: 5	
Economic Development Program	YES	
Land Use Program	NO	
Public Education/Awareness	N/A	
Property Acquisition	N/A	
Planning/Zoning Boards	YES	
Stream Maintenance Program	N/A	
Tree Trimming Program	YES	
Engineering Studies for Streams (Local/County/Regional)	YES	
Mutual Aid Agreements	N/A	
Studies/Reports/Maps		
Hazard Analysis/Risk Assessment (City)	N/A	
Hazard Analysis/Risk Assessment (County)	N/A	
Evacuation Route Map	N/A	
Critical Facilities Inventory	N/A	
Vulnerable Population Inventory	N/A	
Land Use Map	YES	

Staff/Department		Full Time or Part Time?

Element	Yes, No, N/A	Comments
Building Code Official	NO	MAYOR
Building Inspector	NO	CONTRACTED OUT
Mapping Specialist (GIS)	NO	
Engineer	NO	CONTRACTED OUT
Development Planner	NO	
Public Works Official	YES	
Emergency Management Coordinator	NO	
NFIP Floodplain Administrator	NO	
Bomb and/or Arson Squad	NO	
Emergency Response Team	NO	
Hazardous Materials Expert	NO	
Local Emergency Planning Committee	NO	
County Emergency Management Commission	NO	
Sanitation Department	YES	
Transportation Department	YES	
Economic Development Department	NO	MEMBER OF REDI
Housing Department	NO	
Historic Preservation	NO	
Non-Governmental Organizations (NGOs)	Is there a local chapter? Yes or No	
American Red Cross	NO	
Salvation Army	NO	
Veterans Groups	NO	
Local Environmental Organization	NO	
Homeowner Associations	NO	
Neighborhood Associations	NO	
Chamber of Commerce	YES	
Community Organizations (Lions, Kiwanis, etc.	NO	
Financial Resources	Is your jurisdiction able to? Yes or No	
Apply for Community Development Block Grants	YES	
Fund projects thru Capital Improvements funding	NO	
Authority to levy taxes for specific purposes	N/A	
Fees for water, sewer, gas, or electric services	YES	
Impact fees for new development	NO	
Incur debt through general obligation bonds	NO	
Incur debt through special tax bonds	NO	
Incur debt through private activities	NO	
Withhold spending in hazard prone areas	NO	

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Comprehensive Plan	Yes
Builder's Plan	Yes
Capital Improvement Plan	No
Local Recovery Plan	No
County Recovery Plan	Yes
Debris Management Plan	No
Economic Development Plan	Regional Economic Development Inc.
Transportation Plan	No
Land-use Plan	Yes
Watershed Plan	No
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	No

Additional Questions

1. How is your government structure organized? (Commission, Mayor/City Council, how many members) Mayor/City Council (5)

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

N/A

3. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

N/A

4. Describe any hazard-related concerns or issues regarding the vulnerability of special needs populations, such as the elderly, disabled, low-income, or migrant farm workers.

N/A

5. How many outdoor warning sirens are in your community? (1)

   How are they activated (indicate responsible department/personnel)? Boone County Joint Communication.

6. Does your community utilize any other warning systems such as Cable Override, Reverse 911, etc? If so, please describe them. No

7. Does your community have designated public tornado shelters/saferooms? If so, are they constructed in accordance with FEMA standards? No

   Please provide address locations: N/A

8. List residential, commercial and industrial development in your jurisdiction since last plan update.

   Bailey Residential Subdivision – No Commercial, No Industrial

9. Describe development trends and expected growth areas. Is any new development expected to occur in the 100-year floodplain? Is any new development expected to occur in any other known hazard areas? If possible, please provide a map indicating potential/planned growth areas.

No

10. Are any new facilities or infrastructure planned for construction during the next five years? If so, please provide facility name and purpose along with proposed locations, if known. We have ongoing plans in motion to make the necessary infrastructure improvements to our water/sewer/roads.

11. Please list major employers in your jurisdiction with an estimated number of employees.

Stureon R5 School District employes approximately 30 people.

12. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

No. Due to changes within our City Office staff, the committee was not formed.

13. Describe your jurisdiction's participation in the NFIP. Include information about how compliance with the NFIP is enforced locally. Our City Clerk is our designated floodplain administrator.

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the hazard specific column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Riverine Flooding (Major & Flash)-**RF**	Severe Winter Weather (incl. snow, ice, severe cold)-**SWW**	Hazardous Materials Release (fixed facility, accidents)-**HM**
Dam Failure-**DF**	Droughts-**D**	Mass Transportation Accident-**MTA**
Levee Failure-**LF**	Extreme Temperatures-**ET**	Nuclear Power Plants (emergencies & accidents)-**NPP**
Earthquake-**EQ**	Fires (structural, urban, and wild)-**F**	Public Health Emergencies/Environmental Issues-**PH**
Land Subsidence / Sinkholes-**LSS**	Attack (nuclear, conventional, chemical, and biological)-**A**	Special Events-**SE**
Severe Thunderstorm (incl. winds, hail, lightning)-**ST**	Civil Disorder-**CD**	Terrorism-**TX**
Tornadoes-**T**	Cyber Disruption-**CyD**	Utilities (interruptions & system failures)-**U**

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities	**High Potential Loss Facilities**	**Transportation and Lifeline**
Hospitals and other medical facilities	Power plants	Highways, bridges, and tunnels
Police stations	Dams/levees	Railroads and facilities
Fire station	Military installations	Bus facilities
Emergency Operations Centers	Hazardous material sites	Airports
	Schools	Water treatment facilities
	Shelters	Natural gas facilities and pipelines
	Day care centers	Oil facilities and pipelines
	Nursing homes	Communications facilities
	Main government buildings	

Economic Assets

Economic assets at risk may include major employers or primary economic sectors, such as agriculture, whose losses or inoperability would have severe impacts on the community and its ability to recover from disaster.

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
Essential Facilities such as hospitals and other medical facilities, police and fire stations, Emergency Operations Centers						
Boone County Fire Station	201 East Wall	N/A	N/A	N/A	2	ST, T, F

Name of Asset	Address	Square Feet	*Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
High Potential Loss Facilities such as power plants, dams/levees, military installations, hazardous materials sites, shelters, day care centers, nursing homes, main government buildings (Do not include schools—they will be reported by the school districts)						
Sturgeon School District – 2 Locations	210 W. Patton and 24350 North Fairgrounds	N/A	N/A	N/A	250	ST T F MTA TX
Sturgeon Day Care	114 West Francis Street	N/A	N/A	N/A	50	ST T F TX
Sturgeon Residential Care Center	315 East Stone	N/A	N/A	N/A	25	ST T F TX
Sturgeon City Office	303 East Fire Station	N/A	N/A	N/A	5	ST T F TX
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						
N/A	N/A	N/A	N/A	N/A	N/A	N/A

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

Economic Assets (Major Employers, etc)

Asset	Address	Product/ Service	Value (if known)	Number of Employees	Hazards
Sturgeon School District	210 W. Patton & 24350 North Fairgrounds	Education	N/A	30	ST T F MTA TX

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction. Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	N/A
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Jurisdiction	N/A
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Multi-Jurisdictional

Hazard Mitigation Plan

Data Collection Questionnaire

For School Districts and Educational Institutions

County: Boone

School District / Educational Institution Name: Centralia R-VI School District

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs.

Prepared by: _____
Phone: _____
Email: _____
Date: _____

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission, ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	Yes	2022	
Capital Improvement Plan	Yes	2022	
School Emergency Plan Shelter in place protocols Evacuation protocols	Yes	2024	
Weapons Policy	Yes	2023	

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Principal	One Principal for each school
Emergency Manager	Yes	Director of Operations	
Grant Writer	No		
Public Information Officer	No		

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Yes	
Local funds	Yes	
General obligation bonds	Yes	
Special tax bonds	No	
Private activities/donations	Yes	

State and federal funds	Yes	

Additional Capabilities Questions

1. Are your buildings equipped with a public address system or other emergency alert system? Please describe.

   Yes, the school district has multiple alert methods including an intercom system, classroom phones, interactive clocks & TVs.

2. Do your school's buildings have NOAA Weather Radios?

   Yes, 1 per school (located in the front office)

3. List any past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect facilities or provide education regarding potential hazards.

Educational sessions are provided to students and faculty by local service providers, with annual drills scheduled for each identified hazard

4. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities.

Any new building renovations will include bringing the structures up to code, including the installation of fire suppression systems, safe rooms, and other safety features.

5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?

Yes, Centralia High School is equipped with a tornado shelter that meets FEMA standards

6. Did your school district / institution make any additions to buildings or construct new buildings since the last plan update (2010)? Please list the buildings and the improvement.

Yes, the expansion at Centralia High School features a newly constructed wing of classrooms.

7. Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?

Yes, there is a planned expansion to build a Performing Arts Center at Centralia High School

8. What percentage is your projected enrollment expected to increase or decrease in the next five years?

A projected 3 - 5% increase is expected over the next 5 years.

9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.

Centralia Police Department provides security needs.

VULNERABILITY ASSESSMENT

Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the hazard specific column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Riverine Flooding (Major & Flash)-**RF**
Dam Failure-**DF**
Levee Failure-**LF**
Earthquake-**EQ**
Land Subsidence / Sinkholes-**LSS**
Severe Thunderstorm (incl. winds, hail, lightning)-**ST**
Tornadoes-**T**
Severe Winter Weather (incl. snow, ice, severe cold)-**SWW**
Droughts-**D**
Extreme Temperatures-**ET**
Fires (structural, urban, and wild)-**F**
Attack (nuclear, conventional, chemical, and biological)-**A**
Civil Disorder-**CD**
Cyber Disruption-**CyD**
Hazardous Materials Release (fixed facility, accidents)-**HM**
Mass Transportation Accident-**MTA**
Nuclear Power Plants (emergencies & accidents)-**NPP**
Public Health Emergencies/Environmental Issues-**PH**
Special Events-**SE**
Terrorism-**TX**
Utilities (interruptions & system failures)-**U**

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable or not available, enter "N/A". Add as many rows as needed. **If you have this data in GIS formats, or other formats, please provide in lieu of this.**

Name of Asset	Address	Square Feet	Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
Chance Elementary	510 S. Rollins Centralia, Mo 65240					
Centralia Intermediate	550 W. Lakeview Centralia, MO 65240					
Chester Boren Middle	110 N. Jefferson Centralia, MO 65240					
Centralia High School	849 S.Jefferson Centralia, MO 65240					
Centralia Central Office	123 N Rollins Centralia, MO 65240					
Bus Barn	851 N Hwy 151 Centralia, MO 65240					

Name of Asset	Address	Square Feet	Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
Champion Academy	635 S.Jefferson Centralia, MO 65240					

Multi-jurisdictional Mitigation Plan
HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Multi-jurisdictional Mitigation Plan
HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire For School Districts and Educational Institutions

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. If you are unsure about the answer to a question, contact the individual in your jurisdiction who is responsible for the element. If you are signed in to a Google account, you may close the questionnaire and Google Forms will save your work. If you have any questions about the questions, contact Miriam Bouallegue at miriam.bouallegue@midmorpc.org.

Email *

lofield@cpsk12.org

Please select your jurisdiction from the list. *

- (●) Columbia Public Schools
- ( ) Southern Boone Schools
- ( ) Hallsville School District
- ( ) Sturgeon School District
- ( ) Harrisburg School District
- ( ) Fayette R-III School District
- ( ) North Callaway R-1 School District
- ( ) Centralia School District
- ( ) New Franklin R-1 School District
- ( ) University of Missouri
- ( ) Stephen's College
- ( ) Columbia College
- ( ) Other: _____

First and Last Name *

Lazell Ofield

Phone Number *

573.214.3725

Date

MM DD YYYY

10 / 28 / 2024

CAPABILITY ASSESSMENT&INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with “N/A”. If applicable, please provide a completion date for the element.

Master Plan

- (●) Yes
- ( ) No
- ( ) N/A

If your school district/institution has a master plan, please state the date of the latest version of the plan.

MM DD YYYY

06 / 01 / 2024

Comments:

Capital Improvement Plan

- (●) Yes
- ( ) No
- ( ) N/A

If your school district/institution has a capital improvement plan, please state the date of the latest version of the plan.

MM DD YYYY

06 / 01 / 2024

Comments:

School Emergency Plan

- ○ Yes, including shelter in place protocols
- ○ Yes, including evacuation protocols
- ◉ Yes, including shelter in place protocols and evacuation protocols
- ○ No
- ○ N/A

If your school district/institution has a school emergency plan, please state the date of the latest version of the plan.

MM DD YYYY

08 / 20 / 2024

Comments:

EBCA Board Policy

Weapons policy

- ◉ Yes
- ○ No
- ○ N/A

If your school district/institution has a weapons policy, please state the date of the latest version of the policy.

MM DD YYYY

03 / 18 / 2024

Comments:

JFCJ Board Policy

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Full-time building official (i.e. Principal)

- (●) Yes
- ( ) No
- ( ) N/A

Department/Position

Comments:

34 Building Principals / COO - at Aslin Building

Emergency Manager

- (●) Yes
- ( ) No
- ( ) N/A

Department/Position

Directory Safety and Security

Comments:

Grant Writer

- (●) Yes
- ( ) No
- ( ) N/A

Department/Position

Comments:

Public Information Officer

- (●) Yes
- ( ) No
- ( ) N/A

Department/Position

Chief Communications Officer

Comments:

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Capital improvements project funding

- (●) Yes
- ( ) No
- ( ) N/A

Comments

Local funds

- (●) Yes
- ( ) No
- ( ) N/A

Comments

General obligation bonds

- (●) Yes
- ( ) No
- ( ) N/A

Comments

Special tax bonds

- ( ) Yes
- (●) No
- ( ) N/A

Comments

Private activities/donations

- (●) Yes
- ( ) No
- ( ) N/A

Comments

State and federal funds

- (●) Yes
- ( ) No
- ( ) N/A

Comments

Additional Capabilities Questions

Are your buildings equipped with a public address system or other emergency alert system? Please describe.

Yes. (911 address location information database - Intelquent) (Centel Alert)

Do your school's buildings have NOAA Weather Radios?

Yes.

List any past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect facilities or provide education regarding potential hazards.

Security Enentrace. Weapons detection, Visitor management system, no prop door policy

List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities.

Security Enentrace. Weapons detection, Visitor management system, no prop door policy

Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?

yes. (5)

Did your school district / institution make any additions to buildings or construct new buildings since the last plan update (2010)? Please list the buildings and the improvement.

Yes.

Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?

Yes.

What percentage is your projected enrollment expected to increase or decrease in the next five years?

Within the Budget Document

Do you have your own campus police? Please explain your police department or who you rely on for security needs.

No. But we do use SRO with the city of Columbia

Asset Inventory

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable, enter “N/A”). Add as many buildings as needed. Then, respond to the final question and indicate hazards to which the assets are vulnerable before proceeding to the next section.
If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

Name and address of building asset 1

Square footage of building asset 1

Replacement value (insured) of building asset 1

Contents value of building asset 1

_____

Occupancy/Capacity number of building asset 1

_____

Hazards to which building asset 1 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 2

Square footage of building asset 2

Replacement value (insured) of building asset 2

Contents value of building asset 2

Hazards to which building asset 2 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 3

Square footage of building asset 3

Replacement value (insured) of building asset 3

Contents value of building asset 3

Occupancy/Capacity number of building asset 3

Hazards to which building asset 3 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 4

_____

Square footage of building asset 4

_____

Replacement value (insured) of building asset 4

_____

Contents value of building asset 4

_____

Occupancy/Capacity number of building asset 4

_____

Hazards to which building asset 4 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 5

Square footage of building asset 5

Replacement value (insured) of building asset 5

Contents value of building asset 5

Occupancy/Capacity number of building asset 5

Hazards to which building asset 5 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 6

_____

Square footage of building asset 6

_____

Replacement value (insured) of building asset 6

_____

Contents value of building asset 6

_____

Occupancy/Capacity number of building asset 6

_____

Hazards to which building asset 6 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 7

_____

Square footage of building asset 7

_____

Replacement value (insured) of building asset 7

_____

Contents value of building asset 7

_____

Occupancy/Capacity number of building asset 7

_____

Hazards to which building asset 7 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 8

Square footage of building asset 8

Replacement value (insured) of building asset 8

Contents value of building asset 8

Occupancy/Capacity number of building asset 8

Hazards to which building asset 8 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 9

Square footage of building asset 9

Replacement value (insured) of building asset 9

Contents value of building asset 9

Occupancy/Capacity number of building asset 9

Hazards to which building asset 9 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 10

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Square footage of building asset 10

_____

Replacement value (insured) of building asset 10

_____

Contents value of building asset 10

_____

Occupancy/Capacity number of building asset 10

_____

Hazards to which building asset 10 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 11

Square footage of building asset 11

Replacement value (insured) of building asset 11

Contents value of building asset 11

Occupancy/Capacity number of building asset 11

Hazards to which building asset 11 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 12

_____

Square footage of building asset 12

_____

Replacement value (insured) of building asset 12

_____

Replacement value (insured) of building asset 12

_____

Contents value of building asset 12

_____

Occupancy/Capacity number of building asset 12

_____

Hazards to which building asset 12 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 13

Square footage of building asset 13

Replacement value (insured) of building asset 13

Contents value of building asset 13

Occupancy/Capacity number of building asset 13

Hazards to which building asset 13 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 14

Square footage of building asset 14

Replacement value (insured) of building asset 14

Contents value of building asset 14

Hazards to which building asset 14 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 15

_____

Square footage of building asset 15

_____

Replacement value (insured) of building asset 15

_____

Contents value of building asset 15

_____

Occupancy/Capacity number of building asset 15

_____

Hazards to which building asset 15 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 16

Square footage of building asset 16

Replacement value (insured) of building asset 16

Contents value of building asset 16

Occupancy/Capacity number of building asset 16

Hazards to which building asset 16 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 17

Square footage of building asset 17

Replacement value (insured) of building asset 17

Contents value of building asset 17

Occupancy/Capacity number of building asset 17

Hazards to which building asset 17 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 18

Square footage of building asset 18

Replacement value (insured) of building asset 18

Contents value of building asset 18

Occupancy/Capacity number of building asset 18

Hazards to which building asset 18 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 19

Square footage of building asset 19

Replacement value (insured) of building asset 19

Contents value of building asset 19

Occupancy/Capacity number of building asset 19

Hazards to which building asset 19 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 20

_____

Square footage of building asset 20

_____

Replacement value (insured) of building asset 20

_____

Contents value of building asset 20

_____

Occupancy/Capacity number of building asset 20

_____

Hazards to which building asset 20 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of buildings asset 21

_____

Square footage of building asset 21

_____

Replacement value (insured) of building asset 21

_____

Contents value of building asset 21

_____

Occupancy/Capacity number of building asset 21

_____

Hazards to which building asset 21 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 22

_____

Square footage of building asset 22

_____

Replacement value (insured) of building asset 22

_____

Contents value of building asset 22

_____

Occupancy/Capacity number of building asset 22

_____

Hazards to which building asset 22 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 23

Square footage of building asset 23

Replacement value (insured) of building asset 23

Contents value of building asset 23

Occupancy/Capacity number of building asset 23

Hazards to which building asset 23 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 24

Square footage of building asset 24

Replacement value (insured) of building asset 24

Replacement value (insured) of building asset 24

Contents value of building asset 24

Occupancy/Capacity number of building asset 24

Hazards to which building asset 24 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 25

Square footage of building asset 25

Replacement value (insured) of building asset 25

Contents value of building asset 25

Occupancy/Capacity number of building asset 25

Hazards to which building asset 25 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [ ] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [ ] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Historic Hazard Events

Please fill out the sheet on the next page for each significant hazard event that affected your jurisdiction. **Complete as many copies as necessary to record all events** and complete with as much detail as possible.

This includes all events associated with the hazards listed in the previous section that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type, nature, and magnitude of event 1

Date and location of event 1

12.16.2016

Injuries and deaths from event 1

Property damage, infrastructure damage, and crop damage from event 1

Business/Economic Impacts from event 1

Road/school/other closures from event 1

Other damage from event 1

Insured losses from event 1

Federal/state disaster relief funding for event 1

Opinion on likelihood of event 1 occurring again

Source of information for event 1

Comments on event 1

Type, nature, and magnitude of event 2

Date and location of event 2

Injuries and deaths from event 2

Property damage, infrastructure damage, and crop damage from event 2

Business/Economic Impacts from event 2

Road/school/other closures from event 2

Other damage from event 2

Insured losses from event 2

Federal/state disaster relief funding for event 2

Opinion on likelihood of event 2 occurring again

Source of information for event 2

Comments on event 2

Type, nature, and magnitude of event 3

Date and location of event 3

Injuries and deaths from event 3

Property damage, infrastructure damage, and crop damage from event 3

Business/Economic Impacts from event 3

Road/school/other closures from event 3

Other damage from event 3

Insured losses from event 3

Federal/state disaster relief funding for event 3

Opinion on likelihood of event 3 occurring again

Source of information on event 3

Comments on event 3

Type, nature, and magnitude of event 4

Date and location of event 4

Injuries and deaths from event 4

Property damage, infrastructure damage, and crop damage from event 4

Business/Economic Impacts from event 4

Road/school/other closures from event 4

Other damage from event 4

Insured losses from event 4

Federal/state disaster relief funding for event 4

Opinion on likelihood of event 4 occurring again

Source of information on event 4

Comments on event 4

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Google Forms

Multi-Jurisdictional

Hazard Mitigation Plan

Data Collection Questionnaire

For School Districts and Educational Institutions

County: Boone

School District / Educational Institution Name: Hallsville R-IV

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs.

Prepared by: Tyler Walker
Phone: 573 696 5512
Email: twalker@hallsville.org
Date: 11-15-24

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission, ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	X	Sept. 2024	
Capital Improvement Plan	X	Sept. 2024	
School Emergency Plan Shelter in place protocols Evacuation protocols	X	August 2024	
Weapons Policy	X		

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	X	MS Principal	
Emergency Manager	X	Communications Director	
Grant Writer	X	Assistant Superintendent	
Public Information Officer	X	Communications Director	

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Y	
Local funds	Y	
General obligation bonds	Y	
Special tax bonds	Y	
Private activities/donations	Y	
State and federal funds	Y	

Additional Capabilities Questions

1. Are your buildings equipped with a public address system or other emergency alert system? Please describe.

   Yes, emergency alarms

2. Do your school's buildings have NOAA Weather Radios?

   Yes

3. List any past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect facilities or provide education regarding potential hazards.

   No

4. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities.

   No

5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?

   Yes. Yes, MS Wing and Primary School wing

6. Did your school district / institution make any additions to buildings or construct new buildings since the last plan update (2010)? Please list the buildings and the improvement.

   Primary school wing HS Science wing
   Primary gymnasium MS wing

7. Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?

   No

   Primary classroom addition
   MS Wing Phase 2

8. What percentage is your projected enrollment expected to increase or decrease in the next five years?

   10% increase

9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.

   Hallsville Police Department designates our school district one full-time resource officer.

VULNERABILITY ASSESSMENT

Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the hazard specific column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Riverine Flooding (Major & Flash)-**RF**
Dam Failure-**DF**
Levee Failure-**LF**
Earthquake-**EQ**
Land Subsidence / Sinkholes-**LSS**
Severe Thunderstorm (incl. winds, hail, lightning)-**ST**
Tornadoes-**T**
Severe Winter Weather (incl. snow, ice, severe cold)-**SWW**
Droughts-**D**
Extreme Temperatures-**ET**
Fires (structural, urban, and wild)-**F**
Attack (nuclear, conventional, chemical, and biological)-**A**
Civil Disorder-**CD**
Cyber Disruption-**CyD**
Hazardous Materials Release (fixed facility, accidents)-**HM**
Mass Transportation Accident-**MTA**
Nuclear Power Plants (emergencies & accidents)-**NPP**
Public Health Emergencies/Environmental Issues-**PH**
Special Events-**SE**
Terrorism-**TX**
Utilities (interruptions & system failures)-**U**

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable or not available, enter "N/A". Add as many rows as needed. **If you have this data in GIS formats, or other formats, please provide in lieu of this.**

Name of Asset	Address	Square Feet	Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards

Multi-jurisdictional Mitigation Plan
HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

HARRISBURG R-VIII SCHOOL DISTRICT

The Harrisburg School District did not participate in the 2020 Boone County Hazard Mitigation update. According to the last update there are not any specific future development plans. Long-term facilities plan goals include the addition of a middle school building, addition of a softball field in the high school sports complex and the acquisition of land for future growth.

Table 2.22			
Harrisburg R-VIII School District			
School Name	**Grades**	**Certified Staff**	**Enrollment 2019-20**
Harrisburg Elementary	K-5	28	307
Harrisburg Middle	6-8	20	152
Harrisburg High	9-12	21	155
	Total	**69**	**614**
Source: Missouri Department of Elementary and Secondary Education - Data as of 11/17/2019			
Property Valuation			
	Count	**Replacement Value (including contents)**	**Insured Value**
Buildings	15	$22,129,873	
Vehicles	15		$47,487
Sources: School District Insurance Statement			

District Name	Building Name	Building Enrolment
Harrisburg R-VIII	Harrisburg Elementary	291
Harrisburg R-VIII	Harrisburg High	178
Harrisburg R-VIII	Harrisburg Middle	136

UPDATED SOUTHERN BOONE SCHOOLS INFORMATION 2025

2.4.5 SOUTHERN BOONE COUNTY R-I SCHOOL DISTRICT

Southern Boone has had rapid growth in the last several years. In 2024 a bond initiative funded construction for high school expansion including a new vocational agriculture classrooms and shop area, family and consumer science classroom and art room along with roof and parking lot improvements. In 2022 voters approved a no-tax increase bond issue to repair the outdoor stadium, fix drainage issues, parking lot improvements and other facility needs.

Future plans include a no-tax increase bond for a performing arts center and additional classroom space to address student overcrowding and curricular needs.

Table 2.23			
Southern Boone Co. R-I School District			
School Name	**Grades**	**Certified Staff 2024-25 Sept Count**	**Enrollment 2024-25 Sept Count**
Southern Boone Primary updated 1/16/25	PK-2	99	753
Southern Boone Elementary updated 1/16/25	3-4		
Southern Boone Middle updated 1/16/25	5-8	63	648
Southern Boone High updated 1/16/25	9-12	55	570
	Total	**217**	**1,971**
Source: Missouri Department of Elementary and Secondary Education - Data as of 11/17/2019			
Property Valuation			
	Count	**Replacement Value (including contents)**	**Insured Value**
Buildings 1/24/25	12	$100,000,000	
Vehicles updated 1/24/25	35		
Sources: School District Insurance Statement			

Multi-Jurisdictional

Hazard Mitigation Plan

Data Collection Questionnaire

For School Districts and Educational Institutions

County: Boone

School District / Educational Institution Name: Sturgeon School District

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs.

Prepared by: Jeff Carr
Phone: 573-687-3519
Email: jcarr@sturgeon.k12.mo.us
Date: March 19, 2025

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission, ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	No		
Capital Improvement Plan	Yes	Unknown	
School Emergency Plan Shelter in place protocols Evacuation protocols	Yes	In progress	The school has a crisis response plan, updated in 2021.
Weapons Policy	Yes	Updated annually	

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes	Administration	
Emergency Manager	Yes	Operations	
Grant Writer	No		The district has other staff who cover these duties as needed.
Public Information Officer	No		The district has other staff who cover these duties as needed.

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Yes	
Local funds	No	
General obligation bonds	Yes	

Special tax bonds	Yes	
Private activities/donations	No	
State and federal funds	Yes	Mostly federal block grants

Additional Capabilities Questions

1. Are your buildings equipped with a public address system or other emergency alert system? Please describe.
   The schools use an intercom and alarm system.

2. Do your school's buildings have NOAA Weather Radios?

   Yes, as well as walkie-talkies with weather radio capabilities.

3. List any past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect facilities or provide education regarding potential hazards.

   None

4. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities.

   None

5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?

   Yes, the high school has a safe room addition.

6. Did your school district / institution make any additions to buildings or construct new buildings since the last plan update (2010)? Please list the buildings and the improvement.

   Yes, the high school addition, which included an ag shop, weight room, and safe room.

7. Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?

   There are no concrete plans at this time, however expansion will be necessary to meet projected future enrollment. A location has not been identified. The only known hazard near the school is the railroad.

8. What percentage is your projected enrollment expected to increase or decrease in the next five years?

   The district currently has about 500 students, however there are also about 1,000 students enrolled in the online academic program hosted by the district. In person enrollment is projected to increase by about 100 students in the next 5 years because of planned new subdivisions.

9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.

   The school has an agreement with Boone County Sheriff's Department for a school resource officer.

VULNERABILITY ASSESSMENT

Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the hazard specific column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Riverine Flooding (Major & Flash)-**RF**
Dam Failure-**DF**
Levee Failure-**LF**
Earthquake-**EQ**
Land Subsidence / Sinkholes-**LSS**
Severe Thunderstorm (incl. winds, hail, lightning)-**ST**
Tornadoes-**T**
Severe Winter Weather (incl. snow, ice, severe cold)-**SWW**
Droughts-**D**
Extreme Temperatures-**ET**
Fires (structural, urban, and wild)-**F**
Attack (nuclear, conventional, chemical, and biological)-**A**
Civil Disorder-**CD**
Cyber Disruption-**CyD**
Hazardous Materials Release (fixed facility, accidents)-**HM**
Mass Transportation Accident-**MTA**
Nuclear Power Plants (emergencies & accidents)-**NPP**
Public Health Emergencies/Environmental Issues-**PH**
Special Events-**SE**
Terrorism-**TX**
Utilities (interruptions & system failures)-**U**

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable or not available, enter "N/A". Add as many rows as needed. **If you have this data in GIS formats, or other formats, please provide in lieu of this.**

Name of Asset	Address	Square Feet	Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards
Sturgeon Elementary	210 W Patton St, Sturgeon, MO 65284				250	EQ, ST, T, SWW, D, ET, F, HM, MTA, PH, U
Sturgeon Middle School	210 W Patton St, Sturgeon, MO 65284				150	EQ, ST, T, SWW, D, ET, F, HM, MTA, PH, U
Sturgeon High School	24350 N Fairgrounds Rd, Sturgeon, MO 65284				150	EQ, ST, T, SWW, D, ET, F, HM, MTA, PH, U

Commented [MB1]: Check with the district

																		Name of Asset
																		Address
																		Square Feet
																		Replacement Value (Insured)
																		Contents Value
																		Occupancy/ Capacity #
																		Hazards

Multi-jurisdictional Mitigation Plan
HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Multi-jurisdictional Mitigation Plan
HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Multi-Jurisdictional

Hazard Mitigation Plan

Data Collection Questionnaire

For School Districts and Educational Institutions

County: Boone

School District / Educational Institution Name: University of Missouri

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs.

Prepared by: Jerry Jenkins
Phone: _____
Email: jenkinsjer@missouri.edu
Date: 3/26/25

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission, ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with "N/A". If applicable, please provide a completion date for the element. If your school district / institution has any of the **underlined and bolded** elements, please provide a copy of the document to the contact indicated on the front of this questionnaire and indicate method in the comments column (i.e. available on the web, will email or mail).

Planning Elements	Yes/No	Date of Latest Version	Comments
Master Plan	Yes	Unknown	
Capital Improvement Plan	Yes	Unknown	
School Emergency Plan Shelter in place protocols Evacuation protocols	Yes	2018	
Weapons Policy	Yes	Unknown	

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Personnel Resources	Yes/No	Department/Position	Comments
Full-time building official (i.e. Principal)	Yes		
Emergency Manager	Yes	Emergency Management	
Grant Writer	Yes	Grants	
Public Information Officer	Yes	MUPD	

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Financial Resources	Accessible/Eligible to Use (Y/N)	Comments
Capital improvements project funding	Yes	
Local funds	No	
General obligation bonds		
Special tax bonds		
Private activities/donations	Yes	

State and federal funds	Yes	

Additional Capabilities Questions

1. Are your buildings equipped with a public address system or other emergency alert system? Please describe.

   Yes they use Alertus. MU also sends text message alerts through MUAlert

2. Do your school's buildings have NOAA Weather Radios?

   The residence halls do.

3. List any past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect facilities or provide education regarding potential hazards.

   Currently, there is training for faculty, staff and students focused on crime prevention, active threat, and first aid training.

4. List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities.

   Most buildings have generators which are tested by Facilities. There are also biannual meetings with all building coordinators to discuss disaster response and mitigation.

5. Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?

MU is working on NWS StormReady Certification and putting signage in buildings for where to shelter in case of tornado. Many buildings have basements but not FEMA rated shelters. Moving forward, new construction will have FEMA rated safe rooms.

6. Did your school district / institution make any additions to buildings or construct new buildings since the last plan update (2010)? Please list the buildings and the improvement.

   MU is adding onto the stadium and enclosing it to mitigate active shooter threats.

7. Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?

There are planned additions to the Trowbridge Center as well as street repair and reconstruction.

8. What percentage is your projected enrollment expected to increase or decrease in the next five years?

Enrollment is projected to increase by about 500-1,000 students per year.

9. Do you have your own campus police? Please explain your police department or who you rely on for security needs.

Yes, MUPD.

VULNERABILITY ASSESSMENT

Asset Inventory

The purpose of this worksheet is to assist in the assessment of the vulnerable populations and facilities owned by your school district / institution. Use the table below to compile a detailed inventory of specific assets at risk. In the hazard specific column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Riverine Flooding (Major & Flash)-**RF**
Dam Failure-**DF**
Levee Failure-**LF**
Earthquake-**EQ**
Land Subsidence / Sinkholes-**LSS**
Severe Thunderstorm (incl. winds, hail, lightning)-**ST**
Tornadoes-**T**
Severe Winter Weather (incl. snow, ice, severe cold)-**SWW**
Droughts-**D**
Extreme Temperatures-**ET**
Fires (structural, urban, and wild)-**F**
Attack (nuclear, conventional, chemical, and biological)-**A**
Civil Disorder-**CD**
Cyber Disruption-**CyD**
Hazardous Materials Release (fixed facility, accidents)-**HM**
Mass Transportation Accident-**MTA**
Nuclear Power Plants (emergencies & accidents)-**NPP**
Public Health Emergencies/Environmental Issues-**PH**
Special Events-**SE**
Terrorism-**TX**
Utilities (interruptions & system failures)-**U**

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable or not available, enter "N/A". Add as many rows as needed. **If you have this data in GIS formats, or other formats, please provide in lieu of this.**

Name of Asset	Address	Square Feet	Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards

Name of Asset	Address	Square Feet	Replacement Value (Insured)	Contents Value	Occupancy/ Capacity #	Hazards

Multi-jurisdictional Mitigation Plan
HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district / institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	Flood
Nature and magnitude of event	Missouri River Flooding across Mid MO
Location	MU Research Reactor at Providence Road and Mick Deaver, Columbia MO
Date of event	June 25, 2021
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	Detours were needed since roads around the reactor were flooded. The MU Research Reactor itself did not flood.
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	Very likely
Source of information	NOAA Storm Events Database
Comments	Widespread flash flooding was reported across the southern half of Boone County, when up to 7 inches of rain fell in a span of 6 hours. Several water rescues were reported, including one swift water rescue. Columbia firefighters rescued a man who was clinging to a tree in Bear Creek downstream of North Creasy Springs Road after his car got swept away by the swift current. They also rescued two people from a mobile home on North Hinkson Creek Road. At least an additional 10 water rescues were

	performed after the drivers drove into flood waters in a number of locations around the county. Numerous roads were flooded including U.S. Highway 63 at intersection with Highway 163, Nifong Boulevard at Glen Eagle Drive, Highway WW at Old Hawthorne, Creasy Springs and Bear Creek, North Route V at Barnes School Road, and U.S. Highway 40 near Midway. The rain pushed Hinkson Creek to a record high level, flooding Wilson□□□s Total Fitness and the Missouri Athletic Center at Forum Boulevard and closing Providence Road through midday on Friday. A section of West Dripping Springs Road was washed out due to flash flooding from Silver Fork Creek. Highway E was flooded where it crosses over Perche Creek and Route ZZ was flooded by Harmony Creek. Also, Route Y east of Ashland was closed due to flooding from Cedar Creek. No deaths or injuries were reported.

Multi-jurisdictional Mitigation Plan
HISTORIC HAZARD EVENTS

Please fill out one sheet for each significant hazard event that affected **your school district /institution** with as much detail as possible. This includes all hazard events listed on the Vulnerability Assessment page that have caused previous damage. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	

Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

Multi-Jurisdictional Hazard Mitigation Plan Data Collection Questionnaire For School Districts and Educational Institutions

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will not** be eligible applicants for FEMA mitigation funding programs. If you are unsure about the answer to a question, contact the individual in your jurisdiction who is responsible for the element. If you are signed in to a Google account, you may close the questionnaire and Google Forms will save your work. If you have any questions about the questions, contact Miriam Bouallegue at miriam.bouallegue@midmorpc.org.

Email *

dtauber@stephens.edu

Please select your jurisdiction from the list. *

- ○ Columbia Public Schools
- ○ Southern Boone Schools
- ○ Hallsville School District
- ○ Sturgeon School District
- ○ Harrisburg School District
- ○ Fayette R-III School District
- ○ North Callaway R-1 School District
- ○ Centralia School District
- ○ New Franklin R-1 School District
- ○ University of Missouri
- ◉ Stephen's College
- ○ Columbia College
- ○ Other: _____

First and Last Name *

Demond Tauber

Phone Number *

573-268-8087

Date

MM DD YYYY

12 / 10 / 2024

CAPABILITY ASSESSMENT&INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan.

Please indicate which of the following your school district / institution has in place. For elements that do not pertain to you, please indicate with “N/A”. If applicable, please provide a completion date for the element.

Master Plan

- ○ Yes
- ○ No
- ◉ N/A

If your school district/institution has a master plan, please state the date of the latest version of the plan.

MM DD YYYY

/ /

Comments:

Unknown

Capital Improvement Plan

- ○ Yes
- ○ No
- ◉ N/A

If your school district/institution has a capital improvement plan, please state the date of the latest version of the plan.

MM DD YYYY

/ /

Comments:

Unknown

School Emergency Plan

- ○ Yes, including shelter in place protocols
- ○ Yes, including evacuation protocols
- ◉ Yes, including shelter in place protocols and evacuation protocols
- ○ No
- ○ N/A

If your school district/institution has a school emergency plan, please state the date of the latest version of the plan.

MM DD YYYY

01 / 10 / 2016

Comments:

Weapons policy

- ◉ Yes
- ○ No
- ○ N/A

If your school district/institution has a weapons policy, please state the date of the latest version of the policy.

MM DD YYYY

01 / 10 / 2016

Comments:

Administrative/Technical

Identify the technical and personnel resources responsible for activities related to hazard mitigation/loss prevention within your school district / institution.

Full-time building official (i.e. Principal)

- (●) Yes
- ( ) No
- ( ) N/A

Department/Position

VP of Operations/Facilities

Comments:

Emergency Manager

- (●) Yes
- ( ) No
- ( ) N/A

Department/Position

Campus Safety Director

Comments:

Grant Writer

- ( ) Yes
- ( ) No
- (●) N/A

Department/Position

Unknown

Comments:

Public Information Officer

- (●) Yes
- ( ) No
- ( ) N/A

Department/Position

Campus Safety Director

Comments:

Financial Resources

Identify whether your school district /institution has access to or is eligible to use the following financial resources for hazard mitigation.

Capital improvements project funding

- ○ Yes
- ○ No
- ◉ N/A

Comments

Unknown

Local funds

- ○ Yes
- ○ No
- ◉ N/A

Comments

Unknown

General obligation bonds

- ○ Yes
- ○ No
- ◉ N/A

Comments

Unknown

Special tax bonds

- ○ Yes
- ○ No
- ◉ N/A

Comments

Unknown

Private activities/donations

- ○ Yes
- ○ No
- ◉ N/A

Comments

Unknown

State and federal funds

- ◉ Yes
- ○ No
- ○ N/A

Comments

Additional Capabilities Questions

Are your buildings equipped with a public address system or other emergency alert system? Please describe.

General fire alarms illuminated and audible.

Do your school's buildings have NOAA Weather Radios?

Yes.

List any past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect facilities or provide education regarding potential hazards.

List any other past or ongoing projects or programs designed to reduce disaster losses. These may include projects to protect critical facilities.

Do any of your buildings have designated tornado shelters or "saferooms"? If so, are they constructed in accordance with FEMA standards?

Yes.

Did your school district / institution make any additions to buildings or construct new buildings since the last plan update (2010)? Please list the buildings and the improvement.

No.

Does your school district / institution plan to remodel or construct any buildings in the next 5 years? If so, please list the building or proposed building and planned improvements. Are any planned construction activities in known hazard areas?

No.

What percentage is your projected enrollment expected to increase or decrease in the next five years?

1% per year.

Do you have your own campus police? Please explain your police department or who you rely on for security needs.

We have a campus safety department. We are not sworn officers (unarmed).

Asset Inventory

Please list buildings owned by your school district / institution including the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). Add as many buildings as needed. Then, respond to the final question and indicate hazards to which the assets are vulnerable before proceeding to the next section.
If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.

Name and address of building asset 1

Columbia Hall 1200 E. Broadway COMO

Square footage of building asset 1

48,496

Replacement value (insured) of building asset 1

$7,000,000

Contents value of building asset 1

$1,000,000

Occupancy/Capacity number of building asset 1

250

Hazards to which building asset 1 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 2

Catherine Webb Studios

Square footage of building asset 2

21,550

Replacement value (insured) of building asset 2

$3,000,000

Contents value of building asset 2

$750,000

Hazards to which building asset 2 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 3

Dudley Hall

Square footage of building asset 3

17,080

Replacement value (insured) of building asset 3

$2,000,000

Contents value of building asset 3

$750,000

Occupancy/Capacity number of building asset 3

200

Hazards to which building asset 3 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 4

Pillsbury Science Center

Square footage of building asset 4

51,415

Replacement value (insured) of building asset 4

7,500,000

Contents value of building asset 4

$1,000,000

Occupancy/Capacity number of building asset 4

200

Hazards to which building asset 4 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 5

Firestone Baars Chapel

Square footage of building asset 5

7845

Replacement value (insured) of building asset 5

$4,000,000

Contents value of building asset 5

$800,000

Occupancy/Capacity number of building asset 5

200

Hazards to which building asset 5 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 6

Green House

Square footage of building asset 6

2,170

Replacement value (insured) of building asset 6

$800,000

Contents value of building asset 6

$150,000

Occupancy/Capacity number of building asset 6

25

Hazards to which building asset 6 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 7

Helis Communications

Square footage of building asset 7

51,415

Replacement value (insured) of building asset 7

$5,000,000

Contents value of building asset 7

$1,000,000

Occupancy/Capacity number of building asset 7

100

Hazards to which building asset 7 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 8

Hickman Hall

Square footage of building asset 8

32,160

Replacement value (insured) of building asset 8

$9,000,000

Contents value of building asset 8

1,500,000

Occupancy/Capacity number of building asset 8

150

Hazards to which building asset 8 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 9

Historic Senior Hall

Square footage of building asset 9

34,299

Replacement value (insured) of building asset 9

$10,000,000

Contents value of building asset 9

$1,500,000

Occupancy/Capacity number of building asset 9

200

Hazards to which building asset 9 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [ ] Special Events-SE
- [x] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 10

Hugh Stephens Library

Square footage of building asset 10

48,030

Replacement value (insured) of building asset 10

$7,500,000

Contents value of building asset 10

$2,000,000

Occupancy/Capacity number of building asset 10

400

Hazards to which building asset 10 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 11

Silverthorne Arena 1200 E. Broadway COMO

Square footage of building asset 11

11,625

Replacement value (insured) of building asset 11

$7,000,000

Contents value of building asset 11

$1,500,000

Occupancy/Capacity number of building asset 11

500

Hazards to which building asset 11 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 12

Lela Raney Wood Hall 1200 E. Broadway COMO

Square footage of building asset 12

55,734

Replacement value (insured) of building asset 12

$10,000,000

Replacement value (insured) of building asset 12

$10,000,000

Contents value of building asset 12

$3,000,000

Occupancy/Capacity number of building asset 12

750

Hazards to which building asset 12 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 13

Macklanburg Playhouse 1200 E. Broadway COMO

Square footage of building asset 13

20,430

Replacement value (insured) of building asset 13

$6,000,000

Contents value of building asset 13

$1,000,000

Occupancy/Capacity number of building asset 13

350

Hazards to which building asset 13 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
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- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 14

Facilities 1200 E. Broadway COMO

Square footage of building asset 14

20,490

Replacement value (insured) of building asset 14

2,000,000

Contents value of building asset 14

$2,000,000

Hazards to which building asset 14 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 15

Pillbury Hall

Square footage of building asset 15

53,351

Replacement value (insured) of building asset 15

$11,000,000

Contents value of building asset 15

$2,000,000

Occupancy/Capacity number of building asset 15

350

Hazards to which building asset 15 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 16

President's Home 1200 E. Broadway COMO

Square footage of building asset 16

9,101

Replacement value (insured) of building asset 16

1,000,000

Contents value of building asset 16

$500,000

Occupancy/Capacity number of building asset 16

20

Hazards to which building asset 16 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 17

Prunty Hall 1200 E. Broadway COMO

Square footage of building asset 17

25,842

Replacement value (insured) of building asset 17

$6,500,000

Contents value of building asset 17

$2,000,000

Occupancy/Capacity number of building asset 17

300

Hazards to which building asset 17 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
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- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 18

Roblee 1200 E. Broadway

Square footage of building asset 18

48,736

Replacement value (insured) of building asset 18

$11,000,000

Contents value of building asset 18

$2,000,000

Occupancy/Capacity number of building asset 18

300

Hazards to which building asset 18 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 19

Sampson Hall 1200 E. Broadway COMO

Square footage of building asset 19

23,517

Replacement value (insured) of building asset 19

$7,000,000

Contents value of building asset 19

$1,500,000

Occupancy/Capacity number of building asset 19

100

Hazards to which building asset 19 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 20

Scene Shop 1200 E. Broadway COMO

Square footage of building asset 20

20,490

Replacement value (insured) of building asset 20

$900,000

Contents value of building asset 20

$400,000

Occupancy/Capacity number of building asset 20

25

Hazards to which building asset 20 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of buildings asset 21

Searcy Hall 1200 E. Broadway COMO

Square footage of building asset 21

28,512

Replacement value (insured) of building asset 21

$6,500,000

Contents value of building asset 21

$2,000,000

Occupancy/Capacity number of building asset 21

300

Hazards to which building asset 21 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 22

Stamper Commons 1200 E. Broadway COMO

Square footage of building asset 22

82,858

Replacement value (insured) of building asset 22

$13,000,000

Contents value of building asset 22

$3,000,000

Occupancy/Capacity number of building asset 22

400

Hazards to which building asset 22 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 23

Tower Hall 1200 E. Broadway COMO

Square footage of building asset 23

62,735

Replacement value (insured) of building asset 23

$9,500,000

Contents value of building asset 23

2,000,000

Occupancy/Capacity number of building asset 23

300

Hazards to which building asset 23 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 24

Visitor's Center 1200 E. Broadway COMO

Square footage of building asset 24

15,020

Replacement value (insured) of building asset 24

$3,500,000

Replacement value (insured) of building asset 24

$3,500,000

Contents value of building asset 24

$1,500,000

Occupancy/Capacity number of building asset 24

75

Hazards to which building asset 24 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [x] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Name and address of building asset 25

Walter Hall 1200 E. Broadway COMO

Square footage of building asset 25

15,600

Replacement value (insured) of building asset 25

$4,500,000

Contents value of building asset 25

$1,000,000

Occupancy/Capacity number of building asset 25

125

Hazards to which building asset 25 is vulnerable.

- [ ] Riverine Flooding (Major & Flash)-RF
- [ ] Dam Failure-DF
- [ ] Levee Failure-LF
- [ ] Earthquake-EQ
- [ ] Land Subsidence / Sinkholes-LSS
- [ ] Severe Thunderstorm (incl. winds, hail, lightning)-ST
- [ ] Tornadoes-T
- [ ] Severe Winter Weather (incl. snow, ice, severe cold)-SWW
- [ ] Droughts-D
- [ ] Extreme Temperatures-ET
- [x] Fires (structural, urban, and wild)-F
- [ ] Attack (nuclear, conventional, chemical, and biological)-A
- [x] Civil Disorder-CD
- [ ] Cyber Disruption-CyD
- [ ] Hazardous Materials Release (fixed facility, accidents)-HM
- [ ] Mass Transportation Accident-MTA
- [ ] Nuclear Power Plants (emergencies & accidents)-NPP
- [ ] Public Health Emergencies/Environmental Issues-PH
- [x] Special Events-SE
- [ ] Terrorism-TX
- [ ] Utilities (interruptions & system failures)-U

Historic Hazard Events

Please fill out the sheet on the next page for each significant hazard event that affected your jurisdiction. **Complete as many copies as necessary to record all events** and complete with as much detail as possible.

This includes all events associated with the hazards listed in the previous section that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type, nature, and magnitude of event 1

None.

Date and location of event 1

Injuries and deaths from event 1

Property damage, infrastructure damage, and crop damage from event 1

Business/Economic Impacts from event 1

Road/school/other closures from event 1

Other damage from event 1

Insured losses from event 1

Federal/state disaster relief funding for event 1

Opinion on likelihood of event 1 occurring again

Source of information for event 1

Comments on event 1

Type, nature, and magnitude of event 2

Date and location of event 2

Injuries and deaths from event 2

Property damage, infrastructure damage, and crop damage from event 2

Business/Economic Impacts from event 2

Road/school/other closures from event 2

Other damage from event 2

Insured losses from event 2

Federal/state disaster relief funding for event 2

Opinion on likelihood of event 2 occurring again

Source of information for event 2

Comments on event 2

Type, nature, and magnitude of event 3

Date and location of event 3

Injuries and deaths from event 3

Property damage, infrastructure damage, and crop damage from event 3

Business/Economic Impacts from event 3

Road/school/other closures from event 3

Other damage from event 3

Insured losses from event 3

Federal/state disaster relief funding for event 3

Opinion on likelihood of event 3 occurring again

Source of information on event 3

Comments on event 3

Type, nature, and magnitude of event 4

Date and location of event 4

Injuries and deaths from event 4

Property damage, infrastructure damage, and crop damage from event 4

Business/Economic Impacts from event 4

Road/school/other closures from event 4

Other damage from event 4

Insured losses from event 4

Federal/state disaster relief funding for event 4

Opinion on likelihood of event 4 occurring again

Source of information on event 4

Comments on event 4

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Multi-Jurisdictional Hazard Mitigation Plan

Data Collection Questionnaire

For Special Districts

County: Boone

Special District Name: Boone County Regional Sewer District

Return by: November 18, 2024

Please complete this data collection questionnaire as accurately and completely as possible as this information will appear in the mitigation plan. A data collection questionnaire must be completed for each "jurisdiction" that wishes to be included in the plan. According to FEMA's definition a jurisdiction is any local government, including counties, municipalities, cities, towns, school districts, special districts, councils of government, and tribal organizations. Any of these entities as well as publicly funded colleges and universities that do not participate in the planning process **will no**t be eligible applicants for FEMA mitigation funding programs. Please note: School Districts and other Educational Institutions should complete the Data Collection Questionnaire indicated "For School Districts and Educational Institutions".

Prepared by: Daniel Cunningham _____

Phone: 573-443-2774 _____

Email: dcunningham@bcrsd.com _____

Date: January 10, 2025 _____

Please return questionnaires by mail or email.

Mail:
Mid-Missouri Regional Planning Commission,
ATTN: Miriam Bouallegue
206 E Broadway #9304
P.O. Box 140
Ashland, MO 65010

Email:
miriambouallegue@midmorpc.org

CAPABILITY ASSESSMENT
&
INCORPORATION OF EXISTING PLANS, STUDIES, REPORTS AND TECHNICAL INFORMATION

The purpose of this section is to collect information to document existing capabilities as well as determine existing plans, studies, reports, and technical information that may need to be incorporated in the mitigation plan. Although some of this information may have been captured in your previous mitigation plan, it is important to ensure this information is current in the plan update

Please indicate which of the following your jurisdiction has in place. For elements that do not pertain to your type of public entity, please indicate with "N/A". If applicable, please provide a completion date for the element. If your jurisdiction does not have a particular element, and a higher level of government has the authority pertaining to your jurisdiction, please indicate this in the comments column. If your jurisdiction has any of the **underlined and bolded** elements, please provide a copy of the document to the contact listed on the front and indicate method in the comments column (i.e. available on the web, will email or mail).

Element	Yes, No, N/A	Comments and/or Weblink
Planning Capabilities		
Capital Improvement Plan	Date: May 2014	
Emergency Operations Plan	Date:	
Continuity of Operations Plan	Date:	
Community Wildfire Protection Plan	Date:	
Other:		
Policies		
Programs		
Cross-Connection Program		
Hydrant Flushing Program		
Public Education/Awareness		
Tree Trimming Program		
Mutual Aid Agreements		
Other:		

Element	Yes, No, N/A	Comments and/or Weblink
Studies/Reports/Maps		
Evacuation Route Map		
Critical Facilities Inventory		
Staff/Department		**Full Time or Part Time?**

Financial Resources	Is your jurisdiction able to? Yes or No
Fund projects thru Capital Improvements funding	
Fees for water, sewer, gas, or electric services	Yes
Incur debt through general obligation bonds	
Incur debt through special tax bonds	
Incur debt through private activities	
Withhold spending in hazard prone areas	

For plan updates, the plan maintenance process outlined in your previous plan requires all participating jurisdictions to incorporate the requirements of the mitigation plan into other planning mechanisms, when appropriate. A key element of effective implementation of mitigation is for the mitigation plan to be incorporated in existing authorities, policies, programs, and resources. Next to each applicable planning mechanism, indicate how your jurisdiction incorporated the previous mitigation plan. If no incorporation has occurred, please explain, including background information detailing any challenges preventing incorporation.

Planning Capabilities	Method of Incorporation Since Previous Plan or Challenges Preventing Incorporation
Capital Improvement Plan	Updated May 2014, and in the process of updating currently.
Emergency Operations Plan	
Continuity of Operations Plan	
Firewise or other Fire Mitigation Plan such as Community Wildfire Protection Plan	

Additional Questions

1. How is your Special District structure organized? (Board of Directors, Commission, how many members)

The Boone County Regional Sewer District is), a common sewer district organized and operated under Chapter 204, RSMo, and political subdivision of the State of Missouri.

2. List any past or ongoing public education or information programs, such as for responsible water use, fire safety, household preparedness, or environmental education.

Informational newsletters sent out to our members.

3. List any other past or ongoing projects or programs designed to reduce disaster losses, these may include projects to protect critical facilities. Be sure to include pending or approved projects submitted for FEMA mitigation grants.

4. Please list Mitigation Planning Committee members who served during the development of the previously approved plan. Was the process set forth for monitoring the implementation of the previously approved mitigation plan adhered to? Did the Committee meet as was specified in the previously approved plan? Why or why not?

VULNERABILITY ASSESSMENT

The purpose of this worksheet is to assess the vulnerable buildings, populations, critical facilities, infrastructure, and other important assets in your community by using the best available data to complete the table. Use the table on the next page to compile a detailed inventory of specific assets at risk including critical facilities and infrastructure; natural, cultural, and historical assets; and economic assets. In the natural hazard column of the asset inventory table, indicate (by assigned abbreviation) which of the following hazards the asset is vulnerable to:

Natural Hazards	
Flooding (Major & Flash) - **RF**	Drought - **D**
Levee Failure - **LF**	Extreme Temperature - **ET**
Dam Failure - **DF**	Severe Thunderstorm (incl. winds, hail, lightning) - **ST**
Earthquake - **EQ**	Severe Winter Weather (incl. snow, ice, severe cold) - **SWW**
Land Subsidence / Sinkholes - **LSS**	Tornadoes - **T**
Drought - **D**	Wildfire - **WF**

Critical Facilities and Infrastructure

A critical facility may be defined as one that is essential in providing utility or direction either during the response to an emergency or during the recovery operation. FEMA's HAZUS-MH loss estimation software uses the following three categories of critical assets. 'Essential facilities' are those that if damaged would have devastating impacts on disaster response and/or recovery. 'High potential loss facilities' are those that would have a high loss or impact on the community. Transportation and lifeline facilities are third category of critical assets; examples are provided below.

Essential Facilities
Fire station
Emergency Operations Centers

High Potential Loss Facilities
Power plants
Dams/levees
Hazardous material sites
Main government buildings

Transportation and Lifeline
Highways, bridges, and tunnels
Railroads and facilities
Bus facilities
Airports
Water treatment facilities
Natural gas facilities and pipelines
Oil facilities and pipelines
Communications facilities

Asset Inventory

Please list critical facilities and other community assets, the square feet, values, and occupancy/capacity. If not applicable, enter "N/A"). In the last column, use the codes from the previous page to indicate hazards to which the asset is vulnerable. Add as many rows as needed. If this information is available in GIS format, please provide.

Critical Facilities

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
Essential Facilities such as fire stations, Emergency Operations Centers						
See attached list of facilities						

Name of Asset	Address	Area (sq.ft.)	Replacement Value (Insured) ($)	Contents Value ($)	Occupancy/ Capacity (#)	Natural Hazards
High Potential Loss Facilities such as power plants, dams/levees, hazardous materials sites, main government buildings (Do not include schools—they will be reported by the school districts)						
Transportation and Lifelines such as highways, bridges, and tunnels; railroads and facilities, bus facilities, airports, water treatment facilities, natural gas facilities and pipelines, oil facilities, oil facilities and pipelines, communications facilities						

***If replacement cost data is not available, use the best available data (assessed valuation or other method for estimating cost) and explain any data deficiencies.**

HISTORIC HAZARD EVENTS

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction. Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	

HISTORIC HAZARD EVENTS (continued)

Please fill out the sheet on the next page for each significant hazard event that affected **Your Jurisdiction. Make as many copies as necessary to record all events** and complete with as much detail as possible. This includes all events associated with the hazards listed below that have caused previous damage in your jurisdiction. It is especially important to capture events that either were not included in the previous Hazard Mitigation Plan or occurred since the plan was completed. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Jurisdiction	
Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Source of information	
Comments	